

Nordic Entrepreneurship Islands

STATUS AND POTENTIAL

**Mapping and forecasting Entrepreneurship Education
on seven selected Nordic Islands**



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Tilde Reffstrup

Susanne Kærn Christiansen

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Executive Summary

This report presents the results of a one-year pilot project, *Nordic Entrepreneurship Islands*, carried through by the Danish Foundation for Entrepreneurship in collaboration with the Nordic Council of Ministers and seven selected Nordic islands. Ranged according to population size, the seven selected islands are Andøy (Norway), Pargas¹ (Finland), Bornholm (Denmark), the Faroe Islands, Greenland, Gotland (Sweden) and Iceland.

The results presented in the report are divided into the macro, the meso and the micro level and include:

- A mapping of the national or regional strategy for entrepreneurship education (macro level).
- A mapping of the educational institutions' strategies for entrepreneurship education at the secondary and tertiary education levels (meso level).
- A mapping of the existing spread of entrepreneurship education in secondary education and in higher education on the seven islands (micro level).
- Case stories from five islands about students who have received a Micro Grant (micro level).
- An account of the entrepreneurial potential of each island through a special effort. The account has been carried out on the basis of estimated forecasts for entrepreneurship education and for the allocation of Micro Grants on each island.
- An economic estimate of the particular effort on each island.
- General recommendations for each island on the basis of a particular effort.

Data from Nordregio concerning the population changes and employment situation on the islands are presented as background for the mapping.

The rationale behind the report and the pilot project is that many of these often remote islands have challenges such as lack of education opportunities and jobs, depopulation and economic stagnation. Especially young people with high ambitions

¹ Pargas is not an island but an area in southwestern Finland.

concerning their education and career choose to move away from the islands. Some of the reasons are that there are too few workplaces, and that companies who disappear are not replaced by new companies at the same rate. This is partly due to the lack of entrepreneurs and innovative employees on the islands.

Globalisation and the pervasive changes of society have increased the importance of innovation and entrepreneurship in the educational discourse, also in a Nordic context (Moberg 2014). There is a growing focus on the implementation of innovation and entrepreneurship in the education system and on how education can best provide pupils and students with entrepreneurial competences. Denmark has moreover achieved positive results through the allocation of Micro Grants to students who want to start their own business, during or after their education. There are therefore good reasons for focusing on entrepreneurship. The focus on and the goal of more entrepreneurship education in the education system have been determined from, among others, the economic rationale that the North needs more entrepreneurs and innovative employees to increase job creation and productivity. In addition, there are wider rationales about teaching pupils and students entrepreneurial competences and providing startup capital in order to increase the enterprise activity in society.

On all three levels of investigation (macro, meso and micro), the mapping has been carried out mainly through questionnaires. On the macro level data have been collected through a questionnaire sent to the responsible project organisation on the island, on the meso level data have been collected through a questionnaire sent to the school managements at both secondary education institutions and higher education institutions. On the micro level data have been collected from secondary education through a questionnaire sent to the teachers, and on the higher education level course descriptions have been collected and categorised by means of the Star Model.² Moreover, each island has been given the opportunity to award a Micro Grant of DKK 25,000 to a promising young startup and on the basis of an interview with the startup to write a case story about it.

The mapping on the three levels and the experiences from Denmark have provided the background for elaborating forecasts for the seven islands about the benefits of implementing a special effort on the area of *entrepreneurship in the educations and micro financing of young startups*.

The seven islands are from the start very different, which makes a comparison on fair terms impossible. The sole purpose of the report is to provide the truest possible image of each island's status and set up the most realistic forecast for each. Some of

² Stjernemodellen (the Star Model), which was developed by Øresund Entrepreneurship Academy and further developed by the Danish Foundation for Entrepreneurship, is found in Appendix 2.

the islands have worked on the area of entrepreneurship and entrepreneurship education for several years, whereas on other islands the topic is completely new. Such conditions have been considered in the elaboration of the forecasts.

In general, the forecasts for the islands anticipate an increase in the number of pupils and students who receive entrepreneurship education and an increase in the number of applicants for a Micro Grant, provided that a special effort is carried through. The anticipated increases depend on the number of schools and educational institutions and on the existing spread of, and experience with, entrepreneurship education on each island.

Following the forecasts, the report gives a number of recommendations to each island on the three areas which have been mapped (macro, meso and micro). In general, the recommendations focus on the following topics:

- A national strategy, a cross-ministry cooperation and economic resources are necessary in order to set up the frames for and political focus on the work with entrepreneurship and entrepreneurship education.
- A coordinator who is responsible for the overall implementation at the national level and who cooperates with the political and strategic level.
- Strong relations with and between stakeholders from all relevant sectors of society will ensure a coherence between initiatives and provide for a broad support for the field.
- Communication and information to all sectors of society about the benefits of entrepreneurship education and why the entrepreneurial competences are generally useful for everyone, not only for those who want to start their own business. The narrow understanding of entrepreneurship as only related with business must be changed in order to ensure that there is broad support for introducing more entrepreneurship in education and in society as such.
- Data collection about entrepreneurship education and its results will help to get the continued support from the political level and from private stakeholders.
- The management level of the educational institutions must actively support and prioritise entrepreneurship education. School managements have a very important role in creating the link between the national strategy and the actual practice in classrooms. The school's priorities must at the same time be clearly communicated across the institution and to its external partners.
- It is important to support educational institutions and focus on the development of entrepreneurship education. The Danish Foundation for Entrepreneurship has

published “A Taxonomy of Entrepreneurship Education”, which provides inspiration on how to teach entrepreneurship at different educational levels.

- A plan and resources for further education of teachers when it comes to teaching entrepreneurship is advised.
- Concurrently with an increased focus on entrepreneurship education in institutions, there must be a focus on extra-curricular activities, during the education as well as after finished education.
- Allocation of Micro Grants to promising young startups can help to boost enterprise activity and create growth.
- A general advice to all islands is to exploit synergies across countries/ islands and to be inspired by one another.

Preface

The aim of this report is to provide the results from a pilot project conducted in 2016 and to give an insight on the entrepreneurship educational status on seven selected Nordic islands and the development opportunities arising from increasing the focus on entrepreneurship education, as well as the framework conditions offered to young entrepreneurs on the islands. The report is the result of a fruitful collaboration between The Nordic Council of Ministers and Danish Foundation for Entrepreneurship. The report could, however, not have been produced without the participation of the seven islands.

The mapping of the seven Nordic islands is intended for a number of stakeholders. It is primarily an overview for politicians and decision makers who draw up the legislation and frames relating to entrepreneurship education. The mapping is also for educational institution leaders, who in their everyday work can provide structures, environment and educational development to ensure that entrepreneurship education becomes an integral part of the activities in secondary and higher education institutions on the islands. The third target group is the leaders and employees of public and privately funded startup/innovation system initiatives, who provide the island entrepreneurs with different kinds of support systems.

Participating islands and involved partners in this pilot project are:

- Andøy (NO): Steve Hernes and Torun Hansen, Ungt Entreprenørskab Nordland.
- Bornholm (DK): Tau Rebecca Mikkelsen, Fonden for Entreprenørskab – Region Bornholm.
- Faroe Islands: Susan Klein Gregoriussen and Brynhild Høyer, Fonden for Entreprenørskab – Region Færøerne.
- Gotland (SE): Adam Ladeback, Ung Företagsamhet – Region Gotland.
- Greenland: Jan Mørch Pedersen and Christian Wennecke, Greenland Business.
- Iceland: Minna Melleri, Junior Achievement Iceland.
- Pargas (FI): Petra Palmroos, Pargas Stad.

Each island partner has contributed by participating in the data collection, handing out a Micro Grant to a promising student startup and by identifying two exemplary cases and describing them in written form.

Acknowledgements

Thank you to all the participating organisations mentioned above and to Julien Grunfelder from Nordregio for providing demographic background data for the report. A great many teachers, educational managements and government officials have contributed by responding to the questionnaires and island representatives contributed with their thoughts, ideas, reflections and experiences at the conference held November 16th 2016. We wish to thank you all for your contributions without which the project would not have been possible.

A sincere thank you to the members of the steering group, Mikkel Leihardt, Head of Division in Ministry of Higher Education & Science in Denmark, and member of Nordic Civil Servants' committee for education and research (EK-U), Morten Friis Møller, Senior advisor, Nordic Council of Ministers and committee for education and research, and Christian Vintergaard, CEO, Danish Foundation for Entrepreneurship.

1. Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation and economic stagnation. This requires a focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons could be said to be the lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potential arising from an increased focus on entrepreneurship education and startup capital for student startups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student startup Micro Grant, a mapping of the existing spread of entrepreneurship education at

the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as other research.

The full entrepreneurial potential is viewed as the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and startup capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

2. Methodology and Structure of the report

This report maps the present situation on the seven Nordic islands with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student startup on each island.

In order to map the status of entrepreneurship education on the seven Nordic islands, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the “entrepreneurship education ecosystem”.

The three levels are:

- Macro level: The national strategy for entrepreneurship education in the islands/countries.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio³ concerning population changes and employment situation on the seven islands are shortly discussed in the first chapter.

Detailed information about each island is found in the separate island reports (see Appendix 1–7). The island reports present a mapping on the above-mentioned levels and contain recommendations and forecasts about the potential entrepreneurship education and Micro Grants over a period of five years. An economic assessment of the implementation in the same period is also presented in each island report.

³ Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.
<http://www.nordregio.se/>

2.1 Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.⁴

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013)

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

2.2 Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection on the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

1. Pre-strategy (based on individual initiative).
2. Initial Strategy Development.
3. Strategy Implementation, Consolidation & Development of Practice.
4. Mainstreaming.

⁴ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

The model also identifies five key areas on which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

1. Developing the national strategy framework.
2. The role of local and regional authorities.
3. Implementing entrepreneurship education.
4. Teacher education and training.
5. Engaging with businesses and private associations and organisations.

The project managers on the seven islands answered the questionnaire in the course of 2016. Wherever necessary, the project managers received expert knowledge from relevant government officials and people with knowledge in the field.

2.3 Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

1. School strategy & form.
2. Organisation.
3. Competence.
4. Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted mapping at meso levels. As a continuation of the Progression Model for Entrepreneurship Education Ecosystem The Danish Foundation for Entrepreneurship

therefore developed the questionnaire specifically for the mapping of the meso level in this project. “A Quality Standard for Enterprise Education”, developed by Centre for Education and Industry, University of Warwick, and “HEInnovate”, a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum⁵ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager on each island to the management of educational institutions on the upper secondary level and the tertiary level on the island.

2.4 Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching were taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers’ evaluation of their school’s policy on innovation and entrepreneurship education.

It also examines the teachers’ evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focuses on four areas or “entrepreneurial dimensions”. Please see “A Taxonomy of Entrepreneurship education” for further elaboration on the entrepreneurial dimensions.⁶

⁵ HEInnovate. <https://heinnovate.eu/>

⁶ A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation. <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

The four entrepreneurial dimensions examined are:

1. Action
2. Creativity
3. Environment (outward orientation)
4. Attitude

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (startup).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015/2016. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, "Stjernemodellen"⁷ is used as a tool for the categorisation of courses (see Appendix B for further details).

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations, too, and has been used by the Foundation for the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

2.5 Micro Grants and the innovation ecosystem on the islands

Each island has had the opportunity to award a Micro Grant to a promising student startup. The Micro Grant is a small financial aid of DKK 25,000, which allows the student startup to take their business further. Five islands have awarded this Micro Grant to a local student startup. Small cases about each local startup were written and document

⁷ "Stjernemodellen" will henceforth be referred to as the Star Model.

the effects, needs and possibilities for young people on the islands after they receive a Micro Grant.

Each island has also provided information about the innovation ecosystem on the island in the form of a case.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting regarding entrepreneurship education and Micro Grants on the seven islands.

2.6 Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations in the data may, however, occur in relation with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions were sent per email to the responsible project manager on the island. We have been able to collect a few data from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also based on different strategic knowledge. The data given about each island/country are therefore not always equivalent, because it depends on the primary sources and on the information available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The existence of entrepreneurship education may therefore be different than what is communicated in this report. This report maps the data and information, which we have obtained through our research and surveys.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

Neither does this report provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Appendix A) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This allows us to make conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

3. Demographics of the islands

Economic, social and population related challenges are often typical of outlying geographical areas and the seven islands experience such challenges to varying degrees. This chapter provides a short overview of the age structure of the population and employment situation on the islands. This will serve as background for the mapping of the situation on each island and for the suggested measures to stimulate growth.

3.1 Population and age structure

Table 1 shows the demographic development in the population in the years 2009–2015 in the seven islands, as well as in the four countries of which some islands are part.

Generally, there has been a growth of the total population in the countries (that is Norway, Sweden, Finland, Denmark and Iceland) and a decline or a status quo in the total population in the smaller (in population) islands and autonomous regions (Andøy, Pargas, Bornholm, Gotland, Faroe Islands as well as Greenland).

Looking at the in- and decreases in the population in the age groups 0–24 and 25+ during the last 6 years, the general picture for all geographical areas is that the number of 0–24 year olds is increasingly smaller than the number of 25+ year olds, especially on Bornholm and in Greenland (where the difference is more than 10%). So, the very young part of the population decreases in all countries and islands, to a varying degree. This development may be caused by multiple factors, for instance lower birth rates and young people leaving the area to get an education or a job.

When it comes to the dependency ratios (the portions of the population of people either too young or too old to work),⁸ the general picture for all geographical areas is that youth dependency rates decrease whereas old age dependency rates increase, in some places very much so (most notably in Pargas and Bornholm).

Summing up, the situation in the islands, and in the Nordic area in general, is that the old part of the population is becoming larger and the young part is becoming smaller. This trend is particularly noticeable in the smaller and more secluded islands.

⁸ Read more: http://www.investorwords.com/1409/dependency_ratio.html#ixzz4MOLhtg9z

In Andøy, Pargas, Bornholm and Gotland, the difference between the old age dependency and the young age dependency is especially high, that is, the old age dependency is much bigger than the young age dependency.

The two islands that seem to have the biggest challenges when it comes to depopulation of especially young people are Bornholm and Greenland; both experience a decreasing total population and an increasing speed at which the oldest share of the population becomes bigger than the youngest share. In Bornholm, the old age dependency rate is especially on the rise.

Table 1: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7,6	6,0	8,4	-1,6	28,7	27,4	-4,4	22,1	24,5	10,9
Andøy	-0,8	-2,0	-0,4	-2,3	29,0	25,3	-12,7	33,2	37,9	14,1
Finland	2,7	-0,7	4,2	-0,6	25,2	25,7	2,2	25,2	31,3	24,2
Pargas	0,5	-2,3	1,7	-0,5	27,1	27,8	2,6	30,9	40,0	29,5
Denmark	2,7	2,6	2,8	-0,4	27,8	26,4	-5,0	24,1	28,8	19,5
Bornholm	-6,4	-14,3	-3,6	-0,7	25,5	23,0	-9,6	33,2	44,6	34,5
Faroe Isl	-0,9	-4,3	0,9	1,4	34,4	34,5	0,4	22,2	26,9	20,9
Greenland	-0,3	-7,9	4,6	1,0	32,9	29,8	-9,4	9,3	10,7	15,2
Sweden	5,3	4,8	5,5	-1,0	25,4	27,3	7,4	27,1	31,1	14,8
Gotland	0,4	-4,8	2,6	-0,7	22,9	24,6	7,3	31,0	39,2	26,5
Iceland	4,1	0,9	4,2	2,2	30,9	30,8	-0,3	17,2	20,5	19,2

Note: * population aged 0–14 as a share of population aged 15–64.

**population aged 65+ as a share of population aged 15–64.

Source: National statistical institutes and Eurostat.

3.2 Labour market

Table 2 illustrates the development in the employment rates 2009–2013 as well as the education level of the population in 2014 in all seven islands as well as in the four countries of which some islands are part (except where information was unavailable).

Employment rates (2013) range from 63.3% in Greenland to 90.8% in the Faroe Islands.

Andøy, Greenland, Pargas and Bornholm have experienced a decrease or status quo (from -3.7% to 0.7%). Islands, which have experienced an increase (from 3.1% to 4.6%), are Faroe Islands, Iceland and Gotland.

Unemployment rates (2013) range from 3.9% in the Faroe Islands to 9.7% in Greenland. The islands with the lowest unemployment (from 3.9% to 5.4%) are the Faroe Islands, Pargas, Andøy and Iceland. The islands with the highest total unemployment (from 6% to 9.7%) are Gotland, Bornholm and Greenland. The definition of “full employment” is usually an unemployment rate of 2–5%. Thus, the Faroe Islands are close to having full employment in their total population.

The changes in unemployment rates between 2009 and 2013 are given in percentage and vary a lot, but the changes have to be seen in relation to the size of the population of the particular island.

On one end of the scale we have Andøy, which has experienced a very drastic increase in the unemployment rate of 71.4%, but this change has to be seen in relation with the fact that Andøy has a very small population. On the other end of the scale we have Gotland and Iceland, with very differing population sizes, which have both experienced a decrease of -25%.

When it comes to youth unemployment rates, data are available only for 2013 (except Gotland). Therefore we cannot identify the *development* in youth unemployment. What we can observe is that in 2013 the general picture for all seven islands is that the youth unemployment rate is 2 or 3 times as high as the total unemployment rate of the particular island. We assume that Gotland experiences the same challenge; Sweden has the highest youth unemployment rate of all participating countries and islands.

Youth unemployment rates go from 9.9% in the Faroe Islands to 19.7% in Bornholm. Worst of are Bornholm and Greenland, while rates in other areas are above 12% (probably in Gotland too).

Summing up, youth unemployment seems to be a big challenge to all seven islands, based on the data from 2013. The overall employment situation on the islands differs from island to island. Greenland and Bornholm fare worst of all when it comes to employment, and the Faroe Islands and Iceland stand out as the islands with the most positive rates. Andøy, Pargas and Gotland are situated somewhere in-between.

Table 2: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****	
	2009	2013	Change	2009	2013	Change	2009	2013	Change		2014
Norway	76,6	75,6	-1,3	3,2	3,5	9,4	9,2	8,6	-6,5		
Andøy	75,6	72,8	-3,7	2,8	4,8	71,4		12,7			26,6
Finland	68,4	68,4	0	8,4	8,4	0	21,5	19	-11,6		
Pargas	74,5	73,2	-1,7	4,9	4,6	-6,1		14,3			43,2
Denmark	75,1	72,3	-3,7	6,1	7,2	18,0	11,8	14,1	19,5		
Bornholm	68,8	69,3	0,7	8,9	8,9	0		19,7			23,7
Faroe Isl	88,1	90,8	3,1	4,8	3,9	-18,8		9,9			35,9
Greenland	64,9	63,3	-2,5	7,5 (2010)	9,7	29,3		17			14,4
Sweden	72,4	74,5	2,9	8,5	8,3	-2,4	25	23,7	-5,2		
Gotland	74	77,4	4,6	8	6	-25					31,1
Iceland	78,3	81,1	3,6	7,2	5,4	-25	16	13,6	-15		

Note: *number of employed persons as a share of the population aged 15–64.

**total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

***unemployed persons aged 15–24 as a share of the labour force aged 15–24.

****persons with a tertiary education as a share of the population aged 25+.

Source: National statistical institutes and Eurostat.

4. Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate responsible actors for entrepreneurship education are actors at the macro level (policy makers) who provide the framework for working in the area, actors at the meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at macro level on the islands, and in the countries of which four of them are part. The desk research is based on information obtained from the islands by means of a questionnaire. The islands were asked to answer a questionnaire about a national strategy for entrepreneurship education in their country and/or on their island or in their region.

There is a difference between the islands; they are constitutionally a heterogeneous group. While Iceland, the Faroe Islands and Greenland are countries or autonomous territories as well as islands, Andøy, Bornholm, Gotland and Pargas are islands⁹ that are part of a country.

⁹ Pargas is not an island but an area in Finland and was elected for this mapping, because there was no island in Finland meeting the requirements concerning size, population etc for participating in the pilot project. In this report, for the sake of simplicity, "islands" will be used when speaking about them as a group, and "area" will be used when speaking about Pargas alone.

There are also large differences between the islands regarding their experience with entrepreneurship education and their entrepreneurial ecosystem. Some islands are part of countries that have worked many years in the field and have well-structured strategies for this work, but the degree to which the initiatives have reached their geographical area differs. Some islands have just recently started focusing on these initiatives; others have worked in different ways with these initiatives for a number of years.

Tables 3–7 below summarise the islands' answers to the questionnaire about national strategies. The purpose of the tables is to map (not evaluate) and provide an overview of the situation in the Nordic islands as a whole and in each of the islands separately (see the separate island reports).

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

1. Developing the national strategy framework.
2. The role of local and regional authorities.
3. Implementing entrepreneurship education.
4. Teacher education and training.
5. Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

1. Pre-strategy (based on individual initiative).
2. Initial Strategy Development.
3. Strategy Implementation, Consolidation & Development of Practice.
4. Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

For the sake of overview of measures and initiatives taken at the macro level in each country/island, the answers have been divided into five tables corresponding to the above five key areas, which are discussed under separate headings. Under each heading a short outline of the data is given and, wherever extra information was available, elaborations were added.

4.1 Developing the national strategy framework

Below Table 3 summarises the answers to the questionnaire about measures taken at the national level to set the framework for the strategy work. The questions are about goals and plans, main actors involved, budget, and evaluation measures.

Table 3: Developing the national strategy framework

	Andøy (NO)	Pargas (FI)	Bornholm (DK)	The Faroe Islands	Greenland	Gotland (SE)	Iceland
Is there a national definition of entrepreneurship education in your country?	✓	✓	✓	✓	-	✓	-
Does your country have a national strategy for entrepreneurship education?	✓ + Regional	✓ + Regional	✓	-	-	✓	-
Are there main goals for your national strategy?	✓	✓	✓	-	-	✓	-
Is the national strategy established in an action plan?	-	✓	✓	-	-	-	-
Is there a ministerial or cross-ministerial involvement in the strategy?	✓	✓	✓	(✓) ¹⁰	-	✓	(✓) ¹¹
Are other public organisations involved on the area at a national level?	✓	✓	✓	✓	✓	-	✓
Are private businesses involved on the area at a national level?	✓	✓	✓	✓	-	-	✓
To which degree are private businesses/organisations involved in entrepreneurship education at national level? (<i>Not at all, small degree, medium degree, high degree</i>)	High	Medium	High	Medium	Not at all	Not at all	Medium
Did your country have a national budget allocated to entrepreneurship education in 2015?	✓	✓	✓	✓	-	✓	✓
How much was the national budget (in EUR) for entrepreneurship education in 2015?	3,029,280	-	4,500,000	40,000	-	1,892,834	46,000
How much of this budget was given as direct support to educational institutions?	-	-	Approx. 25%	-	-	5–10%	-
Is there a plan for evaluation of the strategy?	✓ ¹²	✓	✓	-	-	-	-
Do you map the spread of entrepreneurship education in your country?	✓ ¹³	✓	✓	-	-	-	-
Do you assess the impact of entrepreneurship education in your country?	✓ ¹⁴	✓	✓	-	-	-	-
Is there any other evaluation of entrepreneurship education?	-	✓ ¹⁵	✓ ¹⁶	✓	-	-	-

¹⁰ The Faroe Islands have to some degree a cross-ministrial collaboration in the field of entrepreneurship education. The collaborating partners are the Ministry of Education, Research and Culture and the Ministry of Business. The two ministries have an agreement with "Íverksetarahúsið" about funding and development of entrepreneurship education in primary school.

¹¹ Iceland has no national strategy, but for several years, across-ministrial collaboration (the Ministry of Education, Science and Culture and the Ministry of Industry & Innovation) has been responsible for promoting and developing entrepreneurship education.

¹² Eastern Norway Research Institute (ENRI) evaluated the last Action Plan (national strategy).

¹³ JA Norway maps their own entrepreneurship education activities.

¹⁴ Part of the evaluation of the Action Plan was to assess the impact of entrepreneurship education.

¹⁵ Teachers can use the MTEE tool, developed by Lappeenranta University of Technology, as a self-assessment tool and provide macro data for decision makers.

¹⁶ A local island initiative is the collaboration between FFE and the Regional Municipality of Bornholm in a project to educate Innovation guides among teachers in all primary schools. In relation with this, a research project will assess the pupils' self-efficacy, but there are no results available yet.

4.1.1 *National strategy & definition*

At present, four of the seven participating islands/countries have a national strategy on entrepreneurship education. The three islands with no strategy are Iceland, the Faroe Islands and Greenland.

Norway, Sweden and Finland have specific entrepreneurship education strategies, whereas the recent Danish strategy (2012–2015) was a broader innovation strategy, which included measures for entrepreneurship education. In 2016, Denmark is “in-between strategies”, so to speak, as the recent strategy period has ended and a new national strategy is underway accompanied with a political appointed start-up counsel (Iværksætterpanel).¹⁷

The four countries with a national strategy for entrepreneurship also have a national definition of entrepreneurship education. Most national definitions are based on a broad understanding of entrepreneurship which is in keeping with the European Key Competences in Lifelong Learning, that is, the “ability to turn ideas into action”,¹⁸ and which is related to employability, active citizenship and entrepreneurial skills for life and work.

Norway, Sweden, Finland and Denmark define entrepreneurship as a process whereby an individual identifies opportunities and transforms them into practice in a social, cultural or economic context. One defines the entrepreneur as a pioneer and as someone who chooses a more demanding occupation or work and thus a different life style. In the Danish national definition of entrepreneurship there is an emphasis on “value creation”. Iceland and Greenland do not have a national definition of entrepreneurship. The Faroese definition seems to focus more narrowly on entrepreneurial and business activity, that is, how to set up a new company and how to run it.

¹⁷ The Danish Foundation for Entrepreneurship and the 4-ministry collaboration was established in 2010 as part of the Strategy for Education and Training in Entrepreneurship. In 2012, a national innovation strategy replaced the former strategy. However, the new strategy supported the continuation of the Danish Foundation for Entrepreneurship and the 4-ministry partnership. In this way, the collaboration, which was established and the measures, which were initiated with the first strategy, continues beyond the time frame of this strategy.

¹⁸ Sense of initiative and entrepreneurship refers to an individual’s ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace in being aware of the context of their work and being able to seize opportunities, and is seen as a foundation for more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance.

4.1.2 Main goals

Denmark, Finland, Norway and Sweden all have main goals for their national strategies. The goals are about increasing the interest for entrepreneurship among children and young people, making sure that the young people meet entrepreneurship at all stages of their education and that they improve their entrepreneurial skills throughout their education, so they can act as entrepreneurs starting their own companies or as innovative employees in existing companies or organisations. Central to these national definitions is the theme of “employability”, which seems to be a general characteristic of national definitions on a European level.

4.1.3 Cross-ministerial collaboration

Experience from European countries has shown that a cross-ministerial collaboration and dedication to the area are important factors in order for entrepreneurship education to have positive impact. A clear agenda and a joint vision of entrepreneurship education are basic prerequisites for a successful collaboration. Experience also shows the importance of policy makers constantly seeking an intensive engagement from the business community and other organisations that can support and strengthen dimensions in entrepreneurship education.

Denmark, Finland, Norway, Sweden, and to some degree Iceland and the Faroe Islands have cross-ministerial involvement in the area of entrepreneurship education with at least two ministries involved. These ministries include ministries such as education, business, trade and industry, research, regional development and culture. In all six countries/ autonomous territories, the Ministry of Education is involved in this work. Greenland has not established cross-collaboration in the area yet.

Previous studies confirm that cross-ministerial involvement and collaboration are success factors because entrepreneurship education supports objectives across many policy areas such as education, economic development, and innovation.¹⁹ In this collaboration, the national Ministry of Education should play a key role.

4.1.4 Public and private organisations

All islands except Gotland state that public organisations are involved at the strategic level. They list such organisations as trade unions, education institutions, municipal and regional organisations, entrepreneurship organisations and others. Greenland so far

¹⁹ Entrepreneurship Education at School in Europe. Eurydice, 2016, p. 50.

has one national actor in the field, Greenland Business the main goal of which is to promote business in Greenland.

All islands except Gotland and Greenland state that private businesses and organisations are involved to a medium or high degree, e.g banks and big companies within insurance and telecommunication.

4.1.5 National budget

With the exception of Greenland, all the countries/islands have a national budget allocated to entrepreneurship education in 2016.²⁰ The budgets differ very much, from EUR 40,000 in the Faroe Islands (this budget is earmarked entrepreneurship activities in primary education and education of primary school teachers) and EUR 46,000 in Iceland to approx. EUR 2 million in Sweden, approx. EUR 3 million in Norway and approx. EUR 4.5 million in Denmark. The size of Finland's budget was not available when this report was written. The different budgets reflect the extent and scope of activities in each country/island, the targeted education levels, number of schools, etc. And, of course, the budgets may have been set up in different ways, covering different headings.

4.1.6 Evaluation measures

When it comes to evaluation measures of the national strategy, Denmark and Finland have a plan for this. Finland and Denmark carry out mapping and impact measurement of entrepreneurship education. In Finland, mapping is carried out as part of JA Finland activities, and impact measurement (teacher assessment) is carried out through the MTEE tool (Measurement Tool for Enterprise Education), which was developed by Lappeenranta University. In Denmark, the main national actor responsible for the implementation of the strategy, the Danish Foundation for Entrepreneurship, also conducts mapping and impact assessment activities on a continuous annual basis. The mapping and impact assessment activities were an important part of the set-up of the Danish Foundation for Entrepreneurship (FFE) from the very start in order to ensure evidence-based politics in the field of entrepreneurship education.

Summing up, most of the participating countries and autonomy territories have an established structure for working with entrepreneurship education at the national level.

²⁰ In December 2016 during the second processing of the Greenlandic Finance Act 2017, EUR 175,000 was allocated to the establishment of a regional office in Greenland as part of the regional activities of the Danish Foundation for Entrepreneurship.

Most of them also have a national definition, which refers to the European Key Competence definition and they have a strategy for entrepreneurship education.

In most of the participating countries, key actors from different sectors are involved to a Medium or High degree at the national level. Most of them also have a national budget for the area. Greenland is new in the entrepreneurship education field and has only just very recently taken first measures to establish a structure for working in this field. Greenland Business has been the one national key actor so far and has only recently started focusing on the area. Iceland, although they have worked with entrepreneurship education initiatives for many years, do not yet have any established structure on this field at the national level.

4.2 The role of local and regional authorities

Table 4 summarises the islands' answers to questions about initiatives at the local and regional (island) level. The questions are about local initiatives about entrepreneurship or entrepreneurship education, collaborating partners, and how the initiatives are funded. In Iceland, the Faroe Islands and Greenland, the island level corresponds with country level.

Table 4: Developing an active role of local and regional authorities

	Andøy (NO)	Pargas (FI)	Bornholm (DK)	Faroe Islands	Greenland	Gotland (SE)	Iceland
Are there any local/regional studies on (or documented results of) entrepreneurship education on your island?	-	-	-	-	-	-	-
Is there any local funding of entrepreneurship education on your island? (<i>a. public, b. private or c. both</i>)	-	√ (c)	√ (b)	√ (c)	-?	-	√ (c)
Are there any regional entrepreneurship education centres in your country?	√	√	√	√	-	√	√
How many and how are they funded?	17 JA centres (one in Nordland)	17 YES centres (one in Southwest Finland)	7 regional FFE offices (one in Bornholm and one in the Faroe Islands)	2 ²¹ and one FFE Region	-	24 UF offices (one in Gotland)	1
Is there a local entrepreneurship education centre on your island and how is it funded?	-	-	√	√	-	√	√
Are there any strategic partnerships on your island betw private sector and educ. institutions? (<i>a. Business-school, b. NGO-school, c. Other</i>)	c	a + c	a	a	-	b	a
To which degree are private businesses involved in the entrepreneurship education strategy on your island?	Small	Small	High	Medium	-	-	Medium
Are there any ecosystem initiatives on your island?	-	-	-	√	-	√	√

²¹ "Íverksetarahúsið" in Klaksvík and "Hugskotið" (House of Innovation) in Torshavn.

There is as of yet no documented results of entrepreneurship education in any of the seven islands. Four of the islands have initiatives on entrepreneurship education, which are funded through public and/or private actors. Four islands have local entrepreneurship education centres, funded either through local authorities (municipalities) or through both public and private actors. On Andøy and in Pargas there are no specific local actors present; they are, however, part of the Nordland JA centre and Southwest Finland YES centre, respectively.

Andøy, Bornholm, Gotland and Pargas are part of countries, which have regional centres as part of the Junior Achievement Worldwide organisation. These regional centres work in different ways with initiatives at the local level. Ungt Entreprenørskap in Norway, The Danish Foundation for Entrepreneurship in Denmark, Ung Företagsamhet in Sweden and the YES centres in Finland function to some degree as local entrepreneurship centres. In these countries, many of the strategic partnerships between educational institutions and other partners, which are taking place at the local level, mostly business-school partnerships, are organised through the regional or local unit (JA, YES, UE, UF or FFE). The Danish Foundation for Entrepreneurship is also present with a regional FFE centre in the Faroe Islands. A regional FFE centre in Greenland is underway and is expected to launch in the beginning of 2017 (which was decided in the Finance Act of Greenland in December 2016).

The Faroe Islands, Andøy, Iceland, Bornholm and Pargas have an involvement of private businesses at strategy level in the local area, but to varying degrees. The degree is low in Andøy and Pargas. There are local ecosystem initiatives, mostly incubators, innovation and startup centres, in three islands (Faroe Islands, Iceland and Gotland).

Summing up, all islands except Greenland have initiatives related to entrepreneurship education at the island level, either in the form of funding of entrepreneurship education activities and/or as strategic partnerships between schools and other actors (business, NGO or other). Most islands also have some kind of entrepreneurship education organisation (Junior Achievement) involved at either local island level or regional level. Some also have local ecosystem initiatives that provide support for startups.

It is not quite accurate to place islands like Andøy and Pargas alongside islands like Iceland and the Faroe Islands, because local island level corresponds to national level in the latter two, while Andøy and Pargas belong under regional strategies of their respective countries. It is, however, one of the premises of this mapping to examine islands that are very different in various ways. So, when looking at the results from the islands, one should always keep in mind their differences in terms of population size, territory, constitution, etc.

Figure 1: Young boy celebrating in front of a crowd of students at the regional Edison competition



Photo: Rasmus Degnbol.

4.3 Implementing entrepreneurship education

Table 5 summarises the islands' answers to questions about nationally agreed learning objectives for entrepreneurship education at NQF levels 1–8 and which kind of entrepreneurship education is implemented at the different NQF levels.

Table 5: Support to educational institutions

	Andøy (NO)	Pargas (FI)	Bornholm (DK)	Faroe Islands	Greenland	Gotland (SE)	Iceland
Are entrepreneurship learning objectives formally approved in your country or island at some of the NQF levels 1–8?	3–4	All levels	All levels	1–2	None	3–4	None
Is entrepreneurship education implemented at all levels of education? Which? (compulsory or optional)	All levels	All levels	All levels	All levels	No levels	All levels	Some levels
If it is only implemented at some levels, which?	1–8	1–8	1–8	1–8	-	1–8 ²²	3–4, 5–8
Is EE taught in your country at NQF levels 1–2 primarily as a method?	√	√	√	-	-	√	√
Is EE taught in your country at NQF levels 1–2 primarily as a subject?	-	-	√	√	-	-	-
...as none of the above?	-	-	-	-	√	-	-
Is EE taught in your country at NQF levels 3–4 primarily as a method?	√	√	√	√	-	√	-
Is EE taught in your country at NQF levels 3–4 primarily as a subject?	√	√ (P -)	√	√	-	-	√
...as none of the above?	-	-	-	-	√	-	-
Is EE taught in your country at NQF levels 5–8 primarily as a method?	√	√	√	√	-	√	-
Is EE taught in your country at NQF levels 5–8 primarily as a subject?	√	√	√	-	-	-	√
...as none of the above?	-	-	-	-	√	-	-

²² According to the report "Entrepreneurship education in the Nordic countries" from 2012, entrepreneurship education has been implemented at all education levels in Sweden.

The four islands within countries with a national strategy for entrepreneurship education state that learning objectives for entrepreneurship education have been formally approved at the national level for some education levels, either at upper secondary level or all levels. In the Faroe Islands, such objectives exist at the primary school level.

The degree to which entrepreneurship education has been implemented (either compulsory or optional) at the different education levels is rather high. Norway, Denmark, Sweden, Finland state that it has been implemented at all national education levels. Also the Faroe Islands state that it has been implemented at all educational levels. The degree to which entrepreneurship education has been implemented in the individual islands, and in which form, is further examined in the chapters about the meso level and the micro level.

In Iceland, it is implemented at upper secondary/VET school level and in higher and PhD level. Entrepreneurship education is moreover taught to a low degree in primary school through an annual innovation competition. In Greenland, according to the answers to the questionnaire at a national level, there has been no implementation of entrepreneurship education at any education level yet. A few examples of entrepreneurship education have, however, been identified at the upper secondary level through our questionnaire at this level (see the chapter about the meso level).

Five islands provide examples of entrepreneurship programmes. Most of them are programmes at upper secondary level and VET and in higher education. Norway and Denmark also have programmes for primary school (Project Edison). Most examples are optional courses provided as an add-on to the ordinary teaching and which focus on starting your own business, such as Company Programme.

The islands were asked to state whether entrepreneurship education is taught primarily as a method or as a subject (or both) at the different education levels in their country. A general alignment between the islands can be identified when it comes to the way in which entrepreneurship is taught at the different education levels. At the primary level, in general, it seems to be taught primarily as a method, and at the upper secondary and VET school level as well as at the higher education level it is taught as both a method and a subject. Only in the Faroe Islands it is taught primarily as a subject in primary school. In Sweden, entrepreneurship education is taught primarily as a method at all three levels. In Greenland there is generally no entrepreneurship education (see the chapter about the meso level).

To sum up, all islands/countries except Iceland and Greenland have formally approved learning objectives for entrepreneurship education at some or all levels. The Faroe Islands, Norway, Finland, Sweden and Denmark have implemented entrepreneurship education at all levels, and Iceland has implemented it at some levels.

Figure 2: Four young students explaining their squared board game to two judges



Photo: Claus Lillevang.

4.4 Teacher education and training

Table 6 summarises the islands' answers to questions about the existence of teacher education and training set up at the national level, as well as different forms of supporting material or other initiatives for teacher training (TT).

Table 6: Teacher education and training

	Andøy (NO)	Pargas (FI)	Bornholm (DK)	The Faroe Islands	Greenland	Gotland (SE)	Iceland
Is entrepreneurship education a part of initial teacher training in your country?	√	√	√	√	-	-	-
Are there any other means for teachers to get training in entrepreneurship education in your country?	√	√	√	√	-	√	-
Is there any national support for TT in your country (financial or non-financial) such as framework for network?	-	√	√	-	-	-	-
Is there any national support for TT in your country (financial or non-financial) such as guidelines?	√	√	√	√	-	-	√
Is there any national support for TT in your country (financial or non-financial) such as promotion?	-	-	√	-	-	-	-
Is there any national support for TT in your country (financial or non-financial) such as programmes?	√	-	√	-	-	-	-
Is there any national support for TT in your country (financial or non-financial) such as rewards/awards?	-	-	√	-	-	-	-
Is there any national support for TT in your country (financial or non-financial) such as website with entrepreneurship teaching materials?	√	-	√	-	-	-	-

The Faroe Islands, Andøy, Bornholm and Pargas all state that entrepreneurship education is part of initial teacher training at the national level. However, the way in which entrepreneurship education is part of initial teacher training differs from place to place, and in no country/island is it fully integrated yet.

In the Faroe Islands, teacher training is mostly offered through “Íverksetarahúsið” in Klaksvík.

In Norway, for instance, teacher training takes place mostly through JA Norway. The fact is that there are few courses in entrepreneurship in pedagogical subjects and teacher education despite a focus on the importance of teacher training in the two last Norwegian national strategies.

In Denmark, with the school reform in 2014, entrepreneurship education became a mandatory component in the ordinary primary school teacher education. Entrepreneurship is also found in some of the pedagogics courses that are mandatory for newly employed teachers at secondary and higher education level. However, systematic entrepreneurship teacher training and continuing professional development still only occur to a modest extent in Denmark. The Danish Foundation for Entrepreneurship focuses on the matter for instance through support to educational institutions that send their teachers to entrepreneurship education courses. The Foundation also collaborates closely with university colleges (where teachers are educated in Denmark) to enhance teacher training in entrepreneurship education. The latest initiative is the development of two further education courses in entrepreneurship education for teachers’ at all educational levels and teachers in VET schools.

In Finland, where teachers are educated at universities, entrepreneurship education has become a mandatory part of initial teacher training in three universities, but is optional at the other teacher education institutions.

Other means for teacher training in entrepreneurship education exist in five countries. The examples include courses offered by the entrepreneurship education centre (“Íverksetarahúsið” in the Faroe Islands), JA programmes (Norway), optional courses in university colleges (Denmark), a local project including the education of local teachers to act as “innovation guides” in their schools (Bornholm), university courses and JA programmes (Gotland), and teachers’ further education, study trips and participation in entrepreneurship projects (Finland). Finland, moreover, has an emphasis on teachers’ experience with “real life” and entrepreneurship. Teachers are therefore also trained in work life knowledge and skills through in-service training and special secondments during which teachers can experience entrepreneurship in practice.

A few islands mention other means of support for teacher training, most of them offer guidelines, and a couple of them mention the possibility of networking and the availability of teaching materials.

To sum up, entrepreneurship education has not been fully integrated into teacher training in any country yet, but the countries have many different initiatives that contribute towards this goal. There is, however, still a long way to go. Entrepreneurship education has been integrated as a mandatory part of teacher education in some teacher education institutions in a few countries (Finland and Denmark).

4.5 Engaging with businesses and private associations and organisations

Table 7 summarises the islands' answers to questions about focus areas of the business/private sector when it comes to their involvement in entrepreneurship education initiatives, and whether this sector provides funding for the area.

Table 7: Engaging with businesses and private associations and organisations

	Andøy (NO)	Pargas (FI)	Bornholm (DK)	The Faroe Islands	Greenland	Gotland (SE)	Iceland
Are there any national research/results of the cooperation between private sector and educ. institutions with regard to entrepreneurship education?	-	√	-	-	-	-	-
Does the private sector provide any funding of entrepreneurship education projects in your country/island?	-	√	√	-	-	-	√
What is the focus area of the business sector when they involve in local entrepreneurship education – recruitment?	√	√	√	√	-	√	√
What is the focus area of the business sector when they involve in local entrepreneurship education – the role of business in entrepreneurship education?	-	-	√	-	-	-	√
What is the focus area of the business sector when they involve in local entrepreneurship education – publicity / CSR?	-	√	-	-	-	√	√
Other, what?	-	-	-	-	-	-	-

The answers to the questions about the private sector and their focus areas when engaging in entrepreneurship education show that the primary focus area of the private sector is “recruitment”, which is mentioned by all six islands that have an engagement of businesses and private organisations in the area (not Greenland). Three islands also mention “publicity/CSR” and “the role of business in entrepreneurship education” as focus areas of the private sector. The private sector moreover provides funding to entrepreneurship education projects in three islands/countries.

4.6 General conclusion of the macro level

The countries are at very different stages when it comes to the development and implementation of a strategy on entrepreneurship education. Some of them have already developed structures, but need more support in the implementation phase. Others must start from scratch with the building up and development of a structure to enhance entrepreneurship education. Iceland, for instance, already has a wide network of actors, who are engaged in the entrepreneurship education agenda, and has a broad experience working in this field, and Greenland is at the very beginning of this development.

Concerning the national strategy framework, the general picture that appears from our data set is that the majority of the countries have a national strategy and a national definition of entrepreneurship education. Entrepreneurship is understood as activity related to the realisation of new industry/business or the development of existing industry/business. Some countries talk more broadly about entrepreneurship as a process where the individual identifies opportunities and transforms them into practice in social, cultural or economic context. Some define the entrepreneur as a pioneer and as someone who chooses a more demanding occupation or work, and thus a different life style. The Danish definition has a focus on “value creation”.

In most countries main goals and objectives have been set, and in three countries, the national strategy is established in an action plan. In six countries the ministerial involvement is cross-ministerial with at least two ministries involved and with the Ministry of Education in a key role.

5. Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy level (macro level) and implementation (micro level) in the form of teachers who teach entrepreneurial skills to pupils and students. The meso level has often been overlooked, or given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But, contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the islands, and make the link between strategy and practice, a survey was sent to the school management of schools and institutions in the seven islands. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

The purpose of the survey is to map, not evaluate, the state of affairs of educational institutions when it comes to their experience with and strategies for education in innovation and entrepreneurship.

The management (principals etc.) from 32 out of a total of 79 upper secondary and tertiary educational institutions in the seven islands have answered the survey. One must take into account that the number of participating educational institutions varies from one island to the next, and the fewer the participating institutions from an island the less representative their answers are, seen from a statistical viewpoint. The islands also differ very much in population size and the number of educational institutions at the secondary and tertiary levels as illustrated in table 8.

Table 8: Population and number of secondary and tertiary educational institutions

	Population	Educational institutions in the island	Participating institutions in the survey	Strategy	No strategy
Andøy	4,980	1	1	0	1
Pargas	15,457	3	2	1	1
Bornholm	39,756	6	3	1	2
The Faroe Islands	49,188	9	8	0	8
Greenland	55,847	16	4	1	3
Gotland	57,391	3	2	1	1
Iceland	332,529	41	12	6	6

5.1 Strategy & form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

None of the seven islands are able to maintain that all their educational institutions have formulated a strategy for education in entrepreneurship. However, five islands state that they have at least one institution with a formulated strategy. In total, 10 institutions (31%) in the survey have stated that they have a strategy. This leaves 69% of the participating institutions in the islands without a strategy for entrepreneurship education (see Table 8).

The five islands that have at least one educational institution with a strategy for entrepreneurship education are Bornholm, Gotland, Greenland, Iceland and Pargas.

5.1.1 *The schools' goals for development of entrepreneurship education*

Among the most common goals characterising the 10 educational institutions with a strategy for the development of entrepreneurship education are:

- The cooperation between teachers and local businesses, public institutions and organisations in relation with entrepreneurship education (80%).
- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching) (60%).
- Teaching in entrepreneurship (learning objectives) (60%).
- The development of curriculum in order for it to contain learning objectives and competences for innovation and entrepreneurship (60%).

5.1.2 *Implementation, revising, communicating and understanding the plan*

The data collected also show that 60% of the institutions with a strategy have a precise plan for the implementation of the entrepreneurship education strategy. However, not all of them (40%) have made a precise plan for following up and revising the strategy on a continuous basis or have created a common frame of understanding entrepreneurship education and how to practise it. Even fewer (20%) have communicated the plan clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution).

This indicates that even though an institution has a strategy for entrepreneurship education, there is a good chance that this strategy and plan has not been communicated to all stakeholders. As a consequence, the integration of entrepreneurship education in the educational organisation dilutes.

5.1.3 *No strategy but entrepreneurship education activities*

The two islands that currently do not have educational institutions with an entrepreneurship education strategy are Andøy and the Faroe Islands. In the other five islands at least half or more of the institutions have no strategy. In total 69% (22 out of 32) of the participating educational institutions in all seven islands do not have a strategy for entrepreneurship education.

It is, however, interesting that the management of all the institutions with no strategy nevertheless state that there is entrepreneurship teaching and/or activities related to entrepreneurship education taking place at their educational institution. 77% of the institutions with no strategy state that their students are working with projects that bring them in contact with the surrounding society, and 73% state that their students are being taught how to start a business, or they are being taught in new and innovative ways. 36% state that their educational institution has collaboration with the local business industry concerning students' education and further working life/career.

To which extent the teaching or activities are present at the institutions is not investigated in this survey. Therefore it is not possible to say how much teaching or how many activities are taking place in these educational institutions. For further details on this – please see the chapter about Micro level.

5.1.4 *Importance of strategy and education in entrepreneurship*

Even though management from all educational institutions in the survey states that entrepreneurship education is part of the education in one way or another, it is less likely that a strategy has been formulated. Could this partly be because management

in the seven islands does not believe it is important enough to formulate a strategy or that they do not believe it is relevant for their students to be taught entrepreneurship?

On a scale from 1 to 5²³ the data from the seven islands (all respondents) show a weighted mean of 3.90 on the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship". The seven islands are split into two groups; one including institutions with a mean above 4 (agree/very much agree) and another including institutions with a mean less than 4 (neither or/disagree/very much disagree). The first group includes Andøy, Bornholm, Iceland and Pargas. The second group includes Gotland, Greenland and the Faroe Islands. The difference in mean value between the two groups is small; 3.8 (with strategy) and 4.1 (without strategy)

A slightly higher weighted mean (3.94) in all the islands is found with regard to the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship". Again, the islands are split into two groups although slightly different groups, one including those with a mean above 4 (agree/ very much agree) and another with those with a mean less than 4 (neither or/disagree/ very much disagree). The first group includes Bornholm, Greenland and Pargas; the second group includes Gotland, Andøy, Faroe Islands and Iceland. Again there is only a small difference between the institutions with a strategy (mean: 4.0) and the ones without a strategy (mean: 3.77).

5.1.5 Importance of goals for entrepreneurship teaching

Although not all respondents in the survey agree that a strategy for entrepreneurship education is important or that it is relevant for all their students to be taught entrepreneurship, they all believe that the institution can or should set goals for entrepreneurship teaching. The reasons why they believe this differ from institution to institution and in some cases the difference is also a difference between institutions with a strategy and institutions without. Table 9 summarises the answers to questions about which goals management thinks is important to set.

75% of the respondents believe that their institution should set goals for entrepreneurship education to strengthen students' interest in becoming an entrepreneur/starting a new business. More institutions with no strategy (82%) believe this than institutions with a strategy (60%).

²³ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

69% of all respondents believe that their institution should set goals to strengthen students' interest in their future education and career. Similarly, 69% of all respondents believe that their institution should set goals to strengthen the cooperation between the educational institution and the local society. There is no significant difference between the institutions with or without a strategy.

Overall, many of the school managements in the seven islands do not believe that their institution should set goals for entrepreneurship education to decrease the student dropout rate (16%) or to fulfil new national/regional policy in the area of entrepreneurship education (19%). However, the picture is quite different when we separate the institutions with a strategy from the institutions without. 30% of the respondents with a strategy believe that their institution should set goals for entrepreneurship teaching in order to decrease the student dropout rate. This is only the case for 9% of the respondents without a strategy. 30% of the respondents with a strategy also want to comply with the new national/regional policy in the area of entrepreneurship education in contrast to 14% of the respondents without a strategy.

