FONDEN FOR ENTREPRENØRSKAB
YOUNG ENTERPRISE DANMARK

2011

Impact of Entrepreneurship Education in Denmark - 2011

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Contents

Executive Summary

In this report the initial findings of two longitudinal impact surveys of entrepreneurship education, which were initiated by The Danish Foundation for Entrepreneurship-Young Enterprise during 2011, are presented. The two surveys focus on ninth-graders at lower secondary level and university students at graduate level. Even though the surveys are in their initial stages we can identify some interesting indications of what effects entrepreneurship education have on students.

At lower secondary level, where we follow 2,000 randomly selected students, we identify a clear and significant difference between ordinary students and students who have received entrepreneurship education, regarding their view of their future and their ambition level, as well as their sense of perceived connectedness to school and society. The attitudes towards entrepreneurship are on an average very high for all the students in the sample. 95% see entrepreneurship as something positive and 53% see it as a potential career choice. We could not identify any difference among the group of students participating in entrepreneurship education and the ordinary students regarding this, but given the results from our university survey, we expect that this will change over time.

The design of our survey at university level does not allow us to draw these types of conclusions at this stage. In this survey we follow six entrepreneurship programmes which are compared to seven ordinary gratuate level programmes, in total 556 students. A measurement tool that allows us to establish the impact of different programmes on students' entrepreneurial self-efficacy has been developed and tested.

We see that entrepreneurial activities are not only popular among entrepreneurship students, but also among ordinary students. Over 29% of the entrepreneurship students and over 11% of the ordinary students are actively trying to start up a new business. These are very high levels for both of the groups compared to the population on an average, where this share is 2.7%.

Preface

It is a widespread assumption that education is beneficial not just for individuals, but also for society. In recent years focus has been heavily in favour of more young people completing a youth education and carrying on to a higher form of education. In general, it is assumed that a higher level of education increases Denmark's ability to succeed in global competition. Lately, a consensus has also been created that shows that young people should learn how to create value for others - through practical application of their strong theoretical expertise. We believe that through entrepreneurship education, young people will be even better equipped to meet future challenges and to solidly help increase value in Denmark. Entrepreneurship education is a natural and inspiring way to bring value-adding knowledge into play.

Two years ago, the Danish Foundation for Entrepreneurship - Young Enterprise started the efforts of spreading entrepreneurial training in the Danish education system and already, we see more young people leaving the education system with skills to start their own business or abilities to create innovation in established organizations. In fact, our recent mapping shows that 10 per cent of all students are participating in teaching that involves creativity, innovation and entrepreneurship.

From a Danish population survey conducted last year and from several studies abroad, we know that entrepreneurship education has value-adding effects. Young people, who have participated in entrepreneurship education or training sessions during their education, start more businesses and also have higher earnings. However, more systematic and detailed studies of what works and why are still missing – an extensive task with many unresolved questions.

Therefore, we have now started a research project that examines whether and how entrepreneurship teaching works and the more precise effects of different approaches to entrepreneurship teaching.

One of the pieces to this puzzle is the study of a group of students from the ninth grade which we will follow through their further education and career and consider, among others, what effect entrepreneurship education has on the individual's attitudes and behaviour in relation to choice of education, business start-up and income. Another piece of the puzzle is the study of the impact of university entrepreneurship courses on students' entrepreneurial self-efficacy, intentions and behaviour.

The impact of entrepreneurship education is an area which has lacked systematic examination, but has been in strong demand both among teachers and decision-makers. Therefore, we are excited to bring the first results of our long term project in this report.

Christian Vintergaard, CEO
The Danish Foundation for Entrepreneurship – Young Enterprise

Introduction

In recent years, there has been an intensified focus specifically in the area of entrepreneurship in the educational system in Denmark as well as other countries in Europe. In Denmark, however, it is unique that the implementation of a national strategy for this area[1] has been delegated to one single organization. The Danish Foundation for Entrepreneurship - Young Enterprise (FFE-YE) has been established (January 2010) to support the development and diffusion of entrepreneurship education at all levels and in all fields of study in the educational system - from ABC to PhD. The objective is that more students gain knowledge of entrepreneurship and develop their ability to act entrepreneurially. The basic idea is that Denmark's future competitive capacity in the form of new businesses with growth potential will be strengthened by young people's abilities to innovate, identify opportunities, and transform ideas into value stimulated through education.