Table 9: Reasons for the educational institution to set goals for entrepreneurship teaching?

	All	Strategy	No strategy
To strengthen students' interest in their further education and career	69%	70%	68%
To strengthen students' interest in becoming an entrepreneur/starting a new business	75%	60%	82%
To prepare students better for working life	53%	50%	55%
To decrease the student drop-out rate	16%	30%	9%
To upgrade teachers' skills within entrepreneurship teaching	41%	40%	41%
To live up to new national/regional policy on the area of entrepreneurship education	19%	30%	14%
To strengthen the cooperation between my educational institution and the local society	69%	70%	68%
To strengthen the profiling and promotion of my educational institution	38%	40%	36%
To boost the development of the local area, for instance by contributing to new businesses through the skill development of young people	47%	60%	41%
The educational institution neither will nor should set goals for entrepreneurship education	0%	0%	0%

5.1.6 External network

As Table 10 illustrates, 6% of the participating institutions, all of them without a strategy, state that they do not have any arrangements at all for giving their students the possibility to make contact with the external network of the institution. The institutions with a strategy all provide their students this possibility one way or another.

Traditional initiatives like guest lectures given by local business people or entrepreneurs (75%) and visits to companies (63%) are among the top possibilities at institutions on the seven islands for their students to make contact with the institution's external network. There are small and only insignificant differences between the institutions with a strategy and the ones without. However, more institutions with a strategy than institutions without have guest lecturers and it is the other way round when it comes to company visits.

At least half the educational institutions (53%) provide exchange/trainee service in local businesses/organisations and 44% have project weeks or –days in collaboration with external partners. Again, we see small and insignificant differences between the educational institutions with a strategy and institutions without.

It is less likely that the students have the possibility to participate in workshops in cooperation with external partners (31%) or in competitions at the educational institution where external contacts function as judges (25%). Here it is possible to identify considerable differences between the institutions with a strategy and institutions without. 60% of the educational institutions with a strategy have workshops in cooperation with external partners and 40% have competitions at the educational institution where external contacts function as judges. 18% of the institutions without a strategy provide these possibilities to their students.

Table 10: Which possibilities do the students at your educational institution have for making contact with the institution's external network?

	All	Strategy	No strategy
Exchange/trainee service in local businesses/organisations	53%	60%	50%
Guest lectures given by local business people, entrepreneurs, or others	75%	80%	73%
Workshops in cooperation with external partners	31%	60%	18%
Subject-/project weeks or -days in cooperation with external partners	44%	40%	45%
Visits to companies, organised by the educational institution	63%	50%	68%
Competitions at the educational institution, where external contacts function as judges	25%	40%	18%
The educational institution has no such arrangements for giving students this kind of opportunity	6%	0%	9%

5.1.7 Involvement from school governing body and local businesses

It is not necessarily a natural activity for the management in the survey to involve the governing body of the institution in the work regarding entrepreneurship education. Similarly they do not perceive local businesses and/or local public institutions as a resource in their work with entrepreneurship education.

Data from the seven islands show on a scale from 1 to 5²⁴ a weighted mean of 2,77 in relation to the degree to which the governing body of the educational institution is involved in the work with entrepreneurship education. The relative low mean is explained by the difference between the institutions with and the institutions without a strategy. The educational institutions with a strategy show a higher mean (3.66) than the institutions without (2.7). About a third of all institutions participating in the survey have to "some extent" involved their governing body in the work with entrepreneurship education.

²⁴ 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

A slightly higher weighted mean of 3.10 is found when it comes to the question about the degree to which the educational institution is involved with local businesses and/or local public institutions as a resource in their work with entrepreneurship education. Again, there is a certain difference between the educational institutions with a strategy (3.88) and those without (3.10).

5.2 Organisation

This area is related to topics such as resources, structures and expectations.

5.2.1 Resources, structure and expectations

As Table 11 illustrates data show that 25% of all the educational institutions in the survey have no resources earmarked to entrepreneurship education. Almost all of these institutions (except one) are institutions without a strategy.

Time (59%) and staff with knowledge and expertise on the area (44%) are the two most common resources earmarked entrepreneurship education at the 32 educational institutions in the survey. 41% of the institutions have earmarked financial resources to this area. There are noticeable differences on all parameters between the educational institutions with a strategy and the institutions without.

Table 11: Has your educational institution earmarked some of the following resources to entrepreneurship education?

	All	Strategy	No strategy
Financial resources	41%	60%	32%
Time	59%	90%	55%
Staff with knowledge and expertise in the area	44%	60%	36%
No resources have been earmarked to the area	25%	10%	36%

As Table 12 illustrates data show that 30% of the participating institutions have a coordinator or unit for entrepreneurship teaching with full backing and practical support from management and who is a part of management. 60% of the educational institutions with a strategy have this and 14% of the institutions without.

As mentioned earlier, entrepreneurship teaching or activities related to entrepreneurship teaching exist at all the institutions. The same goes for a structure around entrepreneurship education; all the institutions in the survey have an incorporated structure with regard to entrepreneurship education. Table 12 shows that

89% state that entrepreneurship teaching is part of the timetables and the annual teaching plans, and 57% state that in the annual teaching plans time has been allocated to entrepreneurial teaching courses of a longer duration, for instance project weeks, optional subjects, etc. There is no significant difference between the institutions with a strategy and the institutions without.

However, when we look at the expectations and communication efforts from management to teachers, we can observe that no less than 23% of the institutions without a strategy have communicated to the teachers what their expectations are concerning where, when and how entrepreneurship teaching should be integrated in the school. 40% of the institutions with a strategy have done this. It is interesting and positive that so many institutions without a strategy nevertheless have a degree of focus regarding the entrepreneurship area, which has prompted them to communicate this to the teachers. On the other hand, one could have expected that more of the institutions with a strategy would have communicated this to the teachers.

Even fewer institutions with a strategy require from their teachers to describe in their annual plan how they integrate entrepreneurship in other subjects and that they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students. Thus 30% of them require from their teachers that they describe in the annual plan how they integrate entrepreneurship education in other subjects. In comparison, 14% of the institutions with no strategy require this. 20% of the institutions with a strategy require from their teachers that they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students. Only 9% of the institutions with no strategy require this from their teachers.

Table 12: Structure and expectations to teachers

	All institutions	Strategy	No strategy
Is entrepreneurship teaching part of the timetables and the annual teaching plans at your educational institution?	89%	90%	73%
In the annual teaching plans, has time been allocated to entrepreneurial teaching courses of a longer duration, such as for instance project weeks, optional subjects, etc.?	57%	50%	55%
Has management communicated to the teachers what their expectations are concerning where, when and how entrepreneurship teaching should be integrated at the educational institution?	30%	40%	23%
Does management of the educational institution require from the teachers that they describe in their annual plans how they integrate entrepreneurship education in other subjects?	20%	30%	14%
Does management require from the teachers that they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students?	15%	20%	9%
Does the educational institution use a feedback system, which ensures that the teachers follow up on the pedagogical goals and objectives?	59%	60%	45%
Does the educational institution have a coordinator or unit for entrepreneurship teaching with full backing and practical support from the management and is a part of the management?	30%	60%	14%

The relatively low expectations from school management are supported by data, which show that in 22% of the institutions management has no structure at all for dialogue and cooperation between teachers from different disciplines. (See Table 13) It is, however, evident that the institutions with a strategy endorse dialogue and cooperation to a higher degree than the ones with no strategy. The dialogue and cooperation take place through common facilities across the educational institution's subdivisions and through dialogue and co-decision between teachers and students. Cross-curricular teaching and/or interdisciplinary project groups / work are, however, slightly more likely to be a part of the support in institutions with no strategy. It is interesting that management of the institutions with a strategy seems less likely to support dialogue and cooperation between teachers from different disciplines because, as Table 14 shows, they are much more likely to plan for cross-curricular cooperation within the subject of entrepreneurship to support competence development and knowledge sharing within entrepreneurship.

Table 13: How does management support a dialogue and cooperation between teachers from different disciplines?

	All	Strategy	No strategy
Through common facilities across the educational institution's subdivisions	31%	60%	18%
Through cross-curricular teaching and/or interdisciplinary project groups	44%	40%	45%
Through dialogue and co-decision between teachers and students	31%	40%	27%
The management has at present no particular structures for such a dialogue	22%	20%	32%

5.3 Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

5.3.1 *Plan for teacher competence development*

The teacher's competences are always important when it comes to the level of quality in teaching. This of course also goes for the teaching of entrepreneurship education. As Table 14 illustrates, 64% of the educational institutions without a strategy do not have any plan at all for teachers' competence development and knowledge sharing when it comes to entrepreneurship education. 20% of the institutions with a strategy do not have any plan at all. The plan for competence development in half the institutions with a strategy is that it should take place through knowledge sharing about entrepreneurship teaching, through special networks, and through teachers having a cross-curricular cooperation within the subject of entrepreneurship. Only 25% have a plan for the continuing education of teachers.

Table 14: In which way does your educational institution's plan for competence development and knowledge sharing within entrepreneurship education manifest itself?

	All	Strategy	No strategy
Through continuing education of teachers in entrepreneurship teaching	25%	30%	23%
Through knowledge sharing about entrepreneurship teaching and through special networks	34%	50%	27%
The teachers have a cross-curricular cooperation within the subject of entrepreneurship	22%	50%	9%
The management of the educational institution has at present no plan for this	44%	20%	64%

5.3.2 *Experimenting with teaching forms*

As Table 15 shows, a quarter of all respondents in the survey state that they do not allow their teachers to experiment with teaching forms in general. These institutions are more likely to be the ones without a strategy (32%) than the ones with a strategy (10%). Data also show that a higher percentage of the institutions with a strategy (80%), compared to the ones without (41%), allow the teachers to experiment with teaching forms through cooperation with businesses. When it comes to the other parameters, the institutions with a strategy also to a higher degree allow their teachers to experiment with teaching forms.

Table 15: What does your educational institution allow the teachers in the form of possibility and co-responsibility for experimenting with teaching forms in general?

	All	Strategy	No strategy
Project work / feature weeks or days	63%	70%	59%
Cooperation with businesses	53%	80%	41%
Cross-curricular feature periods	47%	60%	41%
The management of the educational institution offers at present no such possibility	25%	10%	32%

5.3.3 Cooperation with surrounding society

As Table 16 shows a quarter of all institutions in the seven islands are at present not involved in cooperation and knowledge sharing with the surrounding society/local area. These institutions are more likely the ones without a strategy (32%) than the institutions with a strategy (10%). However, most of the participating educational institutions in the survey are involved in some kind of cooperation and knowledge sharing with the surrounding society/local area – more likely the ones with a strategy than the ones without. Whom they cooperate and share knowledge with also differs from institution to institution, especially when it comes to cooperation and knowledge sharing with newly started businesses/entrepreneurs. 60% of the educational institutions with a strategy do this in contrast to 9% of the institutions without.

Table 16: How is your educational institution involved in cooperation and knowledge sharing with the surrounding society/local area?

	All	Strategy	No strategy
Established business/industry	38%	50%	32%
Newly started businesses /entrepreneurs	25%	60%	9%
Institutions within the public sector	59%	80%	50%
Other knowledge organisations	50%	80%	36%
My educational institution is at present not involved in such cooperation /knowledge sharing	25%	10%	32%

5.3.4 Extra-curricular activities

In educational institutions, curricular entrepreneurship education is sometimes combined with extra-curricular entrepreneurship activities such as incubators, business plan competitions, advice and guidance for student startups etc. These activities are usually offered to students to strengthen their entrepreneurial competences and mindset and to provide support and guidance to student startups.

As Table 17 illustrates, data from the survey suggest that these activities are used in most educational institutions with a strategy in entrepreneurship but the same does not apply to institutions without a strategy. 64% of the no-strategy institutions do not at present offer any form of extra-curricular entrepreneurship activity. This is the case for 30% of the educational institutions with a strategy.

Student incubators exist in 60% of the educational institutions with a strategy. Only 9% of the no-strategy institutions offer this possibility to their students. Entrepreneurship

education given by entrepreneurs is also offered to students in 60% of the educational institutions with a strategy and, again, this is only the case in 9% of the institutions without a strategy. Business plan competitions are present in both types of institutions and, again, more in strategy institutions (40%) than in no-strategy institutions (14%).

Table 17: How does your educational institution organise extra-curricular activities that strengthen the entrepreneurial competences and mindset of students?

	All	Strategy	No strategy
By offering students incubator activities (to help them with startup activities)	25%	60%	9%
By offering other forms of advice and guidance for student startups	31%	50%	23%
By offering entrepreneurship education given by entrepreneurs	25%	60%	9%
By offering student societies organisational support in relation with innovation and entrepreneurship	16%	30%	9%
By arranging business plan competitions	22%	40%	14%
By organising networks between students and entrepreneurs/business industry	19%	30%	14%
My educational institution does at present not offer such possibilities	41%	30%	64%

5.4 Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

Access to materials and teachers aids, which can support the teaching in entrepreneurship education, exists almost to the same degree in educational institutions with a strategy (60%) and in institutions without (59%). See Table 18.

However, the institutions with a strategy have more experience with actual teaching forms and programmes than the institutions without. They also validate and revise the learning objectives for entrepreneurship teaching in order to update their teaching programmes to a higher degree, and they develop curriculum in collaboration with external stakeholders in order to obtain input about useful competences in the future.

In the survey, 90% of the educational institutions with a strategy have experience with actual teaching forms and programmes within entrepreneurship education. Company Programme, which is a teaching programme for upper secondary level, is

mentioned as one of these programmes. 32% of the institutions without a strategy have experience with this. 80% of the institutions with a strategy validate and revise the learning objectives for entrepreneurship teaching in order to update their teaching programmes. This is only done by 14% of the institutions without a strategy. Developing curriculum in cooperation with external stakeholders in order to get input about useful competences in the future is done by 50% of the educational institutions with a strategy. 23% of the institutions without do this.

Last but not least, 30% the institutions with a strategy measure the impact of the entrepreneurship teaching before, during and after the course/teaching. None of the institutions without a strategy do this.

Table 18: Practice of teaching, development of materials and curriculum

	All YES	Strategy YES	No strategy YES
Do the teachers at your educational institution have access to materials and teachers' aids which can support their teaching in innovation and entrepreneurship?	70%	60%	59%
Does your educational institution have experience with actual teaching forms and programmes within I&E?	59%	90%	32%
Does your educational institution measure the impact of I&E teaching before, during and after the course/teaching?	11%	30%	0%
Does your educational institution continuously validate and revise the learning objectives for I&E teaching with a view to updating its teaching programmes?	41%	80%	14%
Does your educational institution develop its curriculum in collaboration with external stakeholders in order to get input concerning useful competences in future?	37%	50%	23%

5.5 General conclusion of the meso level

The survey at meso level examines four main areas: School strategy & form, Organisation, Competence and Practice. Of all the educational institutions participating in the survey, 69% do not have a strategy for entrepreneurship education. It is, however, interesting that even though an institution has a strategy for entrepreneurship education, there is a good chance that the strategy and plan have not been communicated to internal stakeholders such as teachers and students and other stakeholders such as cooperating partners outside the institution. This is applicable to 80% of the educational institutions with a strategy. And when we look

at the expectations and communication from management to teachers in particular, we see that 23% of the institutions without a strategy have communicated to the teachers what their expectations are concerning where, when and how entrepreneurship teaching should be integrated in the school. 40% of the institutions with a strategy have done this. It is interesting and positive that so many institutions without a strategy nevertheless have a degree of focus on the entrepreneurship area that has prompted them to communicate this to the teachers. On the other hand, one could have expected that more of the institutions with a strategy would have communicated this to the teachers.

Entrepreneurship teaching seems to be present in most of the educational institutions in one way or another even though not more than 31% of the participating educational institutions have a strategy. Thus 82% of the institutions in the survey have entrepreneurship teaching as part of the timetables and the annual teaching plans. However, a plan for providing and ensuring the teachers the necessary competences on the area appears not to be have particular significance to management – no more than 25% of all educational institutions in the survey have a plan for the continuing education of teachers.

Whether or not there are financial resources allocated the area can be influenced by whether the educational institution has a strategy or not. 60% of the educational institutions with a strategy have financial resources earmarked to the area. This goes for 32% of the educational institutions without a strategy.

The presence of extra-curricular entrepreneurship activities such as; incubators, business plan competitions, advice and guidance for student startups, also seem to be influenced by whether the educational institution has a strategy or not. 30% of the educational institutions with a strategy and 64% of the institutions without a strategy have no extra-curricular entrepreneurship activities.

This finding is interesting since 75% of the respondents in the survey actually believe that their institution should set goals for entrepreneurship education to strengthen students' interest in further career and their interest in becoming an entrepreneur.

6. Micro level

The micro level concerns the implementation level, that is, the actual teaching occurring at educational institutions on the seven islands and the spread of this form of education. That is, how many students participate in this form of education on the islands?

In the early phases of the development of a national strategy for entrepreneurship education, there is a strong dependency on individual teachers' enthusiasm. The early phases are also characterised by limited teacher training with no or little in-service training. But, as the island or country develops the area more and more, this level becomes more systematised, the teachers' central role is increasingly recognised and good practice examples identified, and teaching materials begin to be developed and elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in upper secondary education, vocational/VET and tertiary level education on different parameters.

The share of pupils and students who have received entrepreneurship education is calculated on the basis of the total number of pupils and students on the island. It must be emphasised that this share may be inaccurate, as it is based on the responses received. There may be other pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey for this mapping.

6.1 Upper secondary education

At the upper secondary level, the data have been collected by means of a questionnaire for the teachers. The purpose of the survey is to map the number of pupils in upper secondary education who participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The questionnaire is divided into four main categories (see Table 19):

- *Basic information* consists of two questions about whether the teachers perceive that the school has a clear policy of integration of innovation and entrepreneurship in the education. The responses to these questions thus indicate a score that reflects the extent to which this is the case.
- *Taxonomy*²⁵ contains the following four dimensions: *action*, *creativity*, *environment* and *attitude*. These terms refer to entrepreneurial competences, which are not necessarily a subject or subject knowledge in themselves but are competences to set initiatives in motion and create opportunities. As such, a high score in the teachers' perceptions of the fulfilment of these four indicators is desirable. The score in the four dimensions of the pupils and students who have received entrepreneurship education is compared to the scores of the pupils who have not received entrepreneurship education.
- *Entrepreneurship* and setting things in motion is the foundation of entrepreneurship education. The total number of pupils having received entrepreneurship education in any given area is comprised of all pupils who have answered the questions regarding whether the pupil or student has received instruction in starting a business and/or tried starting up and gained experience starting a business affirmatively.
- *Entrepreneurship education*, which is the percentage of pupils who have received entrepreneurship education, is calculated from the total number of pupils in the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

²⁵ Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.
<http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

Table 19: Breakdown of the survey

Subject	Variable
Basic information	Policy on innovation Policy on entrepreneurship
Taxonomy	Action Creativity Environment Attitude
Entrepreneurship	Entrepreneurship education, % Realistic experience in startup, %
Entrepreneurship education	Number of students

In Table 20 below, the overall results for the upper secondary level are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

A total of 65 teachers from Bornholm, the Faroe Islands, Gotland and Pargas have answered the survey. All together, they represent 2,080 students divided on 112 classes. Greenland and Andøy are not represented at the upper secondary level as there were either no answers or the existing answers were insufficient to be included in the survey. Overall, 756 pupils at the upper secondary level have encountered entrepreneurship education in the 2015/2016 school year.

The teachers were asked to what degree they experience that their school has clear policies on innovation and entrepreneurship in education, respectively, and the average score for all schools on these two questions is 26 and 27 of 100, respectively. This shows that, seen from the teachers' perspective, the schools in general do not have a clear policy on innovation and entrepreneurship as part of education.

The share of classes, which have a realistic experience in starting up a business (24%), is 12 percentage points below the share of classes that encountered entrepreneurship education (36%). As such, less than a fourth of the classes have experience in starting up a business.

Table 20: The total results for the upper secondary level

Subject	Variable	Results 1–100
Basic information	Policy on innovation	26
	Policy on entrepreneurship	27
Taxonomy	Action	40
	Creativity	45
	Environment	41
	Attitude	45
Entrepreneurship	Entrepreneurship education, %	36
	Realistic experience in startup, %	24
Entrepreneurship education	Number of students	756
Score for students receiving entrepreneurship education	Action	64
	Creativity	62
	Environment	65
	Attitude	62
Score for students NOT receiving entrepreneurship education	Action	27
	Creativity	35
	Environment	27
	Attitude	35

At the bottom of Table 20, the number of students who have received entrepreneurship education is compared to the number of students who have not received entrepreneurship education. The two are compared on the four parameters *action*, *creativity*, *environment* and *attitude*. From the teachers' answers, a clear trend emerges: the students who have received entrepreneurship education score much higher on all parameters than the students who have not. This is especially visible on the parameters *action* and *environment* where the score is more than doubled. As such, the students, who have received entrepreneurship education, increase the total score for the four parameters.

6.2 Vocational/VET

At vocational/VET level the data have been collected by means of a questionnaire directed at the teachers. The purpose of the survey is to map the number of pupils in vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories (see Table 21):

- *Basic information* is comprised of two questions. They concern whether the teachers experience that their school has clear policies on innovation and entrepreneurship in education, respectively. The scores for these questions thus reflect to what degree that is the case.
- *Teaching*, which focuses on the degree to which the teachers experience that the pupils have participated in innovation and entrepreneurship education in class instruction and courses, as clear subjects in their practical training and internships as well as clear subjects in their apprenticeship tests.
- *Entrepreneurship* and setting things in motion is the foundation for entrepreneurship education. The teachers were asked whether the pupils have participated in feature weeks, camps, projects or the like focusing on innovation and entrepreneurship, respectively. In addition, the teachers were asked whether the pupils had participated in other innovation or entrepreneurship projects. If the answer is yes to any one of these questions, the pupils are included in the total number of pupils, who receive entrepreneurship education. As such, there are three different questions, which all play a part in determining whether the pupils have received entrepreneurship education.
- *Entrepreneurship education* thus indicates the number of pupils who, based on the abovementioned questions, receive entrepreneurship education. The share of pupils who have received entrepreneurship education is calculated from the total number of pupils on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

Table 21: Breakdown of the survey

Subject	Variable
Basic information	Policy on innovation Policy on entrepreneurship
Teaching	Innovation in subject/course Innovation as clear topic in practical training Innovation as clear topic in apprenticeship test Entrepreneurship in subject/course Entrepreneurship as clear topic in practical training Entrepreneurship as clear topic in apprenticeship test
Entrepreneurship	Innovation, % Startup of business/Entrepreneurship, % Other, %
Entrepreneurship education	Number of students

In Table 22, the overall results for vocational/VET are presented. The scale from 1-7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

A total of 19 teachers from Bornholm, the Faroe Islands, Pargas, Greenland, Iceland and Andøy have completed the survey. All together, they represent 380 students divided on 22 classes. Gotland is not represented as there were either no answers or the existing answers were insufficient.

The teachers were asked to what degree they experience that their school has clear policies on innovation and entrepreneurship in education, respectively, and the average score for all schools is 33 and 32 of 100, respectively. This result is slightly above that of the upper secondary educational institutions.

Looking at the degree to which the teachers believe that pupils have participated in innovation and entrepreneurship education in classes and subjects; that innovation and entrepreneurship are clear topics in their practical training and internships as well as their apprenticeship tests, the score is high for all three. According to the teachers, the pupils encounter innovation and entrepreneurship education to a higher degree during class instruction than in their apprenticeship tests.

The share of classes, who have participated in feature weeks, camps, projects or the like focusing on innovation, is 50% while 28% of the classes have had the opportunity to participate in similar courses focusing on starting up a business. In addition, the teachers answered that 28% of the classes had participated in other innovation or entrepreneurship courses. In total, the number of pupils who have received entrepreneurship education is 239.

Table 22: The total results for vocational/VET

Subject	Variable	Results (1–100)
Basic information	Policy on innovation	33
	Policy on entrepreneurship	32
Teaching	Innovation in subject/course	30
	Innovation as clear topic in practical training	23
	Innovation as clear topic in apprenticeship test	12
	Entrepreneurship in subject/course	30
	Entrepreneurship as clear topic in practical training	22
	Entrepreneurship as clear topic in apprenticeship test	11
Entrepreneurship	Innovation, %	50
	Startup of business/Entrepreneurship, %	28
	Other, %	28
Entrepreneurship education	Number of students	239

6.3 Upper secondary and vocational/VET

Table 23 presents the total number and share of pupils from both upper secondary level and vocational/VET receiving entrepreneurship education in the 2015/2016 school year.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participate in entrepreneurship education.²⁶ However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

Table 23 presents the total number and share of students from both upper secondary level and vocational/VET on all islands.

Table 23: Number and share of students receiving entrepreneurship education in the school year 2015/2016

	Total number of students	Number of students receiving entrepreneurship education	Share of students receiving entrepreneurship education, %
Andøy, Norway	150	15	10.00%
Pargas, Finland	528	109	20.60%
Bornholm, Denmark	1,500	325	21.70%
The Faroe Islands	2,284	204	8.90%
Greenland	2,446	23	0.90%
Gotland, Sweden	1,466	181	12.30%
Iceland	26,513	312	1%

6.4 Tertiary education

For the purpose of mapping entrepreneurship education at the tertiary education level, the islands were asked to send course descriptions of courses within innovation and entrepreneurship or courses that resemble this kind of teaching at this level along with the number of students partaking in these courses during the academic year 2015/2016. The received course descriptions were then screened on the basis of the categories in the Star Model – a model for identifying entrepreneurship courses.

In the Star Model courses and subjects are categorised according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of

²⁶ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model (and method) is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Five of the participating islands have educational institutions at the tertiary level and four of them have sent descriptions for courses and educations at this education level. Table 24 shows the number of students receiving entrepreneurship education through their participation in the courses that were identified as entrepreneurship courses during the academic year 2015/2016.

Table 24: Students receiving entrepreneurship education year 2015/16

	Total number of students	Number of students receiving entrepreneurship education	Share of students receiving entrepreneurship education, %
Bornholm, Denmark	574	42	7.30%
The Faroe Islands	973	50	5.10%
Greenland	834	39	4.70%
Iceland	19,163	688	3.60%
Gotland, Sweden	1,000	X	0%

Figure 3: student explaining his business idea to a judge and two other students through his mobile phone



Photo: Lars V. Andersen.

7. Micro Grants

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at the upper secondary and tertiary levels with entrepreneurial ambitions. A Micro Grant is a small financial aid to student startups in the initial phases of the startup process. Initially, the Micro Grant initiative was a pilot project but, since 2014, the Micro Grant initiative has turned into a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education.

The objectives of the Micro Grant initiative are to enhance growth and employment. The long-term objective of supporting student startups is to create growth companies that can contribute with more jobs, export incomes and societal growth. On an annual basis approx. 250 applications (corresponding to approx. 1,000 students) are submitted in Denmark and approx. 65% of them have participated in entrepreneurship education. Annually, approx. 70 grants (DKK 2.5 million) are awarded in Denmark.

Analysis shows that the Micro Grant initiative has a catalytic effect and contributes to enhancing employment in Denmark.²⁷ Only 4–12 months after receiving a Micro Grant, 50 grant recipients created the equivalence of 79 full time jobs in Denmark. Put in another way: For every million invested, more than 40 full time jobs have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after receiving the Micro Grant, and 9 out of 50 grant recipients in the survey achieved growth capital (up to DKK 2.3 million) within 4–12 months. None in the control group achieved further growth capital in the period.

As part of the Nordic Entrepreneurship Islands project, each of the participating islands has had the opportunity to award a Micro Grant (DKK 25,000) to a promising student startup in the local area. The purpose is to help the student startup realise their entrepreneurial idea. Table 25 shows the number of applicants on each island and the names of the startups receiving a Micro Grant along with the name of their educational institution.

All team members of the startups, who received a Micro Grant, have participated in entrepreneurship education – except the startup team from Gotland and one of the

²⁷ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

Pargas startup team members. This reflects more or less the pattern, which is seen in Denmark. Two Micro Grant recipients, the startup teams from Gotland and Greenland ended up declining the grant because they abandoned their idea in the process.

A small case was elaborated about each startup in order to document the effects, needs and possibilities for young people on the islands after receiving a Micro Grant. Please see the individual island reports for further details about the Micro Grant cases.

None of the islands have funds earmarked for student startups. Gotland and Iceland have some financial support for startups; however, these initiatives are not exclusively for student startups. Students from Bornholm have the opportunity to apply for a Micro Grant from the Danish Foundation for Entrepreneurship; a separate initiative on Bornholm has not been initiated.

Table 25: Micro Grant recipients 2016

	Number of applicants	Educational institution	Startup
Andøy	5	Andøy videregående skole	Get'em points & Vi kjæm med det
Pargas	3	Pargas svenska gymnasium	BioLink
Bornholm	2	Kunstakademiets Designskole, Bornholm	Oh Oak
The Faroe Islands	2	Glasir Tórshavn College	Green Growth
Greenland	1	Niuermik Ilinniarfik	Arctic Fresh Supply
Gotland	3	Uppsala universitet, Campus Gotland	Teamcrew
Iceland	2	Reykjavik University	Rentmate

8. Future entrepreneurial potential

Based on the objective of creating joint Nordic solutions that will entail positive effects for all Nordic countries including the autonomous territories Greenland and the Faroe Islands, the first objective for this pilot project was to ensure a mapping of entrepreneurship education on all seven islands. There is no or only limited prior data available for mapping entrepreneurship in the educational sector in these islands. Knowing the present situation on the islands the second objective has been to define the potential for entrepreneurship education and Micro Grants on the islands from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experiences and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people on the islands learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs.

The seven Nordic islands face similar challenges, however, with small differences in level of importance. Most islands are suffering from increasing old age dependency, depopulation and youth unemployment. In general, having too few jobs also challenges the Nordic islands and the companies that disappear are not replaced by new entrepreneurial businesses. In addition, there is an industrial change happening from the traditional "living of the land/sea" and existing jobs are being replaced by new technologies, new demands etc. This calls for entrepreneurs and innovative employees.

However, the education system trains the young people to the present (and past) jobs and the findings in this report show that, in general, there are very few student entrepreneurs and limited implementation of entrepreneurship education on the seven islands on upper secondary, vocational and tertiary level. As the findings also demonstrate, there are no or only limited resources for entrepreneurship education and no or limited resources for student entrepreneurs on the seven islands. In addition there are no or limited resources for entrepreneurship teachers (e.g. further education in entrepreneurship teaching). It is evident that national, regional and education institution strategies have a huge impact on the development of the above mentioned areas.

Fortunately, the islands actually have possibilities to meet most of these challenges. First of all there is a strong awareness of the present challenges, there is also great potential on each of the seven islands and the islands are filled with resourceful people. We also know that the number of new entrepreneurs can be influenced by regional and national initiatives and that entrepreneurs are very immobile “people”²⁸ – this is good news when trying to find a way to retain young people on the islands.

A way to affect the level of entrepreneurship, and a relatively cheap way too, is to invest in education and microfinancing of student-run startups. There is evidence to support that a focus on entrepreneurship in the education system has a great effect on young people’s entrepreneurial competences. In the short term, young people’s desire to become entrepreneurs increases, and in the long term, more student startups are created. The entrepreneurship education can advantageously be differentiated according to the level of education. Danish research shows that to achieve the greatest effect entrepreneurship education must be differentiated on different levels of education and must be provided to pupils as early as possible during their education.²⁹

8.1 Forecasting entrepreneurship education and Micro Grants

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives on each of the Nordic islands. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student startups are available in the Nordic islands.

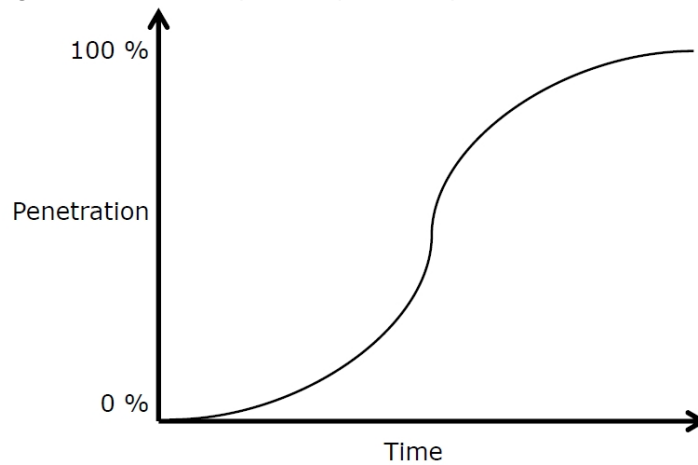
Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student startups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). The Nordic Islands in this pilot project are at different stages on the S-curve and the penetration rates will grow at different speeds accordingly.

²⁸ The Danish Business Authority.

²⁹ <http://www.ffe-ye.dk/fonden/nyheder/nyheder/skaber-entreprenuerskabsundervisning-flere-ivaerksaettere>
<http://www.ffe-ye.dk/fonden/nyheder/nyheder/kan-man-maale-udviklingen-af-elevers-og-studerendes-entreprenoerelle-kompetencer>

Figure 4: S-curve for entrepreneurship education penetration rate



The forecast is presented in Tables 26, 27 and 28.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from each island.
- The maturity level on the island with regard to entrepreneurship in education (The “s-curve”).
- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based on the assumptions that:

- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but that they are estimates.

Table 26: Forecast for Andøy and Pargas

	Andøy, Norway		Pargas, Finland	
	2015/2016	2020/2021	2015/2016	2020/2021
Number of students receiving entrepreneurship education				
Upper secondary & vocational	15	75	109	200
- Percentage of total number of students in upper secondary and vocational education	10.00%	50%	20.60%	37.90%
Tertiary level	0	0	0	0
- Percentage of total number of students in tertiary education	0.00%	0.00%	0.00%	0.00%
Micro Grants				
Number of applicants receiving a grant	2	4	1	3
Average annual costs (4 years) in DKK	700,000–900,000 DKK		750,000–950,000 DKK	

Table 27: Forecast for Bornholm and the Faroe Islands

	Bornholm, Denmark		Faroe Islands	
	2015/2016	2020/2021	2015/2016	2020/2021
Number of students receiving entrepreneurship education				
Upper secondary & vocational	325	660	204	450
- Percentage of total number of students in upper secondary and vocational education	21.70%	43.30%	8.9%	19.7%
Tertiary level	42	200	50	175
- Percentage of total number of students in tertiary education	7.30%	34.80%	5.1%	18.0%
Micro Grants				
Number of applicants receiving a grant	1	6	1	6
Average annual costs (4 years) in DKK	1,300,000–1,700,000 DKK		1,600,000–2,000,000 DKK	

Table 28: Forecast for Greenland, Gotland and Iceland

	Greenland		Gotland, Sweden		Iceland	
	2015/2016	2015/2016	2020/2021	2020/2021	2015/2016	2020/2021
Number of students receiving entrepreneurship education						
Upper secondary & vocational	23	360	181	304	312	4000
- Percentage of total number of students in upper secondary and vocational education	0.9%	14.3%	12.3%	20.7%	1.2%	15.1%
Tertiary level	39	200	0	100	688	2000
- Percentage of total number of students in tertiary education	4.7%	24.0%	0.0%	10.0%	3.6%	10.4%
Micro Grants						
Number of applicants receiving a grant	1	5	1	4	1	10
Average annual costs (4 years) in DKK	1,900,000–2,400,000 DKK		1,400,000–1,800,000 DKK		3,900,000–4,300,000	

8.2 General recommendations

- A national strategy and a cross-ministerial collaboration are necessary means to build a strong foundation for developing regional and island strategies. Especially the Faroe Islands, Iceland and Greenland should focus on this.
- A national operator/ responsible organisation is important to secure implementation and make the link between the political level and the educational sector.
- A specifically dedicated budget for development and activities is necessary. There are no or only limited resources for entrepreneurship education and no or limited resources for student entrepreneurs on the seven islands. Financial resources should be allocated both at national and local level (on the island). This should be a collaborative effort between the public and private sector.
- Strong stakeholder relations are essential. The private sector, the public sector and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation.
- Support to and collaboration with schools and educational institutions on all levels. Danish research shows that to achieve the greatest effects entrepreneurship education must be differentiated on the respective levels of education and must be provided to pupils as early as possible during their education. Entrepreneurship in higher education is the most effective way to foster long-run student startups.
- Collecting data to secure knowledge about the development in penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and, later on, making impact studies is vital for the support from ministries and the private sector.
- Involvement from school management and the building of strategies at the institutional level is essential. School management provides the very important link between a national/regional strategy level and the implementation of this strategy, that is, the actual teaching taking place in the classrooms. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice.
- Communicating the educational institutions' entrepreneurship strategy to all stakeholders, both internally (teachers and students) and externally (collaborating

partners outside the institution), is essential for the strategy to have an impact on the penetration rate for entrepreneurship education on the island.

- A plan and resources for providing and ensuring the teachers the necessary competences on the area are necessary elements from the beginning. There are no or limited resources for entrepreneurship teachers competence development (e.g. further education in entrepreneurship teaching and networks) on the seven islands.
- All islands have access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and well-functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequently create significantly more entrepreneurs and higher income³⁰ and they have a positive impact on the pupils' motivation to study, their school engagement and their academic confidence.³¹ Moreover, they have a positive impact on the primary school pupils' grades.³²
- Extra-curricular entrepreneurship activities such as incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level.
- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contribute to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups on the island. However, it takes time before the students have become accustomed to applying for this grant.
- Whenever possible, synergies across the Nordic islands should be utilised.

³⁰ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10.103 CP-pupils were matched with 214.735 non CP-pupils.

³¹ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

³² Johansen and Schanke (2014) conducted a survey on 1880 secondary pupils and 1160 primary school pupils who participated in Junior Achievement's programmes.

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- HEInnovate, <https://heinnovate.eu/>

Sammenfatning

Denne rapport præsenterer resultaterne af et et-årigt pilotprojekt, *Nordic Entrepreneurship Islands*, som er gennemført af Fonden for Entreprenørskab i samarbejde med Nordisk Ministerråd samt syv udvalgte nordiske øer. De syv øer, rangeret efter befolkningsstørrelse, er Andøy (Norge), Pargas³³ (Finland), Bornholm (Danmark), Færøerne, Grønland, Gotland (Sverige) og Island.

De resultater, der præsenteres i rapporten, er opdelt i makro-, meso- og mikroniveau og omfatter:

- En kortlægning af den nationale strategi for entreprenørskabsundervisning (med inddragelse af elementer fra en evt. regional strategi) (makroniveau).
- En kortlægning af uddannelsesinstitutionernes strategi for entreprenørskabsundervisning på ungdomsuddannelser og videregående uddannelser (mesoniveau).
- En kortlægning af den eksisterende udbredelse af entreprenørskabsundervisning på ungdomsuddannelser og videregående uddannelser på de syv nordiske øer (mikroniveau).
- Case-historier fra fem af øerne om studerende, der har modtaget et Mikrolegat (mikroniveau).
- En redegørelse for det entreprenørielle potentiale på hver ø via en særlig indsats. Redegørelsen er foretaget på baggrund af estimerede prognoser for entreprenørskabsundervisningen samt for uddelingen af Mikrolegater på hver ø.
- Økonomisk estimering af den særlige indsats på hver ø.
- Generelle anbefalinger til de syv øer via en særlig indsats.

Som baggrund for kortlægningen præsenteres data fra Nordregio vedrørende øernes befolkningsændringer og beskæftigelsessituation.

Rationalet bag rapporten og pilotprojektet er, at mange af disse ofte afsides beliggende øer har udfordringer såsom mangel på uddannelsesmuligheder og jobs,

³³ Pargas er ikke en ø men et geografisk afgrænset område i det sydvestlige Finland.

affolkning og økonomisk stagnation. Specielt unge, som har høje ambitioner for deres karriere og ønsker en videregående uddannelse, vælger at flytte væk fra øerne. Dette skyldes blandt andet, at der er for få arbejdspladser, og at de virksomheder, som forsvinder, ikke erstattes af nye i samme tempo. En af årsagerne til dette kan være manglen på iværksættere og innovative medarbejdere.

Innovation og entreprenørskab er på baggrund af globaliseringen og de gennemgående forandringer af samfundet blevet en stigende del af uddannelsesdiskursen, også i en nordisk sammenhæng (Moberg 2014). Der er stort fokus på at implementere innovation og entreprenørskab i uddannelsessystemet og på, at undervisningen skal give elever og studerende entreprenørielle kompetencer. I Danmark har man desuden gode erfaringer med at støtte studerende med Mikrolegater til opstart af virksomhed. Der er en god grund til dette fokus. Fokus på og et mål om mere entreprenørskabsundervisning gennem hele uddannelsessystemet er afgjort ud fra bl.a. økonomiske rationaler om, at Norden har behov for flere iværksættere og innovative ansatte for at øge jobskabelsen og produktiviteten. Dertil kommer bredere rationaler om at give elever og studerende entreprenørielle kompetencer og opstartskapital og herigennem øge foretagsomheden i samfundet.

På alle tre undersøgelsesniveauer (makro, meso og mikro) er kortlægningen først og fremmest foretaget via spørgeskemaundersøgelser. På makroniveau er data indsamlet via et spørgeskema sendt til den ansvarlige projektorganisation på øen, på mesoniveau er data indsamlet via et spørgeskema sendt til skoleledelser fra både ungdomsuddannelser og videregående uddannelser. På mikroniveau er data indsamlet på ungdomsuddannelser via et spørgeskema sendt til lærere, og på de videregående uddannelser er der indsamlet fagbeskrivelser, der herefter er blevet kategoriseret via Stjernemodellen.³⁴ Hver ø har desuden fået muligheden for at uddele et Mikrolegat på 25.000 DKK til en lovende ung startup og på baggrund af et interview med den unge startup at skrive en case historie om denne.

Kortlægningen på de tre niveauer samt erfaringerne fra Danmark har dannet baggrund for udarbejdelsen af en prognose for, hvad en særlig indsats på området for *entreprenørskab i undervisningen og mikrofinansiering af unge startups* vil kunne bidrage med på den enkelte ø.

De syv øer er som udgangspunkt meget forskellige, hvilket umuliggør en fair sammenligning mellem dem. Formålet med rapporten er da også alene at give et så retvisende billede som muligt af status på hver enkelt ø samt opstille en så realistisk prognose som muligt for hver af dem. På nogle af øerne har man arbejdet med området

³⁴ Stjernemodellen er udviklet af Øresund Entrepreneurship Academy og videreudviklet af Fonden for Entreprenørskab og kan ses i bilag 2.

entreprenørskab og entreprenørskabsundervisning over længere tid og på forskellig måde, på andre øer er området helt nyt. Sådanne forhold er taget i betragtning ved udfærdigelsen af prognosen.

Generelt forudser prognosen på alle øer en stigning i antallet af elever og studerende, der modtager entreprenørskabsundervisning samt antallet af ansøgere til et Mikrolegat, forudsat at en særlig indsats iværksættes. Denne stigning er afhængig af antallet af skoler og uddannelsesinstitutioner på øen samt af den nuværende forekomst af og erfaring med entreprenørskabsundervisning på øen.

I forlængelse af prognoserne giver rapporten en række anbefalinger til hver enkelt ø på de områder, der er blevet kortlagt (makro, meso og mikro). Overordnet koncentrerer anbefalingerne til øerne sig om følgende emner:

- En national strategi, et tværministerielt samarbejde og økonomiske ressourcer er nødvendige for at skabe den overordnede ramme for og politiske fokus på dette arbejde.
- En overordnet national koordinator på området, som kan inddrage alle regioner, vil sikre den bedste implementering.
- Stærke relationer til og mellem interessenter fra alle relevante sektorer er nødvendig for at skabe sammenhæng og bred støtte til området.
- Der skal informeres bredt ud til alle sektorer i samfundet om fordelene ved entreprenørskabsundervisning, og om at de entreprenørielle kompetencer er alment anvendelige. Nogle steder er den snævre opfattelse af disse kompetencer stadig den fremherskende, altså at entreprenørskab kun er relevant for dem, der vil starte virksomhed. Dette er en grundlæggende opfattelse, der skal ændres for at skabe bred opbakning til at få mere entreprenørskab i uddannelserne og i erhvervslivet.
- Dataindsamling omkring entreprenørskabsundervisning og dens resultater er med til at sikre støtten fra politisk niveau og fra private interessenter.
- Ledelsen på uddannelsesinstitutionerne skal ind i kampen. De har en meget vigtig rolle i at skabe linket mellem den overordnede nationale strategi og selve undervisningen i klasselokalerne. Samtidig er det yderst vigtigt, at ledelsen tydeligt kommunikerer deres fokus på entreprenørskab både internt og eksternt.
- Understøttelse af uddannelsesinstitutioner og fokus på udvikling af entreprenørskabsundervisning. Fonden for Entreprenørskab har udgivet "Taxonomi i Entreprenørskabsuddannelse", som giver inspiration til undervisning i entreprenørskab på forskellige uddannelsesstrin.

- Der skal være en plan og ressourcer for at opgradere lærernes viden på området for entreprenørskabsundervisning.
- Sideløbende med øget fokus på entreprenørskabsundervisning i uddannelsesinstitutioner skal der være et fokus på extracurriculære aktiviteter både under og efter uddannelsen.
- Tildeling af Mikrolegater til lovende unge startups giver iværksætteraktiviteten en vitaminindsprøjtning og er vækstskabende, viser de positive erfaringer fra Danmark.
- Et generelt råd til alle øer er at udnytte synergierne på tværs af lande/øer og at lade sig inspirere af hinanden.

Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe³⁵

Table 1: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National ³⁶ strategy, frameworks	<p>No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents.</p> <p>Little or no effective inter-ministerial cooperation.</p> <p>No or rudimentary platforms for dialogue with relevant social partners.</p>	<p>Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players.</p> <p>Mechanisms being established for cooperation between key ministries.</p> <p>Platforms being established to include wider stakeholders.</p> <p>Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc.</p> <p>Mapping and analysis of entrepreneurship education. Good practice examples being identified.</p> <p>Collection of effective teaching methods and materials.</p> <p>Launching of communications campaigns to stimulate interest of business community.</p> <p>Awareness raising with teachers.</p>	<p>Specification of learning outcomes, objectives, indicators and targets.</p> <p>Methods being developed for assessing learning outcomes; and development of appropriate qualifications.</p> <p>Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted.</p> <p>Development of funding streams: allocation of dedicated resources.</p> <p>Implementation support mechanisms being put in place. Resource banks of teaching materials available.</p> <p>Dissemination and broad-based application of the effective teaching methods identified.</p> <p>Research base being developed.</p>	<p>On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved.</p> <p>Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher.</p> <p>Continuous application and refinement of effective teaching methods.</p> <p>Robust funding mechanisms established.</p>

³⁵ *Towards Greater Cooperation and Coherence in Entrepreneurship Education*, European Commission, 2010.

³⁶ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher's enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ³⁷	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

³⁷ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Appendix B: “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” (“Stjernemodellen”) was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor level education as well.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Figure 1 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories which each describe the subject content and teaching approaches and – methods, together forming a unifying concept for the pedagogics, didactics and methods that characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms (*Eksamensformer*) on the website of the Danish Foundation for Entrepreneurship.³⁸

³⁸ <http://www.ffe-ye.dk/videncenter/entreprenørskabs-undervisning/eksamensformer>

Table 1: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix 1: Andøy, Norway

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in a changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons is that there is a lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as on other research.

Indicators of the full entrepreneurial potential are the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation on Andøy with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up on Andøy.

In order to map the status of entrepreneurship education on Andøy, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in the islands/countries
- Meso level: The strategy for entrepreneurship & innovation of educational institutions
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation on Andøy are shortly discussed in the first chapter.³⁹

Definitions of entrepreneurship and entrepreneurship education

In the autumn of 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.⁴⁰

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013).

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection on the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

³⁹ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

⁴⁰ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is based on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager on Andøy completed the questionnaire in the course of 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge in the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational

institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping at the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,⁴¹ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager on Andøy to the management of educational institutions on the upper secondary level and the tertiary level on Andøy.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching have been taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The two questionnaires examine basic information about the teachers' evaluation of their school's policy on innovation and entrepreneurship education.

It also examines the teachers' evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education

⁴¹ <https://heinnovate.eu/>

and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focuses on four areas or “entrepreneurial dimensions”. Please see “A Taxonomy of Entrepreneurship education” for further elaboration on the entrepreneurial dimensions.⁴²

The four entrepreneurial dimensions examined are:

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, the Danish model “Stjernemodellen” is used as a tool for the categorisation of courses (see Appendix B for further details).

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied also to diploma and bachelor educations and has been used by the Danish Foundation for Entrepreneurship during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method are used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

⁴² <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a micro grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000, which allows the student start-up to take their business further. A small case written about the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

The project manager on Andøy has also provided information about the innovation ecosystem on the island in the form of a case.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations in the data may, however, occur in relation with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions have been sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also based on different strategic knowledge. The data given about each island/country are therefore not always equivalent, because it depends on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

This report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Annex 1) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development on Andøy in the recent period. This will serve as background for the mapping of the situation on Andøy and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

In the period 2009–2015, Andøy has experienced a slight decrease (by 0.8%) in the total population, where the population aged 0–24 has decreased by 2% and the population aged 25+ has decreased by 0.4%. This is much lower than Norway as a whole (the population, which grows more than all countries and islands in this mapping). Otherwise, there is nothing remarkable about these population changes when we compare with the other islands. What is worth noting, however, is the fast

decreasing (by 12.7%) youth dependency rate and the fast *increasing* (by 14.1%) old age dependency rate. It is also worth noting that in the period 2009–2013, the old age dependency rates (from 33.2% to 37.9%) are much higher than the youth dependency rates (from 29% to 25.3%).

Labour market

In the period 2009–2013, the overall employment rate in Andøy fell from 75.6% to 72.8%, which is a bit lower than the mean of 75.4% of all the islands' rates, going from 63.3% in Greenland to 90.8% in the Faroe Islands. In the same period, Andøy experienced a rise in the overall unemployment rate from 2.8% to 4.8%, which is very drastic increase (71.4%), however, this percentage has to be seen in relation with the fact that Andøy has a very small population. Compared with the other islands, where the 2013 unemployment rates go from 3.9% in the Faroe Islands to 9.7% in Greenland, the unemployment rate in Andøy is – despite the drastic rise – still relatively good. Compared to Norway as a whole, the Andøy employment and unemployment rates are more negative. The same goes for the youth unemployment rate of 12.7%. Most youth unemployment rates are only available for 2013; therefore the development of this rate cannot be deduced. In comparison, the other islands' youth unemployment rates go from 9.9% in the Faroe Islands to 19.7% on Bornholm (there are no available data for Gotland, but youth unemployment in Sweden as a whole is 23.7%).

Education level

Approx. every fourth citizen in Andøy (26.6%) has attained a tertiary education level. In comparison, the other islands have rates going from 14.4% in Greenland to 43.2% in Pargas.

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate responsible actors for entrepreneurship education are actors at the macro level (policy makers) who provide the framework for working in the area, actors at the meso level (school management), who decide how to implement entrepreneurship

education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at the macro level on Andøy. The desk research is based on information obtained from the island by means of a questionnaire.

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

Developing the national strategy framework

Norway has had a national strategy for entrepreneurship education for many years. There is a cross-ministerial collaboration and many other stakeholders involved at the national level. Among others the Brønnøysund Register Centre (which simplifies reporting duties for business and industry in dealing with the public administration), Union of Education Norway, Finance Norway (FNO), Union of principals, Confederation of Norwegian enterprise (NHO), Virke – the Enterprise Federation of Norway, Organisation for Norwegian municipalities (KS), and Norwegian Confederation of Trade Unions (LO). Moreover, private organisations are involved to a high degree at the national level, a.o. Visma, Ferd and Nordea.

The national budget for entrepreneurship education in Norway is approx. 3 million EUR, but no direct support to educational institutions.

Entrepreneurship education is mapped through JA Norway (in this report referred to as Ungt Entreprenørskab), and the Eastern Norway Research Institute (ENRI) evaluated the latest national strategy, including assessment of the impact of entrepreneurship education in the education system.

The role of local and regional authorities

There are 17 Ungt Entreprenørskab (UE) regions, which are funded through both public and private means; one of them is in the region of Nordland of which Andøy is part. Still, a strategic partnership exists between UE and the local upper secondary school on the island. However, there is very limited involvement of UE in the local primary and lower secondary schools.

The private sector of Andøy is to a small degree involved in the entrepreneurship education strategy. Fabrikken Næringshage, a regional innovation centre for Lofoten and Vesterålen Islands functions as the main support of young entrepreneurs in the municipality of Andøy. SIVA, a public enterprise owned by the Norwegian Ministry of Trade and Fisheries, finances Fabrikken Næringshage, among others.

Implementing entrepreneurship education

At the national level, entrepreneurship education is implemented at all education levels, but formally approved learning objectives only exist for the lower secondary level (NQF 3–4). There are programmes about youth companies in primary school and VET (NQF levels 2, 3, 5 and 6). Entrepreneurship education is taught primarily as a method at the primary education level, and as both a method and a subject at the lower secondary, upper secondary, VET and tertiary level of education.

Teacher education and training

Entrepreneurship education is part of initial teacher training, but mostly, or only, under Ungt Entreprenørskab management. The mapping done by Ungt Entreprenørskab and through independent research has shown that there are few courses in entrepreneurship in pedagogical subjects and teacher education. Moreover, there has been a substantial decline in initial teacher training in entrepreneurship education in recent years in spite of the national strategy's, or action plan's, goal to strengthen courses in teacher education. Other resources for teacher training are guidelines, programmes and websites with entrepreneurship education teaching materials⁴³.

Engaging with businesses and private associations and organisations

The primary focus area of the private sector in Andøy is the recruitment of future employees.

Regional strategy

Norway operates with regional strategies, one of them in Nordland, the region to which Andøy belongs. The following text contains information taken from this regional strategy, "Et nyskapende Nordland. Innovasjonsstrategi for Nordland 2014–2020".

The economy of Nordland is built on the exploitation of natural resources. The three main industries are seafood, processing industry, and tourism. The region has a relatively large amount of small and medium-sized companies compared to other Norwegian regions, but also a few big industrial companies. The dominant companies

⁴³ Some of the information about Norway's strategy for entrepreneurship education is procured through the ICEE project, <http://icee-eu.eu/>

on the three areas, however, have their main offices outside the region, which is a challenge to regional development.

Compared to other Norwegian regions, there are too few new companies starting up and too few new jobs being created within existing companies in Nordland. At the same time, companies have difficulties finding qualified labour. Within the three main industry areas there are of course different challenges, but limited access to qualified labour is one that they share.

What adds to this challenge is that the percentage of 20–40 year-olds in the Nordland region is lower, and decreases more, than in other Norwegian regions. During the last 20 years, Nordland has been the region with the highest number of people moving away. On top of that, the region has a high use of temporary labour, which adds to the problems.

In spite of this, there is great potential within the three main industries. When oil and gas are not taken into account, the economy of the region is more competitive than Norway as a whole. In order to stay competitive and prevent recession, however, it is necessary to have a continuous focus on innovation and development.

The regional strategy distinguishes between “experience-based” and “research and development-based” innovation processes. In Nordland, most innovation is experience-based and takes place in daily work. Too few new companies are established as a result of research results. There is generally a lack of research and development in the region. So, the regional strategy describes measures that must be taken in order to reinforce innovation capacity at the University Nord in Bodø (which is, however, several hundreds of kilometres away from Andøy).

The regional strategy emphasises the need for a more robust and regionally anchored business and industry sector. Development of industry and education sector as well as more collaboration between the two sectors is therefore top priorities of the strategy.

After an analysis of the innovation potential of the region, the strategy has thus set up three overall focus areas:

- To increase competitiveness of the business/industry sector by strengthening the innovative capacity of companies (targeted the region’s many small and medium-sized companies).
- To have more employees in the service industry and more innovative contractors.
- To have an innovation system in Nordland with good interaction, learning and collaboration between key actors from the business sector, labour market, education and research and different parts of the public sector.

Among the priorities is also to develop the range of training and education possibilities, which is offered by further education institutions, and to strengthen the innovative competences of students.

Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy (macro level) and teachers (micro level) who teach entrepreneurial skills to students. The meso level has often been overlooked, or given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the islands and make the link between strategy and practice, a survey was sent to the school management of the institutions on Andøy. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

There is only one educational institution on Andøy – Andøy videregående skole (vocational/VET). The management of the school participated in the survey, and according to their response, there is no strategy for entrepreneurship education on the school. This means that there are also no plans and goals for the development of entrepreneurship education.

No strategy but entrepreneurship education activities

According to the response from the school management, entrepreneurship teaching activities are nevertheless taking place at the school. Among these activities are: teaching in innovation (students are being taught how to start a business or they are

being taught in new and innovative ways), cooperation with the local business industry concerning students' education and further working life/career, and students working with projects that bring them in contact with the surrounding society.

Importance of strategy and education in entrepreneurship

On a scale from 1 to 5⁴⁴ the school states that they agree (4) to the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship". To the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship" they agree to a lesser extent (3).

Importance of goals for entrepreneurship teaching

The institution agrees that goals for education in entrepreneurship should be set to:

- strengthen students' interest in their further education and career
- strengthen students' interest in becoming an entrepreneur/starting a new business
- prepare students better for working life
- decrease the student drop-out rate
- strengthen the cooperation between the educational institution and the local society
- strengthen the profiling and promotion of my educational institution.

However, the institution does not agree that goals should be set to:

- upgrade teachers' skills within entrepreneurship teaching
- live up to new national/regional policy on the area of entrepreneurship education
- boost the development of the local area, for instance by contributing to new businesses through the skill development of young people.

⁴⁴ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

External network

The school also provides the students with the possibility for making contact with the school's external network through:

- guest lectures given by local business people, entrepreneurs, or others
- workshops in cooperation with external partners
- visits to companies, organised by the educational institution.

They do, however, not provide them with this possibility through:

- exchange/trainee service in local businesses/organisations
- subject-/project weeks or -days in cooperation with external partners
- competitions at the educational institution, where external contacts function as judges.

Involvement from school governing body and local businesses

On a scale from 1 to 5⁴⁵ the school has no significant involvement from its governing body (3), and the school has to some extent (4) involvement from the local business as a resource in the work with entrepreneurship education.

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

Andøy videregående skole has earmarked time and other resources such as staff with knowledge and expertise on the area. The school has also appointed a coordinator for entrepreneurship teaching who is part of the management and has the full backing and practical support from the management. However, the school has not earmarked financial resources to the area.

Like most of the educational institutions in the survey (82% of all educational institutions on the seven islands), entrepreneurship teaching is a part of the timetables and of the annual teaching plans. Moreover, in the annual teaching plans, time is allocated to entrepreneurial teaching courses of a longer duration, for instance project weeks, optional subjects, etc.

⁴⁵ 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

However, school management has not communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated at the school. Also, management does not require from the teachers that they describe in their annual plans how they integrate entrepreneurship in other subjects. Furthermore, management does not require from the teachers that they include entrepreneurial learning objectives in their daily teaching and in the activities that they set up with their students. Neither does the school use a feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. Nor is there a structure to support dialogue and corporation between teachers from different disciplines.

Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

Plan for teacher competence development

The school has a plan for competence development and knowledge sharing within entrepreneurship education through the continuing education of teachers in entrepreneurship teaching and through knowledge sharing about entrepreneurship teaching and special networks. There is, however, no plan for competence development through a cross-curricular cooperation between teachers within the subject of entrepreneurship.

Experimenting with teaching forms

Andøy videregående skole allows their teachers to experiment with teaching forms through cooperation with businesses and through project work / feature weeks or days. However, the school does not provide the possibility for teachers to experiment with teaching forms through cross-curricular feature periods.

Cooperation with surrounding society

The school is involved in cooperation and knowledge sharing with the surrounding society/local area, for instance established business/industry and institutions within the public sector. They are, however, not involved in cooperation with newly started businesses /entrepreneurs or other knowledge organisations.

Extra-curricular activities

Andøy videregående skole offers some extra-curricular activities that strengthen the entrepreneurial competences and mind-set of students. The school offers both students incubator activities (to help them with start-up activities) and other forms of

advice and guidance for student start-ups. It also offers extra-curricular activities through student societies' organisational support in relation with innovation and entrepreneurship and by organising networks between students and business industry. There are, however, no extra-curricular activities such as entrepreneurship education given by entrepreneurs or business plan competitions.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

The teachers on Andøy videregående skole have access to materials and teachers' aids to support their teaching in innovation and entrepreneurship. The school also has experience with actual teaching forms and programmes within entrepreneurship. These forms and programmes are for example project work, role-playing, and Company Programme (JA programme).

However, the school does not continuously validate and revise the learning objectives for entrepreneurship teaching. Furthermore, there are no structures for measuring the impact of the entrepreneurship teaching before, during and after the course/teaching. Furthermore, there are no measures for developing the curriculum in cooperation with external stakeholders in order to obtain input concerning useful competences in future.

Micro level

The micro level concerns the implementation level, that is, the actual teaching, which takes place in educational institutions, and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of the development of a national strategy for entrepreneurship education, this level often relies strongly on individual teachers' enthusiasm. Teacher training is often limited with no or little in-service training. But as the island or country develops their activity on the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course

faster and easier when management of the national education institutions has a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in vocational/ VET on different parameters. The upper secondary level on Andøy is not a part of the survey due to insufficient answers, and there are no tertiary level educational institutions on Andøy.

The share of pupils and students who have received entrepreneurship education is calculated on the basis of the total number of pupils and students on the island. It must be emphasised that this share may be inaccurate, as it is based on the responses received. There may be other pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey for this mapping.

Vocational/VET

At the vocational/VET level, the data have been collected by means of a questionnaire aimed at the teachers. The purpose of the survey is to map the number of pupils in vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories.

Basic information is comprised of two questions. They ask whether the teachers experience that their school has clear policies on innovation and entrepreneurship in education, respectively. The scores for these questions thus reflect to what degree this is the case.

Teaching, which focuses on the degree to which the teachers experience that the students have participated in innovation and entrepreneurship education in class instruction and courses, as clear subjects in their practical training and internships as well as clear subjects in their apprenticeship tests.

Entrepreneurship and setting things in motion is the foundation for entrepreneurship education. The teachers were asked whether the pupils have participated in feature weeks, camps, projects or the like focusing on innovation and entrepreneurship, respectively. In addition, the teachers were asked whether the pupils had participated in other innovation or entrepreneurship projects. If the answer is yes to any one of these questions, the pupils are included in the total number of pupils and students, who receive entrepreneurship education. As such, there are three different questions, which all play a part in determining whether the pupils have received entrepreneurship education.

Entrepreneurship education thus indicates the number of pupils who, based on the abovementioned questions, receive entrepreneurship education. The share of pupils

and students who have received entrepreneurship education is based on the total number of pupils and students on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

In Table 1, the overall results for vocational/VET are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

The participating school scores 25 and 17 out of 100, respectively; on the question whether they as teachers perceive that the school has a clear policy on innovation and entrepreneurship as part of the standard education. The scores for both questions are below the mean of 33 and 32, respectively, counting the total number of answers from all islands.

When it comes to the teaching, the students meet innovation as a clear topic only during the practical training or apprenticeship, while they meet entrepreneurship both in the subjects/courses and as a clear topic during the practical training or apprenticeship. However, the teachers perceive that it is to a very low degree, because the score is only 8 out of 100.

Table 1: The results for vocational/VET

Subject	Variable	Andøy
Basic information	Policy on innovation	25
	Policy on entrepreneurship	17
Teaching	Innovation in subject/course	0
	Innovation as a clear topic in practical training/apprenticeship	8
	Innovation as a clear topic in apprenticeship test	-
	Entrepreneurship in subject/course	8
	Entrepreneurship as a clear topic in practical training/apprenticeship	8
	Entrepreneurship as a clear topic in apprenticeship test	-
Entrepreneurship	Innovation, percentage	-
	Start-up of business / Entrepreneurship, percentage	50
	Other, percentage	-
Entrepreneurship education	Number of students receiving entrepreneurship education	15

Note: The results comprise answers from 2 teachers with a total of 2 classes and 25 students.

According to the respondents (teachers), none of the classes have participated in project week, camp, project or similar activities with a focus on innovation, while half of them have participated in similar activities with a focus on the start-up of a business/entrepreneurship. None of the classes have, according to the teachers, participated in other innovations or entrepreneurship related programmes.

The result is comprised of answers from two teachers with a total of 25 pupils. Overall, 15 pupils at vocational/VET on Andøy have encountered entrepreneurship

education in the 2015/2016 school year. That is the equivalent of 10% of the 150 pupils in vocational/VET level on Andøy.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participate in entrepreneurship education^[1]. However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.⁴⁶ Only 4–12 months after receiving a Micro Grant, 50 grant recipients created the equivalent of 79 full-time jobs in Denmark. Put in another way: For every million invested more than 40 full-time jobs have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after receiving the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

On Andøy, there is one upper secondary educational institution. The total number of students for the school year 2015/2016 is 150. At present, there are no funds

^[1] <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

⁴⁶ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

earmarked for student start-ups on the island, but the pupils can apply for financial support from the local businesses. However, this has not been systematised.

During the project trial granting micro grants of DKK 25,000 on Andøy, five applications from student start-ups were received. Normally, a student start-up is comprised of 2 to 6 pupils or students. All applicants have received entrepreneurship education to some degree.

The Micro Grant was marketed through the principal and teachers at the school and through the school's website. The teachers also launched an innovation camp with the local "Ungt Entreprenørskab" regional office in Nordland in order to facilitate the idea development process etc. In general, the support from the regional office "Ungt Entreprenørskab" has a large influence on the students being taught entrepreneurship in close collaboration with the teachers. Local businesses are also involved in the instruction.

Effects

For the student start-ups, the Micro Grant has had a significant effect. The project manager says: "It has given the pupils the opportunity to think a little bigger and has resulted in a project with a longer span than just the one school year usually encouraged through entrepreneurship education in school."

The Micro Grants have enabled access to mentors and potential loans. Further, the grant itself has given the pupils more inspiration and belief in their idea and in its potential for realisation. The grant has been spent on start-up expenses; equipment, cooperation agreements as well as development, marketing and market research.

On Andøy, they also believe in the derivative effects for the island and local community as a consequence of the idea: "Both ideas have the potential to grow and become real businesses in the local community on the island after this school year since they both create jobs and do something for the social life on the island – they have very different foci – but as a whole, the ideas will contribute to growth for both tourism and the local community. This is important for a small community like Andøy," says May-Britt Johansen (Manager of Andøy Næringsforening).

Needs and possibilities

Ungt Entreprenørskab, Region Nordland, is the primary support for student start-ups on the island, but more as a facilitator of entrepreneurship education than as a concrete help for any one start-up. However, they draw on partners and offer courses in accounting, taxes and marketing and advertising, among others.

Micro Grant recipients

Due to the age of the pupils as well as the size of the grant, the grant was split in two. One team received a third and the other received two thirds of the grant.

Startup: Get'em points UB

A volunteer app which encourages the residents on the island to contribute through voluntary work:

"As young people ourselves, we think that there are too few cultural events on the island, and we believe that our innovative product will have a positive effect on the cultural life on Andøya. In order to create cultural events and arrangements, you are dependent on enthusiastic people who want to create a community among the inhabitants on the island. Therefore, we believe that the "volunteer clock" will be a good and innovative way to have more enthusiastic volunteers to put together events for inhabitants of all ages. We want to produce our product and sell it to different companies. To begin, we want to contact a variety of clubs to see whether it is an inter-esting idea. If the clock is received positively, we want to sell it to multiple organisations. Our product is also a great solution to a social problem, which is continually discussed in the media; for many, it can be difficult to take part in social events be-cause of costs. By realising the "volunteer clock", we can help include more people in cultural events and the like. It will be possible to collect app 'points', which can be used to collect benefits from other cultural arrangements."

Startup: Vi kjæm med det UB (UB=ungdomsbedrift)

A service that provides supplies and services to small boats and at the same time buys the fish catch of the day.

"We want to be a service that delivers supplies and services to small boats. It can go the other way around as well, so that we buy fish from the boats. This will make it easier for the local population to get fresh fish. The procedure is like this; the fishermen take contact to our company, either by phone, facebook, or through our website. Then they place an order on the supplies and goods they need from us. In return, we want to buy fish from the fishermen so that the local population can buy fish from us."

Future entrepreneurial potential

Andøy suffers from an increasing old age dependency and a high youth unemployment rate. Nordland, of which Andøy is a part, is moreover the Norwegian region with the highest number of people moving away. Among the reasons for the depopulation is the

lack of job opportunities in the region. At the same time, companies are having problems in finding qualified labour, so it seems to be a vicious circle. This calls for entrepreneurs and innovative employees.

Based on the objective of creating solutions that will entail positive effects for Andøy, the first objective for this pilot project has been to ensure a mapping of entrepreneurship education on the island. There is no or only limited prior data available for mapping entrepreneurship in the educational sector on Andøy. Knowing the present situation on the island the second objective has been to define the potential for entrepreneurship education and Micro Grants on Andøy from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people on Andøy learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs.

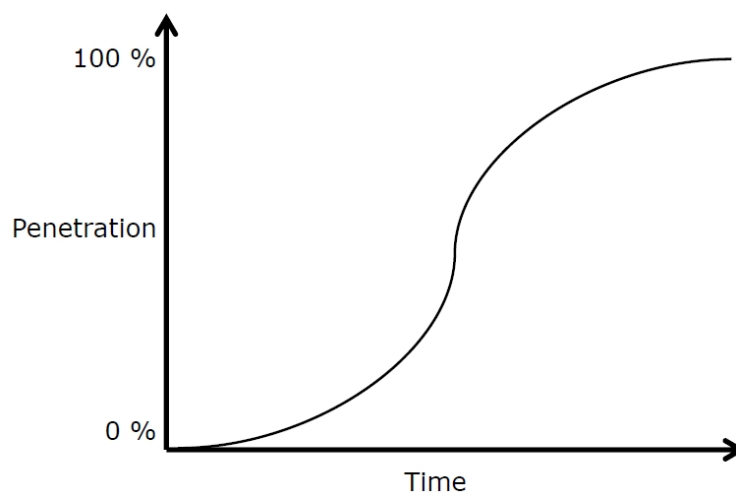
Forecasting entrepreneurship education and Micro Grants for Andøy

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives on Andøy. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Andøy is still in the initial stage. However, the number of students is relatively low which can influence the speed of the penetration rate positively.

Figure 1: S-curve for entrepreneurship education penetration rate



The forecast is presented in Table 2 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from Andøy.
- The maturity level on the island with regard to entrepreneurship in education (The “s-curve”).
- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

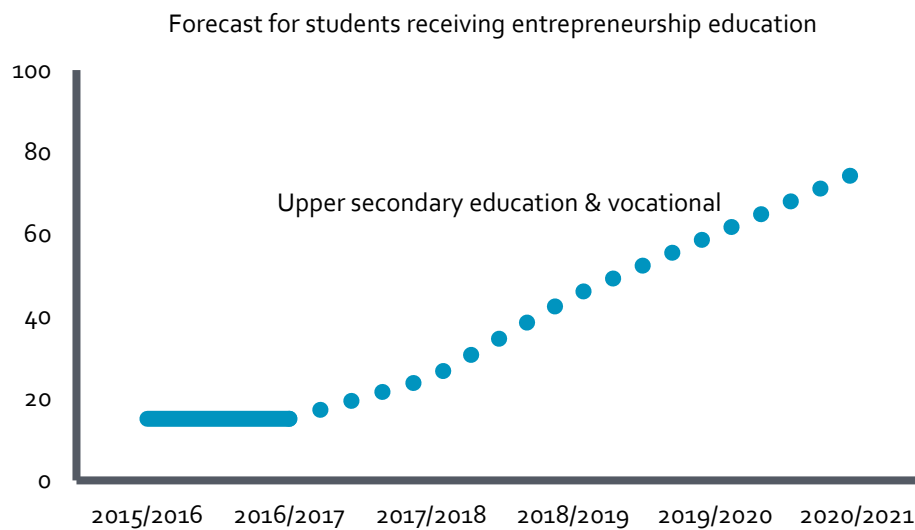
And the forecast is based on the assumptions that:

- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

Table 2: Forecast for Andøy

Forecast for entrepreneurship and micro grants until the school year 2020/2021						
Andøy, Norway						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/ VET						
Students in total	150	150	150	150	150	150
Students receiving entrepreneurship education, forecast	15	15	25	45	60	75
Share of students receiving entrepreneurship education, percentage	10,0%	10,0%	16,7%	30,0%	40,0%	50,0%
Applicants receiving a grant	-	-	-	-	-	-
Accepted applicants	2	2	2	2	3	4
Average annual costs (4 years) in DKK	DKK 700.000–900.000					

Figure 2: Forecast for Andøy



Recommendations for Andøy

- A dedicated budget for development and activities is necessary. There are no or only limited resources for entrepreneurship education and no or limited resources for student entrepreneurs on Andøy. Financial resources should be allocated at local level and this should be a collaborative effort between public and private sector.
- Strong stakeholder relations are essential. Private sector, public sector and the educational institutions should cooperate when implementing a regional strategy for entrepreneurship education. This could take form as a cross sector board in a regional organisation. The Nordland region has already decided on several initiatives to address the challenges of the region and reverse the current development. A regional strategy for Nordland is in place and the educational sector is a part of that strategy. The intent is to have an innovation system in Nordland with a good interaction, learning and collaboration between key actors from the business sector, labour market, education and research and different parts of the public sector. However, the mapping of Andøy shows that the private sector of Andøy is only involved to a small degree in the entrepreneurship education on the island.
- There is evidence to support that an effort to enhance entrepreneurship education has a great effect on young people's entrepreneurial competences. In the short term, it increases their desire to become entrepreneurs, and in the long term, it creates more entrepreneurs and more student start-ups. The entrepreneurship education can advantageously be differentiated according to the level of education. Danish research shows that in order to achieve the greatest effects entrepreneurship education must be differentiated at the different levels of education and must be provided to pupils as early as possible during their education.⁴⁷ At the conference held in November it was suggested by the Andøy delegation that Ungt Entreprenørskab should become involved in local primary schools and use their pedagogical programmes aimed at different age groups. For further inspiration on teaching entrepreneurship on different levels please see "Taxonomy i Entreprenørskabsuddannelse" published by the Danish Foundation for Entrepreneurship.⁴⁸
- Collecting data to secure knowledge on the development of penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and later on making impact studies is vital for the support from ministries and private sector.
- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link

⁴⁷ <http://www.ffe-ye.dk/fonden/nyheder/nyheder/kan-man-maale-udviklingen-af-elevers-og-studerendes-entreprenorielle-kompetencer>

⁴⁸ <http://www.ffe-ye.dk/media/555474/taksonomi2020entrepren3b8rskabsuddannelse2022oudgave2onlineversion.pdf>

between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice. This involvement could ensure that financial resources are earmarked to this area. The private sector experiences the need for qualified labour, which should motivate them to become involved.

- Communicating the educational institutions entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to cooperating partners outside the institution is essential for the strategy to have an impact on the penetration rate for entrepreneurship education on the island.
- A plan and resources for providing and ensuring the teachers the necessary competences in the area is needed from the beginning. The strategic emphasis on and financial support to entrepreneurship education should among other things focus on upgrading teachers' skills within entrepreneurship teaching. Today entrepreneurship education is part of initial teacher training, but mostly, or only, under the management of Ungt Entreprenørskab. A mapping done by Ungt Entreprenørskab and through independent research has shown that there are few courses in entrepreneurship in pedagogical subjects and teacher education. Moreover, there has been a substantial decline in initial teacher training in entrepreneurship education in recent years in spite of the national strategy's, or action plan's, goal to strengthen courses in teacher education. Other resources for teacher training are guidelines, programmes and websites with entrepreneurship education teaching materials.⁴⁹ The Andøy delegation at the "Nordic Entrepreneurship Island conference in November 2016" suggests that teacher training should be supplemented with networks across borders and they emphasise the importance of the teachers' skills and knowledge when implementing a strategy for entrepreneurship education.
- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator.
- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups on the island. However, it takes time before the students have become accustomed to applying for this grant.
- Whenever possible synergies across the Nordic islands should be utilised.

⁴⁹ Some of the information about Norway's strategy for entrepreneurship education is procured through the ICEE project.

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe⁵⁰

Table 3: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National ⁵¹ strategy, frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

⁵⁰ Towards Greater Cooperation and Coherence in Entrepreneurship Education, European Commission, 2010.

⁵¹ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ⁵²	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

⁵² The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Figure 3: Ten young students presenting their ideas on stage at the Edison competition



Photo: Rasmus Degnbol.

Appendix B. “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Figure 1 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.⁵³

⁵³ <http://www.ffe-ye.dk/videncenter/entreprenørskabs-undervisning/eksamensformer>

Table 4: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 5: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7,6	6,0	8,4	-1,6	28,7	27,4	-4,4	22,1	24,5	10,9
Andøy	-0,8	-2,0	-0,4	-2,3	29,0	25,3	-12,7	33,2	37,9	14,1
Finland	2,7	-0,7	4,2	-0,6	25,2	25,7	2,2	25,2	31,3	24,2
Pargas	0,5	-2,3	1,7	-0,5	27,1	27,8	2,6	30,9	40,0	29,5
Denmark	2,7	2,6	2,8	-0,4	27,8	26,4	-5,0	24,1	28,8	19,5
Bornholm	-6,4	-14,3	-3,6	-0,7	25,5	23,0	-9,6	33,2	44,6	34,5
Faroe Isl	-0,9	-4,3	0,9	1,4	34,4	34,5	0,4	22,2	26,9	20,9
Greenland	-0,3	-7,9	4,6	1,0	32,9	29,8	-9,4	9,3	10,7	15,2
Sweden	5,3	4,8	5,5	-1,0	25,4	27,3	7,4	27,1	31,1	14,8
Gotland	0,4	-4,8	2,6	-0,7	22,9	24,6	7,3	31,0	39,2	26,5
Iceland	4,1	0,9	4,2	2,2	30,9	30,8	-0,3	17,2	20,5	19,2

Note: * population aged 0–14 as a share of population aged 15–64.

**population aged 65+ as a share of population aged 15–64.

Source: Data sources: National statistical institutes and Eurostat.

Table 6: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76,6	75,6	-1,3	3,2	3,5	9,4	9,2	8,6	-6,5	
Andøy	75,6	72,8	-3,7	2,8	4,8	71,4		12,7		26,6
Finland	68,4	68,4	0	8,4	8,4	0	21,5	19	-11,6	
Pargas	74,5	73,2	-1,7	4,9	4,6	-6,1		14,3		43,2
Denmark	75,1	72,3	-3,7	6,1	7,2	18,0	11,8	14,1	19,5	
Bornholm	68,8	69,3	0,7	8,9	8,9	0		19,7		23,7
Faroe Isl	88,1	90,8	3,1	4,8	3,9	-18,8		9,9		35,9
Greenland	64,9	63,3	-2,5	7,5 (2010)	9,7	29,3		17		14,4
Sweden	72,4	74,5	2,9	8,5	8,3	-2,4	25	23,7	-5,2	
Gotland	74	77,4	4,6	8	6	-25				31,1
Iceland	78,3	81,1	3,6	7,2	5,4	-25	16	13,6	-15	

Note: *number of employed persons as a share of the population aged 15–64.

**total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

***unemployed persons aged 15–24 as a share of the labour force aged 15–24.

****persons with a tertiary education as a share of the population aged 25+

Source: Data sources: National statistical institutes and Eurostat.

Appendix 2: Pargas, Finland

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures, and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation, and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons is that there is a lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as on other research.

Indicators of the full entrepreneurial potential are the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation in Pargas with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up in Pargas.

In order to map the status of entrepreneurship education in Pargas, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in Finland and in the region of Southwest Finland.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation in Pargas are shortly discussed.⁵⁴

Definitions of entrepreneurship and entrepreneurship education

In the autumn of 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.⁵⁵

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013)

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection at the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

⁵⁴ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

⁵⁵ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager in Pargas completed the questionnaire in the course of 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge in the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,⁵⁶ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager in Pargas to the management of educational institutions at the upper secondary level and the tertiary level in Pargas.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET, the data were collected by means of a questionnaire aimed at the teachers. The two different types of teaching were taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers' evaluation of their school's policy on innovation and entrepreneurship education.

⁵⁶ <https://heinnovate.eu/>

It also examines the teachers' evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for the upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focuses on four areas or "entrepreneurial dimensions". Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.⁵⁷

The four entrepreneurial dimensions examined are:

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, "Stjernemodellen"⁵⁸ is used as a tool for the categorisation of courses (see Appendix B for further details).

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations too, and was used by the Danish Foundation for Entrepreneurship during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method are used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

⁵⁷ <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

⁵⁸ Henceforth referred to as the Star Model

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a Micro Grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000, which allows the student start-up to take their business further. A small case written about the local start-up and Micro Grant recipient documents the effects, needs, and possibilities for young people on the islands after they receive a Micro Grant.

The project manager in Pargas has also provided information about the innovation ecosystem in the local area in the form of a case.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands.⁵⁹ The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations between data may, however, occur when our data are compared with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions have been sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also with different strategic knowledge behind the answers. The data given about each island/country are therefore not always equivalent, because they depend on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not

⁵⁹ Pargas is not an island like the other six geographical areas examined in this report. However, for the sake of simplicity, when we speak of them as a group, we refer to them as "the seven islands."

participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

This report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Appendix A) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size, and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development in Pargas in the recent period. This will serve as background for the mapping of the situation in Pargas and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

In the period 2009–2015, Pargas has experienced almost status quo of the total population; a slight increase of 0.5%. The change in the population aged 0–24 is a decrease of 2.3%, while the change in the population aged 25+ is an increase of 1.7%.

The youth dependency rate has slightly increased in the period, from 27.1% to 27.8%, while the much higher old age dependency rate has increased very much, from 30.9% to 40%. Thus, the old part of the population is increasing very fast, although still not to the same degree as Bornholm, which has experienced the highest increase of all the islands in the period.

Labour market

The overall employment rate in Pargas decreased slightly (by 1.7%) in the period 2009–2013, going from 74.5% to 73.2%, which is, however, a higher rate than in Finland as a whole, and close to the mean value (75.4%) of all seven islands' rates. The unemployment rate, which has decreased from 4.9% to 4.6% in the same period, is also better than in Finland as a whole, and is the second most positive rate of all seven islands (rates going from 3.7% in the Faroe Islands to 9.7% in Greenland). Concerning the youth unemployment rate, data are only available from 2013 where the rate was 14.3%, which is rather high compared to the other islands (rates going from 9.9% in the Faroe Islands to 19.7% in Greenland). So, all things considered, although the overall employment and unemployment rates are not as negative compared to the other islands, the youth unemployment rate is still a big challenge in Pargas.

Education level

Of all seven islands, considering the data which was available for this mapping, Pargas has the highest share of persons with a tertiary education level – 43% of the total population aged 25+ has attained a tertiary education level.

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate responsible actors for entrepreneurship education are actors at the macro level (policy makers), who provide the framework for working in the area, actors at the meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at the macro level in Pargas. The desk research is based on information obtained from the island by means of a questionnaire.

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

Developing the national strategy framework

Finland has had a national strategy for entrepreneurship education for many years with clear objectives for the education at all educational levels. There is a cross-ministerial collaboration, and many key actors from different levels of society are involved in the strategic work at the national level, e.g. municipalities, cities, regional education organisations and regional development organisations, banks, insurance companies, business chambers, business associations and others.

The strategy seeks to support a more entrepreneurial culture, active citizenship and business start-ups, while the 19 regional EE resource centres of the YES network emphasise networking, support and training for and with teachers.

JA Finland is collecting data to map their own activities. Assessment of the impact of entrepreneurship education is for instance taking place through the MTEE tool, developed by Lappeenranta University of Technology in 2015. MTEE is a tool that allows teachers to assess their own teaching practice and provides decision makers with macro level data, which they can use in their work with national and regional policies on the area.

So far Finland has 8 regional strategies for entrepreneurship education, one of them in Southwest Finland, the region to which Pargas belongs.

The strategy is called “An entrepreneurial and prosperous Southwest Finland” and the involved actors are representatives for local municipalities and cities, regional providers of education and training and regional development organisations. The Southwestern Finland’s vision for 2020 is that entrepreneurship education should be the foundation and basis for well-being and entrepreneurship.⁶⁰

The role of local and regional authorities

There are 19 YES (JA) centres, but no actual centre working exclusively with entrepreneurship education. In the Pargas area, there are a few organisations such as business chambers and employers’ associations that arrange entrepreneurship courses.

There are strategic partnerships between businesses and schools as well as other forms of partnerships. Private businesses are, however, only involved to a small degree in the area of Pargas. There are no ecosystem initiatives.

Implementing entrepreneurship education

Entrepreneurship education is optional at all levels except in primary school. At ISCED 1–2 it is a cross-curricular theme in both core and optional subjects. At ISCED 3 the

⁶⁰ Ett företagsamt och välmående egentliga Finland – Strategi 2020 för fostran till företagande.

national core curriculum features “Social studies”, which includes entrepreneurship education elements. In school based IVET at ISCED 3, there is a compulsory module about entrepreneurship.

At the primary level, entrepreneurship education is taught as a method, at the upper secondary and tertiary levels, entrepreneurship education is taught as both a method and a subject.

The national curriculum was reformed recently and the new curriculum, which was introduced in August 2016, emphasises the importance of entrepreneurship education to a much higher degree than previously.

The consequences of having implemented entrepreneurship education at the compulsory level and in higher education for several years now are that entrepreneurship education has become much more accepted by actors on all levels.

Teacher education and training

Teachers are trained at university in Finland, and especially universities enjoy a wide freedom in deciding teaching methods. However, entrepreneurship education has become a compulsory element in teacher training in three institutions and an elective element in several other institutions.

Finland attaches great importance to the fact that teachers should be knowledgeable about work life. Therefore, teachers are taught about work life and skills in their further education. Moreover, in-service teacher training is provided by the YES centres as well as through school-business cooperation.⁶¹

Engaging with businesses and private associations and organisations

The private sector in Pargas is involved in and provides funding for entrepreneurship education projects. The focus areas of the private sectors are, both nationally and in Pargas specifically, the recruitment of future employees and publicity/CSR.

Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy (macro level) and teachers (micro level), who teach entrepreneurial skills to students. The meso level has often been overlooked, or

⁶¹ Some of the information on this page has been procured through the ICEE project, <http://icee-eu.eu>

given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level in the geographical area and make the link between strategy and practice, a survey was sent to the school management of schools and institutions in Pargas. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication, and evaluation.

Two out of three educational institutions on secondary level and vocational/VET in Pargas have participated in the survey and one of these schools has a strategy for entrepreneurship. The two institutions are:

- Pargas svenska gymnasium (strategy).
- Axxell Utbildning Ab (no strategy).

The schools' plan and goals for development of entrepreneurship education

The institution with a strategy has a precise plan for the implementation of the entrepreneurship strategy and the plan has been communicated clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution). The institution also has a plan for following up and revising the entrepreneurship strategy on a continuous basis and has created a common frame of understanding of entrepreneurship education and how to practise it.

The management on the institution with a strategy has also set concrete targets and goals for development of entrepreneurship education.

- The establishment of project weeks in innovation & entrepreneurship.
- Cooperation between teachers and local businesses, public institutions and organisations in relation with entrepreneurship education.
- Teaching in entrepreneurship (learning objectives).

However, the institution has not set targets and goals for the following areas:

- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching).
- The development of curriculum so that it contains learning objectives and competences for innovation and entrepreneurship.
- Continuing education of teachers in teaching innovation & entrepreneurship.

No strategy but entrepreneurship activities

Even though one of the participating institutions in Pargas does not have an entrepreneurship education strategy, there are nevertheless entrepreneurship teaching and/or activities related to entrepreneurship taking place at the institution, for instance teaching in innovation (students are being taught how to start a business, or they are being taught in new and innovative ways), cooperation with the local business industry concerning students' education and further working life/career, and students working with projects that bring them in contact with the surrounding society.

Importance of strategy and education in entrepreneurship

There is a difference between the two institutions when it comes to their opinion about the importance of formulating a strategy for education in entrepreneurship. On a scale from 1 to 5⁶² the institutions state that they very much agree to the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship". The institution without a strategy has answered "neither/or" to the same statement. However, both institutions have stated that they "very much agree" to the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship".

Importance of goals for entrepreneurship teaching

Both institutions agree that goals for education in entrepreneurship should be set to:

- strengthen students' interest in their further education and career
- strengthen students' interest in becoming an entrepreneur/starting a new business
- prepare students better for working life
- strengthen the cooperation between the educational institution and the local society

⁶² 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree

- boost the development of the local area, for instance by contributing to new businesses through the skill development of young people.

The institution with a strategy in addition agrees that goals should be set to:

- comply with new national/regional policy on the area of entrepreneurship education.

On the other hand, the institution without a strategy agrees that goals should be set to:

- decrease the student drop-out rate
- upgrade teachers' skills within entrepreneurship teaching.

External network

Both institutions in the survey provide their students with the possibility for making contact with the institution's external network and both provide the same possibilities:

- Guest lectures given by local business people, entrepreneurs, or others.
- Visits to companies, organised by the educational institution.
- Competitions at the educational institution, where external contacts function as judges.

None of the institutions give their students the possibility for making contact with the institutions external network through:

- Exchange/trainee service in local businesses/organisations.
- Workshops in cooperation with external partners.
- Subject-/project weeks or -days in cooperation with external partners.

Involvement from school governing body and local businesses

There is only a small difference between the two institutions when it comes to the degree of involvement from the governing body of the institution in entrepreneurship education. On a scale from 1 to 5⁶³ the institution with a strategy states that there is no significant involvement from the governing body, and the institution without a strategy states that there is to some extent involvement from the governing body. Both

⁶³ 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

institutions state that there is to some extent involvement from the local business sector as a resource in the work with entrepreneurship education.

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

Both institutions have earmarked financial resources to entrepreneurship education. None of them have earmarked time or other resources such as staff with knowledge and expertise on the area. However, the institution with a strategy states that they have a coordinator for entrepreneurship teaching, who has the full backing and practical support from management and who is part of management. The institution without a strategy does not have this.

Like most of the institutions in the survey (82% of participating institutions on all islands), entrepreneurship teaching is part of the timetables and the annual teaching plans at both institutions in Pargas. At both institutions it is also required that the teachers describe in their annual plans how they integrate entrepreneurship in other subjects. However, in the annual teaching plans, time has not been allocated to entrepreneurial teaching courses of a longer duration, for instance project weeks, optional subjects, etc.

At the institution without a strategy, management has communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated. The institution also requires that the teachers include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students. There is a feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. The institution also supports dialogue and cooperation between teachers from different disciplines through common facilities across the departments of the institution. None of this is present at the institution with an entrepreneurship strategy.

At none of the institutions has management developed a particular system for supporting dialogue and cooperation between teachers from different disciplines through cross-curricular teaching and/or interdisciplinary project groups, or through dialogue and co-decision between teachers and students.

Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

Plan for teacher competence development

The institution with a strategy has no plan for competence development and knowledge sharing within entrepreneurship education. The institution without a strategy has a plan for continuing education of teachers in entrepreneurship teaching but no plan for knowledge sharing about entrepreneurship teaching or through special networks. Furthermore, it does not have a plan for cross-curricular cooperation between teachers within the subject of entrepreneurship.

Experimenting with teaching forms

Both institutions in Pargas allow their teachers to experiment with teaching forms through cooperation with businesses and through cross-curricular feature periods. However, only the institution with a strategy provides the teachers with the possibility to experiment with teaching forms through project work / feature weeks or days.

Cooperation with the surrounding society

Both institutions are involved in cooperation and knowledge sharing with the surrounding society/local area such as established business/industry and other knowledge organisations. In addition, the institution with a strategy is also involved with newly started businesses / entrepreneurs. None of the institutions are involved with institutions within the public sector.

Extra-curricular activities

Both educational institutions in Pargas offer some extra-curricular activities that strengthen the entrepreneurial competences and mind-set of students. The institution with a strategy offers students both incubator activities (to help them with start-up activities), entrepreneurship education given by entrepreneurs and business plan competitions. The institution without a strategy only offers this through other forms of advice and guidance for student start-ups. None of the two institutions offer extra-curricular activities through student societies, organisational support in relation with innovation and entrepreneurship or networking possibilities between students and entrepreneurs/business industry.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

At both institutions, teachers have access to materials and teacher's aids to support their teaching in innovation and entrepreneurship. The institution with a strategy also has experience with actual teaching forms and programmes within entrepreneurship and continuously validates and revises the learning objectives for entrepreneurship teaching with a view to updating the teaching programmes. None of the institutions measures the impact of the entrepreneurship teaching before, during and after the course/teaching. However, the institutions develop their curriculum in cooperation with external stakeholders in order to get input concerning useful competences in future.

Micro level

The micro level concerns the implementation level, that is, the actual teaching taking place in educational institutions and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of the development of a national strategy for entrepreneurship education, this level often relies strongly on individual teachers' enthusiasm. Teacher training is limited with no or little in-service training. But as the island or country develops their activity on the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in upper secondary education on different parameters. Vocational/VET is not a part of the survey due to insufficient answers and there are no tertiary level educational institutions in Pargas.

The share of pupils and students who have received entrepreneurship education is calculated on the basis of the total number of pupils and students in Pargas. It must be emphasised that this share may be inaccurate, as it is based on the responses received.

There may be other pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey for this mapping.

Upper secondary education

At the upper secondary level, data have been collected by means of a questionnaire for the teachers. The purpose of the survey is to map the number of pupils in upper secondary education who participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The questionnaire is divided into four main categories.

Basic information consists of two questions about whether the teachers perceive that the school has a clear policy of integration of innovation and entrepreneurship in the education. The responses to these questions thus indicate a score that reflects the extent to which this is the case.

*Taxonomy*⁶⁴ contains the following four dimensions: *action, creativity, environment* and *attitude*. These terms refer to entrepreneurial competences, which are not necessarily a subject or subject knowledge in themselves but are competences to set initiatives in motion and create opportunities. As such, a high score in the teachers' perceptions of the fulfilment of these four indicators is desirable. The score in the four dimensions of the pupils and students who have received entrepreneurship education is compared to the scores of the pupils and students who have not received entrepreneurship education.

Entrepreneurship and setting things in motion is the foundation of entrepreneurship education. The total number of pupils and students having received entrepreneurship education in any given area is comprised of all teachers who have answered the questions regarding whether the pupil or student has received instruction in starting a business and/or tried starting up and gained experience starting a business affirmatively.

Entrepreneurship education, which is the percentage of pupils and students who have received entrepreneurship education, is calculated from the total number of pupils and students on the respective island/area. As mentioned above, reservations are taken about the accuracy of this share.

In Table 1 below, the overall results for the upper secondary level are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

⁶⁴ Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.
<http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

The teachers experience a clear policy on entrepreneurship with a score of 55 compared to the average 27. This score is also above the average of all islands/areas. The relatively high score is also evident in the number of classes who have been taught business start-up and also have realistic experience with business start-up. The percentages are 54% and 46%, respectively. This is the equivalent of 89 students having received entrepreneurship education.

Table 1: The results from Pargas, Finland

Subject	Variable	Pargas, Finland
Basic information	Policy on innovation	28
	Policy on entrepreneurship	55
Taxonomy	Action	36
	Creativity	38
	Environment	29
	Attitude	42
Entrepreneurship	Teaching in start-up percentage	54
	Realistic experience with start-up, percentage	46
Entrepreneurship education	Number of students receiving entrepreneurship education	89
Score for students receiving entrepreneurship education	Action	49
	Creativity	45
	Environment	45
	Attitude	41
Score for students <i>not</i> receiving entrepreneurship education	Action	26
	Creativity	33
	Environment	10
	Attitude	44

Note: The results are comprised of answers from 9 teachers with a total of 13 classes and 171 students.

Comparing the entrepreneurial parameter scores of the students who have and students who have not received entrepreneurship education, the results are, for the first time, different from those of the other islands. The parameter *attitude* shows a higher score for students who have *not* received entrepreneurship education. However, the score for students who have received entrepreneurship education is higher when it comes to the other three parameters. The differences are markedly lower than the average, however, which means that, according to the teachers, the students, who have received entrepreneurship education, have not necessarily achieved better entrepreneurial competences.

The result is comprised of answers from 9 teachers with a total of 171 pupils. Overall, 89 pupils at upper secondary level in Pargas have encountered

entrepreneurship education in the 2015/2016 school year. That is the equivalent of 20.6% of the 528 pupils in upper secondary level in Pargas. In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participated in entrepreneurship education.⁶⁵ However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.⁶⁶ Only 4–12 months after receiving a Micro Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after receiving the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

⁶⁵ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

⁶⁶ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

In Pargas, there are three upper secondary educational institutions. The total number of students in the school year 2015–16 is 528. At present, no funds are earmarked for student start-ups in Pargas.

During the project trial granting Micro Grants of DKK 25,000 in Pargas, three applications from student start-ups were received. Normally, a student start-up is comprised of 2 to 6 pupils or students. Three out of four members of the team that received the grant have participated in entrepreneurship education developed by “Ungt företagande” Finland. The Micro grant was marketed directly to students at the three schools with an interest in entrepreneurship.

Effects

For the student start-up, the Micro Grant has had a range of effects. The project manager, Magnus Sundman says: “They feel valuable since they are treated as adult entrepreneurs. In addition, the Micro Grant has made key people in the business available, and with the grant as starting capital they have been able to create a professional website, among other things.” However, the project manager in Pargas also voices some scepticism about whether the Micro grant will have a real, long-term effect since it is aimed at students at the upper secondary level. At the same time, it is clear that the grant has been kind of a motivator and has ensured that the young people from the three schools consider entrepreneurship a valid career. “They build a useful network with their future in mind”. In Pargas, they have become aware of the potential that the young people will look for more growth capital after receiving a grant.

In Pargas, they also believe in the derivative effects for the area and local community as a consequence of the idea: “For the region's islands, the company's idea is new and fresh. It brings together various geographic areas of a scattered archipelagic landscape. The idea unites different actors, especially the suppliers of raw materials, consumers of bio waste, the relevant environmental and permit authorities, as well as surrounding partner companies. Entrepreneurship promotes sustainable and natural development in the archipelago in both the short and long term”, says Magnus Sundman, coordinator of the courses in entrepreneurship in Pargas. He continues, “The impact of their business is not yet visible on the islands of Pargas; it will take more time to determine its effect on the local environment. As mentioned, the doors have only now been opened. Business activities and entrepreneurship of this type contribute to how Pargas is perceived in terms of its business climate and environment for young entrepreneurs and their ideas. Small and medium-sized businesses run by young entrepreneurs are especially essential for the welfare and development of Pargas.”

Needs and possibilities

During the process, the student start-up has been counselled in making a business plan, budgets, accounting, marketing, etc. Furthermore, they have been offered office facilities and benefited from sharing experiences and knowledge with other entrepreneurs. However, they ask for more help in developing the product and in establishing contact with more specialists in fertiliser production. In addition, they need professional and financial support in order to move the project further.

Micro Grant recipient

BioLink

The business concept is largely based on the idea of a cleaner archipelago.

“The company is creating a tool that enables collaboration between agricultural/fish farmers and businesses that refine biogas. The tool is a contact forum in the form of a web portal. The portal serves as a link between the waste producers and the refiners of biogas, and facilitates contact between them. The website includes a discussion forum, facts about biogas, payment policies, tables for inputting necessary information, and contact information of the parties involved.”

Future entrepreneurial potential

Pargas is an area characterised by an increasing old age dependency and a relatively high youth unemployment rate. Furthermore, it is primarily a rural area with a few industries in the primary sector. There is a high rate of people with a tertiary education in the area although there are no higher education institutions in Pargas. Considering the comparatively low rate of start-ups among people under 35 and the rather high youth unemployment rate in Finland as a whole (19% in 2013), it is very relevant to focus on entrepreneurship education in schools and to focus on improving the conditions for new start-ups.

Based on the objective of creating solutions that will entail positive effects for Pargas, the first objective for this pilot project has been to ensure a mapping of entrepreneurship education in the area. There is no or only limited prior data available for mapping entrepreneurship in the educational sector in Pargas. Knowing the present situation in the area, the second objective has been to define the potential for entrepreneurship education and Micro Grants in Pargas from 2016/2017 to 2020/2021.

This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The long-term ambition is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people in Pargas learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the market position of Pargas internationally and contributing to a sustainable development, growth and jobs.

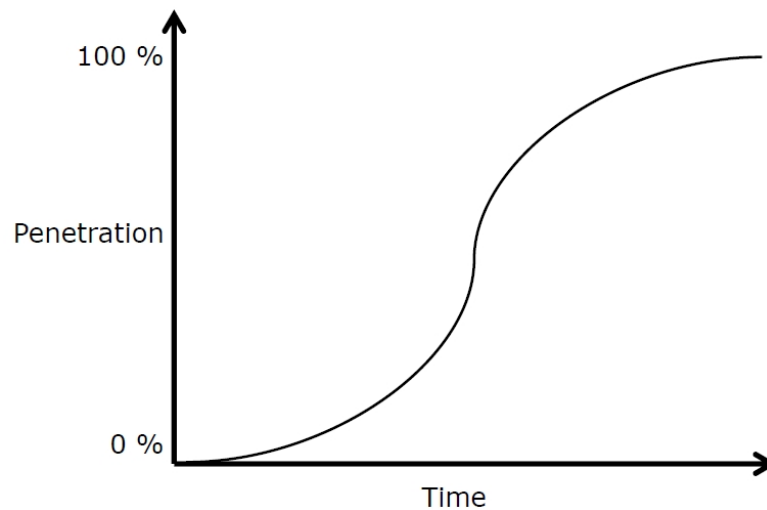
Forecasting entrepreneurship education and Micro Grants for Pargas

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives in Pargas. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Pargas is in the stage where the curve is steep and initiatives and strategies will have a relative high effect on the penetration rate.

Figure 1: S-curve for entrepreneurship education penetration rate



The forecast is presented in Table 2 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from Pargas.
- The maturity level in Pargas with regard to entrepreneurship in education (the "s-curve").
- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based on the assumptions that:

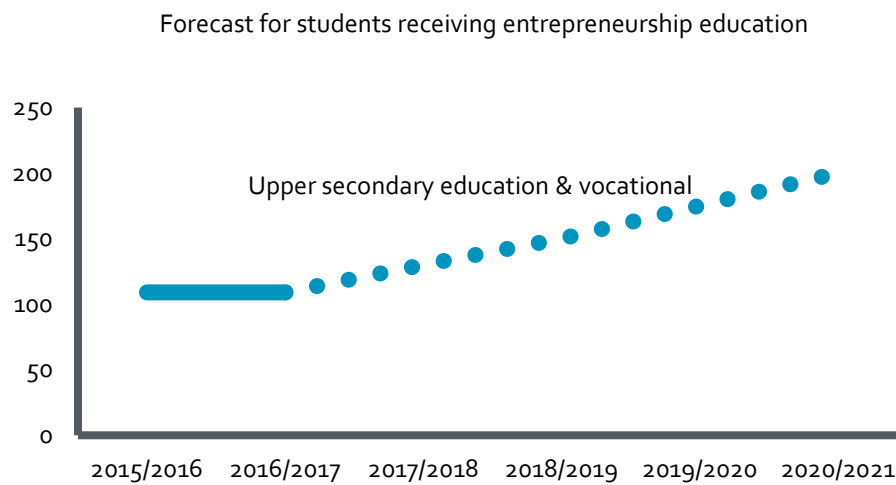
- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but are estimates.

Table 2: Forecast for Pargas

Forecast for entrepreneurship and micro grants until the school year 2020/2021. Pargas, Finland						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	528	528	528	528	528	528
Students receiving entrepreneurship education, forecast	109	109	130	150	175	200
Share of students receiving entrepreneurship education, percentage	20.6%	20.6%	24.6%	28.4%	33.1%	37.9%
Applicants receiving a grant	-	-	-	-	-	-
Accepted applicants	1	1	1	2	2	3
Average annual costs (4 years) in DKK	DKK 750,000–950,000					

Figure 2: Forecast for Pargas



Recommendations for Pargas

- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector. Experiences with the past strategies for entrepreneurship education have taught the Finnish policy makers to inform about entrepreneurship education on a broad scale nationally, and especially regionally. Finland is a large and sparsely populated country. Measures to reach the regions are for instance through the 17 regional YES centres. In Finland the regional viewpoint is important, because the regions are very different and at different stages when it comes to implementing entrepreneurship education. However, the National Educational Programme (Köreplan 2016) has not yet been implemented at local level in Pargas.
- A specifically dedicated budget for development and activities is necessary. There are no or only limited resources for entrepreneurship education and student entrepreneurs in Pargas. Financial resources should be allocated both at national and local level. This should be a collaborative effort between the public and private sectors.
- Strong stakeholder relations are essential. The private sector, the public sector and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation.
- Support and collaboration with schools and educational institutions on all levels. There is evidence to support that an effort to enhance entrepreneurship education has a great effect on young people's entrepreneurial competences. In the short term, it increases their desire to become entrepreneurs, and in the long term, it creates more entrepreneurs and more student start-ups. The entrepreneurship education can advantageously be differentiated according to the level of education. Danish research shows that in order to achieve the greatest effects entrepreneurship education must be differentiated on different levels of education and must be provided to pupils as early as possible during their education.⁶⁷ At the conference held in November, the Pargas delegation pointed out that there is a gap between primary and lower secondary school levels in relation to entrepreneurship education. There seems to be a lack of knowledge about models and best practices to be implemented by the teachers at this level. For further inspiration on teaching entrepreneurship on different levels please see

⁶⁷ <http://www.ffe-ye.dk/fonden/nyheder/nyheder/kan-man-maale-udviklingen-af-elevers-og-studerendes-entreprenoerielle-kompetencer>

“Taxonomy i Entreprenørskabsuddannelse” published by the Danish Foundation for Entrepreneurship.⁶⁸

- Promote entrepreneurship education. It is important to inform about and promote entrepreneurship, because the narrow view of entrepreneurship (only related with business) still prevails in some areas. One way could be to highlight and promote schools and teachers who have done a good job about implementing entrepreneurship education. And use the example of young people who have experiences with entrepreneurship education or with starting their own company.
- Collecting data to secure knowledge on the development of penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and later on making impact studies is vital for the support from ministries and private sector.
- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice.
- Communicating the educational institutions entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to have an impact on the penetration rate for entrepreneurship education on the island.
- A plan and resources for providing and ensuring the teachers the necessary competences in the area are necessary elements from the beginning. There are no or limited resources for entrepreneurship teachers competence development. The strategic emphasis on and financial support to entrepreneurship education should among other thing focus on upgrading teachers’ skills within entrepreneurship teaching. The Pargas delegation at the Nordic Entrepreneurship Island conference in November 2016 emphasised the importance of the teachers’ skills and knowledge and they suggested that teacher training should be supplemented with networks both within Finland and across borders to motivate teachers.
- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator.

⁶⁸ <http://www.ffe-ye.dk/media/555474/taksonomizoioentreprenc3b8rskabsuddannelse2022oudgave2oonlineversion.pdf>

- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement entrepreneurship teaching and help create new start-ups in Pargas. However, it takes time before the students have become accustomed to applying for this grant.
- Whenever possible, synergies across the Nordic islands in the project should be utilised.

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe⁶⁹

Table 3: A Progression Model for Entrepreneurship Education Ecosystem in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National ⁷⁰ strategy, frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

⁶⁹ *Towards Greater Cooperation and Coherence in Entrepreneurship Education*, European Commission, 2010.

⁷⁰ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ⁷¹	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

⁷¹ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Appendix B. “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Figure 1 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.⁷²

⁷² <http://www.ffe-ye.dk/videncenter/entreprenuerskabs-undervisning/eksamensformer>

Table 4: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 5: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7,6	6,0	8,4	-1,6	28,7	27,4	-4,4	22,1	24,5	10,9
Andøy	-0,8	-2,0	-0,4	-2,3	29,0	25,3	-12,7	33,2	37,9	14,1
Finland	2,7	-0,7	4,2	-0,6	25,2	25,7	2,2	25,2	31,3	24,2
Pargas	0,5	-2,3	1,7	-0,5	27,1	27,8	2,6	30,9	40,0	29,5
Denmark	2,7	2,6	2,8	-0,4	27,8	26,4	-5,0	24,1	28,8	19,5
Bornholm	-6,4	-14,3	-3,6	-0,7	25,5	23,0	-9,6	33,2	44,6	34,5
Faroe Isl	-0,9	-4,3	0,9	1,4	34,4	34,5	0,4	22,2	26,9	20,9
Greenland	-0,3	-7,9	4,6	1,0	32,9	29,8	-9,4	9,3	10,7	15,2
Sweden	5,3	4,8	5,5	-1,0	25,4	27,3	7,4	27,1	31,1	14,8
Gotland	0,4	-4,8	2,6	-0,7	22,9	24,6	7,3	31,0	39,2	26,5
Iceland	4,1	0,9	4,2	2,2	30,9	30,8	-0,3	17,2	20,5	19,2

Note: * population aged 0–14 as a share of population aged 15–64.

**population aged 65+ as a share of population aged 15–64.

Source: Data sources: National statistical institutes and Eurostat.

Table 6: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76,6	75,6	-1,3	3,2	3,5	9,4	9,2	8,6	-6,5	
Andøy	75,6	72,8	-3,7	2,8	4,8	71,4		12,7		26,6
Finland	68,4	68,4	0	8,4	8,4	0	21,5	19	-11,6	
Pargas	74,5	73,2	-1,7	4,9	4,6	-6,1		14,3		43,2
Denmark	75,1	72,3	-3,7	6,1	7,2	18,0	11,8	14,1	19,5	
Bornholm	68,8	69,3	0,7	8,9	8,9	0		19,7		23,7
Faroe Isl	88,1	90,8	3,1	4,8	3,9	-18,8		9,9		35,9
Greenland	64,9	63,3	-2,5	7,5 (2010)	9,7	29,3		17		14,4
Sweden	72,4	74,5	2,9	8,5	8,3	-2,4	25	23,7	-5,2	
Gotland	74	77,4	4,6	8	6	-25				31,1
Iceland	78,3	81,1	3,6	7,2	5,4	-25	16	13,6	-15	

Note: *number of employed persons as a share of the population aged 15–64.

**total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

***unemployed persons aged 15–24 as a share of the labour force aged 15–24.

****persons with a tertiary education as a share of the population aged 25+.

Source: Data sources: National statistical institutes and Eurostat.

Appendix 3: Bornholm, Denmark

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures, and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation, and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons could be said to be the lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as on other research.

The full entrepreneurial potential is viewed as the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation on Bornholm with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up on Bornholm.

In order to map the status of entrepreneurship education on Bornholm, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in the islands/countries.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation on Bornholm are shortly discussed in the first chapter.⁷³

Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.⁷⁴

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013)

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education in the seven Nordic islands.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection on the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

⁷³ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

⁷⁴ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager on Bornholm completed the questionnaire during 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge in the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,⁷⁵ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager on Bornholm to the management of educational institutions on the upper secondary level and the tertiary level on Bornholm.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching have been taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers' evaluation of their school's policy on innovation and entrepreneurship education.

⁷⁵ <https://heinnovate.eu/>

It also examines the teachers' evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focuses on four areas or "entrepreneurial dimensions". Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.⁷⁶

The four entrepreneurial dimensions examined are:

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, "Stjernemodellen" is used as a tool for the categorisation of courses (see Appendix B for further details).⁷⁷

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations too, and was used by the Foundation during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

⁷⁶ <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

⁷⁷ "Stjernemodellen" will henceforth be referred to as the Star Model.

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a micro grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000, which allows the student start-up to take their business further. A small case written about the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

The project manager on Bornholm has also provided information about the innovation ecosystem on the island in the form of a case.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations in the data may, however, occur in relation with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions have been sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also with different strategic knowledge behind the answers. The data given about each island/country are therefore not always equivalent, because they depend on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

Furthermore, the report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Appendix A) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development on Bornholm in the recent period. This will serve as background for the mapping of the situation on Bornholm and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

The total population on Bornholm has declined by 6.4% in the period 2009–2015 (although the negative tendency has subsided significantly during the last couple of years).⁷⁸ The biggest challenge for Bornholm when it comes to the demographic

⁷⁸ www.dst.dk

development is the fact that the share of the population aged 0–24 has decreased immensely, by 14.3%, while the population aged 25+ has decreased by 3.6%. In comparison to the other islands, this is a very considerable decrease in the young population (all islands, except Iceland, experience decreases in the young population, changes going from +0.9% in Iceland to -7.9% in Greenland).

In the same period (2009–2015), the old age dependency on Bornholm has increased very much (from 33.2% to 44.7%) while the youth dependency has decreased (from 25.5% to 23%). In fact, when it comes to these two sets of data, population changes and youth as well as old age dependency rates, Bornholm is the island with the biggest changes of the seven islands. Changes meaning that the older part of the population is increasing at a very fast rate.

Labour market

The overall employment rate on Bornholm is relatively low but has had a very slight increase; in the period 2009–2013, it thus changed from 68.8% to 69.3%. The unemployment rate remained at a relatively high 8.9% during the same period and it is thus the second highest unemployment rate of all seven islands Greenland's rate being the highest. When it comes to youth unemployment, Bornholm had the highest rate of all islands in 2013 (19.7%), not counting the rate from Gotland, which is not available (however, the youth unemployment rate for Sweden as a whole was 23.7% in 2013).

The positive development in employment in Denmark is concentrated in big cities, especially Copenhagen, where the employment rate the last 20 years has increased three times as much (+30%) as in the rest of Denmark. At the same time, the employment rate on Bornholm has *decreased* by more than 10%, which is the most negative development of all Danish regions. One reason is that the tertiary sector (service industries) has grown a lot, and this sector is typically concentrated in cities. At the same time, the primary sector (manufacturing industries, farming and fishery), which typically exists mostly in rural areas, has experienced a large decrease in Denmark. Another reason for the employment decrease on Bornholm is the lack of qualified labour (e.g. caused by a low education level) and the lack of interaction with collaborating partners, suppliers and markets. Compared to other European countries, the differences in employment between capital and the country, as a whole is the largest in Denmark.⁷⁹

⁷⁹ <http://dst.dk/da/Statistik/Analyser/visanalyse?cid=27140>

Education level

Bornholm has the lowest education level of all Danish regions. And compared to the other seven Nordic islands' education rates (share of population with a tertiary education level), Bornholm is in the lower half with a rate of 23.7%. The other islands' rates range from 14.4% in Greenland to 43.2% in Pargas.

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate, responsible actors for entrepreneurship education are actors at the macro level (policy makers) who provide the framework for working in the area, actors at the meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at the macro level on Bornholm. The desk research is based on information obtained from the island by means of a questionnaire.

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.

- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix 1.

Developing the national strategy framework

In Denmark, there is a well-established structure at the national level for working with entrepreneurship education. There is a strategy and goals for all education levels and a cross-ministerial collaboration on the policy level that works closely together with the main partner on the implementation level, The Danish Foundation for Entrepreneurship (FFE). FFE, among other things, facilitates seven regional units that operate at the local level with ecosystem initiatives. One of these regions is located on Bornholm. Stakeholders from all levels of society work together and are represented on the board of FFE Region Bornholm. Moreover, the main organisation of FFE has a structure for mapping entrepreneurship education and measuring the impact of entrepreneurship education in Denmark on an annual basis.

The annual budget for entrepreneurship education in Denmark is approx. EUR 4.5 million, approx. 25% of which are given as funds to development projects in schools and educational institution under the administration of FFE. FFE is funded by the Ministries and by private organisations. FFE moreover takes part in several international research projects that develop and share knowledge on entrepreneurship education.

The role of local and regional authorities

The regional centres for entrepreneurship education in Denmark are the regional units of FFE. In addition, FFE collaborates with 6 regional growth forums, consisting of members from the regional council, local authorities, educational institutions, business community, and commercial organisations. These growth forums focus on entrepreneurship and growth, many of them also with a focus on entrepreneurship in education. One of these growth forums is located on Bornholm.

There are several local initiatives on Bornholm to support new entrepreneurs. Business Centre Bornholm (BCB) runs start-up cafes, successful online as well as individual programmes with guidance about starting up your own business. BCB has also recently started to cooperate with FFE Bornholm and Campus Bornholm about an initiative that includes visits to education institutions to teach students about entrepreneurship.

Bright Park Bornholm is an initiative on Bornholm, which offers cheap office space facilities and networking possibilities for new entrepreneurs. Bornholms Landbrug offers consultancy services to entrepreneurs within food and agriculture.

Implementing entrepreneurship education

Entrepreneurship education is taught at all education levels in Denmark as both a method and a subject, but the implementation may vary from one educational institution and region to the next. However, the reform of the primary school and VET education from 2014 introduced a mandatory entrepreneurship education subject in all primary schools, "Håndværk og Design" (in 4th–6th grade), and made entrepreneurship education mandatory in part of VET education. In upper secondary schools, entrepreneurship education has been implemented in all study directions, but to a larger degree in the higher technical and the higher commercial ones and less in the general Gymnasium. At the higher education level, entrepreneurship education has been implemented in varying degrees, mostly as optional subjects.

The most widely spread forms of entrepreneurship education in Danish educational institutions are the FFE programmes Project Edison (7th grade), Next Level (8th-10th grade), Company Programme (upper secondary school), and Start-up Programme (short and medium-length tertiary educations).

The assessment studies, performed by FFE, focus on different ways of teaching entrepreneurship and distinguish between teaching *about*, *for* and *through* entrepreneurship, teaching methods, which have different effects at different education levels and on different types of students.

Teacher education and training

Entrepreneurship education has become a mandatory component in the ordinary primary school teacher education. Entrepreneurship is also found in some of the pedagogics courses that are mandatory for newly employed teachers at the secondary and tertiary education levels. However, it was necessary to create real change in practices and the theoretical understanding of the educators to teacher training of a longer duration. This was addressed in the Danish national innovation strategy from 2012, “A Nation of Solutions”.

Still, systematic teacher training in entrepreneurship education and continuing professional development is only done to a modest extent in Denmark. Teachers can participate in some isolated courses but thorough, coherent, and quality assured teacher training in entrepreneurship is generally missing. There have been several – usually regional – initiatives during the past years, but they often shut down after the project funds are spent or due to a lack of demand. For that reason, FFE started a new national initiative in 2015 with the purpose of building on existing best practices, developing and sustaining continuing education in innovation and entrepreneurship for teachers at all levels. For more information about the teacher training please, see the website of the Danish Foundation for Entrepreneurship.⁸⁰

Engaging with businesses and private associations and organisations

Private businesses and organisations are involved to a high degree at the overall national level (see above). They are sponsors of FFE’s work and also support through non-financial means, for instance by acting as volunteer judges and advisors for pupils and students, at the big annual event Danish Entrepreneurship Award or at other competitions and events. The same involvement is seen on Bornholm, although at a smaller scale.

Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy (macro level) and teachers (micro level), who teach entrepreneurial skills to students. The meso level has often been overlooked, or

⁸⁰ <http://www.ffe-ye.dk/undervisning/efteruddannelser/indsats-for-efteruddannelse>

given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the islands, and make the link between strategy and practice, a survey was sent to the school management of schools and institutions on Bornholm. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

3 out of 6 educational institutions on secondary and tertiary level on Bornholm have participated in the survey and like the other islands more than half of the participating institutions do not have a strategy for entrepreneurship education. One educational institution in the survey on Bornholm has a strategy for entrepreneurship education and the other two do not.

The schools' plan and goals for development of entrepreneurship education

The school with a strategy has a precise plan for the implementation of the entrepreneurship strategy and a plan for following up and revising the entrepreneurship strategy on a continuous basis. The educational institution has also created a common frame of understanding of entrepreneurship education and how to practise this form of teaching. This frame and plan have been communicated clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution).

The management has also set several concrete targets and goals for development of entrepreneurship education.

The targets and goals are:

- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching).
- The establishment of project weeks in innovation & entrepreneurship.

- The cooperation between teachers and local businesses, public institutions and organisations in relation with entrepreneurship education.
- The development of curriculum so that it contains learning objectives and competences for innovation and entrepreneurship.
- Continuing education of teachers in teaching innovation & entrepreneurship.

No strategy but entrepreneurship activities

Although two out of three schools have no entrepreneurship strategy, one of the participating educational institutions with no strategy nevertheless states that entrepreneurship teaching and/or activities related to entrepreneurship do take place at their educational institution. For instance students working with projects that bring them in contact with the surrounding society, and students being taught how to start a business or being taught in new and innovative ways. The educational institution also cooperates with the local business industry concerning students' education and further working life/career. The third institution in the survey has no activities at all.

Importance of strategy and education in entrepreneurship

Management from all three institutions on Bornholm agree that education in entrepreneurship is relevant to their students and that it is important for the institution to formulate a strategy for entrepreneurship. On a scale from 1 to 5 the data from Bornholm show a mean of 4.33 on the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship".⁸¹ This is slightly above the weighted mean from all the islands (3.90). The same mean (4.33) is found concerning the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship". Again, this is a slightly higher mean than the weighted mean of 3.94 from all islands.

The importance of goals for entrepreneurship teaching

Management from the three institutions agree on some of the statements as to why the institution should set goals for entrepreneurship teaching. They all agree that the goals should be set to strengthen students' interest in their further education and career and to strengthen students' interest in becoming an entrepreneur/starting a new business. This complies with what most institutions on all the islands believe.

Management on the institution with a strategy also believes that the goals should be set to prepare students better for working life and to boost the development of the

⁸¹ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

local area, for instance by contributing to new businesses through the skill development of young people. Management also believes that the goals should be set to decrease the student dropout rate.

The two institutions with no strategy agree that goals should be set to strengthen the cooperation between the educational institution and the local society.

External network

On Bornholm, all three institutions provide their students the possibility for making contact with the institutions' external network. They all provide this possibility through guest lectures given by local business people, entrepreneurs, or other external representatives. Like the other islands, this is the most common option for the students to make contact with the external network. Like 59% of all educational institutions in the survey, two thirds of the institutions on Bornholm provide exchange/trainee service in local businesses/organisations as a possibility. None of the institutions on Bornholm provide subject-/project weeks or -days in cooperation with external partners, and only one of the institutions (the one without a strategy) arranges visits to companies and arranges competitions, where external contacts function as judges.

The involvement from school governing body and local businesses

As a resource in the work with entrepreneurship education, the degree of involvement from the governing body of the institution and the local businesses is quite different in the three institutions and reflects the existence of a strategy at the institution. On a scale from 1 to 5 the institution with a strategy has a high degree of involvement from both the governing body of the institution (5) and the local businesses (5) as a resource in the work with entrepreneurship education.⁸² This is not the case when it comes to the two institutions without a strategy. At these institutions there is no involvement at all from the governing body (1) and only a low degree of involvement from local businesses (Mean: 2).

⁸² 1= not at all, 2=a small extent, 3=neither or, 4=to some extent, 5=to a high extent.

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

Not surprisingly, the only institution on Bornholm that has earmarked resources to entrepreneurship education such as financial resources, time and staff with knowledge and expertise on the area is the institution with a strategy. The other two institutions have no resources earmarked to the area.

Like most (82%) of the institutions in the survey (all islands), entrepreneurship teaching is a part of the timetables and the annual teaching plans at the institution with a strategy. This is not the case for the institutions without a strategy.

Moreover, the institution with a strategy has appointed a coordinator for entrepreneurship teaching, who has the full backing and practical support from management, and who is part of management. In addition, management has communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated at the educational institution. Management of the educational institution also requires from the teachers:

- That they describe in their annual plans how they integrate entrepreneurship in other subjects.
- That they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students.

The educational institution also uses a feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. The management also supports dialogue and cooperation between teachers from different disciplines through cross-curricular teaching and/or interdisciplinary project groups, through common facilities across the educational institution's subdivisions and dialogue and co-decision between teachers and students.

This is not the case on the two institutions without a strategy. However, one of them states that in the annual teaching plans, time has been allocated to entrepreneurial teaching courses of a longer duration, for instance project weeks, optional subjects, etc., and that the management supports dialogue and cooperation between teachers from different disciplines through cross-curricular teaching and/or interdisciplinary project groups.

Competence

This area is about topics related to qualification, knowledge sharing, pedagogics, and cooperative relations.

Plan for teacher competence development

When it comes to a plan for teacher competence development there is a difference between the institution with a strategy and the two institutions without. Presently, the institutions without a strategy do not have such a plan. The institution with a strategy has a plan for competence development and knowledge sharing within entrepreneurship education which takes place through the continuing education of teachers, knowledge sharing about entrepreneurship teaching, and special networks. Moreover, the teachers have a cross-curricular cooperation within the subject of entrepreneurship.

Experimenting with teaching forms

The institution with a strategy allows the teachers to experiment with teaching forms through project work / feature weeks or days, cooperation with businesses and cross-curricular feature periods. Presently, management of the institutions without a strategy offer no such possibility.

Cooperation with the surrounding society

Only the institution with a strategy is involved in cooperation and knowledge sharing with the surrounding society/local area through established business/industry, newly started businesses / entrepreneurs, Institutions within the public sector and other knowledge organisations. Presently, both institutions without a strategy are not involved in such corporation/knowledge sharing.

Extra-curricular activities

The institution with a strategy offers extra-curricular activities in order to strengthen the entrepreneurial competences and mind-set of students. They offer incubator activities (to help students in their start-up activities), other forms of advice and guidance for student start-ups, entrepreneurship education given by entrepreneurs, student societies, organisational support in relation with innovation and entrepreneurship and business plan competitions. However, the institution does not organise networks between students and entrepreneurs/business industry. The institutions without a strategy do not offer any of the extra-curricular activities mentioned.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials, and teachers' aids.

In practice, the educational institution with a strategy on Bornholm provides the teachers access to materials and teachers' aids, which can support their teaching in innovation and entrepreneurship. The institution also has experience with actual teaching forms and programmes within entrepreneurship. The institution also measures the impact of the entrepreneurship teaching before, during and after the course/teaching, and it continuously validates and revises the learning objectives for entrepreneurship teaching with a view to updating the current teaching programmes. The institution also develops its curriculum in cooperation with external stakeholders in order to get input concerning useful competences in future. The institutions without a strategy state that they do not have any of the practical tools mentioned.

Micro level

The micro level concerns the implementation level, that is, the actual teaching taking place in educational institutions and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of developing a national strategy for entrepreneurship education, this level often relies strongly on individual teachers' enthusiasm. Teacher training is limited with no or little in-service training. But as the island or country develops their activity on the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being elaborated. At the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in upper secondary education, vocational/VET and tertiary level education, on different parameters.

The share of pupils and students, who has received entrepreneurship education, is calculated on the basis of the total number of pupils and students on the island. It must be emphasised that this share may be inaccurate, as it is based on the responses

received. There may be other pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey for this mapping.

Upper secondary education

At the upper secondary level, data have been collected by means of a questionnaire for the teachers. The purpose of the survey is to map the number of pupils in upper secondary education who participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The questionnaire is divided into four main categories.

Basic information consists of two questions about whether the teachers perceive that the school has a clear policy of integration of innovation and entrepreneurship in the education. The responses to these questions thus indicate a score that reflects the extent to which this is the case.

Taxonomy contains the following four dimensions: *action, creativity, environment and attitude*.⁸³ These terms refer to entrepreneurial competences, which are not necessarily a subject or subject knowledge in themselves but are competences to set initiatives in motion and create opportunities. As such, a high score in the teachers' perceptions of the fulfilment of these four indicators is desirable. The score in the four dimensions of the pupils and students who have received entrepreneurship education is compared to the scores of the pupils and students who have not received entrepreneurship education.

Entrepreneurship and setting things in motion is the foundation of entrepreneurship education. The total number of pupils and students having received entrepreneurship education in any given area is comprised of all pupils and students who have answered the questions regarding whether the pupil or student has received instruction in starting a business and/or tried starting up and gained experience starting a business affirmatively.

Entrepreneurship education, which is the percentage of pupils and students who have received entrepreneurship education, is calculated from the total number of pupils and students on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

In Table 1 below, the overall results for the upper secondary level is presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

⁸³ Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.
<http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

A total of 8 teachers have answered the survey. All together, they represent 468 students divided on 19 classes. Overall, 214 pupils at the upper secondary level on Bornholm have encountered entrepreneurship education in the 2015/2016 school year.

As is evident in Table 1 the teachers experience a clear policy on innovation and entrepreneurship to a higher degree than average. The score for this question is 32 and 31, respectively, which is above the average of 26 and 27, respectively. This should be seen in the context of the teachers stating that 42% of the classes in this survey has received instruction in business start-up. However, the percentage of students, who have realistic experience starting a business, is only 16%. This is significantly lower than the 24% that emerge in the total results.

Table 1: The results for upper secondary level

Subject	Variable	Bornholm, Denmark
Basic information	Policy on innovation	32
	Policy on entrepreneurship	31
Taxonomy	Action	35
	Creativity	44
	Environment	56
	Attitude	41
Entrepreneurship	Teaching in start-up percentage	42
	Realistic experience with start-up, percentage	16
Entrepreneurship education	Number of students receiving entrepreneurship education	214
Score for students receiving entrepreneurship education	Action	54
	Creativity	67
	Environment	90
	Attitude	68
Score for students <i>not</i> receiving entrepreneurship education	Action	21
	Creativity	27
	Environment	32
	Attitude	20

Note: The results are comprised of answers from 8 teachers with a total of 19 classes and 468 students.

Considering the four entrepreneurial parameters, the score for pupils, who have received entrepreneurship education on all four parameters; *action*, *creativity*, *outward orientation* and *attitude*, is more than double that of the pupils who have not received entrepreneurship education.

Vocational/VET

At vocational/VET level, data have been collected by means of a questionnaire directed at the teachers. The purpose of the survey is to map the number of pupils in vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories.

Basic information is comprised of two questions. They concern whether the teachers experience that their school has clear policies on innovation and entrepreneurship in education, respectively. The scores for these questions thus reflect to what degree that is the case.

Teaching, which focuses on the degree to which the teachers experience that the students have participated in innovation and entrepreneurship education in class instruction and courses, as clear subjects in their practical training and internships as well as clear subjects in their apprenticeship tests.

Entrepreneurship and setting things in motion is the foundation for entrepreneurship education. The teachers were asked whether the pupils have participated in feature weeks, camps, projects or the like focusing on innovation and entrepreneurship, respectively. In addition, the teachers were asked whether the pupils had participated in other innovation or entrepreneurship projects. If the answer is yes to any one of these questions, the pupils are included in the total number of pupils and students who receive entrepreneurship education. As such, there are three different questions which all play a part in determining whether the pupils have received entrepreneurship education.

Entrepreneurship education thus indicates the number of pupils who, based on the abovementioned questions, receives entrepreneurship education. The share of pupils and students who has received entrepreneurship education is based on the total number of pupils and students on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

In Table 2, the overall results for vocational/VET are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

The results in Table 2 show that the teachers perceive that there is a clear policy on innovation and entrepreneurship. The respective scores of 47 and 42 are both significantly above the average of 33 and 32, respectively.

With regard to the teaching situation, the teachers' answers are very close to the average in finding that most of the pupils have had innovation and entrepreneurship as clear topics in their practical training and internships as well as during class instruction. However, according to the teachers, the students only to a low degree encounter innovation and entrepreneurship in their apprenticeship tests.

Table 2: The results for vocational/VET

Subject	Variable	Bornholm, Denmark
Basic information	Policy on innovation	47
	Policy on entrepreneurship	42
Teaching	Innovation in subject/course	39
	Innovation as a clear topic in practical training/apprenticeship	33
	Innovation as a clear topic in apprenticeship test	11
	Entrepreneurship in subject/course	28
	Entrepreneurship as a clear topic in practical training/apprenticeship	33
	Entrepreneurship as a clear topic in apprenticeship test	11
Entrepreneurship	Innovation, percentage	67
	Start-up of business / Entrepreneurship, percentage	50
	Other, percentage	33
Entrepreneurship education	Number of students receiving entrepreneurship education	111

Note: The results are comprised of answers from 6 teachers with a total of 6 classes and 115 students.

More than half of the classes, 67%, have participated in feature weeks, camps, projects or the like focusing on innovation, whereas half the classes have participated in similar feature weeks, camps etc. with a focus on business start-up and entrepreneurship. 33% have participated in other innovation or entrepreneurship programmes.

A total of 6 teachers have answered the survey. All together, they represent 115 pupils divided on 6 classes. Overall, 111 pupils at vocational/VET level on Bornholm have encountered entrepreneurship education in the 2015/2016 school year.

Upper secondary and vocational/VET

The total number of pupils receiving entrepreneurship education in the 2015/2016 school year in both upper secondary education and vocational/VET on Bornholm is 325. That is the equivalent to 21.7% of the 1,500 pupils in the upper secondary education and vocational/VET on Bornholm.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participate in entrepreneurship education.⁸⁴ However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship

⁸⁴ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

(hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

Tertiary level

For the purpose of mapping entrepreneurship education at the tertiary education level, the islands were asked to send course descriptions of courses within innovation and entrepreneurship or courses that resemble this kind of teaching at this level along with the number of students partaking in these courses during the academic year 2015–16. The received course descriptions were then screened on the basis of the categories in the Star Model – a model for identifying entrepreneurship courses.

In the Star Model courses and subjects are categorised according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Bornholm has provided information about six educations at the tertiary level, three of which have been identified as entrepreneurship education or as containing elements of innovation and entrepreneurship. The table below lists the educations and the number of participating students during 2015–16.

Table 3: The results for the tertiary level on Bornholm

Course	Number of students 2015–16
Teacher (Håndværk og Design)	12
Bachelor in Design	18
Academy Profession Degree in Service, Hospitality and Tourism Management	12

Teacher

Innovation and/or entrepreneurship are referred to in six different teaching subjects of the teacher education (for primary and lower secondary school), but only the teaching subject "Håndværk og Design" can be characterised as entrepreneurship education. Håndværk & Design was introduced as a mandatory subject at the primary level (4th–7th grade) with the Danish school reform in 2014. It is method-based entrepreneurship education focusing on the idea phase in the entrepreneurial process and in the category student participation.

Bachelor in Design

According to the description of the module "Form and function in Glass and Ceramics" on the first semester, the student must work with "the development from idea to finished product/prototype". In the module "Business cooperation" in the fourth semester, the student is introduced to "management of your own business" in relation with the students' "reflections about own career and possibilities [as a craftsman] after finished education".

These two references do not suffice to meet the criteria of the Star Model to evaluate this education's level of innovation and entrepreneurship content, but they nevertheless relate to the process of innovation and self-employment and therefore the education is identified as containing elements of entrepreneurship education.

Academy Profession Degree in Service, Hospitality and Tourism Management

The education contains the courses "Creativity and innovation 1", "Creativity and innovation 2", which are identified as entrepreneurship education. For instance, the students must be able to use different tools to practical idea development and creativity in a practice-oriented context.

Moreover, the education contains the courses "Strategy and business plan" (1 and 2), where the students must obtain knowledge about and learn to use models and methods for working out a business plan. In the courses "Service marketing and trends" (1, 2 and 3), the students must obtain knowledge about and be able to identify relevant market and customer conditions for a given business, as well as be able to identify relevant conditions for the service company's choice of a strategy for internationalisation.

The education also contains courses about "Business economics" (1.2 and 3), where the students obtain knowledge about financial management, accounting, budgeting, and evaluation of the economic development of a business. The student must moreover learn about the global economic cycle, including macroeconomics, and be able to negotiate and give presentations in English.

The education moreover contains courses on "Business communication and networking" (1.2 and 3) as well as "Intercultural competency" (1 and 2) that relate to some of the categories in the Star Model.

Finally, the education involves a trainee period in an existing service company where the student is part of the daily operations and development-oriented working processes and job functions in the company, and where he or she works on a particular project about a practice-oriented problem.

The education focuses mostly on intrapreneurship, because the descriptions focus on existing service businesses.

Summing up, three educations at the tertiary level on Bornholm are identified as entrepreneurship education. The total of participating students in these educations during 2015–16 were 42. This corresponds to 7.3% of the total number of higher education students on Bornholm. The total number of higher education students on Bornholm during 2015–16 was 574. In comparison, at the national level, the percentage of Danish tertiary level students who participated in entrepreneurship education in all Danish tertiary education institutions was 13.7% in 2014–15. The percentage of Danish tertiary level student who participated in entrepreneurship education in 2015–16 is 15.8%.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially, the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on an annual basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.⁸⁵ Only 4–12 months after receiving a Micro

⁸⁵ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after they received the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

On Bornholm, there are two upper secondary educational institutions and four tertiary educational institutions. The total number of students in the school year 2015–16 is 1,500. At present, there are no funds earmarked for student start-ups on Bornholm. However, pupils and students can apply for a Micro Grant offered by the Danish Foundation for Entrepreneurship.

During the project trial of giving Micro Grants of DKK 25,000 on Bornholm, two applications from student start-ups were received. Normally, a student start-up is comprised of 2 to 6 pupils or students. The recipient has participated in a 5-week career course through the educational institution. The course contained entrepreneurship education as well as career mentoring and coaching. The Micro Grant was marketed through the local newspaper as well as other media (local radio, television and websites), in newsletters on facebook as well as through the local Business Center Bornholm.

Effects

For the student start-up, the Micro Grant will have significant effect. The Micro Grant recipient, Sara, says:

"The grant means that I have had the opportunity to get out there and pitch my product to a wider audience and have actually had orders with some great retailers. Hopefully, this means that my brand is strengthened and has a farther reach than before. Further, I have established contact to several people in PR who have helped me expose my products in the press. In addition, the video has made it much easier for me to share my message on social media and as such reach more people."

She continues:

"I am definitely motivated to continue working here on the island and stay on the same track. Hopefully, the increase in demand, which the Micro grant and my participation at the trade show facilitated, will generate jobs in production – either hired by me privately or at Keramikfabrikken at Bright Park in Nexø. It has been a good start for me, considering the fact that I finished my education two months ago. Long term, my vision is that Oh Oak will grow larger and become a broader design business and include more than ceramics."

The grant has been spent on participating in the interior and design trade show Nortmodern as well as a video telling the story about the products and supporting the brand building effort.

Needs and possibilities

During the process, the student start-up has applied for and received help and guidance at Business Center Bornholm. However, there is still a need for guidance, she states: "The financials definitely take up a lot of my time. I need help with the daily accounting, but also guidance with regard to future visions like how to get in contact with investors to boost the business."

Micro Grant recipient

Oh Oak

I produce handmade ceramic utility products for everyday use which are strongly inspired by the nature on Bornholm. It is important to me that my products have a sensuous quality to them that makes them stand out in a branch of trade where competition is tough but where, at the same time, there is a great lack of products that appeal to the tactile sense especially.

My products are aimed at the quality-minded consumer who doesn't mind paying extra for a handmade product, which tells a different story than the product that can be bought at the local supermarket.

Future entrepreneurial potential

The biggest challenge for Bornholm when it comes to the demographic development is the fact that the share of the population aged 0–24 has decreased immensely while the old age dependency has increased considerably. Changes meaning that the older part of the population is increasing at a very fast rate. At the same time, Bornholm has the lowest education level of all Danish regions and the employment rate on Bornholm has decreased by more than 10%, which is the most negative development of all Danish regions.

Based on the objective of creating solutions that will entail positive effects for Bornholm, the first objective for this pilot project has been to ensure a mapping of entrepreneurship education in the area. There is no or only limited prior data available for mapping entrepreneurship in the educational sector in Bornholm. Knowing the present situation on the island the second objective has been to define the potential for

entrepreneurship education and Micro Grants on Bornholm from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people on Bornholm learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the market position of Bornholm internationally and contributing to a sustainable development, growth and jobs.

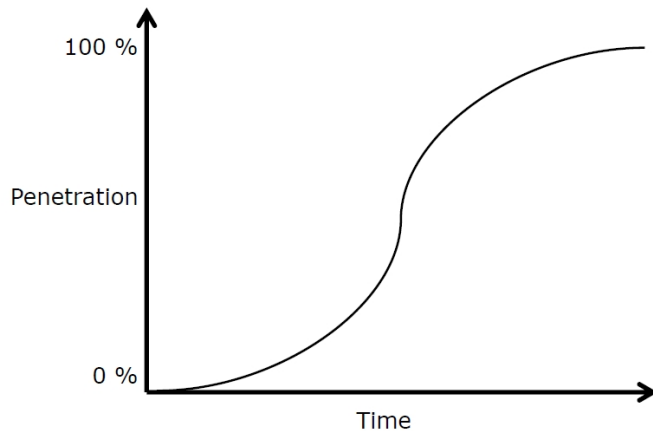
Forecasting entrepreneurship education and Micro Grants for Bornholm

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives on Bornholm. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Bornholm is in the stage where the curve is steep and initiatives and strategies will have a relative high effect on the penetration rate.

Figur 1: S-curve for entrepreneurship education penetration rate



The forecast is presented in Table 3 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from Bornholm.
- The maturity level on the island with regard to entrepreneurship in education (The "s-curve").
- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based under the assumptions that:

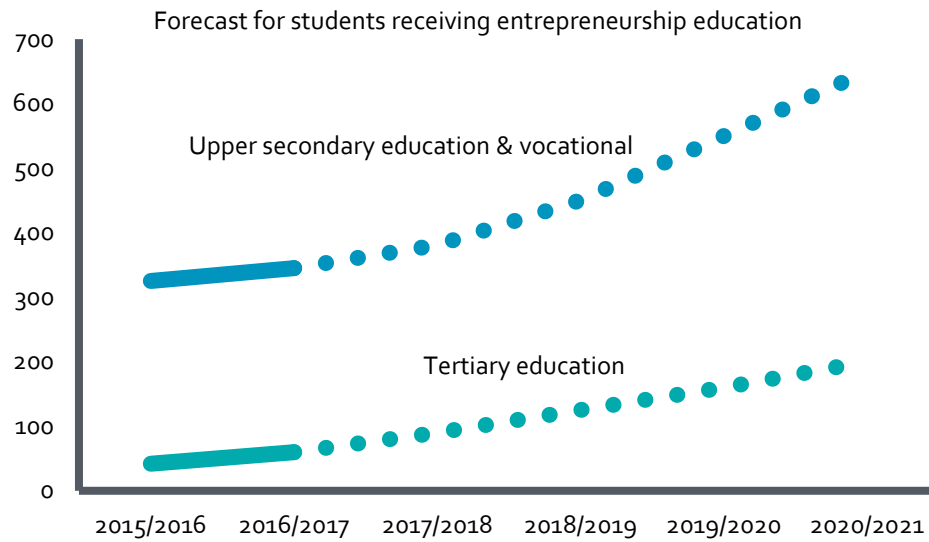
- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but are estimates.

Table 4: Forecast for Bornholm

Forecast for entrepreneurship and micro grants until the school year 2020/2021. Bornholm, Denmark						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	1,500	1,500	1,500	1,500	1,500	1,500
Students receiving entrepreneurship education, forecast	325	345	380	450	550	650
Share of students receiving entrepreneurship education, percentage	21.7%	23.0%	25.4%	30.0%	36.7%	43.3%
Tertiary education						
Students in total	574	574	574	574	574	574
Students receiving entrepreneurship education, forecast	42	60	90	125	160	200
Share of students receiving entrepreneurship education, percentage	7.3%	10.5%	15.7%	21.8%	27.9%	34.8%
Applicants receiving a grant						
Accepted applicants	1	2	3	4	5	6
Average annual costs (4 years) in DKK	DKK 1,300,000–1,700,000					

Figure 2: Forecast for Bornholm



Recommendations for Bornholm

- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector.
- A specifically dedicated budget for development and activities is necessary. There are only limited resources for entrepreneurship education and limited resources for student entrepreneurs on Bornholm. Financial resources should be allocated both at national and local level (on the island). This should be a collaborative effort between public and private sector.
- Strong stakeholder relations are essential. Private sector, public sector and the educational institutions should cooperate when implementing the national and regional strategies. The FFE Region Bornholm is an example of such collaborations on regional level. Private businesses and organisations are involved in the work with entrepreneurship education on Bornholm. They sponsor the work of FFE Region Bornholm and support through non-financial means, for instance by acting as volunteer judges and advisors for pupils and students, at competitions and events. However, more initiatives are needed such as collaboration between FFE Region Bornholm and the municipality of Bornholm. This could for instance be about implementing innovation guides in schools and by ensuring better conditions for young entrepreneurs.

- Support and collaboration with schools and educational institutions on all levels. Danish research shows that in order to achieve the greatest effects entrepreneurship education must be differentiated at the respective levels of education and must be provided to pupils as early as possible during their education. Entrepreneurship in higher education is the most effective way to foster long-run student start-ups.
- Collecting data to secure knowledge on the development in penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and later on making impact studies is vital for the support from ministries and private sector.
- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice.
- Communicating the educational institutions entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to have an impact on the penetration rate for entrepreneurship education on the island.
- A plan and resources for providing and ensuring the teachers the necessary competences on the area are necessary elements from the beginning. There are no or limited resources for entrepreneurship teachers competence development (e.g. further education in entrepreneurship teaching and networks) on the seven islands.
- Bornholm has access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequent creates significantly more entrepreneurs and higher income and they have a positive impact on the pupils' motivation to study, their school engagement and their academic confidence and they have a positive impact on the primary school pupils' grades.^{86,87,88}

⁸⁶ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10,103 CP-pupils were matched with 214,735 non CP-pupils.

⁸⁷ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

⁸⁸ Johansen and Schanke (2014) conducted a survey on 1880 secondary pupils and 1160 primary school pupils who participated in Junior Achievement's programmes.

- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level.
- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups on the island. However, it takes time before the students have become accustomed to applying for this grant.
- Whenever possible, synergies across the Nordic islands should be utilised.

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe⁸⁹

Table 5: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National strategy, ⁹⁰ frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

⁸⁹ *Towards Greater Cooperation and Coherence in Entrepreneurship Education*, European Commission, 2010.

⁹⁰ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ⁹¹	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

⁹¹ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Figure 3: An investor and a young entrepreneur in the garden at the Impact Investor Ball



Photo: Rasmus Degnbol.

Appendix B. “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Figure 1 below illustrates the overall structure of “The Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.⁹²

⁹² <http://www.ffe-ye.dk/videncenter/entreprenuerskabs-undervisning/eksamensformer>

Table 6: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 7: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7.6	6.0	8.4	-1.6	28.7	27.4	-4.4	22.1	24.5	10.9
Andøy	-0.8	-2.0	-0.4	-2.3	29.0	25.3	-12.7	33.2	37.9	14.1
Finland	2.7	-0.7	4.2	-0.6	25.2	25.7	2.2	25.2	31.3	24.2
Pargas	0.5	-2.3	1.7	-0.5	27.1	27.8	2.6	30.9	40.0	29.5
Denmark	2.7	2.6	2.8	-0.4	27.8	26.4	-5.0	24.1	28.8	19.5
Bornholm	-6.4	-14.3	-3.6	-0.7	25.5	23.0	-9.6	33.2	44.6	34.5
Faroe Isl	-0.9	-4.3	0.9	1.4	34.4	34.5	0.4	22.2	26.9	20.9
Greenland	-0.3	-7.9	4.6	1.0	32.9	29.8	-9.4	9.3	10.7	15.2
Sweden	5.3	4.8	5.5	-1.0	25.4	27.3	7.4	27.1	31.1	14.8
Gotland	0.4	-4.8	2.6	-0.7	22.9	24.6	7.3	31.0	39.2	26.5
Iceland	4.1	0.9	4.2	2.2	30.9	30.8	-0.3	17.2	20.5	19.2

Note: * population aged 0–14 as a share of population aged 15–64. ** population aged 65+ as a share of population aged 15–64.

Source: National statistical institutes and Eurostat.

Table 8: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76.6	75.6	-1.3	3.2	3.5	9.4	9.2	8.6	-6.5	
Andøy	75.6	72.8	-3.7	2.8	4.8	71.4		12.7		26.6
Finland	68.4	68.4	0	8.4	8.4	0	21.5	19	-11.6	
Pargas	74.5	73.2	-1.7	4.9	4.6	-6.1		14.3		43.2
Denmark	75.1	72.3	-3.7	6.1	7.2	18.0	11.8	14.1	19.5	
Bornholm	68.8	69.3	0.7	8.9	8.9	0		19.7		23.7
Faroe Isl	88.1	90.8	3.1	4.8	3.9	-18.8		9.9		35.9
Greenland	64.9	63.3	-2.5	7.5 (2010)	9.7	29.3		17		14.4
Sweden	72.4	74.5	2.9	8.5	8.3	-2.4	25	23.7	-5.2	
Gotland	74	77.4	4.6	8	6	-25				31.1
Iceland	78.3	81.1	3.6	7.2	5.4	-25	16	13.6	-15	

Note: * number of employed persons as a share of the population aged 15–64.

** total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

*** unemployed persons aged 15–24 as a share of the labour force aged 15–24.

**** persons with a tertiary education as a share of the population aged 25+.

Source: National statistical institutes and Eurostat.

Appendix 4: The Faroe Islands

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures, and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation, and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons could be said to be the lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as other research.

The full entrepreneurial potential is viewed as the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation in the Faroe Islands with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up in the Faroe Islands.

In order to map the status of entrepreneurship education in the Faroe Islands, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in the Faroe Islands.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.

- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation in the Faroe Islands are shortly discussed.⁹³

Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.⁹⁴

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013).

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

⁹³ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

⁹⁴ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection on the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager in the Faroe Islands completed the questionnaire in the course of 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge in the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,⁹⁵ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager in the Faroe Islands to the management of educational institutions on the upper secondary level and the tertiary level in the Faroe Islands.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching have been taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

⁹⁵ <https://heinnovate.eu/>

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers' evaluation of their school's policy on innovation and entrepreneurship education.

It also examines the teachers' evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focus on four areas or "entrepreneurial dimensions". Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.⁹⁶

The four entrepreneurial dimensions examined are:

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, "Stjernemodellen" is used as a tool for the categorisation of courses (see Appendix B for further details).⁹⁷

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations too, and was used by the Foundation during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

⁹⁶ <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

⁹⁷ "Stjernemodellen" will henceforth be referred to as the Star Model.

The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a micro grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000 that allows the student start-up to take their business further. A small case written about the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

The project manager in the Faroe Islands has also provided information about the innovation ecosystem on the islands in the form of a case (see Appendix D, in Danish).

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations between data may, however, occur when our data are compared with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions have been sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also with different strategic knowledge behind the answers. The data given about each island/country are therefore not always equivalent, because they depend on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is

based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

This report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Appendix A) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development in the Faroe Islands in the recent period. This will serve as background for the mapping of the situation in the Faroe Islands and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

According to the data from Nordregio (see tables in Appendix C), there has been a slight decrease (-0.9%) in the total Faroese population in the period 2009–2015. The share of 0–24 olds has *decreased* by 4.3%, whereas the share of people aged 25+ has had a slight *increase* of 0.9%. This is a significant decrease in the very young part of the population; only Greenland, Bornholm and Gotland have more significant decreases of the 0–24 olds, also when compared with the change in the share of people aged 25+. Many young people go abroad to study and about half of them never return, presumably because there is a lack of knowledge-intensive workplaces in the Faroe Islands.⁹⁸

In the Faroe Islands, the old age dependency, although still smaller than the youth dependency rate, has had a considerable increase in the period 2009–2015 from 22.2% to 26.9% (a 20.9% increase). In the same period, the youth dependency rate remained at status quo with 34.4% and 34.5% in the two years.

Labour market

The Faroe Islands' overall employment rate is the highest of all islands presented in this mapping and has increased in the period 2009–2013, from 88.1% to 90.8%. In the same period, the unemployment rate has decreased from 4.8% to 3.9%. The youth unemployment rate is almost 10%, which is the second lowest of all presented islands (the lowest rate being 8.6% and the highest 23.7%), but it is still something that ought to be addressed.

Education level

The share of the population with a tertiary education in the Faroe Islands is relatively high (almost 36%), compared to the other six islands.

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The

⁹⁸ http://www.setur.fo/fileadmin/user_upload/SSS/PDF-filur/Buskaparadid/Fragreidingar/Buskaparfragreiding_varid_2016.pdf

immediate responsible actors for entrepreneurship education are actors at the macro level (policy makers) who provide the framework for working on the area, actors at the meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at the national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at the macro level in the Faroe Islands. The desk research is based on information obtained from the islands by means of a questionnaire.⁹⁹

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

⁹⁹ The Macro questionnaire has been validated by Eyðun Gaard, administration manager, Office for vocational/VET education, Alda Joensen, Head of Section, Ministry of Education, Research and Culture, Sámal í Skorini, Head of Section, Ministry of Education, Research and Culture and Jenny Lydersen, Educational leader, Ministry of Education, Research and Culture.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

Developing the national strategy framework

The Faroe Islands do not yet have a national strategy for entrepreneurship education, but have taken the first steps towards such a strategy in the form of an agreement between the Ministry of Education, Research and Culture and “Íverksetarahúsið” about the development of entrepreneurship education in primary school and lower secondary school. The agreement includes a national budget of DKK 40,000 which is earmarked for these activities and which is administered by Íverksetarahúsið. Evaluation of these initiatives also takes place through Íverksetarahúsið who evaluates their work and competitions together with the educational institutions and the teachers as well as in collaboration with the Ministry of Education, Research and Culture.

At the moment, two ministries are involved on the area of entrepreneurship education, the Ministry of Business and the Ministry of Education, Research and Culture. Other important stakeholders involved at the national level are trade unions and employers’ associations, Hugskotið (Innovation House) in Torshavn, Vinnuframi and iNova, as well as large businesses.

The role of local and regional authorities

There are strategic partnerships between educational institutions and businesses, and entrepreneurship education in the Faroe Islands is funded through both private and public means. The two entrepreneurship education centres in the Faroe Islands are Íverksetarahúsið in Klaksvik and Hugskotið (Innovation House) in Torshavn. Íverksetarahúsið is funded through local authorities and is an independent organisation

working to further new and existing businesses and arranging entrepreneurship education events in schools. There are also ecosystem initiatives such as iNova and Vinnuframi, which supports entrepreneurs and new businesses in the development phase of their business. Moreover, the Danish Foundation for Entrepreneurship has a regional unit, FFE Region Færøerne, in the Faroe Islands.

Implementing entrepreneurship education

Entrepreneurship education is implemented at all educational levels, but learning objectives have been formally approved only at the primary education level. At the primary and secondary education levels entrepreneurship education is implemented in the form of special programmes, which are given as a supplement to the ordinary education. In upper secondary education, there are optional courses in entrepreneurship. In the Faroese education system, entrepreneurship education is taught as a subject in primary school, as both a subject and a method in upper secondary school, and as a method in higher education. In most other islands, the way in which entrepreneurship education is taught in primary and in higher education is the reverse.

Teacher education and training

Íverksetarahúsið offers entrepreneurship courses for teachers. However, entrepreneurship education is also offered as an optional part of initial teacher training. There are guidelines as support for teachers who want to teach entrepreneurship education, but no other available means of teacher support.

Engaging with businesses and private associations and organisations

Both trade unions and employers' associations are involved in upper secondary education and vocational/VET in the Faroe Islands. Íverksetarahúsið in Klaksvík acts as an advisor for primary school, and private businesses play a role in relation to the university. The focus area of the business sector when it comes to entrepreneurship education is the recruitment of future employees. The business sector (Eik Bank and Vinnuhúsið (House of Industry)), upper secondary educations and the university are all represented on the board of the "FFE Region Faroe Islands", which has been one of the regional units of the Danish Foundation for Entrepreneurship since 2012.

To get a more in-depth overview of the innovation system in the Faroe Islands, please see Appendix D (in Danish).

Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy level (macro level) and implementation (micro level) in the form of teachers, who teach entrepreneurial skills to pupils and students. The meso level has often been overlooked, or given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the island, and make the link between strategy and practice, a survey was sent to the school management of schools and institutions in the Faroe Islands. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

The purpose of the survey is to map, not evaluate, the state of affairs of educational institutions when it comes to their experience with and strategies for education in innovation and entrepreneurship.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

8 out of 9 educational institutions at secondary and tertiary level in the Faroe Islands have participated in the survey.

The institutions are:

- Sjónáám.
- Fiskivinnuskúlin.
- Miðnáámsskúlin í Suðuroy.
- Fróðskaparsetur Føroya.
- Heilsuskúli Føroya.
- Kambsdal College.

- Tekniski Skúlin í Klaksvík.
- Glasir.

None of the participating educational institutions have a strategy for entrepreneurship education. This means that there are no plan or goals set for the development of entrepreneurship education at the upper secondary and tertiary levels either.

No strategy but entrepreneurship activities

Nevertheless, management of all eight educational institutions in the survey state that entrepreneurship teaching and/or activities related to entrepreneurship are taking place at their institution. The activities vary. Five institutions state that their students are working with projects that bring them in contact with the surrounding society. Half of the eight institutions state that they teach innovation (students are being taught how to start a business, or they are being taught in new and innovative ways), and two of the eight institutions state that their educational institution has cooperation with the local business industry concerning students' education and further working life/career.

Three institutions participate in Company Programme,¹⁰⁰ which is a learning-by-doing programme in which pupils from upper secondary education learn to develop, get hands-on experience with, and realise good ideas within everything from social innovation to technical products. The pupils achieve valuable competences during the programme, which they can use in future as entrepreneurs or as more innovative employees in organisations.

In two of the eight educational institutions, none of the above mentioned entrepreneurship activities are taking place. On the other hand, the institutions mention activities that can be difficult to categorise as entrepreneurial activities. One states that their students "have internships and are thereby in contact with businesses where they continuously have to think creatively and innovatively." Another states, "they collaborate with Navigationsskolen in Torshavn and skoleskibet 'DRAGIN' concerning the practical elements of the ABC of the maritime."

¹⁰⁰ Glasir Tórshavn College, Tekniski Skúli í Klaksvík and Kambsdalur College.

Importance of strategy and education in entrepreneurship

On a scale from 1 to 5 the data from the Faroe Islands show a mean of 3.75 concerning the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship".¹⁰¹ One institution "very much agrees" (5) and four institutions "agree" (4) to the statement. However, three institutions have stated "neither/or" (3) to the statement.

A slightly higher mean (3.88) is found concerning the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship". Again, one institution "very much agrees" (5) to the statement. Six institutions "agree" (4) to the statement. One institution disagrees to this statement.

Importance of goals for entrepreneurship teaching

All Faroese institutions participating in the survey agree that they can or should set goals for entrepreneurship education. Most of them (6 out of 8) agree that goals for education in entrepreneurship should be set to strengthen students' interest in becoming an entrepreneur/starting a new business. Five institutions agree that goals should be set to prepare students better for working life. And four out of eight institutions agree that goals for entrepreneurship education should be set to strengthen students' interest in their further education and career, strengthen the cooperation between the educational institution and the local society, and boost the development of the local area, for instance by contributing to new businesses through the skill development of young people.

Only three institutions agree that the goals should be set to strengthen the profiling and promotion of the educational institution, and even fewer (two institutions) agree that goals should be set to upgrade teachers' skills within entrepreneurship teaching. One institution believes that goals should be set to meet the new national/regional policy in the area of entrepreneurship education, and none of the institutions agree that goals for entrepreneurship education should be set to decrease the student dropout rate.

¹⁰¹ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

External network

One of the eight Faroese institutions does not provide their students with the possibility for making contact with the institution's external network. Among the other seven educational institutions, five arrange for guest lectures given by local business people, entrepreneurs or other external representatives, and visits to companies. Four institutions provide exchange/trainee service in local businesses/organisations and subject-/project weeks or -days in cooperation with external partners. Two educational institutions also arrange competitions at their educational institution, where external contacts function as judges. Only one educational institution provides workshops in cooperation with external partners.

Involvement from school governing body and local businesses

In the Faroe Islands, there is generally a low degree of involvement from the governing body of the participating institutions and the local business as a resource in the work with entrepreneurship education. On a scale from 1 to 5 the educational institutions have a mean of 1.75 when it comes to the degree of involvement from the governing body and an only slightly higher mean (2.5) when it comes to involvement from the local business sector as a resource in the work with entrepreneurship education. This is the lowest mean of all islands in the survey and might reflect the fact that none of the educational institutions have a strategy for entrepreneurship education.¹⁰²

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

Half of the participating Faroese institutions do not have resources earmarked to entrepreneurship education. The other half have both financial resources and time allocated to entrepreneurship education. Three of them also have other resources such as staff with knowledge and expertise on the area.

In five of the eight educational institutions entrepreneurship teaching is part of the timetables and the annual teaching plans. Also, in four institutions, time has been allocated to entrepreneurial teaching courses of a longer duration in the annual teaching plans, for instance project weeks, optional subjects, etc. Half of the institutions use a

¹⁰² 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. However, six of the participating Faroese institutions have not communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated at the educational institution. And none of the institutions require from the teachers that they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students or that they describe in their annual plans how they integrate entrepreneurship in other subjects.

Management of half the participating Faroese institutions support dialogue and corporation between teachers from different disciplines through cross-curricular teaching and/or interdisciplinary project groups. Another two of the institutions support dialogue and cooperation between teachers from different disciplines through dialogue and co-decision between teachers and students. Two institutions have at present no particular structures for such a dialogue.

Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

Plan for teacher competence development

Three quarters (six out of eight) of the Faroese educational institutions in the survey have at present no plan for competence development and knowledge sharing within entrepreneurship education. One of the institutions has a plan for this through continuing education of teachers in entrepreneurship teaching and knowledge sharing about entrepreneurship teaching as well as through special networks. At one of them this takes place through a cross-curricular cooperation between teachers within the subject of entrepreneurship.

Experimenting with teaching forms

Six out of eight participating institutions in the Faroe Islands allow their teachers to experiment with teaching forms through project work / feature weeks or days. Five of them give this possibility through cross-curricular feature periods, and four of them through cooperation with businesses. The remaining two institutions do not at present offer such possibilities to the teachers.

Cooperation with surrounding society

Two of the participating educational institutions are not involved in cooperation and knowledge sharing with the surrounding society/local area at all. Three of them are

involved in cooperation and knowledge sharing with institutions within the public sector, two institutions are involved with other knowledge organisations, and one institution is involved with the established business/industry. None of the institutions are involved with newly started businesses /entrepreneurs.

Extra-curricular activities

Only two of the eight educational institutions offer extra-curricular activities that strengthen the entrepreneurial competences and mind-set of students. One institution organises extra-curricular activities by offering advice and guidance for student start-ups, and another institution arranges business plan competitions. The rest of the institutions do not at present offer extra-curricular activities, and none of them offer students incubator activities, entrepreneurship education given by entrepreneurs or student societies, organisational support in relation with innovation and entrepreneurship, or networks between students and entrepreneurs/business industry.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

At half the educational institutions in the survey, teachers have access to materials and teachers' aids to support their teaching in innovation and entrepreneurship. Only two of the institutions have experience with actual teaching forms and programmes within entrepreneurship (e.g. European Business Game). One of the eight institutions continuously validates and revises the learning objectives for entrepreneurship teaching with a view to updating the teaching programmes, and one institution develops its curriculum in cooperation with external stakeholders in order to get input concerning useful competences in future. None of the institutions, however, measures the impact of the entrepreneurship teaching before, during and after the course/teaching.

Micro level

The micro level concerns the implementation level, that is, the actual teaching taking place in educational institutions and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of the development of a national strategy for entrepreneurship education, this level often relies strongly on individual teachers' enthusiasm. Teacher

training is limited with no or little in-service training. But as the island or country develops their activity in the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when the management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in upper secondary education, vocational/VET and tertiary level education, on different parameters.

The share of pupils and students who have received entrepreneurship education is calculated on the basis of the total number of pupils and students on the islands. It must be emphasised that this share may be inaccurate, as it is based on the responses received. There may be other Faroese pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey.

Upper secondary education

At the upper secondary level, the data have been collected by means of a questionnaire for the teachers. The purpose of the survey is to map the number of pupils in upper secondary education who participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The questionnaire is divided into four main categories.

Basic information consists of two questions about whether the teachers perceive that the school has a clear policy of integration of innovation and entrepreneurship in the education. The responses to these questions thus indicate a score that reflects the extent to which this is the case.

Taxonomy contains the following four dimensions: *action, creativity, environment* and *attitude*.¹⁰³ These terms refer to entrepreneurial competences, which are not necessarily a subject or subject knowledge in themselves but are competences to set initiatives in motion and create opportunities. As such, a high score in the teachers' perceptions of the fulfilment of these four indicators is desirable. The score in the four

¹⁰³ Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.
<http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

dimensions of the pupils and students who have received entrepreneurship education is compared to the scores of the pupils and students who have not received entrepreneurship education.

Entrepreneurship and setting things in motion is the foundation of entrepreneurship education. The total number of pupils and students having received entrepreneurship education in any given area is comprised of all teachers who have answered the questions regarding whether the pupil or student has received instruction in starting a business and/or tried starting up and gained experience starting a business affirmatively.

Entrepreneurship education, which is the percentage of pupils and students who have received entrepreneurship education, is calculated from the total number of pupils and students on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this percentage.

In Table 1 below, the overall results for the upper secondary level are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

A total of 28 teachers have answered the survey. All together, they represent 803 students divided on 45 classes. Overall, 180 pupils at the upper secondary level in the Faroe Islands have encountered entrepreneurship education in the 2015/2016 school year.

As is evident in Table 1, the teachers from upper secondary education in the Faroe Islands only experience a clear policy on innovation and entrepreneurship to a very low degree. The score for this question is 19 and 18, respectively, which is below the average of 26 and 27, respectively.

This is also evident in the number of classes that encounter entrepreneurship education according to the teachers. Less than 25% encounter entrepreneurship education and only 20% have realistic experience in business start-up. In real numbers, 180 pupils at the upper secondary level in the Faroe Islands receive entrepreneurship education.

The score for the entrepreneurial parameters; *action, creativity, environment* and *attitude* for pupils who receive entrepreneurship education is, according to the teachers, almost double that of pupils who do not receive entrepreneurship education.

Table 1: The results for the upper secondary level

Subject	Variable	The Faroe Islands
Basic information	Policy on innovation	19
	Policy on entrepreneurship	18
Taxonomy	Action	36
	Creativity	40
	Environment	38
	Attitude	42
Entrepreneurship	Teaching in start-up percentage	24
	Realistic experience with start-up, percentage	20
Entrepreneurship education	Number of students receiving entrepreneurship education	180
Score for students receiving entrepreneurship education	Action	78
	Creativity	66
	Environment	61
	Attitude	68
Score for students <i>not</i> receiving entrepreneurship education	Action	23
	Creativity	31
	Environment	31
	Attitude	33

Note: The result is comprised of answers from 28 teachers with a total of 45 classes and 803 pupils.

Vocational/VET

At vocational/VET level data have been collected by means of a questionnaire directed at the teachers. The purpose of the survey is to map the number of pupils in vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories.

Basic information is comprised of two questions. They concern whether the teachers experience that their school has clear policies on innovation and entrepreneurship in education, respectively. The scores for these questions thus reflect to what degree that is the case.

Teaching, which focuses on the degree to which the teachers experience that the students have participated in innovation and entrepreneurship education in class instruction and courses, as clear subjects in their practical training and internships as well as clear subjects in their apprenticeship tests.

Entrepreneurship and setting things in motion is the foundation for entrepreneurship education. The teachers were asked whether the pupils have

participated in feature weeks, camps, projects or the like focusing on innovation and entrepreneurship, respectively. In addition, the teachers were asked whether the pupils had participated in other innovation or entrepreneurship projects. If the answer is yes to any one of these questions, the pupils are included in the total number of pupils and students who receive entrepreneurship education. As such, there are three different questions, which all play a part in determining whether the pupils have received entrepreneurship education.

Entrepreneurship education thus indicates the number of pupils who, based on the abovementioned questions, receive entrepreneurship education. The share of pupils and students who have received entrepreneurship education is based on the total number of pupils and students on the respective islands/areas. Again, and as mentioned above, reservations are taken about the accuracy of this share.

In Table 2, the overall results for vocational/VET are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

The results in Table 2 show that the teachers experience a clear policy on innovation (30) more than entrepreneurship (23). The scores are both below the average of 33 and 32, respectively.

According to the teachers, the pupils only encounter innovation and entrepreneurship during class instruction and thus not during their practical training and internships. In addition, none of the pupils encounter innovation and entrepreneurship as a clear and obvious topic during their apprenticeship tests. This may be caused partly by some students not having had practical training and/or internships and partly by the teachers not finding that the pupils have had innovation and entrepreneurship as part of their practical training, internship and their apprenticeship tests.

24 pupils have received entrepreneurship education with a focus on innovation and/or entrepreneurship in the technical/vocational schools in the Faroe Islands.

Table 2: The results for vocational/VET

Subject	Variable	The Faroe Islands
Basic information	Policy on innovation	30
	Policy on entrepreneurship	23
Teaching	Innovation in subject/course	20
	Innovation as a clear topic in practical training/apprenticeship	0
	Innovation as a clear topic in apprenticeship test	0
	Entrepreneurship in subject/course	17
	Entrepreneurship as a clear topic in practical training/apprenticeship	0
Entrepreneurship	Entrepreneurship as a clear topic in apprenticeship test	0
	Innovation, percentage	20
	Start-up of business / Entrepreneurship, percentage	0
Entrepreneurship education	Other, percentage	0
	Number of students receiving entrepreneurship education	24

Note: The result is comprised of answers from 4 teachers with a total of 5 classes and 96 pupils.

Upper secondary education and vocational/VET

The total number of pupils receiving entrepreneurship education in the 2015/2016 school year on both upper secondary education and vocational/VET in the Faroe Islands is 204. This is the equivalent of 8.9% of the 2,284 pupils in upper secondary education and vocational/VET in the Faroe Islands.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participated in entrepreneurship education.¹⁰⁴ However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

Tertiary education

For the purpose of mapping entrepreneurship education at the tertiary education level, the islands were asked to send course descriptions of courses within innovation and entrepreneurship or courses that resemble this kind of teaching at this level along with

¹⁰⁴ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

the number of students partaking in these courses during the academic year 2015–16. The received course descriptions were then screened on the basis of the categories in the Star Model – a model for identifying entrepreneurship courses.

In the Star Model courses and subjects are categorised according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to obtain an insight of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

The Faroe Islands have provided descriptions of six educations at the tertiary level in the Faroe Islands, three of which have been identified as entrepreneurship education or as containing elements of innovation and entrepreneurship:

Table 3: The results for the tertiary level for the Faroe Islands

Course	Number of students 2015–16
Academy Professional Degree in Marketing Management (Markedsføringsøkonom)	24
Academy Professional Degree in Production Technology (Produktionsteknolog)	15
Master in West Nordic Studies	11

Academy Profession Degree in Marketing Management

Teaching in all subjects of the education contains elements of entrepreneurship and innovation and is interdisciplinary. In the fall semester 2015, the students have worked with a large interdisciplinary project, where they have made a business plan in relation with the establishment of a new company. In the spring semester 2016, the students have worked with an interdisciplinary project where they have compiled a marketing plan.

Academy Profession Degree in Production Technology

The education is project-oriented and interdisciplinary and contains elements of innovation and entrepreneurship. During the education, the students get assignments from the business sector, and the business sector evaluates the result of these assignments. Some of the objectives of the education are that the student must be able to apply methods for idea generation, to manage resources – individually as well as in groups. Moreover, the student acquires learning re. methods about managing projects and about financing in projects, as well as about developing a business from idea to product.

Master in West Nordic Studies

The purpose of the education is to provide students with specific knowledge of the West Nordic Region combined with abilities to manage and link present day issues and past developments in relation to the major themes of the present debate on societal challenges – specifically in relation to the complexities of the High North, climate and environmental change, and sustainability. To provide students with a unique opportunity to take part in shaping the West Nordic Region of Greenland, Iceland, the Faroe Islands, and coastal Norway and offers students a chance for enhanced mobility within the region.

The learning style is based on active learning, giving relevant responsibility to the student, both for choice of subject and organisation of time. Approaches in core courses at the University of the Faroe Islands include problem-based work, team work, practical work with the requirement of dissemination of new knowledge gained through dialogue (with societal actor) in combination with teacher-guided reflective learning. The programme is distinctly interdisciplinary.

In total, 50 students at the tertiary level in the Faroe Islands have participated in entrepreneurship education during 2015–16. This corresponds to 5.1% of the total number of tertiary level students in the Faroe Islands (973). In comparison, the percentage of Danish tertiary level students who participated in entrepreneurship education was 13.7% in 2014–15. The percentage of Danish tertiary level student who participated in entrepreneurship education in 2015–16 is 15.8%.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially, the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.¹⁰⁵ Only 4–12 months after receiving a Micro Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after they received the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

In the Faroe Islands, there are seven upper secondary educational institutions and five tertiary educational institutions. The total number of students in the school year 2015–16 is 3,257. At present, no funds are earmarked for student start-ups in the Faroe Islands.

During the project trial granting Micro Grants of DKK 25,000 in the Faroe Islands, two applications from student start-ups were received. Normally, a student start-up is comprised of 2 to 6 pupils or students. The team that received the grant is comprised of students who have all participated in entrepreneurship education. Furthermore, they have attended external lectures with Íverksetarahúsið, Hugskotið and Vinnuframi. In addition, they have participated in Company Programme, which is a programme that is offered by the local branch of the Danish Foundation for Entrepreneurship. The Micro Grant was marketed through a variety of local news platforms as well as schools and other educational institutions.

Effects

For the student start-up, the Micro Grant will have a range of effects. They say: “It’s so great to be awarded the Micro Grant. We had really hoped for it. Now we have the opportunity to keep working on the project. The Micro Grant will, among other things, be spent on collecting raw materials, developing prototypes and packaging, renting fields, testing the products etc.” They continue: “The Micro Grant has been a prerequisite for moving the project forward. It has been necessary in order to finance the last step needed to begin commercial production. There are other ways for us to gain financial support during the early beginnings of the business, e.g. Vinnuframi, which supports Faroese entrepreneurs. We have considered applying for financial support for marketing at Vinnuframi. Because of the Micro Grant, we were contacted by Vinnuframi, who stated that they would be willing to support Green Growth after the end of the test period. Green

¹⁰⁵ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

Growth has further had the opportunity to participate in the international competition Creative Business Cup.”

Derivative effects for the island and local community as a consequence of the idea: “Our natural fertiliser will replace the current amount of artificial fertiliser used. Artificial fertilisers may be part of what pollutes fields, streams and fjords. When the farmers can use our natural fertiliser, the use of the artificial fertilisers will drop. This will also create a greener image for the farmers’ products, which are used in the Nordic cuisine and kitchens. This also has an effect on the growing tourist industry, which has our food culture – the new Nordic kitchen – as a main selling point.”

They continue: “We believe that this is a huge opportunity for our project to become real and we have plans to keep working on it while we finish our education. When we are done, we will have even more time for the project. Our dream for the future is that we can be part of solving the problem with pollution, create jobs and at the same time become economically successful.”

Needs and possibilities

During the process, the student start-up has been guided in making a business plan, budgets, accounting, marketing, etc. Further, they have been offered office facilities and benefited from sharing experiences and knowledge with other entrepreneurs. However, they ask for more help in developing the product and in establishing contact with more specialists in fertiliser production. In addition, they need professional and financial support in order to move the project further.

Micro Grant Recipient

Green Growth

Our idea is to transform fish excrements to fertiliser which can be used in the agricultural sector. We wished to utilise waste from the fish farming industry in the Faroe Islands and to find an eco-friendly solution to some of the problems created by salmon breeding and salmon hatching. At the same time, we wanted to create a profitable business. Green Growth's earnings are based on several sources of income. We want to sell fertiliser in huge quantities to the Faroese agricultural sector as well as in smaller units to private households. In addition, we want to sell surplus energy to distributors of electricity and district heating.

Future entrepreneurial potential

There has been a decrease in the very young part of the population and a considerable increase in the old age dependency in the Faroe Islands. Even though the employment rate is high and the youth unemployment rate is low the islands suffer from many young people going abroad to study, as about half of them never return, presumably because there is a lack of knowledge-intensive workplaces in the Faroe Islands.¹⁰⁶

Based on the objective of creating solutions that will entail positive effects for the Faroe Islands, the first objective for this pilot project has been to ensure a mapping of entrepreneurship education in the area. There is no or only limited prior data available for mapping entrepreneurship in the educational sector in the Faroe Islands. Knowing the present situation in the islands the second objective has been to define the potential for entrepreneurship education and Micro Grants in the Faroe Islands from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people in the Faroe Islands learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the market position of the Faroe Islands internationally and contributing to a sustainable development, growth and jobs.

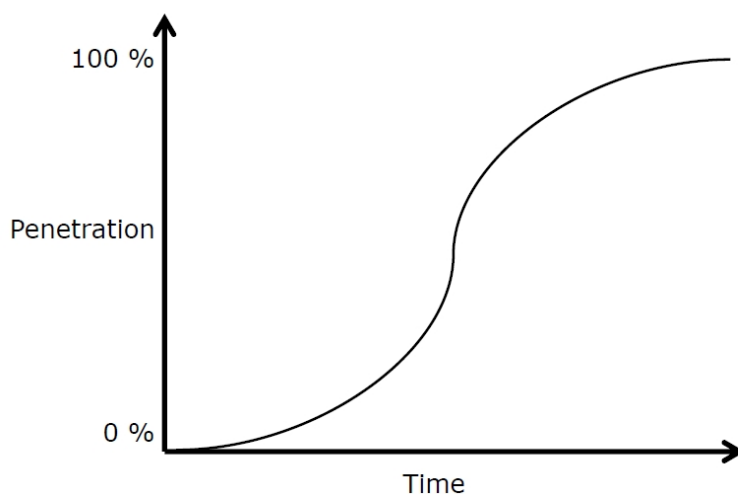
Forecasting entrepreneurship education and micro grants for the Faroe Islands

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives in the Faroe Islands. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

¹⁰⁶ http://www.setur.fo/fileadmin/user_upload/SSS/PDF-filur/Buskaparadid/Fragreidingar/Buskaparfragreiding_varid_2016.pdf

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). The Faroe Islands is in the initial stage of the S-curve.



The forecast is presented in Table 4 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from the Faroe Islands.
- The maturity level in the islands with regard to entrepreneurship in education (The "s-curve").
- Development rates from Denmark and Bornholm (2010 – 2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based on the assumptions that:

- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.

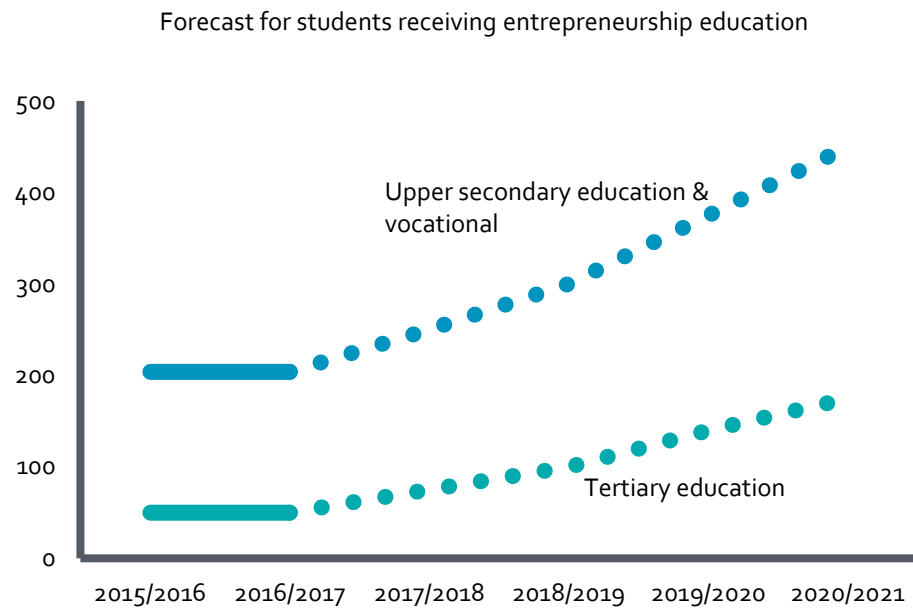
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but are estimates.

Table 4: Forecast for the Faroe Islands

Forecast for entrepreneurship and micro grants until the school year 2020/2021. The Faroe Islands						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	2,284	2,284	2,284	2,284	2,284	2,284
Students receiving entrepreneurship education, forecast	204	204	250	300	375	450
Share of students receiving entrepreneurship education, percentage	8.9%	8.9%	10.9%	13.1%	16.4%	19.7%
Tertiary education						
Students in total	973	973	973	973	973	973
Students receiving entrepreneurship education, forecast	50	50	75	100	140	175
Share of students receiving entrepreneurship education, percentage	5.1%	5.1%	7.7%	10.3%	14.4%	18.0%
Applicants receiving a grant						
Accepted applicants	1	2	3	4	5	6
Average annual costs (4 years) in DKK			DKK 1,600,000–2,000,000			

Figure 2: Forecast for the Faroe Islands



Recommendations for the Faroe Islands

- A national strategy and a cross-ministerial collaboration are necessary means to build a strong foundation for developing regional and island strategies. In the Faroe Islands, several initiatives have been implemented. However, the development of a national structure for entrepreneurship education is still in its very early stage. A higher political commitment to the area is required in order to create an overall national strategy for entrepreneurship education covering all education levels.
- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector. There are several actors in the Faroe Islands covering different levels of education in the Faroe Islands. The political commitment must go hand-in-hand with a structured approach (not only a network between existing operators) to the coordination of actions and measures on all education levels – and this preferably through one national operator.
- A specifically dedicated budget for development and activities is necessary. There are only limited resources for entrepreneurship education and no resources for student entrepreneurs in the Faroe Islands. Financial resources should be allocated both at national and local level (in the islands). This should be a collaborative effort between public and private sector.
- Promote entrepreneurship education. An important part of the efforts at national level is to broadly communicate the focus on, and goals for, entrepreneurship education to all important stakeholders in the Faroese society; educational institutions, teachers, students, parents as well as private and public sectors and local and regional authorities.
- Strong stakeholder relations are essential. Private sector, public sector and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation.
- Support and collaboration with schools and educational institutions on all levels. Danish research shows that to achieve the greatest effects entrepreneurship education must be differentiated on the respective levels of education and must be provided to pupils as early as possible during their education. Entrepreneurship in higher education is the most effective way to foster long-run student start-ups. Recommendations should moreover be directed towards ensuring a more comprehensive implementation of entrepreneurship education in educational

institutions. Entrepreneurship education in the Faroe Islands seems to be mostly given as an “add-on” to the ordinary education, that is, given in the form of special events, competitions, innovation days etc. that take place outside normal everyday teaching. However, the recommendation is that entrepreneurship education should be integrated as a method and a way of thinking in the entire education system. This should be accompanied by the understanding that entrepreneurship is not only about starting a new business, but it is also about being an innovative employee in all kinds of workplaces, and that the learning of entrepreneurial skills is useful for every pupil and student.

- Collecting data to secure knowledge on the development in penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and later on making impact studies is vital for the support from ministries and private sector. Making a structure for the continuous mapping and impact assessment of entrepreneurship education is an important next step for the Faroe Islands.
- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice. This mapping shows that management from the Faroese educational institutions participating in the survey have not implemented a strategy for entrepreneurship education. Moreover, the degree of involvement from the governing body of the institutions and local businesses are the lowest of all islands participating in the survey.
- Communicating the educational institutions’ entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to have an impact on the penetration rate for entrepreneurship education in the islands.
- A plan and resources for providing and ensuring the teachers the necessary competences on the area are necessary elements from the beginning. There are no or limited resources for entrepreneurship teachers’ competence development (e.g. further education in entrepreneurship teaching and networks) in the Faroe Islands and the mapping shows that this has not been a focus at the upper secondary or higher education institutions so far. New forms of teaching and teacher roles need to be acquired by teachers.

- Start with existing teaching programmes. There seems to be a relative lack of teaching materials and experience with actual teaching forms and programmes by Faroese teachers. However, the Faroe Islands have access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequently create significantly more entrepreneurs and higher income and they have a positive impact on the pupils' motivation to study, their school engagement and their academic confidence and they have a positive impact on the primary school pupils' grades.^{107 108 109}
- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level.
- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups in the islands. However, it takes time before the students have become accustomed to applying for this grant.
- Whenever possible, synergies across the Nordic islands should be utilised.

¹⁰⁷ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10,103 CP- pupils were matched with 214,735 non CP-pupils.

¹⁰⁸ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

¹⁰⁹ Johansen and Schanke (2014) conducted a survey on 1,880 secondary pupils and 1,160 primary school pupils who participated in Junior Achievement's programmes.

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe¹¹⁰

Table 5: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National strategy, ¹¹¹ frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective interministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

¹¹⁰ Towards Greater Cooperation and Coherence in Entrepreneurship Education, European Commission, 2010.

¹¹¹ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an "add-on" to the mainstream curriculum with emphasis on "entrepreneurship" as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher's enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ¹¹²	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and "hands-on" learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

¹¹² The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Figure 3: Two judges discussing the student ideas at the Start Up Programme



Photo: Lars V. Andersen.

Appendix B: “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Table 6 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.¹¹³

¹¹³ <http://www.ffe-ye.dk/videncenter/entreprenoerskabs-undervisning/eksamensformer>

Table 6: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 7: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7.6	6.0	8.4	-1.6	28.7	27.4	-4.4	22.1	24.5	10.9
Andøy	-0.8	-2.0	-0.4	-2.3	29.0	25.3	-12.7	33.2	37.9	14.1
Finland	2.7	-0.7	4.2	-0.6	25.2	25.7	2.2	25.2	31.3	24.2
Pargas	0.5	-2.3	1.7	-0.5	27.1	27.8	2.6	30.9	40.0	29.5
Denmark	2.7	2.6	2.8	-0.4	27.8	26.4	-5.0	24.1	28.8	19.5
Bornholm	-6.4	-14.3	-3.6	-0.7	25.5	23.0	-9.6	33.2	44.6	34.5
Faroe Isl	-0.9	-4.3	0.9	1.4	34.4	34.5	0.4	22.2	26.9	20.9
Greenland	-0.3	-7.9	4.6	1.0	32.9	29.8	-9.4	9.3	10.7	15.2
Sweden	5.3	4.8	5.5	-1.0	25.4	27.3	7.4	27.1	31.1	14.8
Gotland	0.4	-4.8	2.6	-0.7	22.9	24.6	7.3	31.0	39.2	26.5
Iceland	4.1	0.9	4.2	2.2	30.9	30.8	-0.3	17.2	20.5	19.2

Note: * population aged 0–14 as a share of population aged 15–64.

**population aged 65+ as a share of population aged 15–64.

Source: National statistical institutes and Eurostat.

Table 8: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	
Norway	76.6	75.6	-1.3	3.2	3.5	9.4	9.2	8.6	-6.5	
Andøy	75.6	72.8	-3.7	2.8	4.8	71.4		12.7		26.6
Finland	68.4	68.4	0	8.4	8.4	0	21.5	19	-11.6	
Pargas	74.5	73.2	-1.7	4.9	4.6	-6.1		14.3		43.2
Denmark	75.1	72.3	-3.7	6.1	7.2	18.0	11.8	14.1	19.5	
Bornholm	68.8	69.3	0.7	8.9	8.9	0		19.7		23.7
Faroe Isl	88.1	90.8	3.1	4.8	3.9	-18.8		9.9		35.9
Greenland	64.9	63.3	-2.5	7.5 (2010)	9.7	29.3		17		14.4
Sweden	72.4	74.5	2.9	8.5	8.3	-2.4	25	23.7	-5.2	
Gotland	74	77.4	4.6	8	6	-25				31.1
Iceland	78.3	81.1	3.6	7.2	5.4	-25	16	13.6	-15	

Note: * number of employed persons as a share of the population aged 15–64.

** total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

*** unemployed persons aged 15–24 as a share of the labour force aged 15–24.

**** persons with a tertiary education as a share of the population aged 25+.

Source: National statistical institutes and Eurostat.

Appendix D. Innovationssystemet på Færøerne

Skrevet af Súsán Klein Gregoriussen

Indledning

Globaliseringen og den demografiske udvikling er i dag med til at skabe nogle økonomiske og sociale udfordringer for det færøske samfund. En af de største udfordringer på Færøerne i dag er, at for mange unge flytter til udlandet. Analyser fra Búskaparráðið¹¹⁴ (Økonomisk Råd på Færøerne) viser, at kun lidt over halvdelen af de unge, der rejser til udlandet for at studere, kommer hjem igen. Denne demografiske udvikling medfører, at der bliver en skæv fordeling med færre mennesker i den arbejdsdygtige alder i forhold til antallet af pensionister. Fremskrivninger viser, at mens vi i dag er 4,5 personer i alderen 16–66 for hver person over 67 år, vil der i 2050 kun være 2,1 personer i alderen 16–66 for hver person i alderen over 67 år. Denne demografiske udvikling medfører, at de offentlige udgifter fremover vil stige markant mere end de offentlige skatteindtægter.

Ifølge Búskaparráðið er en af hovedårsagerne til, at de unge ikke vender hjem til Færøerne efter endte studier, at der mangler videnstunge arbejdspladser på Færøerne. Færøske virksomheder, der søger folk med en højere uddannelse, modtager ofte mange ansøgninger fra færingere med bopæl i udlandet. Dette kan indikere, at der er mange unge færingere, der ønsker at rejse hjem, såfremt de får en tilfredsstillende jobmulighed.

Gennem de seneste år har især den pelagiske industri, fiskeindustrien og lakseopdræts-industrien været i vækst, mens fremstillingsindustrier og serviceindustrier er stagneret. Det færøske erhvervsliv er således præget af nogle få industrier i det primære erhverv, der kendetegnes ved virksomheder med få videnstunge arbejdspladser. Dette kan have en betydning for de unges tilflytning til Færøerne, da de fleste unge med en højere uddannelse fra udlandet må forventes af søge videnstunge stillinger i tertiære erhverv.

Det er en stor udfordring for det færøske samfund, at erhvervslivet består af nogle få brancher med relativt få videnstunge stillinger. Med den nuværende udvikling er der

¹¹⁴ http://www.setur.fo/fileadmin/user_upload/SSS/PDF-filur/Buskaparadid/Fragreidingar/Buskaparfragreiding_varid_2016.pdf (Hentet 09-10-2016).

en risiko for, at der fremover vil mangle både folk i den arbejdsdygtige alder og arbejdspladser på Færøerne.

Der er derfor et stærkt behov for, at der arbejdes mere med innovation og entreprenørskab, som kan være med til at fremme udviklingen af nye industrier, virksomheder og videnstunge arbejdspladser. Der bør lægges mere vægt på at skabe optimale rammer for entreprenører og iværksættere, der ønsker at etablere egen virksomhed. Desuden bør man gøre en større indsats for at fremme innovations- og entreprenørskabsaktiviteter på alle trin i uddannelserne, således at de unge mennesker bliver i stand til at skabe deres egne arbejdspladser og formår at møde de udfordringer, som vi står overfor med nye idéer og innovative løsninger.

Undersøgelse og resultater

Nordisk Ministerråd og Fonden for Entreprenørskab har igangsat en større undersøgelse, der har til formål at kortlægge i hvor høj grad, der arbejdes med innovation og entreprenørskab i otte nordiske øsamfund, heriblandt Færøerne.

Denne case beskriver innovationssystemet på Færøerne. Følgende spørgsmål er blevet undersøgt:

- Hvilke tilbud findes til iværksættere på Færøerne?
- Hvilke særlige tilbud findes til unge iværksættere (studerende)?
- Hvilke udfordringer står iværksættere og andre aktører, der arbejder med innovation og entreprenørskab, over for i dag?
- Hvad skal der til for at tilbyde unge mennesker på Færøerne de rette vilkår for at blive iværksættere?
- Hvilke tiltag mangler på Færøerne, og hvad kunne løsningen være?

Undersøgelsen er baseret på resultater fra fire kvalitative interviews med ledende personer fra det færøske iværksætermiljø. Desuden er oplysninger om tilbud til iværksættere og aktører i det færøske iværksætermiljø hentet fra aktørernes respektive hjemmesider.

Resultaterne fra undersøgelsen kan være med til at give et indblik i, hvilke aktører, der er med til at fremme innovations- og entreprenørskabsaktiviteter på Færøerne i dag, og hvilke udfordringer de står over for.

De interviewede personer har desuden nogle bud på, hvilke tiltag, der kan iværksættes for at skabe optimale rammer for dem, som ønsker at etablere egen virksomhed eller ønsker at arbejde med innovations- og entreprenørskabsfremmende aktiviteter.

Der blev anbefalet seksten tiltag, der kan kategoriseres i fire overordnede temaer: Iværksættere og risikovillig kapital (3 tiltag), Iværksættere og administration (4 tiltag), Iværksættere og eksport (1 tiltag) samt Entreprenørskab og uddannelse (8 tiltag).

Innovationssystemet på Færøerne

I det følgende gives en kort beskrivelse af nogle af de aktører, der arbejder med at fremme innovations- og entreprenørskabsaktiviteter på Færøerne.

Hugskotið

Hugskotið¹¹⁵ i Tórshavn er et iværksætterhus, der blev etableret af Torshavns Kommune 1. april 2014 med det formål at fremme innovation og entreprenørskab i kommunen. Hugskotið får en årlig bevilling på 1,2 millioner DKK af Torshavns Kommune. Hugskotið tilbyder en række tjenesteydelser til iværksættere og virksomheder i kommunen, heriblandt gratis rådgivning og lokaler til iværksættere. Der er kontorlokaler med plads til 10–12 iværksættere, og disse er altid fuldt optaget. Der er således et behov for at kunne tilbyde flere og større lokaler.

- *Gratis rådgivning*
Hugskotið tilbyder gratis rådgivning om virksomhedsetablering, patentansøgninger, markedsføring, regnskab, skat, moms, virksomhedsdrift, virksomhedsudvikling, vækst, m.m. Iværksætterne har desuden mulighed for at få gratis hjælp og vejledning fra mentorer, der alle arbejder på frivillig basis.
- *Iværksættercafé*
Hugskotið organiserer iværksættercafé én gang om måneden, hvor specialister holder foredrag om emner, der er relevante for iværksættere. Der plejer at møde mellem 50 og 80 mennesker til disse aftener, hvor iværksættere har mulighed for at mødes og sparre med hinanden.
- *Kurser for iværksættere*
Hugskotið afholder hvert år et 10 ugers kursus for unge iværksættere. De unge lærer bl.a. at lave en forretningsplan, og hvad der skal til for at etablere og drive en virksomhed. Kursisterne mødes én aften hver uge i ti uger.
- *Iværksætteraktiviteter for børn og unge*
Hugskotið har i samarbejde med en af kommunens folkeskoler organiseret innovations- og iværksætteraktiviteter for 4.–9. klasses elever. Formålet med disse aktiviteter er, at eleverne skal lære at tænke, at de selv kan være med til at skabe deres egen arbejdsplads. Eleverne gennemgik forskellige aktiviteter, der

¹¹⁵ www.hugskotid.fo

var med til at give dem en udvidet forståelse for begreberne innovation og kreativitet. De fik dernæst til opgave at gå ud i byen for at finde ud af, hvad der kan gøres bedre i Torshavns Kommune. Eleverne identificerede nye muligheder og behov, og på denne baggrund udviklede de idéer, der skulle omsættes til noget værdiskabende. Undervisningsforløbet sluttede med en konkurrence, hvor eleverne præsenterede over 60 gode og nyskabende idéer.

- *Creative Business Cup*

Hugskotið er medarrangør af Creative Business Cup, der er en international iværksætter konkurrence. Formålet er at knytte det kreative og erhvervsmæssige sammen i projekterne. Vinnuframi, Íverksetarahúsið og Hugskotið udvælger 10 projekter ud fra kriterier, der er fastlagt af Center for Kultur- og Oplevelsesøkonomi i København. Vinderen af den færøske finale går videre til en international finale, hvor de konkurrerer imod deltagere fra mere end 50 lande.

Íverksetarahúsið

Íverksetarahúsið¹¹⁶ i Klaksvík er en selvejende institution, der har til formål at medvirke til udvikling af nye og eksisterende brancher og virksomheder. Íverksetarahúsið får en årlig bevilling på 1,1 million DKK fra Uttanríkis- og vinnumálaráðið, 200.000 DKK fra Klaksvíks Kommune, samt 100.000 DKK fra Føroya Tele. Desuden får Íverksetarahúsið et beløb på 300.000 DKK årligt fra Mentamálaráðið. Dette beløb er øremærket til arbejdet med Skole FM.

Íverksetarahúsið tilbyder rådgivning, kurser og lokaler til iværksættere. Hvert år organiserer Íverksetarahúsið forskellige aktiviteter, der er med til at fremme innovation og entreprenørskab på Færøerne, heriblandt Skole FM, European Business Game, Startup Føroyar, Game Jam, Gaming Huset, Årets Iværksætterdag og Netværksaftener. Desuden er Íverksetarahúsið medarrangør af Creative Business Cup på Færøerne.

- *Skole FM*

Íverksetarahúsið organiserer hvert år Skole FM, hvor elever fra 9. og 10. klasse fra hele landet arbejder med innovation og entreprenørskab. Det er de unge, der skal forme fremtidens samfund. Derfor er det vigtigt, at de i undervisningen udvikler deres evner til at kunne se nye muligheder og at de får nogle værktøjer til at tage imod de udfordringer, der er i fremtidens samfund. Íverksetarahúsið har underskrevet en samarbejdsaftale med Mentamálaráðið, der viser, at de offentlige myndigheder ønsker at fremme elevernes interesse for entreprenørskab og at give dem erfaring med innovation og entreprenørskab. Som en del af Skole FM får eleverne undervisning i entreprenørskab, de besøger

¹¹⁶ www.iverksetan.fo

virksomheder, arbejder med innovation og udvikling af ideer, præsenterer egne virksomhedsidéer, m.m. Skole FM slutter med en konkurrence, hvor elever fra forskellige skoler konkurrerer imod hinanden.

- *European Business Game*
European Business Game (EBG) er en europæisk konkurrence for elever på gymnasiale uddannelsesinstitutioner. Med udgangspunkt i egen virksomhedsidé gennemgår de studerende processen fra idé til forretningsplan og finansiering. De studerende bruger her teorierne i praksis og etablerer kontakter til rådgivere, pengeinstitutter og andre fra erhvervslivet. Eleverne deltager i en konkurrence på Færøerne og vinderen får mulighed for at deltage i den internationale konkurrence, hvor elever fra de fleste europæiske lande konkurrerer imod hinanden. Konkurrencen går ud på at finde den bedste fiktive virksomhed. Færøske studerende har deltaget i EBG siden midten af 1990'erne med meget gode resultater og flere guldmedaljer. European Business Game sponsoreres af Bank Nordik.
- *Game Jam – Spiludvikling på Færøerne*
Íverksetarahúsið har tre år i træk organiseret såkaldte Game Jam event på Færøerne, hvor unge færinger mødes for at udvikle computerspil inden for en begrænset tidsperiode.
- *Gaming Huset*
Íverksetarahúsið har været med til at åbne et "Gaming Hus" i Torshavn, hvor de tilbyder lokaler og hjælp til unge, der ønsker at udvikle computerspil, Apps og 3D, m.m.
- *Startup Føroyar*
Startup Føroyar er en fælles betegnelse for en række kurser, som Íverksetarahúsið har tilbudt på Færøerne. Dog har et kursus været i København. Kursusdeltagerne arbejder med Business Model Canvas og finder ud af, hvad der skal til for at iværksætte en virksomhedsidé.
- *Netværksaftener*
Som noget nyt organiserer Íverksetarahúsið netværksaftener en gang om måneden, hvor iværksættere og andre interesserede har mulighed for at mødes til en forelæsning, kaffe og en snak. Iværksættere har tit fælles udfordringer og her har de mulighed for at mødes i et forum, hvor de kan diskutere udfordringer og dele erfaringer med andre i samme situation som dem selv.
- *Årets iværksætterdag*
Årets iværksætterdag afholdes en gang årligt, hvor årets færøske iværksætter bliver hædret. Dertil gives en innovationspris til en banebrydende innovation samt en investorpris til en visionær og produktiv investering.
- *Kvinnur Megna (Kvinder kan!)*
Kvinnur Megna er en iværksætterdag for kvinder. Der fokuseres på kvinder, der har klaret sig godt som iværksættere, og der gives en pris til en kvinde, der har vist gode resultater og har været med til at inspirere andre kvinder.

- *Iværksætterstøtte*
Iværksætterstøtte er en støtteordning med tilknyttede mentorer, der er lanceret i efteråret 2016. Formålet med ordningen er, at iværksættere får professionel støtte til at udvikle deres virksomheder samtidig med, at de får et godt netværk, der kan hjælpe dem med at skaffe kapital til virksomheden. Støtteordningen er beregnet til nye virksomheder, der har arbejdet med deres idéer i et stykke tid, men mangler at få gang i virksomheden. Der tilbydes daglig sparring og hjælp til at modne projektet, så det er klar til at blive præsenteret for investorer.
- *Informationsaftener på Færøerne*
Rådgivere fra Íverksetarahúsið rejser rundt på Færøerne og informerer om tilbud til iværksættere. Dermed forsøger man også at nå nye iværksættere på de andre øer.

Vinnuframi

Vinnuframi¹¹⁷ støtter iværksættere og virksomheder, der har behov for finansiel støtte og professionel rådgivning til bl.a. udvikling af en forretningsplan, produktudvikling, patentansøgninger samt markedsføring og salg. Støtten fra Vinnuframi er begrænset til kun at omfatte udvikling o. lign, og de er således ikke muligt at få støtte til drift og investeringer.

Vinnuframi støtter aktiviteter, der er med til at udvikle et forskelligartet erhvervsliv på Færøerne og udbreder anvendelse af ny viden. Vinnuframi er medarrangør af den internationale konkurrence Creative Business Cup. I 2015 fik Vinnuframi en årlig bevilling på finansloven på 3,2 millioner.

Inova

Inova¹¹⁸ er en forskerpark i Torshavn, der giver private virksomheder og offentlige organisationer adgang til laboratorier, laboratorieudstyr og lokaler. Inova tilbyder et unikt videnskabeligt miljø, hvor private virksomheders forskningsafdelinger har mulighed for at dele lokaler med universitetet og offentlig forskningsinstitutioner og koordinere et samarbejde, således at Inova's brugere kan få gavn af hinandens færdigheder og kompetencer.

Granskingarráðið

Granskingarráðið¹¹⁹ har til opgave at rådgive Landstyret og erhvervsvirksomheder i forskningspolitiske spørgsmål samt at administrere Granskingargrunnurin og Sjúkrakassagrunnurin.

¹¹⁷ www.vinnuframi.fo

¹¹⁸ www.inova.fo

¹¹⁹ www.gransking.fo

Granskingargrunnurin

Granskingargrunnurin¹²⁰ yder finansiel støtte til forskning og udvikling, der har tilknytning til færøske organisationer, virksomheder og personer.

Sjúkrakassagrunnurin

Sjúkrakassagrunnurin¹²¹ er en fond, der yder støtte til forskningsprojekter, som kan være med til at udvikle det færøske helse- og sundhedsvæsen, uden dog at være med til at finansiere driften af sygehusvæsenet. Sjúkrakassagrunnurin administreres af Granskingarráðið, der har ansvaret for at fordele i alt 28 millioner DKK til forskningsprojekter.

Horizon 2020

Horizon 2020¹²² er EU's støtteprogram for forskning og innovation i perioden 2014–2020. Der lægges vægt på samarbejde mellem forskere og erhvervslivet, og målet er, at Horizon 2020 vil føre til nyskabende forskning, innovative løsninger og nye teknologier ved at give støtte hele vejen fra idé til marked og bygge bro på tværs af grænser og sektorer. Programmet omfatter også støtte til små og mellemstore virksomheder, der kan søge informationer og rådgivning således, at det bliver lettere at omsætte idéer til markedsparate kommercielle produkter.

Fiskivinnuoyndir

Fiskivinnuoyndir er et støtteprogram under Fiskeriministeriet, der bl.a. har til formål at støtte innovative projekter inden for fiskeindustrien.

Framtaksgrunnurin

Framtaksgrunnurin¹²³ er en venturefond, der har en særlig rolle i færøsk erhvervsliv som en risikovillig og tålmodig investor, der investerer med venturekapital i færøske erhvervsvirksomheder og tilbyder ansvarlig lånekapital til nye og ældre færøske virksomheder. Eventuelle overskud geninvesteres i færøske virksomheder, der vurderes at have et udviklingspotentiale. Framtaksgrunnurin investerer bl.a. i virksomheder, der ønsker at udvikle nye produkter og markeder samt virksomheder, der har behov for investorer.

¹²⁰ Granskingargrunnurin er en forskningsfond.

¹²¹ www.vinnufram.fo

¹²² www.ec.europa.eu/programmes/horizon2020 Se også www.gransking.fo

¹²³ www.framtak.fo

TF Íløgur

TF Íløgur,¹²⁴ der er et datterselskab af TF Holding, har til formål at investere i færøsk erhvervsliv.

P/F Royndin

P/F Royndin¹²⁵ er en investeringsfond, der blev etableret af Føroya Lívstrygging i 2005. P/F Royndin investerer i det færøske erhvervsliv, dvs. i aktier og i garantkapital i færøske virksomheder.

Vækstfonden

Vækstfonden¹²⁶ er en dansk fond, der tilbyder vækstlån og vækstkaution til små og mellemstore virksomheder. Færøske virksomheder har mulighed for at søge Vækstfonden om finansiering, heriblandt vækstlån, der er målrettet til unge virksomheder, som allerede har produkter og kunder, men hvis korte historik gør det svært at skaffe finansiering til at accelerere væksten. Nye virksomheder kan bruge lånet, når deres sikkerhed ikke rækker til et almindeligt banklån. Vækstlån til iværksættere har en større risiko end almindelige banklån, og renten er derfor også højere. Iværksættere kan bruge vækstlånet som et supplement til deres øvrige finansiering.

Ud over at få støtte og vejledning fra ovennævnte aktører, har færøske iværksættere mulighed for at få vejledning fra Taks (de færøske skattemyndigheder), revisorer, bogholdere, advokater, banker, reklamebureauer, vejledning om eksport fra Uttanríkis- og Vinnumálaráðið (Udenrigs- og Erhvervsministeriet), ambassader i udlandet samt generel rådgivning fra erhvervsdrivende rådgivere. Såfremt der er behov for gratis rådgivning, er det bedst at henvende sig til Hugskotið eller Iværksætterhuset.

Særlige tilbud til unge entreprenører (studerende)

I de senere år har flere skoler og uddannelsesinstitutioner tilbudt eleverne at arbejde med innovations- og entreprenørskabsprocesser i længerevarende forløb. Således får de unge, der skal forme fremtidens samfund, udviklet deres evne til at se nye muligheder og blive bedre udrustet til at tage imod de udfordringer, som samfundet står overfor.

¹²⁴ www.tfholding.fo

¹²⁵ www.liv.fo/royndin

¹²⁶ www.vf.dk

Målet er at øge interessen for innovation og entreprenørskab blandt eleverne i folkeskolen og i gymnasiet samt at give elever og studerende mulighed for at skabe noget selv. På sigt er målet, at flere involverer sig i samfundet som aktive medborgere, innovative medarbejdere og succesfulde iværksættere.

Fonden for entreprenørskab

Fonden for Entreprenørskab var i 1996 med til at indføre innovations- og entreprenørskabs-aktiviteter i ungdomsuddannelserne på Færøerne. I 2012 blev der etableret en selvstændig region på Færøerne, der i dag hedder Fonden for Entreprenørskab Region Færøerne. I bestyrelsen sidder repræsentanter for Eik Banki, Vinnuhúsið (Industriens Hus), Tøkni, Visit Faroe Islands, Fróðskaparsetur Føroya (Universitetet), Glasir Tórshavn College (Sammenlægning af erhvervsskoler, teknisk skole, handelsskole og alment gymnasium) og Teknisk Skole i Klaksvík. Private virksomheder og foreninger bidrager med økonomisk støtte.

Fonden har primært støttet ungdomsuddannelserne på Færøerne, dvs. erhvervsuddannelserne og de gymnasiale uddannelser og har bl.a. fungeret som en koordinator mellem uddannelsesinstitutionerne med det formål at skabe tværfaglige tilbud, hvor studerende med forskellig uddannelsesmæssig baggrund har mulighed for at mødes. Fonden afholder informationsmøder, hvor studerende orienteres om muligheder for at arbejde med entreprenørskabsaktiviteter, og er koordinator for Company Programme på Færøerne. Eik Banki har været hovedsponsor for Company Programme siden 1996.

Fonden for Entreprenørskab Region Færøerne vil fremover øge indsatsen på alle niveauer i uddannelsessystemet på Færøerne.

Der er etableret gode samarbejdsrelationer mellem Fonden for Entreprenørskab, Undervisningsministeriet, Udenrigs- og erhvervsministeriet, gymnasier, erhvervsskoler, universitetet, foreninger og erhvervslivet på Færøerne. Disse relationer og støtten fra erhvervslivet har stor betydning for gennemførelsen af de forskellige innovations- og entreprenørskabsaktiviteter.

- *Company Programme*
Elever på erhvervsskolerne og de gymnasiale uddannelser har mulighed for at deltage i Company Programme. Eleverne arbejder med innovation og entreprenørskab i et længerevarende undervisningsforløb, der afsluttes med FM i entreprenørskab. Vinderen af den færøske konkurrence får mulighed for at deltage i DM i København. Der er tale om et learning-by-doing program, hvor eleverne bl.a. lærer at se og skabe idéer og muligheder samt at etablere og drive egen virksomhed. Elever, der deltager i Company Programme, udvikler bl.a. deres evne til at være innovative og at iværksætte idéer gennem samarbejde og

netværk. De har bl.a. kontakt til underleverandører, forhandlere, myndigheder, pengeinstitutter og rådgivere. Eleverne udvikler desuden evnen til at planlægge og organisere aktiviteter samt evnen at kunne analysere og håndtere risici. De får også erfaring med at samarbejde og kommunikere med netværk uden for skolen og udvikler deres faglige, personlige og sociale færdigheder, bl.a. evnen at kunne arbejde vedholdende både selvstændigt og i grupper.

- *Rådgivning og efteruddannelse af lærere*
Fonden for Entreprenørskab tilbyder rådgivning og vejledning til lærere på uddannelsesinstitutioner, der deltager i Company Programme og har desuden været med til at give undervisere på ungdomsuddannelserne efteruddannelse, for at fremme anvendelse af innovations- og entreprenørskabsrettede aktiviteter i undervisningen.
- *Internationalt samarbejde og innovation camp*
Fonden for Entreprenørskab har haft en koordinerende rolle i forbindelse med etablering af internationale samarbejdsrelationer mellem færøske og udenlandske uddannelsesinstitutioner. Desuden har fonden været med til at udvikle og afholde Innovation Camp, hvor undervisere og elever fra forskellige nordiske og baltiske lande har deltaget. De internationale Innovation Camps er afholdt med støtte fra bl.a. Nordplus Junior. Det internationale samarbejde har også omfattet samarbejde omkring nationale konkurrencer i Company Programme, hvor udenlandske elever har fået mulighed for at deltage med gæstevirksomheder, dog uden at deltage i selve konkurrencen.

Folkeskolen

I folkeskolelovens § 2, Stk. 2. fremgår, at "Folkeskolen skal skabe rammer for oplevelse, virkelyst og dybsindighed, således at eleverne kan udvikle erkendelse, fantasi og lyst til at lære, og udvikler evne til at vurdere selvstændigt, at træffe beslutninger, at handle og at udvikles med tillid til egne muligheder og de muligheder, der er i fællesskaber."¹²⁷

Der lægges vægt på, at eleverne foruden at opnå faglige kundskaber, også udvikler virkelyst, fantasi samt evnen til at vurdere selvstændigt og træffe beslutninger. Desuden lægges der vægt på, at eleverne ser muligheder og handler. Eleverne skal forberede sig på de videre studier og gøres klar til at kunne varetage et arbejde på fremtidens arbejdsmarked. Dette åbner op for, at lærerne anvender innovative undervisningsmetoder, der styrker elevernes evne til innovativ anvendelse af fagligheden samtidig med, at deres personlige og sociale kompetencer udvikles.

¹²⁷ Oversættelse af den færøske folkeskolelov. Se <http://logir.fo/Logtingslog/125-fra-20-06-1997-um-folkaskulan-sum-seinast-broytt-vid-logtingslog-nr-34-fra-28> (Besøgt 08.10.16)

Der gøres allerede i dag en indsats for, at elever i folkeskolen får undervisning i innovation og entreprenørskab, og nogle folkeskoler på Færøerne har faget entreprenørskab på skoleskemaet for elever i 9. og 10. klasse.

- *Skole FM*
Eleverne i 9. og 10. klasse har mulighed for at deltage i Skole FM, hvor elever fra forskellige skoler konkurrerer mod hinanden. Det er Íverksetarahúsið í Klaksvík, der i samarbejde med undervisningsministeriet står for organiseringen af dette undervisningsforløb. (Se beskrivelse af Skole FM på s. 7).

Erhvervsuddannelser og gymnasiale uddannelser

Flere af erhvervsuddannelserne og de gymnasiale uddannelser har grundfaget Innovation som valgfag. Desuden får eleverne undervisning i innovation og entreprenørskab i forbindelse med tværfaglige projekter og temaer.

- *Company Programme*
Elever på ungdomsuddannelserne har mulighed for at deltage i Company Programme, der koordineres af Fonden for Entrepreneurskab. (Se beskrivelse af Company Programme på s. 13).
- *European Business Game*
Elever på de gymnasiale uddannelser har mulighed for at deltage i konkurrencen European Business Game, der koordineres af Íverksetarahúsið i Klaksvík. (Se beskrivelse på s. 6).

De videregående uddannelser

De videregående uddannelser på Færøerne dækker bl.a. over kortere videregående uddannelser, søfartsuddannelser samt universitetsuddannelser. Innovation og entreprenørskab indgår ikke som selvstændige fag på de korte videregående uddannelser, men indgår som elementer i fag på Markedsføringsuddannelsen og Produktionsteknologuddannelsen, hvor undervisningen er tværfaglig, og hvor eleverne bl.a. arbejder med produktudvikling og forretningsplaner. På søfartsskolerne indgår innovation og entreprenørskab som elementer i nogle af fagene på maskinmesteruddannelsen.

Uddannelserne på Fróðskaparsetur Føroya¹²⁸ (Det færøske universitet) har ikke innovation og entreprenørskab som selvstændige fag på deres uddannelser, men nogle

¹²⁸ www.setur.fo

af uddannelserne indeholder elementer af innovation og entreprenørskab, bl.a. uddannelsen Master i West Nordic Studies. I forbindelse med at bachelor- og kandidatstuderende arbejder med bacheloropgaver og masterafhandlinger, er de studerende ofte i høj grad med til at skabe værdi i samarbejde med eksterne samarbejdspartnere, private virksomheder og offentlige organisationer. Dermed indgår innovation og entreprenørskab som en del af disse projekter.

Fróðskaparsetur Føroya (Universitetet på Færøerne) arbejder med en strategi- og udviklingsplan med øget fokus på innovation og entreprenørskab og har ligeledes haft samarbejde med Íverksetarahúsið i Klaksvík om enkelte iværksætteraktiviteter på universitetet.

Udfordringer, anbefalinger og tiltag

De interviewede personer var enige i, at de største udfordringer, som færøske iværksættere og aktører, der arbejder med innovation og entreprenørskab, står overfor i dag, er iværksætternes manglende adgang til risikovillig kapital samt indføring af innovation og entreprenørskab i uddannelsessektoren. Andre udfordringer, der blev nævnt, er besværligheder i forbindelse med virksomhedsetablering og iværksætternes manglende erfaring med eksport.

Der anbefales i alt seksten forskellige tiltag, der kunne være med til at skabe bedre rammer for iværksættere og andre, der arbejder med innovation og entreprenørskab på Færøerne.

Iværksætteri og risikovillig kapital

- Tiltag 1 – Højere bevilling til Vinnuframi.
- Tiltag 2 – Bevilling til investering i risikofyldte start-up virksomheder.
- Tiltag 3 – Etablering af ny investeringsfond.

Iværksætteri og administration

- Tiltag 4 – Det skal være enkelt at etablere en ny virksomhed.
- Tiltag 5 – Oprettelse af en fælles iværksætterportal.
- Tiltag 6 – Rådgivning om lovmæssige og regnskabsmæssige krav.
- Tiltag 7 – Adgang til lokaler og laboratorier.

Iværksætteri og eksport

- Tiltag 8 – Styrke kontakten mellem iværksættere og eksportrådgivning.

Entreprenørskab og uddannelse

- Tiltag 9 – Øge udbuddet af kurser og fag med læring i og om entreprenørskab.
- Tiltag 10 – Progression i innovations- og entreprenørskabsaktiviteter i uddannelsessystemet.
- Tiltag 11 – Uddannelse og efteruddannelse af undervisere.
- Tiltag 12 – Udvikling af færøsk undervisningsmateriale om innovation og entreprenørskab.
- Tiltag 13 – Samarbejde om entreprenørskab på tværs af uddannelsesinstitutioner.
- Tiltag 14 – Måling og synliggørelse af effekten af entreprenørskabsaktiviteter.
- Tiltag 15 – Tættere samarbejde mellem startup-virksomheder og studerende på universitetet.
- Tiltag 16 – Højere økonomisk bevilling til entreprenørskab i uddannelsessystemet.

Iværksætter og risikovillig kapital

En stor udfordring, som færøske iværksættere har i dag, er manglende adgang til risikovillig kapital. Ifølge flere af de interviewede personer, kan dette være en af hovedårsagerne til, at flere startup-virksomheder ikke rigtig kommer i gang og har svært ved at vokse eller komme ud på udenlandske markeder med deres produkter og tjenesteydelser.

Ifølge flere af de interviewede personer, er færøske investeringsfonde og investorer meget forsigtige med at investere i startup-virksomheder. En af årsagerne kan være, at iværksætternes projekter ikke er modne nok til at blive præsenteret for investorer. Der er ofte tale om en idé og ikke en indtægtsgivende virksomhed. Iværksætterne har brug for at få hjælp til at gøre projekterne salgbare, før de bliver præsenteret for investorer. Der er også flere startup-virksomheder med gode projekter, der har svært ved at få den nødvendige kapital for at komme i gang.

Selv om der er flere investeringsforeninger og investorer på Færøerne, er det ifølge de interviewede personer kun et fåtal af færøske startup-virksomheder, der får risikovillig kapital fra investorerne. Vinnuframi er i øjeblikket den eneste aktør, der giver finansiel støtte til startup-virksomheder, der har behov for at få hjælp til produktudvikling og til at komme ud på markedet med deres produkter og tjenesteydelser. Vinnuframi giver kun støtte til udvikling og har ikke mulighed for at investere i selve virksomheden. Eftersom Vinnuframi kun får ca. 3 millioner DKK årligt til støtte af startup-virksomheder og andre virksomheder, er den samlede støtte til færøske iværksættere meget begrænset.

Der foreslås tre forskellige tiltag, der kan være med til at gøre det lettere for startup-virksomheder at få risikovillig kapital.

Tiltag 1 – Højere bevilling til Vinnuframi

Vinnuframi bør få en højere bevilling på finansloven, således at Vinnuframi kan støtte flere færøske startup-virksomheder og hjælpe iværksættere med at gøre projekterne klar til at blive præsenteret for investorer.

Tiltag 2 – Bevilling til investering i risikofyldte start-up virksomheder

Flere af de interviewede personer nævnte, at der bør bevilges penge til investering i start-up virksomheder. Et af forslagene går ud på, at Framtak får bevilget penge, der øremærkes til investering i risikofyldte start-up projekter. Et andet forslag går ud på, at Vinnuframi får bemyndigelse til at investere i risikofyldte startup-virksomheder, således at de får større mulighed for at hjælpe iværksættere med at realisere deres projekter. Når iværksætterne er kommet længere med deres projekter, har de bedre mulighed for at få risikovillig kapital fra andre investorer.

Tiltag 3 – Etablering af ny investeringsfond

Der bør etableres en investeringsfond, der primært investerer i nye risiko-fyldte startup-virksomheder, som har behov for risikovillig kapital. Der er flere forslag til, hvordan investeringsfonden kan skaffe kapital. Et af forslagene går ud på, at investeringsfonden får en årlig bevilling på finansloven, der kun bliver brugt til investeringer i risikofyldte startup-virksomheder. Et andet forslag går ud på, at færøske virksomheder forpligter sig til at indbetale en vis procentdel af deres overskud til investeringsfonden, der videreinvesterer pengene i risikofyldte startup-virksomheder. Fondens indtægter geninvesteres i nye startup-virksomheder.

Iværksætteri og administration

Når en virksomhed skal etableres på Færøerne, skal iværksættere igennem en længere proces, hvor de skal kontakte flere forskellige organisationer, heriblandt TAKS (de færøske skattemyndigheder), Skráseting Føroya og pengeinstitutter. Nye iværksættere har ofte svært ved at navigere rundt på de forskellige hjemmesider, og etableringsprocessen tager mere end en uge.

Der foreslås fire forskellige tiltag, der kan være med til at gøre det lettere at etablere en virksomhed:

Tiltag 4 – Det skal være enkelt at etablere en ny virksomhed

Tilgangen til at etablere en ny virksomhed skal være enkel og hurtig. Dette kan gøres ved hjælp af digitalisering og ved at gøre det lettere at navigere på TAKS hjemmeside.

Tiltag 5 – Oprettelse af en fælles iværksætterportal

Oprettelse af en fælles iværksætterportal, hvor iværksættere har adgang til alle aktører og organisationer, der er relevante i forbindelse med virksomhedsoprettelse, ville gøre det endnu enklere at etablere en ny virksomhed.

Tiltag 6 – Rådgivning om lovmæssige og regnskabsmæssige krav

Iværksættere skal opfylde mange lovmæssige og regnskabsmæssige krav. Flere iværksættere oplever, at deres manglende viden inden for dette område kan være en hindring. Derfor kunne det være relevant at tilbyde nye startup-virksomheder rådgivning fra bl.a. revisorer og advokater.

Tiltag 7 – Adgang til lokaler og laboratorier

I dag har iværksættere mulighed for at få adgang til lokaler hos Íverksetarahúsið i Klaksvík, Vinnuframi og Hugskotið i Tórshavn. Lokalerne er meget optaget, og det er ofte svært at få adgang til lokaler. Iværksættere skal have lettere adgang til kontorlokaler og laboratorier, og dette er noget, som de offentlige og kommunale aktører bør arbejde med.

Iværksætteri og eksport

Færøske virksomheder har et meget lille hjemmemarked, og derfor er det ofte nødvendigt at tænke på eksport allerede fra virksomhedens etablering. Ifølge flere af de interviewede personer mangler færøske iværksættere ofte viden om og erfaring med eksport, og derfor har de brug for god vejledning. Færøske virksomheder har mulighed for at få vejledning hos Dansk Eksportråd, der bl.a. tilbyder rådgivning og markedsundersøgelser.

Tiltag 8 – Styrke kontakten mellem iværksættere og eksportrådgivning

Der bør gøres en indsats for at styrke kontakten mellem iværksættere, ambassader og andre aktører, der kan rådgive omkring eksport til udenlandske markeder.

Entreprenørskab og uddannelse

Det er en stor udfordring for det færøske samfund, at der i dag kun er nogle få folkeskoler, der tilbyder eleverne mulighed for at arbejde med entreprenørskabsrettede aktiviteter. Elever fra erhvervsskolerne og gymnasierne har bedre muligheder for at arbejde med entreprenørskab, bl.a. ved at deltage i Company

Programme og European Business Game. De korte videregående uddannelser markedsføringsøkonom og produktionsteknolog indeholder flere elementer af innovation og entreprenørskab, mens uddannelserne på universiteterne ikke har innovation og entreprenørskab på skemaet. Her har de studerende dog mulighed for selv at arbejde med entreprenørskabsaktiviteter i forbindelse med projektarbejde og deres arbejde med bacheloropgaver og kandidatafhandlinger.

Flere aktører gør i dag en indsats for, at elever, studerende og undervisere får mulighed for at arbejde med entreprenørskabsaktiviteter. Der skal gøres en indsats for, at endnu flere elever og studerende får mulighed for at arbejde med innovation og entreprenørskab. Dette kan bl.a. gøres ved hjælp af følgende tiltag:

Tiltag 9 – Øge udbuddet af kurser og fag med læring i og om entreprenørskab

Flere af de interviewede personer understregede, at det er vigtigt, at udbuddet af kurser og fag om innovation og entreprenørskab øges på alle skoletrin. Dette er nødvendigt for at skabe interesse for innovation og entreprenørskab hos børn allerede i folkeskolen, således, at børnene lærer at se nye muligheder og får mulighed for at arbejde med teori og praksis. Entreprenørskab skal derfor på skemaet i alle folkeskoler på Færøerne. Der skal arbejdes mere med innovations- og entreprenørskabsrettede aktiviteter i folkeskolen allerede fra 4. klasse, og innovation og entreprenørskab bør indføres som valgfag fra 8. klasse.

Entreprenørskab skal også på skemaet i alle ungdomsuddannelser, således at alle elever får mulighed for at arbejde med entreprenørskabsaktiviteter. Erhvervsskolerne og gymnasierne skal lægge endnu større vægt på læring i og om innovation og entreprenørskab.

Entreprenørskabsaktiviteter skal ind i studieplanerne på de korte videregående uddannelser samt på universitetsuddannelserne, således at vi får flere innovative virksomhedsledere og medarbejdere.

Samfundet har et stort behov for, at flere unge med højere uddannelser får en øget interesse i at arbejde med entreprenørskab og at etablere egen virksomhed. Med en øget indsats på dette område ville vi på sigt kunne se nogle spændende og mere modne projekter hos startup-virksomheder.

Indføring af entreprenørskabsaktiviteter i uddannelsessystemet skal være koordineret, således at der er en sammenhæng og progression i det, som eleverne lærer i folkeskolen og det, de lærer på ungdomsskolerne og på universitetet. Der skal være en progression, således at der på alle uddannelsesniveauer indgår læringsmål med forskellige vidensformer og grader af kompleksitet.

Opgaven med at indføre entreprenørskabsaktiviteter på alle trin i uddannelsessystemet må først og fremmest varetages af Mentamálaráðið, men med god støtte fra Uttanríkis- og Vinnumálaráðið (Udenrigs- og erhvervsministeriet), Fonden for Entreprenørskab Region Færøerne, Vinnuhúsið (Industriens Hus), Íverksetarahúsið og Hugskotið.

Tiltag 10 – Progression i innovations- og entreprenørskabsaktiviteter i uddannelsessystemet

Undervisningen i innovation og entreprenørskab bør være en mere integreret del af undervisningen på alle niveauer, dvs. i folkeskolen, erhvervsskolerne, gymnasierne, de korte videregående uddannelser og på Universitet. I dag koordinerer Íverksetarahúsið i Klaksvík undervisning i entreprenørskab i 9. og 10. klasse i omkring 6–8 folkeskoler i samarbejde med Mentamálaráðið. Íverksetarahúsið koordinerer desuden European Business Game på ungdomsuddannelserne og har etableret samarbejde med Universitetet. Hugskotið i Tórshavn har i samarbejde med Fonden for Entreprenørskab organiseret et par undervisningstilbud til elever på en folkeskole samt en idékonkurrence for elever på erhvervsskoler og handelsgymnasiet. Fonden for Entreprenørskab koordinerer Company Programme og rådgiver i den forbindelse undervisere på erhvervsskoler og gymnasier om entreprenørskabsundervisning.

Alle uddannelsesstilbud inden for innovation og entreprenørskab bør organiseres således, at der er en sammenhæng og progression i de forskellige innovations- og entreprenørskabsaktiviteter.

En mulighed er, at Mentamálaráðið sammen med Uttanríkis- og Vinnumálaráðið, Fonden for Entreprenørskab Region Færøerne, Vinnuhúsið, Hugskotið og Íverksetarahúsið opretter en fond, der har til formål at indføre en integreret og sammenhængende uddannelse i innovation og entreprenørskab på alle uddannelsesstrin, dvs. i folkeskoler, ungdomsuddannelser, korte videregående uddannelser og universitetsuddannelser. Medlemmer i fonden kunne være virksomheder, skoler og andre offentlige organisationer.

Tiltag 11 – Uddannelse og efteruddannelse af undervisere

At arbejde med innovation og entreprenørskab i undervisningen kræver meget af undviserne både m.h.t. faglig viden, pædagogik samt mod til at arbejde kreativt og eksperimenterende. Derfor bør lærere i folkeskoler samt undervisere på ungdomsuddannelserne og universitetet tilbydes opkvalificering og efteruddannelse i at undervise i entreprenørskab, for derigennem at sikre, at de har den nødvendige faglige og pædagogiske kompetence til at undervise i innovation og entreprenørskab.

Tiltag 12 – Udvikling af færøsk undervisningsmateriale om innovation og entreprenørskab

Både undervisere og rådgivere i iværksætermiljøet efterlyser færøske undervisningsmaterialer, der omhandler innovation og entreprenørskab. Såfremt vi ønsker at øge børnenes og de unges interesse og forståelse for innovation og entreprenørskab, må vi give de unge mulighed for at læse og tale om disse emner på færøsk. Unge iværksættere, der ønsker at starte egen virksomhed, kan også få glæde af dette. De har ofte svært ved at forstå fagbegreber på dansk eller engelsk og ved at udtrykke sig om emnet på færøsk, fordi det faglige ordforråd er mangelfuldt. Derfor har det stor betydning for formidlingen af undervisning og rådgivning om entreprenørskab, at der udvikles færøske undervisningsmaterialer og informationsmaterialer om innovation og entreprenørskab.

Tiltag 13 – Samarbejde om entreprenørskab på tværs af uddannelsesinstitutioner

Politikerne har arbejdet for at etablere et tættere samarbejde på tværs af uddannelsesinstitutioner på Færøerne. Dette har bl.a. resulteret i etablering af flere campus. I Tórshavn er tre gymnasiale skoler lagt sammen i et campus, der omfatter det almene gymnasium, teknisk skole og en handelsskole. Den nye skole har fået navnet Glasir Tórshavn College og flytter om kort tid ind i et nyt fysisk campus, der er under opførelse. Dette vil forbedre rammerne for et uddannelsesmiljø og give mulighed for et spændende samarbejde omkring innovation og entreprenørskab på tværs af faglige og uddannelsesmæssige retninger. Skoleledelse, lærere og elever bør prioritere og udnytte mulighederne for samarbejde omkring innovation og entreprenørskab.

Tiltag 14 – Måling og synliggørelse af effekten af entreprenørskabsaktiviteter

I dag findes der ikke systematiske målinger af, hvad der kommer ud af de forskellige innovations- og entreprenørskabsaktiviteter, hverken inden for uddannelsesområdet eller inden for iværksættermiljøet. Derfor bør der laves en systematisk undersøgelse, der måler effekten af de forskellige entreprenørskabsaktiviteter og ordninger. Resultater og succeshistorier bør synliggøres.

Tiltag 15 – Tættere samarbejde mellem startup-virksomheder og studerende på universitetet

Der bør etableres et tættere samarbejde mellem startup-virksomheder og studerende på universitetet. Dette kunne være med til at øge interessen hos de studerende for at arbejde med entreprenørskab og etablere egen virksomhed. Dette ville desuden give startup-virksomhederne viden og kunne være med til at gøre deres projekter mere spændende og modne.

Tiltag 16 – Højere økonomisk bevilling til entreprenørskab i uddannelsessystemet

Uddannelsesinstitutionerne bør få en bevilling, der er øremærket til faget innovation og entreprenørskab eller til arbejdet med at indføre innovations- og entreprenørskabsrettede aktiviteter på alle uddannelsesstrin i uddannelsessystemet på Færøerne.

Kilder

Interviews

Regin W. Dalsgaard, formand i bestyrelsen i Vinnuframi og Íverksetarahúsið, 29.09.2016.

Ólavur Ellefsen, formand i bestyrelsen i Fonden for Entreprenørskab Region Færøerne, og direktør i Tökni, 03.10.2016.

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Appendix 5: Greenland

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures, and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation, and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons could be said to be the lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as on other research.

The full entrepreneurial potential is viewed as the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation in Greenland with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up in Greenland.

In order to map the status of entrepreneurship education in Greenland, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in Greenland.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation in Greenland is shortly discussed.¹²⁹

Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.¹³⁰

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013)

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection at the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.

¹²⁹ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

¹³⁰ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager in Greenland completed the questionnaire in the course of 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge in the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,¹³¹ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager in Greenland to the management of educational institutions at the upper secondary and tertiary levels in Greenland.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching have been taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers' evaluation of their school's policy on innovation and entrepreneurship education.

It also examines the teachers' evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focus on four areas or "entrepreneurial dimensions". Please see "A Taxonomy

¹³¹ <https://heinnovate.eu/>

of Entrepreneurship education” for further elaboration on the entrepreneurial dimensions.¹³²

The four entrepreneurial dimensions examined are:

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, “Stjernemodellen” is used as a tool for the categorisation of courses (see Appendix B for further details).¹³³

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations too, and was used by the Foundation during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a Micro Grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000 that allows the student start-up to take their business further. A small case written about

¹³² <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

¹³³ “Stjernemodellen” will henceforth be referred to as the Star Model.

the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

The project manager in Greenland has also provided information about the innovation ecosystem on the island in the form of a case.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations between data may, however, occur when our data are compared with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions have been sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also with different strategic knowledge behind the answers. The data given about each island/country are therefore not always equivalent, because they depend on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

This report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Appendix A) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development in Greenland in the recent period. This will serve as background for the mapping of the situation in Greenland and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

According to Nordregio's data (see Appendix C), the development in the period 2009–2015 was a *decrease* by 7.9% in the population aged 0–24 and an *increase* by 4.6% in the population aged 25+. Surprisingly, data also show that the youth dependency is much higher than the old age dependency rate, which is unusual compared to the other islands in this mapping, where the reverse situation is mostly the case. In Greenland, the youth dependency in the years 2009 and 2013 is 32.9% and 29.8%, respectively, whereas the old age dependency rate in the same years is 9.3% and 10.7%, respectively. During this period, the youth dependency rate fell (by 9.4%), while the old age dependency rate rose (by 15.2%).

Labour market

Of all islands presented in this mapping, Greenland has the lowest overall employment rate and in the period 2009–2013, the rate decreased from 65% to 63%. Greenland moreover has the highest unemployment rate of the seven islands, almost 10% in 2013, and a relative high youth unemployment rate (17%) in 2013. Unemployment is typically a bigger problem in villages and settlements than in cities in Greenland, but especially so for the very young people under 25 years of age.¹³⁴

Education level

It adds to the challenges in Greenland that the share of the population with a tertiary education is no more than approx. 14%, which is by far the lowest rate of all islands presented in this mapping. The unemployment rates for those with a higher education in Greenland is very low (0.8%), and for those in all other educational categories the unemployment rates are lower than the country average of 10.3%. According to Greenland Statistics, more than half of employed persons have only primary education. This number is however decreasing, while the number of employed persons in all other educational categories is increasing.¹³⁵

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate responsible actors for entrepreneurship education are actors at the macro level (policy makers) who provide the framework for working in the area, actors at the meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational

¹³⁴ <http://www.stat.gl/dialog/main.asp?lang=da&sc=AR&version=201603>

¹³⁵ <http://www.stat.gl/dialog/main.asp?lang=da&version=201518&sc=AR&subthemecode=02&colcode=0>

institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at the macro level in Greenland. The desk research is based on information obtained from the island by means of a questionnaire.

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

Developing the national strategy framework

Greenland is very new in the entrepreneurship education area and has no national strategy for entrepreneurship education, no goals, ministry involvement or national definition. The island has just recently started focusing on entrepreneurship education with Greenland Business as the primary actor. Greenland Business is an organisation where one of the purposes is to function as the national business council. Moreover, Greenland Business functions as a consultancy service for companies and business people as well as for entrepreneurs /start-ups in Greenland. So far, they are the only national actor working directly with entrepreneurship education, even though their primary focus is the business sector rather than the education sector. Until now, there has not been a national budget allocated to entrepreneurship education in Greenland. However, during this pilot project, a proposal was submitted and in December 2016 during the second processing of the Greenlandic Finance Act 2017, EUR 175,000 was allocated to the establishment of a regional office in Greenland under the auspices of the Danish Foundation for Entrepreneurship. This will help to set things in motion in Greenland when it comes to entrepreneurship education.

The role of local and regional authorities

At the moment Greenland Business is the primary actor tapping in to entrepreneurship education through the only initiative directed specifically at young entrepreneurs in Greenland – the 3 year RYE connect project; an online training programme for young entrepreneurs. Actors like Arctic Circle Business and the regional Sermersooq Business Council offer guidance and advice to start-ups, however, not specifically to student start-ups. There have been other initiatives, which have, however, been closed again due to lack of interest and funds. Private actors who support entrepreneurs are also present in Greenland, however, in smaller scale. They include Brugseni which offers guidance and advice to entrepreneurs who want to start up a Greenlandic production, banks that offer advice to start-ups, and a few experienced entrepreneurs who act as guides for coming entrepreneurs.

Implementing entrepreneurship education

There is generally no provision of entrepreneurship education in educational institutions in Greenland, but data at the meso level show that a few educational institutions on upper secondary level offer courses in innovation and entrepreneurship.

Teacher education and training

There is no teacher training in entrepreneurship education in Greenland.

Engaging with businesses and private associations and organisations

The private sector's involvement in entrepreneurship education is relatively low in Greenland at a national level.

Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy level (macro level) and implementation (micro level) in the form of teachers who teach entrepreneurial skills to pupils and students. The meso level has often been overlooked, or given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the island, and make the link between strategy and practice, a survey was sent to the school management of schools and institutions in Greenland. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

The purpose of the survey is to map, not evaluate, the state of affairs of educational institutions when it comes to their experience with and strategies for education in innovation and entrepreneurship.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

Four out of 16 educational institutions in Greenland have participated in the survey. Nuernermik Ilinniarfik, Nuuk, Ilisimatusarfik, GUX-Nuuk and GUX Sisimiut. One of these schools (GUX-Nuuk) has a strategy for entrepreneurship education.

The schools' plan and goals for development of entrepreneurship education

The institution with a strategy also has a precise plan for the implementation of the entrepreneurship strategy and has created a common frame of understanding of entrepreneurship education and how to practise this form of teaching. However, the plan has not been communicated clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution). It also appears that there is no plan for following up and revising the entrepreneurship strategy on a continuous basis.

Management of the institution with a strategy has set only one concrete target and goal for development of entrepreneurship education. It is the development of curriculum in order that it contains learning objectives and competences for innovation and entrepreneurship.

This means that they have *not* set targets and goals for:

- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching).
- The establishment of project weeks in innovation & entrepreneurship.
- The cooperation between teachers and local businesses, public institutions and organizations in relation with entrepreneurship education.
- Teaching in entrepreneurship (learning objectives).
- Continuing education of teachers in teaching innovation & entrepreneurship.

No strategy but entrepreneurship activities

Although three out of the four institutions in the survey in Greenland have no entrepreneurship strategy, two of the institutions without a strategy state that entrepreneurship teaching and/or activities related to entrepreneurship are nevertheless taking place at their educational institution. This includes students being taught in innovation (how to start a business, or being taught in new and innovative ways), and students working with projects that bring them in contact with the surrounding society. One of the institutions also has collaboration with the local business industry concerning students' education and further working life/career.

Importance of strategy and education in entrepreneurship

Management from the four institutions in Greenland agree to the notion that education in entrepreneurship is relevant for their students. They also agree that it is, to some extent, important for the institution to formulate a strategy for entrepreneurship. On a scale from 1 to 5 the data from Greenland show a mean of 3.5 concerning the statement "It is important that my educational institution formulates a strategy for education in

innovation & entrepreneurship".¹³⁶ A higher mean (4.25) is found concerning the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship".

Importance of goals for entrepreneurship teaching

The institution with a strategy agrees that goals for education in entrepreneurship should be set to strengthen students' interest in their further education and career, and to upgrade teachers' skills within entrepreneurship teaching. Management also believes that the goals should be set to strengthen the cooperation between the educational institution and the local society. The latter purpose is something, that all four participating institutions agree to. Management from the institution with a strategy explains:

"Innovation and entrepreneurship play an important role at our institution but as part of the teachers' didactical approach to their subjects. We do not lecture in I&E separately but we have introduced the subject at specifically arranged theme-based days and other events for teachers and students."

Some but not all of the institutions without a strategy also agree that goals should be set for the following purposes:

- Strengthen students' interest in becoming an entrepreneur/starting a new business.
- Prepare students better for working life.
- Live up to new national/regional policy on the area of entrepreneurship education.
- Strengthen the profiling and promotion of my educational institution.
- Boost the development of the local area, for instance by contributing to new businesses through the skill development of young people.

External network

In Greenland, the institution with a strategy gives their students the possibility for making contact with the institution's external network through:

- Guest lectures given by local business people, entrepreneurs, or others.
- Workshops in cooperation with external partners.
- Subject-/project weeks or -days in cooperation with external partners.

¹³⁶ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

Two of the institutions without a strategy give the same possibility to their students. In addition, they give their students the possibility for contacting the institution's external network through exchange/trainee service in local businesses/organisations. One institution also organises visits to companies.

None of the institutions in Greenland give their students the possibility for making contact with the institution's external network through competitions at the educational institution, where external contacts function as judges.

Involvement from school governing body and local businesses

The degree of involvement from the governing body of the institution and the local business as a resource in the work with entrepreneurship education is slightly different at the four institutions. On a scale from 1 to 5 the institution with a strategy has a low degree of involvement from both the governing body of the institution and the local businesses as a resource in the work with entrepreneurship education.¹³⁷ The institutions without a strategy have an involvement which is between "to a small extent" and "to some extent" from the governing body of the institution and from local businesses. Interestingly enough, the institutions without a strategy have slightly more involvement from both governing body of the institution and from local businesses.

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

One of the institutions with no strategy has no resources at all earmarked to entrepreneurship education. The rest of the participating institutions in Greenland do have resources earmarked to entrepreneurship but there are differences as to what and how much. The institution with a strategy has earmarked both time and other resources such as staff with knowledge and expertise on the area. Also, a coordinator for entrepreneurship teaching, who has the full backing and practical support from the management and who is part of the management, has been appointed by the institution with a strategy. Time is also something, which two of the institutions with no strategy have stated as a resource. One of them has also stated that financial resources are earmarked to this area and other resources such as staff with knowledge and expertise on the area. None of the institutions with no strategy have a coordinator for entrepreneurship.

¹³⁷ 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

One of the institutions in the survey (one without a strategy) states that they have e.g. several requirements to the teachers and that they communicate their expectations to the teachers. Thus, entrepreneurship teaching is a part of the timetables and the annual teaching plans. And time is allocated to entrepreneurship teaching courses of a longer duration in the teaching plans, for instance project weeks, optional subjects, etc. They also require from the teachers that they describe in their annual plans how they integrate entrepreneurship in other subjects and that they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students. The institution has also communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated at the educational institution.

Like most (82%) of the institutions in the survey (all islands), entrepreneurship teaching is a part of the timetables and the annual teaching plans at three out of the four participating institutions in Greenland, including the one with a strategy. This institution also uses a feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. None of the other institutions have such a system. However, the institution with a strategy has not communicated to the teachers what their expectations are concerning where, when and how entrepreneurship teaching should be integrated at the educational institution.

Management at all four institutions in the survey support dialogue and corporation between teachers from different disciplines through cross-curricular teaching and/or interdisciplinary project groups. The institution with a strategy along with one of the institutions without a strategy supports the dialogue through dialogue and co-decision between teachers and students. One of the institutions without a strategy also supports the dialogue through common facilities across the educational institution's subdivisions.

Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

Plan for teacher competence development

When it comes to a plan for teacher competence development, there is no apparent difference between the institution with a strategy and two of the institutions without a strategy. At all three institutions, the plan for competence development and knowledge sharing within entrepreneurship education manifests itself through knowledge sharing about entrepreneurship teaching and through special networks. At none of the institutions competence is development ensured through the continuing

education of teachers in entrepreneurship teaching, and their teachers do not have a cross-curricular cooperation within the subject of entrepreneurship. In one of the educational institutions, management presently has no plan at all for teacher competence development in entrepreneurship education.

Experimenting with teaching forms

All the participating institutions in Greenland allow their teachers to experiment with teaching forms. The institution with a strategy allows the teachers to experiment with teaching forms in general through project work / feature weeks. Two of the institutions without a strategy also allow the teachers to experiment through project work / feature weeks as well as through cross-curricular feature periods. One of the no-strategy institutions also allows this through cooperation with businesses.

Cooperation with surrounding society

All four institutions are involved in collaboration and knowledge sharing with the surrounding society/local area through institutions within the public sector and other knowledge organisations. Two of the institutions with no strategy are also involved through established business/industry and newly started businesses /entrepreneurs.

Extra-curricular activities

Extra-curricular activities to strengthen the entrepreneurial competences and mind-set of students are almost non-existent at the institutions in Greenland. Three of them do not at present offer such activities at all. One of the institutions with no strategy, however offers "other forms of advice and guidance for student start-ups and", they arrange business plan competitions and organize networks between students and entrepreneurs/business industry. This institution also mentions that they are working on establishing an incubator.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

In practice, three out of four institutions have access to materials and teachers' aids, which can support their teaching in innovation and entrepreneurship, including the institution with a strategy. The institution with a strategy also has experience with actual teaching forms and programmes within entrepreneurship. In addition, the institution with a strategy also continuously validates and revises the learning objectives for entrepreneurship teaching with a view to updating its teaching programmes. None of the institutions without a strategy do this. However, two of them develop the curriculum in

co-operation with external stakeholders in order to get input concerning useful competences in future. None of the participating institutions in Greenland measure the impact of the entrepreneurship teaching before, during and after the course/teaching. One of the recipients describes their approach in this way:

“Our teachers are expected to think innovatively, which I am also convinced they do, but we are goal-oriented when it comes to entrepreneurship education.”

Micro level

The micro level concerns the implementation level, that is, the actual teaching taking place in educational institutions and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of the development of a national strategy for entrepreneurship education, this level often relies strongly on individual teachers' enthusiasm. Teacher training is limited with no or little in-service training. But as the island or country develops their activity on the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when the management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in Vocational/VET and tertiary level education on different parameters. Upper secondary education is not a part of the survey due to insufficient answers.

The share of pupils and students who has received entrepreneurship education is calculated on the basis of the total number of pupils and students on the island. It must be emphasised that this share may be inaccurate, as it is based on the responses received. There may be other pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey for this mapping.

Vocational/VET

At vocational/VET level data have been collected by means of a questionnaire directed at the teachers. The purpose of the survey is to map the number of pupils in

vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories.

Basic information is comprised of two questions. They concern whether the teachers experience that their school has clear policies on innovation and entrepreneurship in education, respectively. The scores for these questions thus reflect to what degree that is the case.

Teaching, which focuses on the degree to which the teachers experience that the students have participated in innovation and entrepreneurship education in class instruction and courses, as clear subjects in their practical training and internships as well as clear subjects in their apprenticeship tests.

Entrepreneurship and setting things in motion is the foundation for entrepreneurship education. The teachers were asked whether the pupils have participated in feature weeks, camps, projects or the like focusing on innovation and entrepreneurship, respectively. In addition, the teachers were asked whether the pupils had participated in other innovation or entrepreneurship projects. If the answer is yes to any one of these questions, the pupils are included in the total number of pupils and students, who receive entrepreneurship education. As such, there are three different questions, which all play a part in determining whether the pupils have received entrepreneurship education.

Entrepreneurship education thus indicates the number of pupils who, based on the abovementioned questions, receive entrepreneurship education. The share of pupils and students who have received entrepreneurship education is based on the total number of pupils and students on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

In Table 1, the overall results for vocational/VET are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

The result is comprised of answers from 6 teachers with a total of 51 pupils. Overall, 23 pupils at vocational/VET level in Greenland have encountered entrepreneurship education in the 2015/2016 school year. That is the equivalent of 0.9% of the 2,446 pupils in vocational/VET and upper secondary level in Greenland.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participated in entrepreneurship education.¹³⁸ However, this percentage includes pupils and students

¹³⁸ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

The results in Table 1 show that the teachers only experience a clear policy on innovation and entrepreneurship to a lesser degree. The scores of 25% are both below the average of 33% and 32%, respectively.

Table 1: The results for vocational/VET from Greenland

Subject	Variable	Greenland
Basic information	Policy on innovation	25
	Policy on entrepreneurship	25
Teaching	Innovation in subject/course	38
	Innovation as a clear topic in practical training/apprenticeship	33
	Innovation as a clear topic in apprenticeship test	23
	Entrepreneurship in subject/course	35
	Entrepreneurship as a clear topic in practical training/apprenticeship	31
	Entrepreneurship as a clear topic in apprenticeship test	20
Entrepreneurship	Innovation, percentage	63
	Start-up of business / Entrepreneurship, percentage	25
	Other, percentage	38
Entrepreneurship education	Number of students receiving entrepreneurship education	23

Note: The result is comprised of answers from 6 teachers with a total of 8 classes and 51 pupils.

With regard to the teaching situation, the teachers find that the pupils encounter innovation and entrepreneurship in class instruction as well as their practical training and internships. In addition, a relatively large part of the pupils encounter innovation and entrepreneurship as a clear and obvious topic during their apprenticeship tests; the score here is 23 and 20 compared to an average of 11 for both areas.

According to the teachers in this study, more than 60% of the classes have participated in feature weeks, camps, projects or the like focusing on innovation, whereas 25% of classes have participated in similar feature weeks, camps etc. with a focus on business start-up and entrepreneurship. Further, 38% of pupils have participated in other innovation or entrepreneurship programmes.

Tertiary education

For the purpose of mapping entrepreneurship education at the tertiary education level, the islands were asked to send course descriptions of courses within innovation and entrepreneurship or courses that resemble this kind of teaching at this level along with

the number of students partaking in these courses during the academic year 2015–16. The received course descriptions were then screened on the basis of the categories in the Star Model – a model for identifying entrepreneurship courses.

In the Star Model courses and subjects are categorised according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Greenland has provided data about two educations at the tertiary level: Journalism and an Academy Profession Degree in Service, Hospitality and Tourism Management, “Serviceøkonom”. The description of Journalism mentions idea development and creative thinking, but does not emphasise entrepreneurship or innovation in any way and is therefore not categorised as entrepreneurship education.

The description of “Serviceøkonom” (Academy Profession Degree in Service, Hospitality and Tourism Management) is very brief, but the general subject “Strategy and Marketing” includes strategic planning, marketing, innovation and quality management. This subject was taught to 39 students during 2015–16. Two of the students have specialised in Marketing and innovation where they have learned to elaborate and interpret analyses concerning marketing channels and campaigns in tourism as well as development of tourism and facilities.

Greenland has a total of 834 students in higher education. The 39 students participating in entrepreneurship education at the tertiary education level thus correspond to 4.7% of the total number of students at the tertiary education level. In comparison, the percentage of Danish tertiary level students who participated in entrepreneurship education was 13.7% in 2014–15. The percentage of Danish tertiary level student who participated in entrepreneurship education in 2015–16 is 15.8%.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of

the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.¹³⁹ Only 4–12 months after receiving a Micro Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after receiving the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

In Greenland there are 12 upper secondary educational institutions and 4 tertiary educational institutions. The total number of students in the school year 2015–16 is 3,280. At present, there are no funds earmarked for student start-ups in Greenland.

During the project trial granting Micro Grants of DKK 25,000 in Greenland, one application from student start-ups was received. Normally, a student start-up is comprised of 2 to 6 pupils or students. The team that received the grant is comprised of students who have all completed an innovation course during their upper secondary education and who have, on multiple occasions, participated in Greenland Business' Start-up Greenland entrepreneur workshops. The Micro Grant was marketed through Facebook, the local press, through e-mails sent to teachers and principals as well as a variety of news platforms.

Effects

After careful consideration, the student start-up decided not to use the Micro Grant, and thus it is not possible to ascertain the effects of the grant. However, it is obvious that the student start-up has gained experience throughout the process. As such, the project manager says:

¹³⁹ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

- It has given the entrepreneur courage to take action and contact suppliers, the Danish Ministry of Foreign Affairs' Trade Council etc.
- The project began as a project for the business school, but due to a the application for the Micro Grant among other things, it has become an actual business.
- Getting input from the panel on the presentation of the project has given the entrepreneur valuable knowledge and insight in how others see the potential and challenges of the project.
- The local, experienced entrepreneur who was part of the panel has offered to mentor the entrepreneur due to the Micro grant.
- The entrepreneur has been taken seriously in the bank since she could show that others supported her idea.
- The bank wants to realise the project regardless of her not using the Micro grant. Furthermore, they want to be part of the Greenlandic entrepreneurial environment in future.

Derivative effects for the island and local community as a consequence of the idea can be seen even though this idea did not create jobs or the like. However, the grant has created role models who may inspire other pupils, students and young people in general to believe in their own business ideas.

Needs and possibilities

The student start-up believes that there are plenty of opportunities to receive advice and support from the pre-existing arrangements. Yet, she says: "The companies owned by the Greenland Self-government Authorities is seen as a disadvantage for start-ups as it can be difficult to compete and it is in your best interest to stay on good terms with them"

Micro grant recipient

Arctic Fresh Supply

The idea is to sell fresh air in a bottle in China. The production costs and preliminary expenses are very low. The challenges are marketing and delivery.

Future entrepreneurial potential

Greenland experiences challenges with depopulation, especially of young people, low education levels, and high youth dependency. Even though there has been a decrease in youth dependency from 2009 to 2013 it is still much higher than the old age dependency. It adds to the challenges in Greenland that youth unemployment is relatively high, especially in villages and settlements. In addition, the employment rate in Greenland is low and has been decreasing. There are also geographical challenges in Greenland such as long distances within the island, where some villages and settlements are quite isolated, and the infrastructure is insufficient. Many people are employed within traditional and seasonal trades such as fishery and hunting, especially in the more secluded villages and settlements.

Based on the objective of creating solutions that will entail positive effects for Greenland, the first objective for this pilot project has been to ensure a mapping of entrepreneurship education in the area. There is no prior data available for mapping entrepreneurship in the educational sector in Greenland. Knowing the present situation on the island the second objective has been to define the potential for entrepreneurship education and Micro Grants in Greenland from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people in Greenland learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the market position of Greenland internationally and contributing to a sustainable development, growth and jobs.

Forecasting entrepreneurship education and Micro Grants for Greenland

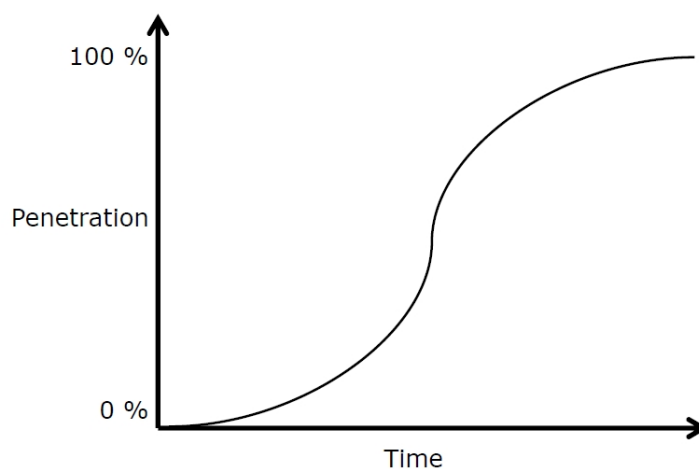
This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives in Greenland. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-

ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Greenland is at the very beginning of the s-curve development of the S-curve.

Figure 1: S-curve for entrepreneurship education penetration rate



The forecast is presented in Table 2 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from Greenland.
- The maturity level on the island with regard to entrepreneurship in education (The "s-curve").
- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based on the assumptions that:

- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.

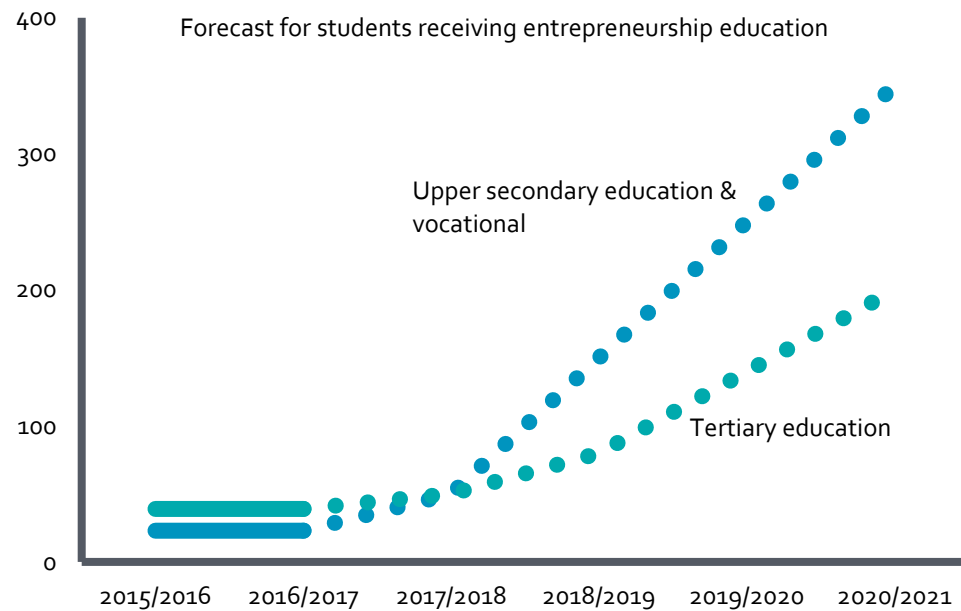
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but are estimates.

Table 2: Forecast for Greenland

Forecast for entrepreneurship and micro grants until the school year 2020/2021						
	Greenland					
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	2,446	2,446	2,446	2,446	2,446	2,446
Students receiving entrepreneurship education, forecast	23	23	50	150	250	350
Share of students receiving entrepreneurship education, percentage	0.9%	0.9%	2.0%	6.1%	10.2%	14.3%
Tertiary education						
Students in total	834	834	834	834	834	834
Students receiving entrepreneurship education, forecast	39	39	50	80	140	200
Share of students receiving entrepreneurship education, percentage	4.7%	4.7%	6.0%	9.6%	16.8%	24.0%
Applicants receiving a grant						
Accepted applicants	1	1	2	3	4	5
Average annual costs (4 years) in DKK	DKK 1,900,000–2,400,000					

Figure 2: Forecast for Greenland



Recommendations for Greenland

- A national strategy and a cross-ministerial collaboration are necessary means to build a strong foundation for developing regional and island strategies. It is estimated that Greenland would profit immensely from sustained efforts in the entrepreneurship education area to meet some of the challenges mentioned above. Fortunately, the potential of entrepreneurship education is recognised in Greenland, and the first steps towards a national strategy have been initiated. However, the development of a national structure for entrepreneurship education is still in its very early stage. A higher political commitment to the area is required in order to create an overall national strategy for entrepreneurship education covering all education levels. Hence it is recommended to take the entrepreneurship education agenda to the political and strategic level to ensure a policy platform and priority of the area from top level and to start planning a structure for implementation at national level. Experiences from other countries show that the development of a national strategy for entrepreneurship education with a specification of clear responsibilities of key actors on both policy and implementation levels helps to gain an overview of the area, to systematise efforts and initiatives, and to benefit from synergies between the different initiatives. Such a strategy should moreover contain clear indicators and

evaluation measures for the strategy. A national strategy for entrepreneurship education should also set clear objectives for each education level, which would help to integrate entrepreneurship education more systematically at all levels and in all types of education, as well as contain measures for teacher training.

- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector. This also helps to avoid ineffective parallel initiatives. In December 2016 during the second processing of the Greenlandic Finance Act 2017 it was decided to establish a regional office in Greenland under the auspices of the Danish Foundation for Entrepreneurship.
- A specifically dedicated budget for development and activities is necessary. There have been no resources for entrepreneurship education and no or limited resources for student entrepreneurs in Greenland until now. However, during this pilot project, a proposal was submitted and in December 2016 during the second processing of the Greenlandic Finance Act 2017, EUR 175,000 was allocated to entrepreneurship education. Financial resources should be allocated both at national and local level (on the island). This should be a collaborative effort between public and private sector.
- Strong stakeholder relations are essential. Private sector, public sector and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation. The board of the regional FFE office in Greenland will entail members from educational, public and private sector.
- Promote entrepreneurship and entrepreneurship education. An important part of the efforts at national level is to communicate broadly the focus on, and goals for, entrepreneurship education to all important stakeholders in the Greenlandic society; educational institutions, teachers, students, parents as well as private and public sectors and local and regional authorities. The acceptance and willingness to embrace entrepreneurship education as a development tool for Greenland is essential. Entrepreneurial role models with differences in gender, industries, size of start-up etc. are key players in developing this cultural acceptance.
- Support and collaboration with schools and educational institutions on all levels. Danish research shows that in order to achieve the greatest effects entrepreneurship education must be differentiated on the respective levels of education and must be provided to pupils as early as possible during their education. Entrepreneurship in higher education is the most effective way to foster long-run student start-ups.
- Collecting data to secure knowledge on the development in penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and subsequently compiling impact studies is vital for support from ministries and private sector.

- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice.
- Communicating the educational institutions' entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to have any impact on the penetration rate for entrepreneurship education on the island. What is needed is an educational focus on entrepreneurship as a viable career path and entrepreneurship education in general.
- A plan and resources for providing and ensuring the teachers the necessary competences in the area are necessary elements from the beginning. There are no resources for entrepreneurship teachers' competence development (e.g. further education in entrepreneurship teaching and networks) in Greenland. Teacher competence development should be of special interest to the educational system in Greenland, especially through the continuing education of teachers in entrepreneurship teaching. Primarily because the island is new to the area but also because data from the survey on the meso level show that competence development and knowledge sharing within entrepreneurship education is not receiving particular focus at the moment.
- Greenland will, through the soon to be established region, have access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and well-functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequently create significantly more entrepreneurs and higher income and they have a positive impact on the pupils' motivation to study, their school engagement and their academic confidence and they have positive impact on the primary school pupils' grades.^{140, 141, 142}
- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level. The delegation from Greenland mentioned Skylab on DTU as a possible inspiration to these activities at the conference in Copenhagen in November 2016.

¹⁴⁰ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10,103 CP-pupils were matched with 214,735 non CP-pupils.

¹⁴¹ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

¹⁴² Johansen and Schanke (2014) conducted a survey on 1880 secondary pupils and 1160 primary school pupils who participated in Junior Achievement's programmes.

- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups in Greenland. However, it takes time before students become accustomed to applying for this grant.
- Whenever possible, synergies across the Nordic islands should be utilised.

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe¹⁴³

Table 3: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National ¹⁴⁴ strategy, frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

¹⁴³ *Towards Greater Cooperation and Coherence in Entrepreneurship Education*, European Commission, 2010.

¹⁴⁴ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ¹⁴⁵	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis ... but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

¹⁴⁵ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Figure 3: Two young students explaining their idea concerning safety in traffic at the regional Edison competition



Photo: Rasmus Degnbol.

Appendix B. “The Star Model” – a method for identifying entrepreneurship education

“Stjernemodellen” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Figure 1 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.¹⁴⁶

¹⁴⁶ <http://www.ffe-ye.dk/videncenter/entreprenoerskabs-undervisning/eksamensformer>

Table 4: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 5: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7,6	6,0	8,4	-1,6	28,7	27,4	-4,4	22,1	24,5	10,9
Andøy	-0,8	-2,0	-0,4	-2,3	29,0	25,3	-12,7	33,2	37,9	14,1
Finland	2,7	-0,7	4,2	-0,6	25,2	25,7	2,2	25,2	31,3	24,2
Pargas	0,5	-2,3	1,7	-0,5	27,1	27,8	2,6	30,9	40,0	29,5
Denmark	2,7	2,6	2,8	-0,4	27,8	26,4	-5,0	24,1	28,8	19,5
Bornholm	-6,4	-14,3	-3,6	-0,7	25,5	23,0	-9,6	33,2	44,6	34,5
Faroe Isl	-0,9	-4,3	0,9	1,4	34,4	34,5	0,4	22,2	26,9	20,9
Greenland	-0,3	-7,9	4,6	1,0	32,9	29,8	-9,4	9,3	10,7	15,2
Sweden	5,3	4,8	5,5	-1,0	25,4	27,3	7,4	27,1	31,1	14,8
Gotland	0,4	-4,8	2,6	-0,7	22,9	24,6	7,3	31,0	39,2	26,5
Iceland	4,1	0,9	4,2	2,2	30,9	30,8	-0,3	17,2	20,5	19,2

Note: * population aged 0–14 as a share of population aged 15–64.

** population aged 65+ as a share of population aged 15–64.

Source: National statistical institutes and Eurostat.

Table 6: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76.6	75.6	-1.3	3.2	3.5	9.4	9.2	8.6	-6.5	
Andøy	75.6	72.8	-3.7	2.8	4.8	71.4		12.7		26.6
Finland	68.4	68.4	0	8.4	8.4	0	21.5	19	-11.6	
Pargas	74.5	73.2	-1.7	4.9	4.6	-6.1		14.3		43.2
Denmark	75.1	72.3	-3.7	6.1	7.2	18.0	11.8	14.1	19.5	
Bornholm	68.8	69.3	0.7	8.9	8.9	0		19.7		23.7
Faroe Isl	88.1	90.8	3.1	4.8	3.9	-18.8		9.9		35.9
Greenland	64.9	63.3	-2.5	7.5 (2010)	9.7	29.3		17		14.4
Sweden	72.4	74.5	2.9	8.5	8.3	-2.4	25	23.7	-5.2	
Gotland	74	77.4	4.6	8	6	-25				31.1
Iceland	78.3	81.1	3.6	7.2	5.4	-25	16	13.6	-15	

Note: National statistical institutes and Eurostat.

Source: * number of employed persons as a share of the population aged 15–64.

** total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

*** unemployed persons aged 15–24 as a share of the labour force aged 15–24.

**** persons with a tertiary education as a share of the population aged 25+.

Appendix 6: Gotland, Sweden

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures, and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation, and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons is that there is a lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as on other research.

Indicators of the full entrepreneurial potential are the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation on Gotland with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up on Gotland.

In order to map the status of entrepreneurship education on Gotland, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in the islands/countries.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation on Gotland is shortly discussed in the first chapter.¹⁴⁷

Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.¹⁴⁸

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013)

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection on the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.

¹⁴⁷ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

¹⁴⁸ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager on Gotland completed the questionnaire in the course of 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge within the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for

Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,¹⁴⁹ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager on Gotland to the management of educational institutions on the upper secondary level and the tertiary level on Gotland.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching have been taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers' evaluation of their school's policy on innovation and entrepreneurship education.

It also examines the teachers' evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focuses on four areas or "entrepreneurial dimensions". Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.¹⁵⁰

The four entrepreneurial dimensions examined are:

¹⁴⁹ <https://heinnovate.eu/>

¹⁵⁰ <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, “Stjernemodellen” is used as a tool for the categorisation of courses (see Appendix B for further details).¹⁵¹

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations too, and was used by the Foundation during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a micro grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000, that allows the student start-up to take their business further. A small case written about the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

The project manager on Gotland has also provided information about the innovation ecosystem on the island in the form of a case.

¹⁵¹ “Stjernemodellen” will henceforth be referred to as the Star Model.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all 7 islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations between data may, however, occur when our data are compared with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions have been sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also with different strategic knowledge behind the answers. The data given about each island/country are therefore not always equivalent, because they depend on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

This report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Annex 1) offers descriptions of a development of practice on each key area and

thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size, and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development on Gotland in the recent period. This will serve as background for the mapping of the situation on Gotland and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

An increasingly old population is typical of Northern countries, but the situation is especially marked in island areas like Gotland. Between 2009 and 2015, the share of persons aged 0–24 *decreased* (by 4.8%) whereas the share of persons aged 25+ *increased* (by 2.6%). In the same period, the old age dependency rate increased from 31% to 39.2%, corresponding to a 26.5% increase, whereas the youth dependency rate increased from 22.9% to 24.6%, corresponding to a 7.5% increase. So, while Gotland's total population maintains status quo, the oldest part of it increases.

Labour market

The overall employment rate in Gotland is quite good (third best of all islands), and between 2009 and 2013, this rate improved from 74% to 77.4%. In the same period, the unemployment rate decreased from 8% to 6%, thus considerably improving. Actually, when it comes to the overall employment and unemployment rates, Gotland fares

better than Sweden as a whole. This is unusual, compared to other countries and their islands in this mapping. It would have been interesting to see the youth unemployment rate for Gotland, but there were no available data for this mapping. Sweden has the by far highest youth unemployment rate of the Northern countries and islands in this mapping, although the rate improved from 25% to 23.7% in the period 2009–2013.¹⁵²

Education level

The share of the population in Gotland with a tertiary education level is 31.1%, which is in the high end compared to the rates that have been available for the other islands, the lowest rate being 14.4% and the highest 43.2%.

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate responsible actors for entrepreneurship education are actors at the macro level (policy makers) who provide the framework for working in the area, actors at the meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at the micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in the European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

¹⁵² As emphasised by Nordregio during the conference held in November 2016, youth unemployment rates are also affected by the various financial systems for students. That students do not receive student grants during the summer break may be one of the explanations for the youth unemployment rates in Sweden.

This chapter will look at existing initiatives and measures at the macro level on Gotland. The desk research is based on information obtained from the island by means of a questionnaire.

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education has a focus on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

Developing the national strategy framework

Sweden has a national strategy including goals. Mainly two ministries are involved, the Swedish National Agency for Education (SNAE) and the Swedish National Agency for Higher Education (SNAHE), without other external organisations directly involved. The main task of both agencies is to formulate the strategy and ensure that government education objectives are achieved and that the quality of education at a local and regional

level is monitored, but they do not promote education.¹⁵³ There is no available information about a regional strategy for entrepreneurship education involving Gotland.

In 2015, the national budget for the entrepreneurship education was EUR 1.9 million, 5–10% of which was given directly to schools.

The role of local and regional authorities

In Sweden, there are no national initiated regional entrepreneurship education centres. However, incubators in universities act, to some degree, as entrepreneurship centres at tertiary level. Uppsala University has a local department, Campus Gotland, where also Science Park Gotland is housed. Science Park Gotland, Uppsala University and Region Gotland have formed a strategic partnership. Science Park Gotland has two purposes: to act as an incubator and to offer programmes for people who want to start their own company.

Implementing entrepreneurship education

Entrepreneurship education is embedded at all levels and types of education in Sweden. It is compulsory and cross-curricular in primary, lower secondary and vocational schools and taught as a separate subject and compulsory in four programmes at the upper secondary level. However, the courses in the subject are offered optionally to other interested students at the secondary level.¹⁵⁴ Entrepreneurship education is taught as a method at all three education levels.

Teacher education and training

Some teacher education institutions have implemented entrepreneurship education, but not as a compulsory part of the education. Moreover, JA Sweden offers teacher training in entrepreneurship education. There is no available information about continuing professional development or in-service training of teachers.

Engaging with businesses and private associations and organisations

Private businesses and organisations are involved in entrepreneurship education, because they have an interest in future recruitment and publicity/CSR. A public ecosystem initiative taking place on Gotland is the collaboration between the incubator

¹⁵³ Entrepreneurship education in the Nordic countries, page 33.

¹⁵⁴ Entrepreneurship education in the Nordic countries, page 33.

at Science Park Gotland and local businesses. Other initiatives include the private Wcreate, which offers co-working space, the nationwide Almi, which is owned by the Swedish government and regional owners, and which offers advice, loans and venture capital through all phases of running a business, and Coompanion Gotland, which offers information, advice and training in how to start your own business. Ung Företagsamhet (JA) has 24 regional offices and supports primary, upper secondary and vocational level with the implementation of entrepreneurship education. There is also an Ung Företagsamhet regional office on Gotland.

Meso level

It requires a strategic and organisational overview of the school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy level (macro level) and implementation (micro level) in form of teachers, who teach entrepreneurial skills to pupils and students. The meso level has often been overlooked, or given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the island, and make the link between strategy and practice, a survey was sent to the school management of schools and institutions on Gotland. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

The purpose of the survey is to map, not evaluate, the state of affairs of educational institutions when it comes to their experience with and strategies for education in innovation and entrepreneurship.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

Two out of three educational institutions on secondary and tertiary level on Gotland have participated in the survey. The institutions are Gutegymnasiet and Wisbygymnasiet. One of these educational institutions (Gutegymnasiet) has a strategy for entrepreneurship.

The schools' plan and goals for development of entrepreneurship education

The educational institution with a strategy has a precise plan for the implementation of the entrepreneurship strategy and a plan to continuously follow up and revise the entrepreneurship strategy. It appears, however that the educational institution has not created a common frame of understanding of entrepreneurship education and how to practise this form of teaching. And the frame and plan have not been communicated clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution).

Management has set a few concrete targets and goals for development of entrepreneurship education.

The targets and goals are:

- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching).
- The cooperation between teachers and local businesses, public institutions and organizations in relation with entrepreneurship education.
- Continuing education of teachers in teaching innovation & entrepreneurship.

However, the educational institution with a strategy has not set targets and goals for the following areas:

- The development of curriculum so that it contains learning objectives and competences for innovation and entrepreneurship.
- The establishment of project weeks in innovation & entrepreneurship.

No strategy but entrepreneurship activities

Although one of the educational institutions does not have an entrepreneurship strategy, the institution states that there is nevertheless entrepreneurship teaching and/or activities related to entrepreneurship taking place. This includes students working with

projects that bring them in contact with the surrounding society and students being taught how to start a business, or being taught in new and innovative ways.

Importance of strategy and education in entrepreneurship

Management from both institutions with and without a strategy on Gotland disagree that education in entrepreneurship is relevant for their students and that it is important for the institution to formulate a strategy for entrepreneurship. Because the institutions have very different views on the matter, Gotland is among the islands with the lowest mean. On a scale from 1 to 5 the data from Gotland show a mean of 2.5 concerning the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship".¹⁵⁵ This is the lowest weighted mean compared to the other islands. The same mean (2.5) is found concerning the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship".

Importance of goals for entrepreneurship teaching

Only the education institution without a strategy has answered the questions as to why the educational institution can or should set goals for entrepreneurship teaching. Whether this is an indication that the institution with a strategy does not think that one should set objectives and targets is not evident from the data. The institution without a strategy agrees that the goals should be set to strengthen students' interest in their further education and career and to strengthen students' interest in becoming an entrepreneur/starting a new business. This complies with what most institutions on all the islands believe. Management also believes that the goals should be set to prepare students better for working life and to strengthen the cooperation between the educational institution and the local society. However, they do not indicate that goals should be set to e.g. upgrade teachers' skills within entrepreneurship education, to decrease student dropout or to live up to national/regional policy in the area of entrepreneurship education, nor to strengthen the profiling and promotion of the educational institution or to boost the development of the local area, for instance by contributing to new businesses through the skill development of young people.

External network

On Gotland, both educational institutions (the one with and the one without a strategy) give their students the possibility to make contact with the institution's external network. Thus, both institutions provide for guest lectures given by local business

¹⁵⁵ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

people, entrepreneurs, or others, and organise visits to companies. These types of external contact are the most frequent types of external contact observed in the data gathered from Gotland. The institution on Gotland with a strategy also provides exchange/trainee service in local businesses/organisations as a possibility for the students. They also provide subject-/project weeks or days in cooperation with external partners and competitions at the educational institution, where external contacts function as judges.

Involvement from school governing body and local businesses

The degree of involvement from the governing body of the institution and the local business as a resource in the work with entrepreneurship education is slightly different at the two institutions. On a scale from 1 to 5 the institution with a strategy has involvement to a medium degree from both the governing body of the institution and the local businesses as a resource in the work with entrepreneurship education.¹⁵⁶ The institution with no strategy has a low degree of involvement from the governing body of the institution and from local businesses.

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

Both the participating educational institutions on Gotland have earmarked resources to entrepreneurship, but there are great differences as to what and how much. The only resource, which the institution without a strategy, has earmarked is "time". The institution with a strategy has earmarked financial resources, time and other resources such as staff with knowledge and expertise on the area. The institution with a strategy has also appointed a coordinator for entrepreneurship teaching, who has the full backing and practical support from management and who is part of management.

Like most (82%) of the institutions in the survey (all islands), entrepreneurship teaching is a part of the timetables and the annual teaching plans at both institutions on Gotland. However, only the institution with a strategy has communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated at the educational institution. Management of the educational institution also requires from the teachers that they describe in their annual plans how they integrate entrepreneurship in other subjects and expect the teachers to

¹⁵⁶ 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students. The educational institution moreover uses a feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. This is not the case at the institution without a strategy. Management of the institution with a strategy also support dialogue and cooperation between teachers from different disciplines through common facilities across the educational institution's subdivisions. The institution without a strategy supports dialogue and co-decision between teachers and students. None of them, however, provides the possibility for cross-curricular teaching and/or interdisciplinary project groups.

Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

Plan for teacher competence development

When it comes to a plan for teacher competence development, there is no apparent difference between the institution with a strategy and the institution without. At both educational institutions, the plan for competence development and knowledge sharing within entrepreneurship education manifests itself through the continuing education of teachers in entrepreneurship teaching and through knowledge sharing about entrepreneurship teaching as well as through special networks. None of the institutions indicates that the teachers have a cross-curricular cooperation within the subject of entrepreneurship.

Experimenting with teaching forms

The institution with a strategy allows the teachers to experiment with teaching forms in general through project work / feature weeks or days and cooperation with businesses. Management at the institutions without a strategy offers at present no such possibility.

Cooperation with the surrounding society

Only the institution with a strategy is involved in collaboration and knowledge sharing with the surrounding society/local area through established business/industry, newly started businesses / entrepreneurs, institutions within the public sector and other knowledge organisations. The institution with no strategy is at present not involved in such cooperation/knowledge sharing.

Extra-curricular activities

Extra-curricular activities are also offered to students on the institution with a strategy to strengthen the entrepreneurial competences and mind-set of students. They provide student incubator activities (to help with start-up activities), other forms of advice and guidance for student start-ups and entrepreneurship education given by entrepreneurs. The latter two activities are also present at the institution with no strategy. However, none of the institutions provides student societies, organisational support in relation with innovation and entrepreneurship, arranges business plan competitions or organises networks between students and entrepreneurs/business industry.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

In practice, both educational institutions in the survey have materials and experience with teaching entrepreneurship etc. The institutions give the teachers access to materials and teachers' aids, which can support their teaching in innovation and entrepreneurship, and they have experience with actual teaching forms and programmes within entrepreneurship. In addition, the institution with a strategy measures the impact of the entrepreneurship teaching before, during and after the course/teaching and continuously validates and revises the learning objectives for entrepreneurship teaching with a view to updating its teaching programmes. The institution also develops its curriculum in cooperation with external stakeholders in order to get input concerning useful competences in future.

Micro level

The micro level concerns the implementation level, that is, the actual teaching taking place in educational institutions and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of the development of a national strategy for entrepreneurship education, this level often relies strongly on individual teachers' enthusiasm. Teacher training is limited with no or little in-service training. But as the island or country develops their activity in the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being

elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in upper secondary education on different parameters. Vocational/VET is not a part of the survey due to insufficient answers.

The share of pupils and students who have received entrepreneurship education is calculated on the basis of the total number of pupils and students on the island. It must be emphasised that this share may be inaccurate, as it is based on the responses received. There may be other pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey for this mapping.

Upper secondary education

At the upper secondary level, data have been collected by means of a questionnaire for the teachers. The purpose of the survey is to map the number of pupils in upper secondary education who participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The questionnaire is divided into four main categories.

Basic information consists of two questions about whether the teachers perceive that the school has a clear policy of integration of innovation and entrepreneurship in the education. The responses to these questions thus indicate a score that reflects the extent to which this is the case.

Taxonomy contains the following four dimensions: *action, creativity, environment* and *attitude*.¹⁵⁷ These terms refer to entrepreneurial competences, which are not necessarily a subject or subject knowledge in themselves but are competences to set initiatives in motion and create opportunities. As such, a high score in the teachers' perceptions of the fulfilment of these four indicators is desirable. The score in the four dimensions of the pupils and students who have received entrepreneurship education is compared to the scores of the pupils and students who have not received entrepreneurship education.

Entrepreneurship and setting things in motion is the foundation of entrepreneurship education. The total number of pupils and students who have received entrepreneurship

¹⁵⁷ Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.
<http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

education in any given area is comprised of all teachers who have answered the questions regarding whether the pupil or student has received instruction in starting a business and/or tried starting up and gained experience starting a business affirmatively.

Entrepreneurship education, which is the percentage of pupils and students who have received entrepreneurship education, is calculated from the total number of pupils and students on the respective island/area. As mentioned above, reservations are taken about the accuracy of this share.

In Table 1 below, the overall results for the upper secondary level are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

A total of 11 teachers have answered the survey. All together, they represent 433 pupils divided on 25 classes. Overall, 181 pupils at the upper secondary level on Gotland have encountered entrepreneurship education in the 2015/2016 school year. That is the equivalent of 12.3% of the 1,466 pupils in the upper secondary level on Gotland. It is, of course, important to keep in mind that the number of answers has an effect on the result on Gotland.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participated in entrepreneurship education.¹⁵⁸ However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

The mapping shows that the teachers only experience a clear policy on innovation to a lesser degree. The score for this question is 19, whereas the average is 26. However, the teachers find that the policy on *entrepreneurship* is more clearly visible with a score of 29 – above the average of 27.

Table 1 further shows that 40% of the classes receive instruction in starting up a business, and 24% have realistic experience in starting up a business.

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¹⁵⁸ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

Table 1: The results for upper secondary education, Gotland, Sweden

Subject	Variable	Gotland, Sweden
Basic information	Policy on innovation	19
	Policy on entrepreneurship	29
Taxonomy	Action	51
	Creativity	56
	Environment	43
	Attitude	57
Entrepreneurship	Teaching in start-up percentage	40
	Realistic experience with start-up, percentage	24
Entrepreneurship education	Number of students receiving entrepreneurship education	181
Score for students receiving entrepreneurship education	Action	64
	Creativity	66
	Environment	65
	Attitude	67
Score for students <i>not</i> receiving entrepreneurship education	Action	41
	Creativity	50
	Environment	28
	Attitude	50

Note: The result is comprised of answers from 11 teachers with a total of 25 classes and 433 pupils.

According to the teachers, the score for the parameters on the entrepreneurial characteristics *action*, *creativity*, *environment* and *attitude* varies little from pupils who have to pupils who have not received entrepreneurship education. This is in contrast to the other islands in this study. However, the score for all the parameters is higher for pupils who have received entrepreneurship education, which is in line with the previous results. As such, all pupils covered by the Gotland survey score relatively high on these parameters – including the pupils who have not received entrepreneurship education.

Tertiary education

Gotland has not provided any descriptions of educations at the tertiary level for this mapping.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially, the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.¹⁵⁹ Only 4–12 months after receiving a Micro Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after receiving the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

On Gotland there are two upper secondary educational institutions and one tertiary educational institution, and the number of pupils and students in the school year 2015/2016 is 2,466. Financial support for student start-ups is already available on Gotland at Science Park and ALMI business partner. However, it is unclear whether this is aimed at established businesses as well as student start-ups and whether the very young/undeveloped start-ups will really have the opportunity to receive funds.

During the project trial granting Micro Grants of DKK 25,000 on Gotland, three applications from student start-ups were received. Normally, a student start-up is comprised of 2 to 6 pupils or students. None of the members of the team that received the grant have received entrepreneurship education. The grant was advertised online at the educational institution's website and Facebook page.

¹⁵⁹ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

Effects

For the student start-up, the Micro Grant will have a range of effects.

- The grant is going to be used for marketing and selling outside of Sweden.
- The team can now focus on producing more games for the future. Without the money they would not have been able to travel around and meeting new customers and business partners.
- The company will be able to further market their first released title, allowing them to reach a wider audience and increase the chance of building an income large enough to fund a second game production.
- The grant will also allow TeamCrew to travel to different conventions in order to promote their products and reach a global audience.

Derivative effects for the island and local community as a consequence of the idea: "By launching a product and potentially continuing building products past school, we will inspire our peers to finish their own projects and to create their own companies".

Needs and possibilities

Young start-ups on Gotland need guidance regarding which mentor to use and they need introduction to network, investors etc. There is a lot of game developers on the island that are not born on the island and they need help to get in touch with the right people. Involvement from Science Park (incubator) on Gotland was necessary for the young Micro Grant receiver in their early stages.

Micro grant recipient

Teamcrew

The business idea is producing videogames. We have produced one game that is going to be released soon.

Future entrepreneurial potential

On Gotland, there is an increasingly old population and a decrease in the youth population. In that aspect, they face the same challenges as other Nordic islands in this mapping. However, the employment rate and the education level of the population on Gotland are both high and the island is filled with resourceful people. This means that there is a great potential and starting point on Gotland to give young people on Gotland entrepreneurial competences and mind-set and to meet the challenge of getting young people to stay on the island.

Based on the objective of creating solutions that will entail positive effects for Gotland, the first objective for this pilot project has been to ensure a mapping of entrepreneurship education in the area. There is no or only limited prior data available for mapping entrepreneurship in the educational sector in Gotland. Knowing the present situation on the island the second objective has been to define the potential for entrepreneurship education and Micro Grants on Gotland from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people on Gotland learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the market position of Gotland internationally and contributing to a sustainable development, growth and jobs.

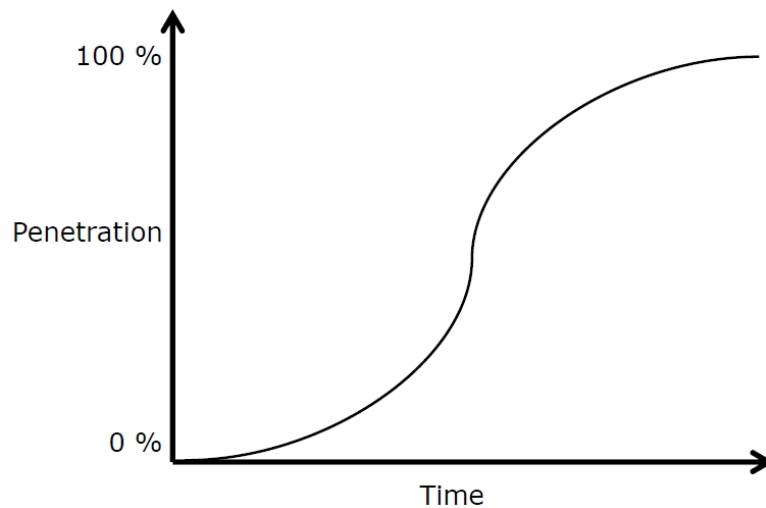
Forecasting entrepreneurship education and Micro Grants for Gotland

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives on Gotland. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Gotland is in the initial stage, however on the way to where the curve is steep, and initiatives and strategies will have a relative high effect on the penetration rate.

Figure 1: S-curve for entrepreneurship education penetration rate



The forecast is presented in Table 3 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from Gotland.
- The maturity level on the island with regard to entrepreneurship in education (The "s-curve").
- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based on the assumptions that:

- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

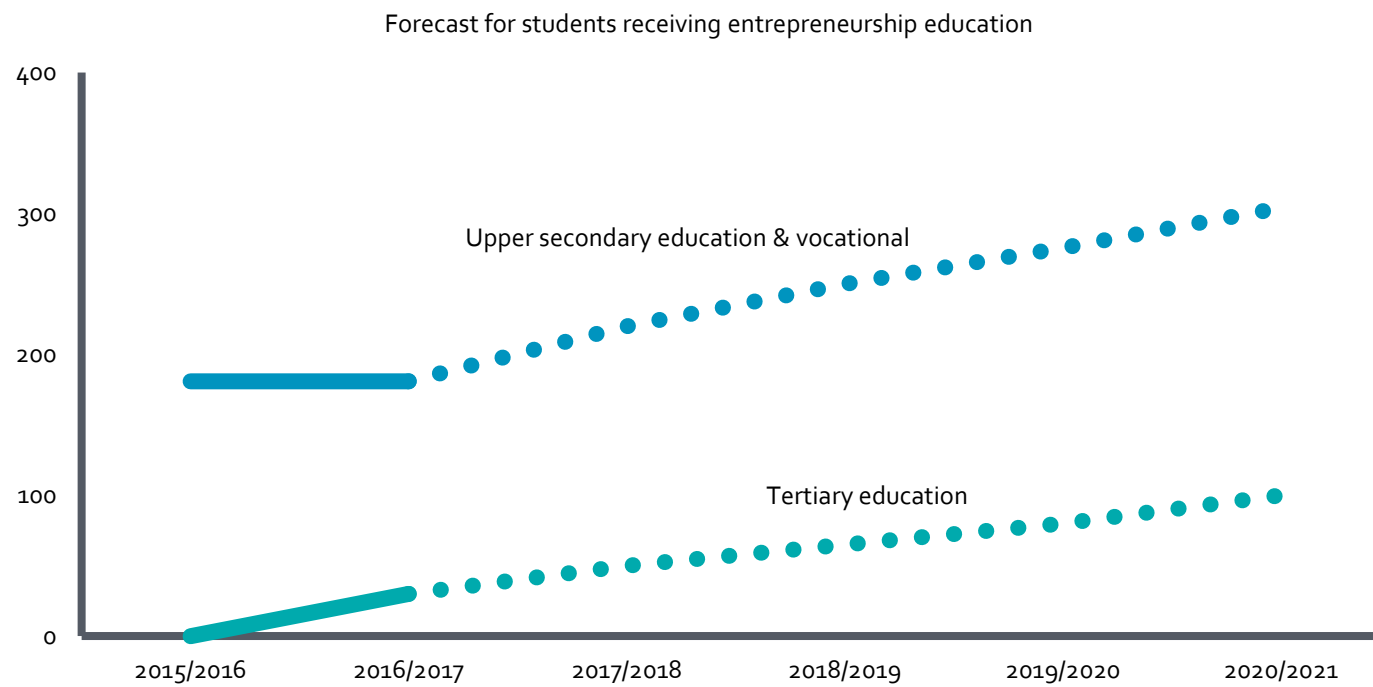
It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but are estimates.

Forecasting entrepreneurship education and Micro Grants for Gotland

Table 2: Forecast for Gotland

Forecast for entrepreneurship and micro grants until the school year 2020/2021, Gotland, Sweden						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	1,466	1,466	1,466	1,466	1,466	1,466
Students receiving entrepreneurship education, forecast	181	181	220	250	276	304
Share of students receiving entrepreneurship education, percentage	12.3%	12.3%	15.0%	17.1%	18.8%	20.7%
Tertiary education						
Students in total	1,000	1,000	1,000	1,000	1,000	1,000
Students receiving entrepreneurship education, forecast	0	30	50	65	80	100
Share of students receiving entrepreneurship education, percentage	0.0%	3.0%	5.0%	6.5%	8.0%	10.0%
Applicants receiving a grant						
Accepted applicants	1	1	2	2	3	4
Average annual costs (4 years) in DKK	DKK 1,400,000–1,800,000					

Figure 2: Forecast for Gotland



General recommendations for Gotland

- A national strategy and a cross-ministerial collaboration are necessary means to build a strong foundation for developing regional and island strategies. Sweden already has this.
- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector.
- A specifically dedicated budget for development and activities is necessary. Financial resources should be allocated both at national and local level (on the island). This should be a collaborative effort between public and private sector. In 2015, the national budget for the entrepreneurship education was EUR 1.9 million, 5–10% of which was given directly to schools.
- Strong stakeholder relations are essential. Private sector, public sector, and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation.
- At the national level, the recommendation is to involve more key stakeholders in the entrepreneurship education agenda and in the strategy work. Examples from other countries show that the higher the amount of the involved stakeholders from different levels of society the better. This would help disseminate the agenda and promote entrepreneurship education nationally, which would also benefit Gotland. Local ecosystem initiatives on Gotland are present, such as the collaboration between Science Park Gotland, Campus Gotland (Uppsala University) and Region Gotland as well as local organisations that offer start-up help. Such ecosystem initiatives on the tertiary and post-education levels constitute a resource, which should be supplemented by initiatives on the general compulsory school level in local schools.
- Promote entrepreneurship education. An important part of the efforts at national level is to broadly communicate the focus on, and goals for, entrepreneurship education to all important stakeholders in the Gotland society; educational institutions, teachers, students, parents as well as private and public sectors and local and regional authorities.
- Support and collaboration with schools and educational institutions at all levels. Danish research shows that in order to achieve the greatest effects entrepreneurship education must be differentiated on the respective levels of education and must be provided to pupils as early as possible during their

education. Entrepreneurship in higher education is the most effective way to foster long-run student start-ups. Combined with Gotland's relatively high education level a further focus on entrepreneurship education in local schools and educational institutions can contribute to creating a synergy effect. Research shows that entrepreneurship education stimulates students' ambitions for further education. At the same time, other studies show that entrepreneurs with a high education level create more viable businesses and growth businesses.

- Collecting data to secure knowledge on the development of penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and subsequently compiling impact studies is vital for the support from ministries and private sector.
- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice.
- Communicating the educational institutions' entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to impact the penetration rate for entrepreneurship education on the island.
- A plan and resources for providing and ensuring the teachers the necessary competences in the area are necessary elements from the beginning. There are no or limited resources for entrepreneurship teachers' competence development (e.g. further education in entrepreneurship teaching and networks) on the seven islands. Efforts are made in Sweden to educate teachers in entrepreneurship education, and on-going training is also taking place. However, the mapping shows that goals for teacher training are not a part of the Gotland educational institutions' strategy even though they seem to have access to teaching materials and experience with teaching forms. At the moment, teacher training in Gotland exists almost only in the form of a short teacher training that JA Gotland provides for Company Programme teachers.
- The educational institutions on Gotland have access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and well-functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequently create significantly more entrepreneurs and higher

income and they have a positive impact on the pupils' motivation to study, their school engagement, and their academic confidence and they have a positive impact on the primary school pupils' grades.^{160, 161, 162}

- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level.
- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups on the island. However, it takes time before students have become accustomed to applying for this grant. Entrepreneurs are very immobile "people" – this is good news when trying to find a way to retain young people on the islands.¹⁶³
- Whenever possible, synergies across the Nordic islands should be utilised.

¹⁶⁰ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10,103 CP- pupils were matched with 214,735 non CP-pupils.

¹⁶¹ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

¹⁶² Johansen and Schanke (2014) conducted a survey on 1880 secondary pupils and 1160 primary school pupils who participated in Junior Achievement's programmes.

¹⁶³ The Danish Business Authority.

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe¹⁶⁴

Table 3: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National strategy, frameworks ¹⁶⁵	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

¹⁶⁴ Towards Greater Cooperation and Coherence in Entrepreneurship Education, European Commission, 2010.

¹⁶⁵ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified of: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ¹⁶⁶	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

¹⁶⁶ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Appendix B. “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Figure 1 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.¹⁶⁷

¹⁶⁷ <http://www.ffe-ye.dk/videncenter/entreprenorskabs-undervisning/eksamensformer>

Table 4: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 5: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7,6	6,0	8,4	-1,6	28,7	27,4	-4,4	22,1	24,5	10,9
Andøy	-0,8	-2,0	-0,4	-2,3	29,0	25,3	-12,7	33,2	37,9	14,1
Finland	2,7	-0,7	4,2	-0,6	25,2	25,7	2,2	25,2	31,3	24,2
Pargas	0,5	-2,3	1,7	-0,5	27,1	27,8	2,6	30,9	40,0	29,5
Denmark	2,7	2,6	2,8	-0,4	27,8	26,4	-5,0	24,1	28,8	19,5
Bornholm	-6,4	-14,3	-3,6	-0,7	25,5	23,0	-9,6	33,2	44,6	34,5
Faroe Isl	-0,9	-4,3	0,9	1,4	34,4	34,5	0,4	22,2	26,9	20,9
Greenland	-0,3	-7,9	4,6	1,0	32,9	29,8	-9,4	9,3	10,7	15,2
Sweden	5,3	4,8	5,5	-1,0	25,4	27,3	7,4	27,1	31,1	14,8
Gotland	0,4	-4,8	2,6	-0,7	22,9	24,6	7,3	31,0	39,2	26,5
Iceland	4,1	0,9	4,2	2,2	30,9	30,8	-0,3	17,2	20,5	19,2

Note: * population aged 0–14 as a share of population aged 15–64.

**population aged 65+ as a share of population aged 15–64.

Sources: National statistical institutes and Eurostat.

Table 6: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76,6	75,6	-1,3	3,2	3,5	9,4	9,2	8,6	-6,5	
Andøy	75,6	72,8	-3,7	2,8	4,8	71,4		12,7		26,6
Finland	68,4	68,4	0	8,4	8,4	0	21,5	19	-11,6	
Pargas	74,5	73,2	-1,7	4,9	4,6	-6,1		14,3		43,2
Denmark	75,1	72,3	-3,7	6,1	7,2	18,0	11,8	14,1	19,5	
Bornholm	68,8	69,3	0,7	8,9	8,9	0		19,7		23,7
Faroe Isl	88,1	90,8	3,1	4,8	3,9	-18,8		9,9		35,9
Greenland	64,9	63,3	-2,5	7,5 (2010)	9,7	29,3		17		14,4
Sweden	72,4	74,5	2,9	8,5	8,3	-2,4	25	23,7	-5,2	
Gotland	74	77,4	4,6	8	6	-25				31,1
Iceland	78,3	81,1	3,6	7,2	5,4	-25	16	13,6	-15	

Note: * number of employed persons as a share of the population aged 15–64.

** total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).

*** unemployed persons aged 15–24 as a share of the labour force aged 15–24.

**** persons with a tertiary education as a share of the population aged 25+.

Source: National statistical institutes and Eurostat.

Appendix 7: Iceland

Introduction

Entrepreneurship and innovation have increasingly become part of the education discourse, also in a Nordic context. This is due to the globalisation and pervasive societal changes (Moberg 2014). In the Nordic countries there is, in general, a great focus on implementing innovation and entrepreneurship in the education system to ensure that pupils and students acquire entrepreneurial competences. And with good reason!

Entrepreneurship education is an important factor in changing and developing society. Focusing on and aiming at obtaining more entrepreneurship education throughout the entire education system is based, among other things, on the economic belief that the Nordic countries need more entrepreneurs and innovative employees in order to increase job creation, new business ventures, and productivity. This is particularly urgent for outlying geographical areas and islands in the North.

Today the Nordic countries experience different socio-economic challenges, and the outlying geographical areas are especially marked by challenges such as lack of education possibilities and jobs, depopulation, and economic stagnation. This requires focus and a special effort.

This is particularly so in some Nordic islands who also experience a loss of high skilled labour as young people with high career ambitions leave the area and move to urban areas due to job shortage. Moreover, new companies and working places do not replace the ones that have disappeared and thus new jobs are not generated. One of the reasons could be said to be the lack of entrepreneurs and innovative employees.

Teaching children and young people the entrepreneurial skills during their education in local schools and educational institutions and supporting the local development of new business can help redress such challenges and stimulate economic growth in the local area.

The one-year pilot project, *Nordic Entrepreneurship Islands*, launched in November 2015, especially addresses the educational and new business venture challenges on seven selected islands. The project also addresses the opportunities and potentials arising from an increased focus on entrepreneurship education and start-up capital for student start-ups on the islands.

In order to define the opportunities and to forecast the potential development of entrepreneurship education and future potential candidates for receiving a student start-up Micro Grant, a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels has been carried out on the seven islands. The entrepreneurial potential of each island is assessed on the basis of these results as well as on other research.

The full entrepreneurial potential is viewed as the number of young people partaking in entrepreneurship education and the expected amount of new companies/jobs created as an outcome of implementing different initiatives. The objectives of enhancing pupils and students with entrepreneurial competences and start-up capital are based on the rationale of increasing societal creativity and ideation. The ambition is that, in the long term, new companies will emerge as a result of these initiatives and more students will obtain skills and competences that will enable them to create and establish new companies.

The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education. As a whole, the project is about enhancing the islands' market position internationally and contributing to a sustainable development, growth and jobs through young people who remain in the local area and start up new businesses.

Methodology and Structure of the report

This report maps the present situation in Iceland with regard to aspects concerning entrepreneurship education on three levels: the macro, the meso and the micro level. Moreover, a Micro Grant was awarded to a promising student start-up in Iceland.

In order to map the status of entrepreneurship education in Iceland, data were collected by means of surveys in the form of questionnaires to respondents on three levels of the "entrepreneurship education ecosystem".

The three levels are:

- Macro level: The national strategy for entrepreneurship education in Iceland.
- Meso level: The strategy for entrepreneurship & innovation of educational institutions.
- Micro level: The number of pupils and students participating in entrepreneurship education at upper secondary and tertiary level.

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation in Iceland are shortly discussed.¹⁶⁸

Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.¹⁶⁹

Entrepreneurship is defined in the following way: "Entrepreneurship is when actions take place on the basis of opportunities and good ideas, and these are translated into value for others. The value thus created can be of an economic, social or cultural nature." (FFE, 2011). This definition shows that the creation of value can take different forms and may thus include intrapreneurship, social enterprise, cultural innovation, etc.

Entrepreneurship education is defined as: "Content, methods and activities that support the development of motivation, competence and experience that make it possible to implement, manage and participate in value-added processes." (FFE, 2013)

Both definitions are used as a frame to define the questionnaires and course descriptions on the meso and micro levels and thus set the frame for the mapping of entrepreneurship education on the seven Nordic islands.

Macro level

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission (see Appendix A for further details) has served as inspiration for framing the data collection on the macro level. The model identifies four different stages in the development of a strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.

¹⁶⁸ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

¹⁶⁹ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The model also identifies five key areas in which a development of practice takes place during the development and implementation of a national strategy for entrepreneurship education. The questionnaire for the macro level is built on these five key areas:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

The project manager in Iceland completed the questionnaire in the course of 2016. Wherever necessary, the project manager received expert knowledge from relevant government officials and people with knowledge in the area.

Meso level

To map the meso level, which constitutes the link between the national strategy level and the implementation level, that is the actual teacher practice, a questionnaire targeted the institutional management of educational institutions was designed. The questionnaire examines the strategy of entrepreneurship education at educational institutions at the upper secondary and tertiary education levels on four main areas:

- School strategy & form.
- Organisation.
- Competence.
- Practice.

The purpose of this survey at the meso level is to provide an overview of the existing measures related to a strategy for entrepreneurship education in the educational institutions as well as their experiences with activities related to entrepreneurship education.

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. “A Quality Standard for Enterprise Education”, developed by Centre for Education and Industry, University of Warwick, and “HEInnovate”, a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,¹⁷⁰ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

The questionnaire was sent through the project manager in Iceland to the management of educational institutions on the upper secondary level and the tertiary level in Iceland.

Micro level

The micro level concerns the actual practice of teachers in educational institutions at the upper secondary level and vocational/VET and the content of the course descriptions at the tertiary level.

At upper secondary level and vocational/VET the data were collected by means of a questionnaire directed at the teachers. The two different types of teaching have been taken into consideration when designing the questionnaires. One questionnaire is used for the upper secondary level and another for vocational/VET.

The purpose of the survey is to map the number of pupils in upper secondary education and vocational/VET who in the school year 2015/2016 participated in education or in activities leading to increased competence levels in innovation and/or entrepreneurship.

The two questionnaires examine basic information about the teachers’ evaluation of their school’s policy on innovation and entrepreneurship education.

It also examines the teachers’ evaluation of the teaching in entrepreneurship education, but the methods vary in the questionnaires for upper secondary education and for vocational/VET education. The questionnaire aimed at upper secondary level teachers focuses on four areas or “entrepreneurial dimensions”. Please see “A

¹⁷⁰ <https://heinnovate.eu/>

Taxonomy of Entrepreneurship education” for further elaboration on the entrepreneurial dimensions.¹⁷¹

The four entrepreneurial dimensions examined are:

- Action.
- Creativity.
- Environment (outward orientation).
- Attitude.

The questionnaire for vocational/VET teachers focuses on the type of teaching, e.g. innovation or entrepreneurship (start-up).

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, “Stjernemodellen” is used as a tool for the categorisation of courses (see Appendix B for further details).¹⁷²

The Star Model was developed by Øresund Entrepreneurship Academy with the purpose of identifying and quantifying entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship in order to be applied for diploma and bachelor educations too, and was used by the Foundation during the last 6 years to map entrepreneurship education at the tertiary level in Denmark.

The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

At both the meso and micro levels, descriptive statistics were used in the treatment of the survey results.

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a Micro Grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000 that allows the student start-up to take their business further. A small case written about

¹⁷¹ <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

¹⁷² “Stjernemodellen” will henceforth be referred to as the Star Model.

the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

The project manager in Iceland has also provided information about the innovation ecosystem on the island in the form of a case.

All data were collected in the summer of 2016 and the preliminary findings were presented at a conference in November 2016 with the participation of different stakeholders from all seven islands. The preliminary findings were discussed, elaborated on and developed to customise and adjust the report and the forecasting about entrepreneurship education and Micro Grants on the seven islands.

Limitations of the methodology

Nordregio has provided the data for the overall demographic mapping of the seven Nordic islands. Nordregio was selected as the single source in order to ensure that the same method was applied to all islands and countries in question. Small variations between data may, however, occur when our data are compared with local statistics or surveying methods.

The desk research regarding the macro level is based on questionnaires, which have been answered by the responsible project manager on the island. Whenever answers were missing or elaboration was needed, a few additional questions were sent per email to the responsible project manager on the island. A few data were collected from other sources as well. The way in which the questionnaire was answered differs from island to island. Some have answered in more detail than others and also with different strategic knowledge behind the answers. The data given about each island/country are therefore not always equivalent, because they depend on the sources and on which information was available.

When it comes to the meso and micro levels, the percentages of participating institutions and participating teachers also vary from island to island. This mapping is based on the responses received. The mapping may therefore give an inaccurate picture of the actual circumstances on the islands, because it is not possible to know whether entrepreneurship education exists on educational institutions that did not participate in the survey. The actual situation on the individual islands when it comes to the existence of entrepreneurship education may therefore be different than what is communicated in this report.

As entrepreneurship education is a complex subject matter involving many levels of society and many stakeholders, it is not possible to give the full picture of the situation on each island regarding the strategies for entrepreneurship education by means of questionnaires distributed to a few key persons.

Furthermore, the report does not provide any conclusion about the maturity level of the individual islands/countries regarding a national strategy for entrepreneurship education. The Progression Model for Entrepreneurship Education Ecosystems in Europe (Appendix A) offers descriptions of a development of practice on each key area and thus allows the islands to evaluate the maturity stage of their own entrepreneurship education ecosystem, and at the same time the model suggests possible ways to further develop this ecosystem.

This report maps aspects of entrepreneurship education activity on different levels of society and thus depicts the different aspects of the entrepreneurship education ecosystem on each individual island. This makes it possible to draw conclusions about the potential of each island and define the key actors useful in the future development of the specific island.

The juxtaposition of seven such different islands caused some problems from a methodological perspective as differences in area size, population size and constitution are so pervasive and had to be taken into account whenever possible. Still, it was of course not possible to account for all differences between the islands.

Demographics

This chapter describes the main demographic development in Iceland in the recent period. This will serve as background for the mapping of the situation in Iceland and for the suggested measures to stimulate growth. See Appendix C for tables on population and age structure as well as labour market for the seven islands participating in the Nordic Entrepreneurship Islands project.

Population and age structure

Like the other Nordic countries Norway, Finland, Denmark and Sweden, Iceland experiences a growth in the total population. The growth (2009–2015) is caused especially by an increase in the population aged 25+ (4.2%) compared to an increase in the population aged 0–24 (0.9%). The Icelandic population growth is not caused by an increase of persons aged 0–24 years, but an increase in persons aged 24+ and in persons aged 65+.

Labour market

The employment rate has been increasing slightly during the last 5 years and is with 81% (2013) higher than the other Nordic countries – and second best compared to the other islands in this mapping. The general unemployment rate has improved considerably (25%) between 2009 and 2013, when it was 5.4%. And the youth unemployment rate, although it is higher than the general unemployment, has improved by 15% between 2009 and 2013, when it was 13.6%. To sum up, the employment situation is rather positive in Iceland, although attention should still be paid to youth unemployment.

Education level

The attainment of a tertiary education of the Icelandic population aged 25–64 has grown from 39,600 to 60,800 in the period 2003–2014, that is, an approximate 50% increase. In the same period the share of persons leaving school with a secondary education has grown from 53,900 to 59,300, corresponding to an approximate 10% increase, and the share of persons leaving school after the primary school level has changed from 48,700 to 43,900, corresponding to an almost 10% decrease.¹⁷³

Macro level

Entrepreneurship education requires efforts on several levels to be successfully implemented in a country's education system and to have a societal impact. Measures need to be taken at both the policy level and at the implementation level with the involvement of, and collaboration with, key actors from all aspects of society. The immediate responsible actors for entrepreneurship education are actors at macro level (policy makers) who provide the framework for working in the area, actors at meso level (school management), who decide how to implement entrepreneurship education in their respective educational institution, and actors at micro level (teachers), who provide the entrepreneurship education in practice.

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

¹⁷³ <http://www.statice.is/statistics/society/education/educational-attainment>

As entrepreneurship is recognised as an important factor in a changing and developing society, the last decade has witnessed an increasing focus on developing strategies for entrepreneurship education in European countries. Some of the Nordic countries are among the frontrunners and have well-established structures at national level. Still, it takes a lot of time and patience to reach educational institutions in every region of a country.

This chapter will look at existing initiatives and measures at the macro level in Iceland. The desk research is based on information obtained from the island by means of a questionnaire.

The questionnaire provides data on five main areas, which correspond to the five key components of the entrepreneurship education ecosystem. Ideally, a national strategy for entrepreneurship education focuses on developing action on these five key areas, according to the European Commission:

- Developing the national strategy framework.
- The role of local and regional authorities.
- Implementing entrepreneurship education.
- Teacher education and training.
- Engaging with businesses and private associations and organisations.

As action and measures are developed in these five key areas, the entrepreneurship education ecosystem goes from one maturity stage to the next. The Model identifies four maturity stages in the development and implementation of a national strategy for entrepreneurship education:

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.
- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

The Progression Model for Entrepreneurship Education Ecosystems in Europe from the European Commission can be viewed in detail in Appendix A.

Developing the national strategy framework

In Iceland, there is a cross-ministerial involvement, non-formalised however, to promote and develop entrepreneurship education. The two ministries involved are the Ministry of Education, Science and Culture and the Ministry of Industry & Innovation. However, Iceland has no national strategy for entrepreneurship education, no national definition of entrepreneurship and no nationally approved goals for EE. Several initiatives like the public initiative Innovation Center Iceland (NMI), which is involved at the strategic level, and private actors like Business Iceland, Federation of Icelandic Industry (SI), Arion Bank, Eimskip, Landsvirkjun, IKEA, Elko and JA Iceland are involved to a “Medium” degree at the national level. For many years, there has primarily been a bottom-up approach to develop entrepreneurship education activities in Iceland, primarily through private actors. In 2016, JA Iceland was established and on its Board are many of the above-mentioned key stakeholders. The national budget for EE in 2015 was EUR 46,000.

The role of local and regional authorities

Innovation Center Iceland is the national entrepreneurship centre on the island, financed through both public and private funds. Icelandic ecosystem initiatives when it comes to supporting start-up activities are incubators as well as innovation and start-up centres, which offer possibilities for coming entrepreneurs. The most important ones are StartUp Reykjavik, StartUp Energy Reykjavik, and Innovation Center Iceland. Innovation Center Iceland offers FabLabs and office space for start-ups. These initiatives are for start-ups in general and not exclusively for student start-ups.

Implementing entrepreneurship education

At present, there are no nationally approved objectives for entrepreneurship education in Iceland. And entrepreneurship education is implemented in both secondary and tertiary education in Iceland, although it is far from being implemented at all educational institutions. In some secondary educational institutions, entrepreneurship education is implemented in the form of Company Programme run by JA Iceland. And there are several courses in EE at the tertiary education level. There is no formal entrepreneurship education programme for primary schools, but during the last 20 years an innovation competition has been available to primary schools. Icelandic schools and educational institutions teach entrepreneurship education primarily as a method at the primary level and primarily as a subject at the upper secondary and tertiary levels.

Teacher education and training

There is very little teacher training in entrepreneurship education in Iceland, only a short teacher training provided by JA Iceland for Company Programme and national guidelines about entrepreneurship education for teachers.

Engaging with businesses and private associations and organisations

Without a national strategy, it has mainly been private actors, e.g. private businesses and organisations, who have driven the development of entrepreneurship education in Iceland. They provide funding and are involved on the area for various reasons, e.g. future recruitment, the role of business in entrepreneurship education, and publicity or CSR. The involvement of private businesses and organisations in the area of entrepreneurship education is on a “Medium” level.

Meso level

It requires a strategic and organisational overview of school management to include entrepreneurship education in the normal education of the school or educational institution. School management (meso level), however, provides the very important link between a national/regional strategy level (macro level) and implementation (micro level) in the form of teachers, who teach entrepreneurial skills to pupils and students. The meso level has often been overlooked, or given less attention, in a country's combined efforts to develop and implement entrepreneurship education. But contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactic exercise, it is also a managerial and organisational practice.

In order to map the meso level of the island, and make the link between strategy and practice, a survey was sent to the school management of schools and institutions in Iceland. The survey examines four main areas: School strategy & form, Organisation, Competence and Practice. The purpose of the survey is to provide an overview of the existing measures concerning a strategy for education in Innovation & Entrepreneurship in educational institutions, or the experience with activities related to innovation and entrepreneurship education in schools and institutions.

The purpose of the survey is to map, not evaluate, the state of affairs of educational institutions when it comes to their experience with and strategies for education in innovation and entrepreneurship.

Strategy & Form

This area relates to background, motivation, challenges, objectives, common understanding, communication and evaluation.

29%, or 12 of 41, educational institutions at the upper secondary and tertiary level in Iceland have participated in the survey. Half of these institutions state that they have a strategy for entrepreneurship. The institutions are:

- Háskólinn á Bifröst – Bifröst University.
- Framhaldsskólinn í Vestmannaeyjum.
- University of Iceland.
- Listaháskóli Íslands / Iceland Academy of the Arts.
- Framhaldsskólinn í Austur-Skaftafellssýslu.
- Menntaskólinn í Reykjavík.

The institutions without a strategy participating in the survey are:

- Hólar University College.
- Agricultural University of Iceland.
- Keilir Academy.
- Menntaskóli Borgarfjarðar.
- Fjölbrautaskólinn við Ármúla.
- Flensborg.

The schools' plan and goals for development of entrepreneurship education

3 of the 6 educational institutions with a strategy have a precise plan for implementation of the strategy. One institution only has a plan for following up and revising the strategy on a continuous basis. Two institutions have created a common frame of understanding of entrepreneurship education and how to practise it. None of the institutions have communicated the frame and plan clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution).

Management of 5 of the 6 institutions with a strategy has also set concrete targets and goals for development of entrepreneurship education.

5 out of 6 institutions have set the following targets and goals:

- Cooperation between teachers and local businesses, public institutions and organisations in relation with entrepreneurship education.
- Teaching in entrepreneurship (learning objectives).

4 out of 6 institutions also have the following targets and goals:

- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching).
- The development of curriculum so it contains learning objectives and competences for innovation and entrepreneurship.

Only 2 of the 6 institutions with a strategy have these targets and goals:

- The establishment of project weeks in innovation & entrepreneurship.
- Continuing education of teachers in teaching innovation & entrepreneurship.

No strategy but entrepreneurship activities

Although 6 out of 12 educational institutions in Iceland have no entrepreneurship strategy, the institutions without a strategy state that there is nevertheless entrepreneurship teaching and/or activities related to entrepreneurship taking place at their educational institution. All of them have activities such as teaching in innovation (students are being taught how to start a business, or they are being taught in new and innovative ways). They also have students working with projects that bring them in contact with the local community. Moreover, two institutions have collaboration with the local business industry concerning students' education and further working life/career.

Importance of strategy and education in entrepreneurship

On a scale from 1 to 5 data from Iceland show a mean of 4.27 concerning the statement "It is important that my educational institution formulates a strategy for education in innovation & entrepreneurship".¹⁷⁴ A slightly lower mean (3.91) is found concerning the

¹⁷⁴ 1 = very much disagree, 2 = disagree, 3 = neither or, 4 = agree, 5 = very much agree.

statement “It is relevant for all students at my educational institution to be taught innovation and entrepreneurship”.

Although all educational institutions with and without a strategy agree that it is important to formulate a strategy for innovation & entrepreneurship, there is a small difference between them. The institutions with a strategy (mean: 4.6) emphasise the importance of formulating a strategy a bit more than the ones without a strategy (mean: 4.0). It is interesting that the institutions without a strategy (mean: 4.0) consider it a bit more relevant that all their students are being taught innovation & entrepreneurship than the ones with a strategy (mean: 3.8). Although such considerations are beyond the scope of this mapping, this result may indicate that even educational institutions without a strategy on the area are preoccupied with ideas about learning similar to the ideas inherent in entrepreneurship education..

Importance of goals for entrepreneurship teaching

Most of the educational institutions (9 out of 12), 4 with and 5 without a strategy agree that goals for education in entrepreneurship should be set to strengthen students’ interest in their further education and career and students’ interest in becoming an entrepreneur/starting a new business. Less (3 with a strategy and 2 without a strategy) agree that they should set goals to prepare students better for working life.

Two thirds of the 12 institutions, 5 with and 3 without a strategy, agree that goals for education in entrepreneurship should be set to strengthen the cooperation between the educational institution and the local society. 7 out of 12 institutions (4 with and 3 without a strategy) agree that goals should be set to boost the development of the local community, for instance by contributing to new businesses through the skill development of young people.

Half of the institutions (both with and without a strategy) agree that goals should be set to upgrade teachers’ skills within entrepreneurship teaching. Only two of the institutions with a strategy and none of the institutions without a strategy agree that there should be goals to fulfil new national/regional policy in the area of entrepreneurship education or to decrease the student dropout rate.

External network

All of the 12 institutions in the survey provide their students the possibility of establishing contact with the institutions’ external network, some in more ways than others.

Two thirds (4 institutions with and 4 without a strategy) have exchange/trainee service in local businesses/organisations and guest lectures given by local business people, entrepreneurs or others. 3 institutions with and 5 without a strategy have visits to companies, organised by the educational institution. 2 of the educational institutions

with a strategy also have competitions at their educational institution, where external contacts function as judges.

None of the institutions without a strategy provide their students with this possibility.

Half of the institutions in the survey have subject/project weeks or -days in cooperation with external partners (2 institutions with and 4 without a strategy) and one third of them have workshops in cooperation with external partners (3 institutions with and 1 without a strategy).

Involvement from school governing body and local businesses

There is a small difference between the institutions with a strategy and the ones without when it comes to the degree of involvement of school management and local businesses as a resource in the work with entrepreneurship education. On a scale from 1 to 5,¹⁷⁵ the institutions with a strategy have an involvement "to some extent" of both the management (mean: 4.0) and the local businesses (mean: 4.2). In the institutions without a strategy, the involvement of the management is either "to a small extent" or "to some extent" (mean: 3.2), and the involvement of local businesses is between "not at all" and "to some extent" (mean: 3.0).

Organisation

This area is related to topics such as resources, structures and expectations.

Resources, structure and expectations

Two of the educational institutions in the survey (without a strategy) have no resources at all earmarked to entrepreneurship education. The rest of the educational institutions in the Icelandic survey have resources earmarked to entrepreneurship education, but there are differences as to what and how much.

Two thirds of the educational institutions have earmarked time as a resource (5 institutions with and 3 without a strategy). Half of the institutions (3 institutions with and 3 without) have earmarked other resources such as staff with knowledge and expertise on the area. Half of the educational institutions with a strategy have also earmarked financial resources to the area of entrepreneurship education. Only one of the educational institutions without a strategy has done the same. A coordinator for entrepreneurship teaching, who has the full backing and practical support from the management and who

¹⁷⁵ 1 = not at all, 2 = to a small extent, 3 = neither or, 4 = to some extent, 5 = to a high extent.

is part of the management, has been appointed by two of the institutions with a strategy and one of the institutions without a strategy.

Like most of the educational institutions in the survey (82% of the participating educational institutions on all islands), entrepreneurship teaching is to some degree a part of the school timetables and the annual teaching plans at all educational institutions in Iceland. However, none of them require from the teachers that they include entrepreneurial learning objectives in their daily teaching and activities. Also, almost none of them (only one) require that the teachers describe in their annual plans how they integrate entrepreneurship in other subjects.

In half the institutions (3 with and 3 without a strategy) time has been allocated to entrepreneurial teaching courses of a longer duration, for instance project weeks, optional subjects, etc. Two thirds of the educational institutions in Iceland have not communicated their expectations to the teachers when it comes to where, when and how entrepreneurship teaching should be integrated in their teaching practice at the educational institution. However, 7 out of 12 institutions (3 with and 4 without a strategy) use a feedback system, which ensures that the teachers follow up on the pedagogical goals and objectives.

Management at half the educational institutions (4 with and 2 without a strategy) supports dialogue and cooperation between teachers from different disciplines through common facilities across the educational institution's subdivisions. A third of the institutions (half of each group) support by means of cross-curricular teaching and/or interdisciplinary project groups and dialogue and co-decision between teachers and students. One of the institutions without a strategy has at present no particular structures for such a dialogue and cooperation.

Competence

This area is about topics related to qualification, knowledge sharing, and pedagogics and cooperative relations.

Plan for teacher competence development

When it comes to a plan for teacher competence development, we see some differences between the 6 educational institutions with a strategy and the 6 without. Half of the institutions without a strategy currently have no plan for competence development and knowledge sharing within entrepreneurship education. All of the institutions with a strategy, however, have a plan to some extent. In 4 of them the plan for competence development manifests itself as a cross-curricular cooperation between teachers within the subject of entrepreneurship, and two of them practise competence development

through knowledge sharing about entrepreneurship teaching and through special networks. This is only the case for one of the institutions without a strategy.

Experimenting with teaching forms

All the institutions in Iceland allow their teachers to experiment with teaching forms in one way or another. Half of the institutions (3 with and 3 without a strategy) allow the teachers to experiment with teaching forms through project work / feature weeks or - days. Almost all the institutions with a strategy (5 out of 6) also allow teachers' cooperation with businesses. Only two of the institutions without a strategy allow this. 4 out of 6 institutions with a strategy have cross-curricular feature periods where the teachers can experiment. Only one of the institutions without a strategy provides this possibility. In one of the institutions with a strategy the management states that "teachers can experiment with teaching forms at their leisure".

Cooperation with surrounding society

All of the 12 institutions are involved in cooperation and knowledge sharing with the surrounding community. Two thirds of them (5 with a strategy and 4 without) are involved with institutions within the public sector and half (4 with and 2 without a strategy) are involved with other knowledge organisations. Half of the institutions with a strategy are also involved with newly started businesses /entrepreneurs and this is only the case for one of the institutions without a strategy. However, when it comes to involvement with established businesses/industry, more institutions without a strategy (3) engage in this than institutions with a strategy (2).

Extra-curricular activities

4 out of 6 institutions without a strategy do not offer any extra-curricular activities that strengthen the entrepreneurial competences and mind-set of students. Most of the institutions with a strategy (except one) provide this. Half of the institutions with a strategy provide incubator activities, other forms of advice and guidance for student start-ups as well as entrepreneurship education given by entrepreneurs. They also organise networks between students and entrepreneurs/business industry.

Practice

This area is about topics that concern actual teaching forms and programmes, feedback, materials and teachers' aids.

Half of the institutions (2 with and 4 without a strategy) in Iceland have access to materials and teachers' aids, which can support their teaching in innovation and

entrepreneurship. Even more (2/3) have experience with actual teaching forms and programmes within entrepreneurship (5 institutions with a strategy and 3 without). However, only half of the institutions in the survey continuously validate and revise the learning objectives for entrepreneurship teaching with a view to updating their teaching programmes. 25% of the institutions develop their curriculum in cooperation with external stakeholders in order to get input concerning useful competences in future. Only one of the institutions (with a strategy) measures the impact of the entrepreneurship teaching before, during and after the course/teaching.

Micro level

The micro level concerns the implementation level, that is, the actual teaching taking place in educational institutions and the spread of this form of education, that is, how many students participate in this form of education on the island.

In the early phases of the development of a national strategy for entrepreneurship education, this level relies strongly on individual teachers' enthusiasm. Teacher training is limited with no or little in-service training. But as the island or country develops their activity in the area of entrepreneurship education, measures on the micro level become more systematised, the teachers' central role is increasingly recognised, good practice examples are identified, and teaching materials are being elaborated. In the more advanced stages, teachers are making increased use of national/regional or local support mechanisms such as training or exchange platforms. More teachers follow the good examples and are engaging with the entrepreneurship education agenda. This development is of course faster and easier when the management of the national education institutions have a clear focus on and agenda for working in this field.

This chapter maps entrepreneurship education from the perspective of teachers in upper secondary education, vocational/VET and tertiary level education, on different parameters.

The share of pupils and students, who has received entrepreneurship education, is calculated on the basis of the total number of pupils and students on the island. It must be emphasised that this share may be inaccurate, as it is based on the responses received. There may be other Icelandic pupils and students who participate in entrepreneurship education but whose teachers did not participate in the survey.

Upper secondary education

At the upper secondary level, data have been collected by means of a questionnaire for the teachers. The purpose of the survey is to map the number of pupils in upper secondary education who participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship in the school year 2015/2016.

The questionnaire is divided into four main categories.

Basic information consists of two questions about whether the teachers perceive that the school has a clear policy of integration of innovation and entrepreneurship in the education. The responses to these questions thus indicate a score that reflects the extent to which this is the case.

Taxonomy contains the following four dimensions: *action, creativity, environment* and *attitude*.¹⁷⁶ These terms refer to entrepreneurial competences, which are not necessarily a subject or subject knowledge in themselves but are competences to set initiatives in motion and create opportunities. As such, a high score in the teachers' perceptions of the fulfilment of these four indicators is desirable. The score in the four dimensions of the pupils and students who have received entrepreneurship education is compared to the scores of the pupils and students who have not received entrepreneurship education.

Entrepreneurship and setting things in motion is the foundation of entrepreneurship education. The total number of pupils and students having received entrepreneurship education in any given area is comprised of all teachers who have answered the questions regarding whether the pupil or student has received instruction in starting a business and/or tried starting up and gained experience starting a business affirmatively.

Entrepreneurship education, which is the percentage of pupils and students who have received entrepreneurship education, is calculated from the total number of pupils and students on the respective islands/areas. As mentioned above, reservations are taken about the accuracy of this share.

In Table 1 below, the overall results for the upper secondary level are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

A total of 9 teachers have answered the survey. All together, they represent 206 students from 10 classes. Overall, 92 pupils at the upper secondary level in Iceland have encountered entrepreneurship education in the 2015/2016 school year.

¹⁷⁶ Please see "A Taxonomy of Entrepreneurship education" for further elaboration on the entrepreneurial dimensions.
<http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

As is evident in Table 1, the teachers only experience a clear policy on innovation and entrepreneurship to a lesser degree. The score for this question is 22 and 18, respectively, which is below the average of 26 and 27, respectively.

However, the teachers answer that 40% of the classes have participated in entrepreneurship education while 30% of the classes have realistic experience with starting up businesses.

Table 1: The results for upper secondary education, Iceland

Subject	Variable	Iceland
Basic information	Policy on innovation	22
	Policy on entrepreneurship	18
Taxonomy	Action	40
	Creativity	46
	Environment	32
	Attitude	37
Entrepreneurship	Teaching in start-up percentage	40
	Realistic experience with start-up, percentage	30
Entrepreneurship education	Number of students receiving entrepreneurship education	92
Score for students receiving entrepreneurship education	Action	68
	Creativity	58
	Environment	59
	Attitude	54
Score for students <i>not</i> receiving entrepreneurship education	Action	22
	Creativity	38
	Environment	13
	Attitude	25

Note: The result is comprised of answers from 9 teachers with a total of 10 classes and 206 students.

Just as the results from the other countries demonstrate, the results from Iceland show that pupils who have received entrepreneurship education score higher on all parameters concerned with entrepreneurial competences. Here, students receiving entrepreneurship education scored double that of students not receiving entrepreneurship education for *action*, *environment* and *attitude*.

Vocational/VET

At vocational/VET level data have been collected by means of a questionnaire directed at the teachers. The purpose of the survey is to map the number of pupils in vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories.

Basic information is comprised of two questions. They concern whether the teachers experience that their school has clear policies on innovation and entrepreneurship in education, respectively. The scores for these questions thus reflect to what degree that is the case.

Teaching, which focuses on the degree to which the teachers experience that the students have participated in innovation and entrepreneurship education in class instruction and courses, as clear subjects in their practical training and internships as well as clear subjects in their apprenticeship tests.

Entrepreneurship and setting things in motion is the foundation for entrepreneurship education. The teachers were asked whether the pupils have participated in feature weeks, camps, projects or the like focusing on innovation and entrepreneurship, respectively. In addition, the teachers were asked whether the pupils had participated in other innovation or entrepreneurship projects. If the answer is yes to any of these questions, the pupils are included in the total number of pupils and students, who receive entrepreneurship education. As such, there are three different questions, which all play a part in determining whether the pupils have received entrepreneurship education.

Entrepreneurship education thus indicates the number of pupils who, based on the abovementioned questions, receive entrepreneurship education. The share of pupils and students who have received entrepreneurship education is based on the total number of pupils and students on the respective islands/areas. Again, and as mentioned above, reservations are taken about the accuracy of this share.

In Table 2, the overall results for vocational/VET are presented. The scale from 1–7, which was used in the survey, has been converted to a new scale, which spans from 1–100. This ensures that all answers in the survey can be compared.

The results in Table 2 show that the teachers find that there is a relatively clear policy on innovation and entrepreneurship in particular. The respective scores of 39% and 44% are both above the average of 33% and 32%, respectively.

With regard to the teaching situation, the teachers find that the pupils have had innovation as an obvious and clear topic in their practical training and internships compared to during class instruction. However, the opposite is the case with regard to entrepreneurship, which has been more present in class and less so during the pupils' practical training.

Table 2: The results from vocational/VET Iceland

Subject	Variable	Iceland
Basic information	Policy on innovation	39
	Policy on entrepreneurship	44
Teaching	Innovation in subject/course	28
	Innovation as a clear topic in practical training/apprenticeship	33
	Innovation as a clear topic in apprenticeship test	-
	Entrepreneurship in subject/course	44
	Entrepreneurship as a clear topic in practical training/apprenticeship	33
	Entrepreneurship as a clear topic in apprenticeship test	-
Entrepreneurship	Innovation, percentage	67
	Start-up of business / Entrepreneurship, percentage	33
	Other, percentage	33
Entrepreneurship education	Number of students receiving entrepreneurship education	45

Note: The result is comprised of answers from 3 teachers with a total of 3 classes and 73 pupils.

67% of the total number of classes have participated in feature weeks, camps, projects or the like focusing on innovation, whereas the amount of classes who have participated in similar feature weeks, camps etc. with a focus on business start-up and entrepreneurship is 33%. This is also the percentage of classes who have participated in other innovation or entrepreneurship programmes.

All in all, 45 pupils have received entrepreneurship education with a focus on innovation and/or entrepreneurship in the vocational/VET schools in Iceland. None of the pupils in this study have completed final apprenticeship tests focusing on innovation or entrepreneurship.

Upper secondary and vocational/VET

Overall, 137 pupils in the survey at upper secondary education and vocational/VET in Iceland have encountered entrepreneurship education in the 2015/2016 school year. However, after further information from JA Iceland it is confirmed that at least 312 pupils have participated in Company Programme (an entrepreneurship education programme) in Iceland the same year and this is thus the most correct number.

312 pupils is the equivalent of 1.2% of the 26,513 pupils in upper secondary education and vocational/VET in Iceland. It is, of course, important to keep in mind that the low number of answers may have an effect on the result in Iceland.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participated in

entrepreneurship education.¹⁷⁷ However, this percentage includes pupils and students receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

Tertiary education

For the purpose of mapping entrepreneurship education at the tertiary education level, the islands were asked to send course descriptions of courses within innovation and entrepreneurship or courses that resemble this kind of teaching at this level along with the number of students partaking these courses during the academic year 2015–16. The received course descriptions were then screened on the basis of the categories in the Star Model – a model for identifying entrepreneurship courses.

In the Star Model courses and subjects are categorised according to how much focus they place on the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to obtain an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Iceland has several entrepreneurship education courses at the tertiary level. Table 3 lists the courses offered at Icelandic tertiary educational institutions and the number of students in the two semesters of the academic year 2015–16.

¹⁷⁷ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

Table 3: The results for the tertiary level in Iceland

Institution	Course	Students Fall 2015	Students Spring 2016
University of Akureyri	Product development and innovation		48
University of Iceland	Field Course in Innovation and Entrepreneurship 1	15	
	Field Course in Innovation and Entrepreneurship 2*		14
	Entrepreneurship and Innovation		31
	Theoretical Foundations of Innovation and Entrepreneurship	26	
	Women and men as leaders, entrepreneurs and administrators		0
	Innovation in Tourism		62
	Innovation and technology in welfare	0	
	Creativity and innovation in textiles	0	
	Innovation – business idea development, project management and gathering of resources	0	
	Innovation, product development, marketing		24
	Education, innovation and employment	0	
	Innovation and practical applications: environment and natural resources		0
	Management of innovation		0
Reykjavik University	Entrepreneurship and starting new ventures		326
	Entrepreneurial finance		11
	Becoming entrepreneur	0	
	Innovation	0	
	How to start a Start-up	48	
University of Bifröst	Innovation and entrepreneurship	28	
	Financial opportunities	18	
Hólar University	Product development and innovation		26
Agricultural University of Iceland	Entrepreneurship		0
Iceland Academy of the Arts	Project management and Entrepreneurship	25	
Total		160	542

Note: * The courses Field Course in Innovation and Entrepreneurship I and II are two parts of the same course, so the students following these courses are the same and should only be counted once.

A total of 688 students participated in innovation and entrepreneurship related courses in the past academic year (the 14 students in the “Field Course in Innovation and Entrepreneurship 2” have been deducted, because we assume they participated in “Field Course in Innovation and Entrepreneurship 1”). We do not know if other students may have been counted twice.

The total number of students at the tertiary level in Iceland in 2015–16 is 19,163. The 688 students in entrepreneurship education in that year thus equal 3.6% of all

tertiary students in Iceland. In comparison, the percentage of Danish tertiary level students who participated in entrepreneurship education was 13.7% in 2014–15. The percentage of Danish tertiary level student who participated in entrepreneurship education in 2015–16 is 15.8 %.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.¹⁷⁸ Only 4–12 months after receiving a Micro Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after they received the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

In Iceland there are 34 upper secondary education institutions and 7 tertiary education institutions. The total number of students in the school year 2015–16 is 45,676. Financial support for student start-ups is already available in Iceland through Start-up Reykjavik. This is, however, not only for student start-ups.

During the project trial granting Micro Grants of DKK 25,000 in Iceland, two applications from student start-ups were received. Normally, a student start-up is

¹⁷⁸ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

comprised of 2 to 6 pupils or students. The team that received the grant is comprised of students who all completed an entrepreneurship course in Reykjavik University in May 2016. The Micro Grant was marketed on Facebook (JA Iceland and Innovation Center Iceland), on the website of Innovation Center Iceland and through direct e-mail to all Icelandic universities/higher education institutions.

Effects

For the student start-up, the Micro grant has had a range of effects. They say:

“Receiving the grant helped us a lot. The grant made it possible to start quickly and that is great for a young start-up. As it is today we haven’t had to get any financing because the grant helped us pay our big start-up cost. The plan was always to start and work on the company in Iceland in the beginning and then later if everything would work out then we would go to the Nordic countries. Everything is happening now, the business is starting and the grant helped us prepare everything much better than we could have done if we hadn’t had the grant. So, it has had good effects on the development of the company”.

Derivative effects for the island and local community as a consequence of the idea are:

“The idea has had good effects on the community by helping foreign students finding a place to stay while they live and learn in Reykjavik. It makes it easier to find a place to stay and that makes more people want to come, learn and live in Reykjavik, because it is hard to find a sleeping place in Reykjavik”.

Needs and possibilities

The team is very satisfied with the help and inspiration they have received during their early stage. However, they express that they need team members with different skills like web development/ programming knowledge and skills, and it can be a challenge to find such people. Matchmaking events etc. could be the answer.

Micro Grant recipient

Rentmate

Rentmate is a platform for international students to connect with each other to share accommodation during their stay in Iceland. The revenue will be generated by charging the landlord a 7% commission fee of the rent. We already have bookings from 64 students for accommodation during this fall semester.

The grant was used for web development, insurance and logo development.

Future entrepreneurial potential

Even though the total population in Iceland is growing and the general employment rate is relatively high, the youth unemployment of 16% is a percentage worth taking into consideration when talking entrepreneurship education in Iceland. Fortunately, the education level is relatively high in Iceland and the number of young people who gain a secondary or tertiary level education is growing. This creates a solid basis and a huge potential for implementing entrepreneurship education in Iceland.

Based on the objective of creating solutions that will entail positive effects for Iceland, the first objective of this pilot project was to ensure a mapping of entrepreneurship education in the area. There is no or only limited prior data available for mapping entrepreneurship in the educational sector in Iceland. Knowing the present situation on the island the second objective has been to define the potential for entrepreneurship education and Micro Grants in Iceland from 2016/2017 to 2020/2021. This forecast includes economic measures and is based on six years of experience and development rates from the Danish Foundation for Entrepreneurship.

The ambition in the long term is that new companies will follow from initiatives implemented and more students will obtain skills and competences that will enable them to create and establish new companies. Thus, the aim is that young people in Iceland learn how to act on opportunities and good ideas and how to convert these ideas into economic, social and/or cultural value for others. As a whole, the continuation of this pilot project is about enhancing the market position of Iceland internationally and contributing to a sustainable development, growth and jobs.

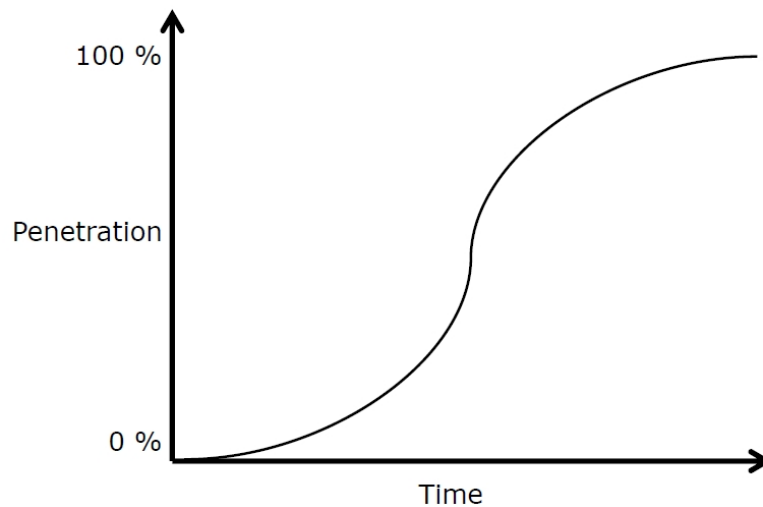
Forecasting entrepreneurship education and Micro Grants for Iceland

This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives in Iceland. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education and that resources for student start-ups are available.

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Iceland is in the initial stage of the S-curve.

Figure 1: S-curve for entrepreneurship education penetration rate



The forecast is presented in Table 4 and Figure 2 below.

The forecast is based on:

- The data collection and findings in this report.
- Stakeholder insights and comments from Iceland.
- The maturity level on the island with regard to entrepreneurship in education (The "s-curve").

- Development rates from Denmark and Bornholm (2010–2016).
- The average of total costs per student during the last three years in Denmark (including development, Micro Grants and administration/operation costs e.g. salary, travel expenses, communication etc.).

And the forecast is based on the assumptions that:

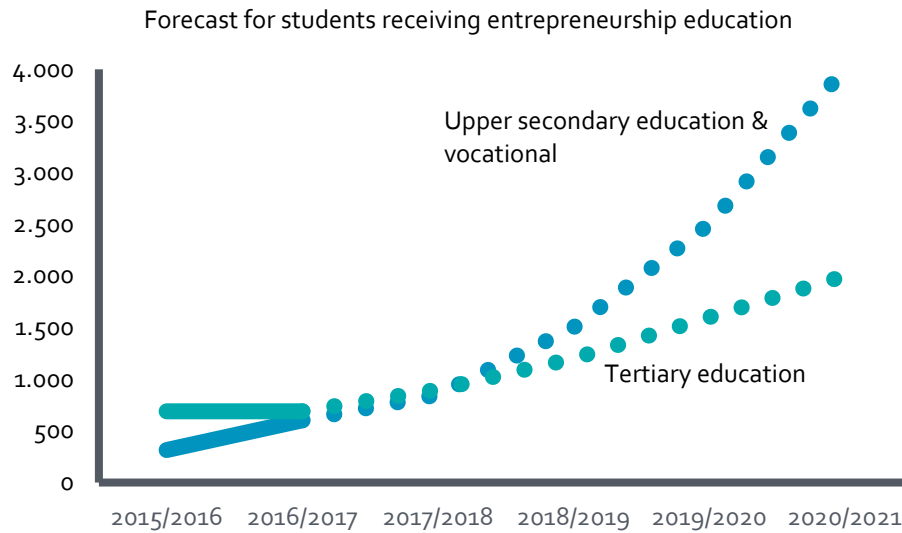
- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

It is important to bear in mind that the forecasts cannot be made with 100% accuracy, but are estimates.

Table 4: Forecast for Iceland

Forecast for entrepreneurship and micro grants until the school year 2020/2021						
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	26,513	26,513	26,513	26,513	26,513	26,513
Students receiving entrepreneurship education, forecast	312	600	850	1,500	2,500	4,000
Share of students receiving entrepreneurship education, percentage	1.2%	2.3%	3.2%	5.7%	9.4%	15.1%
Tertiary education						
Students in total	19,163	19,163	19,163	19,163	19,163	19,163
Students receiving entrepreneurship education, forecast	688	688	900	1,200	1,600	2,000
Share of students receiving entrepreneurship education, percentage	3.6%	3.6%	4.7%	6.3%	8.3%	10.4%
Applicants receiving a grant						
Accepted applicants	1	3	5	6	8	10
Average annual costs (4 years) in DKK	DKK 3,900,000–4,300,000					

Figure 2: Forecast for Iceland



Recommendations for Iceland

- A national strategy and a cross-ministerial collaboration are necessary means to build a strong foundation for developing regional and island strategies. There is no national strategy for entrepreneurship education in Iceland. A higher political commitment to the area is required in order to create an overall national strategy for entrepreneurship education covering all education levels. Hence it is recommended to take the entrepreneurship education agenda to the political and strategic level in order to ensure a policy platform and priority of the area from the top level and to start planning a structure for implementation at the national level. Experiences from other countries show that the development of a national strategy for entrepreneurship education with a specification of clear responsibilities of key actors on both policy and implementation levels helps to gain an overview of the area, to systematise efforts and initiatives, and to benefit from synergies between the different initiatives. Furthermore, such a strategy should contain clear indicators and evaluation measures for the strategy. A national strategy for entrepreneurship education should also set clear objectives for each education level, which would help to integrate entrepreneurship education more systematically at all levels and in all types of education, as well as contain measures for teacher training.

- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector. There are already several bottom-up initiatives and stakeholders involved from many levels of society in Iceland and they have been working with entrepreneurship and entrepreneurship education for many years. Iceland has therefore many experiences with entrepreneurship and a ready network of key actors on the area. This constitutes an important resource, which should be utilised and incorporated in future initiatives in the entrepreneurship education area. The political commitment, however, must go hand-in-hand with a structured approach (not only ending up as a network between existing operators) to the coordination of actions and measures on all education levels – and this preferably through one national operator.
- A specifically dedicated budget for development and activities is necessary. There are only limited resources for entrepreneurship education and no resources for student entrepreneurs in Iceland. Financial resources should be allocated both at national and local level (on the island). This should be a collaborative effort between public and private sector.
- Strong stakeholder relations are essential. Private sector, public sector and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation.
- Promote entrepreneurship and entrepreneurship education. An important part of the efforts at national level is to communicate broadly the focus on, and goals for, entrepreneurship education to all important stakeholders in the Icelandic society; educational institutions, teachers, students, parents as well as private and public sectors and local and regional authorities. Entrepreneurial role models with differences in gender, industries, size of start-up etc. can play a part in this promotion, in collaboration with the media. According to JA Iceland their recent re-launch is expected to increase both the overall awareness of entrepreneurship education (amongst schools and policymakers) as well as the numbers of students being exposed to entrepreneurship education in Iceland – especially at upper secondary level. However, the promotion should also come from political and authority level.
- Support and collaboration with schools and educational institutions at all levels. Danish research shows that to achieve the greatest effects entrepreneurship education must be differentiated on the respective levels of education and must be provided to pupils as early as possible during their education. Entrepreneurship

in higher education is the most effective way to foster long-run student start-ups. As it is now, entrepreneurship education in educational institutions in Iceland mostly takes place in specialised business schools at the upper secondary and tertiary levels, or as an extracurricular course or “add-on” to the normal teaching, e.g. competitions in primary and secondary schools and an optional subject at university.

- Collecting data to secure knowledge on the development in penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and later on compiling impact studies is vital for the support from ministries and private sector.
- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice. This mapping shows that school management in Iceland believe that strategies and goals for entrepreneurship education are important. The reason why only a few have implemented a strategy might be due to the lack of incentives for the management and the lack of a national strategy.
- Communicating the educational institutions’ entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to have any impact on the penetration rate for entrepreneurship education on the island.
- A plan and resources for providing and ensuring the teachers the necessary competences on the area are necessary elements from the beginning. There are resources for entrepreneurship teachers’ competence development (e.g. further education in entrepreneurship teaching and networks) in Iceland. A sustained effort is needed to embed entrepreneurship education in every-day teaching. Implementing requirements on entrepreneurial learning objectives at all levels can be a part of this effort. Teacher training in entrepreneurship education should supplement this. At the moment, teacher training exists almost only as brief teacher training that JA Iceland provides for as part of Company Programme. Furthermore, there appears to be a lack of entrepreneurship education teaching materials in Iceland. In general, teachers do not have enough support to start practicing entrepreneurship education.

- Through JA Iceland, Iceland has access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and well-functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequently create significantly more entrepreneurs and higher income and they have a positive impact on pupils' motivation to study, their school engagement and their academic confidence and they have a positive impact on the primary school pupils' grades.^{179, 180, 181}
- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level.
- A small financial aid (Micro Grant) to student start-ups in the initial phases of the start-up process has proved (in Denmark) to have a catalytic effect and contributes to enhancing employment. The recipients of the grant also actively seek growth capital after receiving a grant. This could supplement the entrepreneurship teaching and help create new start-ups on the island. However, it takes time before students become accustomed to applying for this grant.
- Whenever possible, synergies across the Nordic islands should be utilised.

¹⁷⁹ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10,103 CP-pupils were matched with 214,735 non CP-pupils.

¹⁸⁰ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

¹⁸¹ Johansen and Schanke (2014) conducted a survey on 1,880 secondary pupils and 1,160 primary school pupils who participated in Junior Achievement's programmes.

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- HEInnovate, <https://heinnovate.eu/>

Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe¹⁸²

Table 5: A Progression Model for Entrepreneurship Education Ecosystems in Europe

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National strategy, ¹⁸³ frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

¹⁸² *Towards Greater Cooperation and Coherence in Entrepreneurship Education*, European Commission, 2010.

¹⁸³ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ¹⁸⁴	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

¹⁸⁴ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Appendix B. “The Star Model” – a method for identifying entrepreneurship education

“The Star Model” was developed by Øresund Entrepreneurship Academy with the purpose to identify and quantify entrepreneurship education courses in Danish universities. It was later updated by the Danish Foundation for Entrepreneurship to use for short and medium-length tertiary educations also.

Courses and subjects are categorised and given 1–3 stars according to how much focus they put in the individual categories of the model. Apart from identifying a course or subject as entrepreneurship education, the model can be used to get an image of how much emphasis is put on entrepreneurship in the form of content or teaching methodology in a course/subject. The model and method is used exclusively to identify the extent to which the course/subject focuses on entrepreneurship, it is not an evaluation or assessment of the quality of the course/subject as such.

Table 6 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.¹⁸⁵

¹⁸⁵ <http://www.ffe-ye.dk/videncenter/entreprenorskabs-undervisning/eksamensformer>

Table 6: The Star Model

Teaching design								
Subject-related content					Teaching approaches and methods			
Phases/ Categories	Intrapre- neurship	Entrepre- neurship	Finance/ VC	Law	Practical dimensions	Student participation	Interdisci- plinary	International dimensions
Idea								
Beginning								
Growth								
Running								

Appendix C. Demographic data on the seven islands

Table 7: Population changes (increase and decrease) in % between 2009 and 2015

Unit	Changes in total population	Changes in population aged 0–24	Changes in population aged 25+	Changes female ratio	Youth dependency changes*			Old age dependency changes**		
	2009–2015	2009–2015	2009–2015	2009–2015	2009	2015	Change	2009	2015	Change
Norway	7.6	6.0	8.4	-1.6	28.7	27.4	-4.4	22.1	24.5	10.9
Andøy	-0.8	-2.0	-0.4	-2.3	29.0	25.3	-12.7	33.2	37.9	14.1
Finland	2.7	-0.7	4.2	-0.6	25.2	25.7	2.2	25.2	31.3	24.2
Pargas	0.5	-2.3	1.7	-0.5	27.1	27.8	2.6	30.9	40.0	29.5
Denmark	2.7	.6	2.8	-0.4	27.8	26.4	-5.0	24.1	28.8	19.5
Bornholm	-6.4	-14.3	-3.6	-0.7	25.5	23.0	-9.6	33.2	44.6	34.5
Faroe Isl	-0.9	-4.3	0.9	1.4	34.4	34.5	0.4	22.2	26.9	20.9
Greenland	-0.3	-7.9	4.6	1.0	32.9	29.8	-9.4	9.3	10.7	15.2
Sweden	5.3	4.8	5.5	-1.0	25.4	27.3	7.4	27.1	31.1	14.8
Gotland	0.4	-4.8	2.6	-0.7	22.9	24.6	7.3	31.0	39.2	26.5
Iceland	4.1	0.9	4.2	2.2	30.9	30.8	-0.3	17.2	20.5	19.2

Note: * population aged 0–14 as a share of population aged 15–64.

** population aged 65+ as a share of population aged 15–64.

Kilde: National statistical institutes and Eurostat.

Table 8: Increase and decrease in employment and education rates of the population 2009–2013

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76.6	75.6	-1.3	3.2	3.5	9.4	9.2	8.6	-6.5	
Andøy	75.6	72.8	-3.7	2.8	4.8	71.4		12.7		26.6
Finland	68.4	68.4	0	8.4	8.4	0	21.5	19	-11.6	
Pargas	74.5	73.2	-1.7	4.9	4.6	-6.1		14.3		43.2
Denmark	75.1	72.3	-3.7	6.1	7.2	18.0	11.8	14.1	19.5	
Bornholm	68.8	69.3	0.7	8.9	8.9	0		19.7		23.7
Faroe Isl	88.1	90.8	3.1	4.8	3.9	-18.8		9.9		35.9
Greenland	64.9	63.3	-2.5	7.5 (2010)	9.7	29.3		17		14.4
Sweden	72.4	74.5	2.9	8.5	8.3	-2.4	25	23.7	-5.2	
Gotland	74	77.4	4.6	8	6	-25				31.1
Iceland	78.3	81.1	3.6	7.2	5.4	-25	16	13.6	-15	

Note: * number of employed persons as a share of the population aged 15–64.
 ** total number of unemployed persons as a share of the labour force (labour force is made up by the total number of persons employed or looking for a job).
 *** unemployed persons aged 15–24 as a share of the labour force aged 15–24.
 **** persons with a tertiary education as a share of the population aged 25+.

Sources: National statistical institutes and Eurostat.



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Nordic Entrepreneurship Islands

The pilot project Nordic Entrepreneurship Islands addresses the educational and new business venture challenges on seven selected Nordic islands. The project also addresses the opportunities and potential arising from an increased focus on entrepreneurship education and startup capital for student startups on the islands. The current state of the seven Nordic islands is described through a mapping of the existing spread of entrepreneurship education at the upper secondary and tertiary education levels. This is followed by a presentation, in the form of an informed forecast, of what the future could look like. Each island forecast is given as the possible percentage increase in students receiving entrepreneurship education, student startups receiving a Micro Grant, and the annual costs involved with the attainment of these increases during a five-year period, from 2015/2016 to 2020/2021.