For two years, FFE-YE has been mapping the spread of entrepreneurship education and is now able to show that 10 per cent of all Danish students receive this kind of education. So far, in Denmark and internationally, there has not been conducted any systematic research on what impact entrepreneurship education has on children and young people and their future education and career. The purpose of the studies of FFE-YE is to make a thorough study of the effect of entrepreneurship education in the Danish educational system.

In January 2011, FFE-YE initiated the first report: 'Impact of entrepreneurship education in Denmark'. The report presented the results of a feasibility study based on a broad Danish population study. The fundamental question was whether the respondents during their education had any training in starting a business. The analysis showed that if an individual had received instruction or training in starting a business once, the probability of them receiving entrepreneurship education later on was increased. Training in entrepreneurship often encourages desire and especially skills for innovation and start-up. 60 per cent of the respondents answered that their skills in starting a business had improved and 43 per cent said they were more motivated for doing so. It was also documented that people with training were more likely than people without training to be in the process of starting, intending to start, or to own and manage an established company. One remarkable result of this analysis was that

1. Strategy for Education and Training in Entrepreneurship. Danish Agency for Science, Technology and Innovation. November, 2009. www.fi.dk

training in entrepreneurship has influence on income. Trained men and women have significantly higher income than untrained individuals. The more entrepreneurship training, the higher the income, even when considering other factors such as gender, age, education and employment.

The study informed that entrepreneurship education and training has several beneficial effects on people's future careers. However, there is a need for more detailed information about what makes entrepreneurship education so special that it leads to increased desire and motivation to start not only one's own business, but also other value-adding projects and activities. The participants in the preliminary study were 15-64 year old Danes. This means that some participants had to look back on their school life after almost a lifetime, while others had not even started tertiary education yet.

Based on this preliminary study, we have now started a research project that examines how entrepreneurship education works and the more precise effect of different teaching methods. We plan to follow a group of young students from the ninth grade through their further education and careers and amongst others study the effect of entrepreneurship education on these individuals' attitudes and behaviour in relation to choice of education, starting a business, and income. We shall also be looking at the effect of university courses on graduate level students' confidence in their entrepreneurial self-efficacy, intentions, and behaviour.

This new research will contribute with more specific knowledge about both the immediate effect of education on young people who are completing compulsory schooling and the long-term impact by following them over time.

At the same time, the in-depth study at the university level provides valuable knowledge about the effects of entrepreneurship teaching at this level and more accurate knowledge of what kind of teaching has certain effects. At the same time, we follow the students over a number of years, measuring both the acquired skills and more specific effects such as the number of start-up companies and income. Initially, the main focus of the project is, however, to develop the right design for the measurement.

One of the common ways to evaluate the effect of education is to focus on the participants' intentions; i.e. what the student currently intends to do in the future. This will also be part of our two studies. In addition, we will be asking questions regarding the students' self-efficacy because research shows that this is a good indicator of what young people actually do in the future. On a long term basis, we can then measure the choices the students have made regarding education and career and the concrete effects in relation to start-ups and income.

In this survey we will answer the following questions:

Lower secondary level study

Have the pupils received entrepreneurship training?

How entrepreneurial are the pupils?

What ambitions do the pupils have in relation to future job and education?

How do the pupils feel about themselves, school, their peers, and their future?

What attitude do the pupils have toward entrepreneurship and what intentions do they have in relation to starting their own business/company?

The study at university level:

Which entrepreneurial skills will the student achieve from entrepreneurship training in both short and long term?

Which types of entrepreneurial skills have the largest effect on entrepreneurial behaviour in the short and in the long run, respectively?

What effects do the different types of educational designs have on students' entrepreneurial skills?

1.1. The Report

It is important to first clarify briefly what we mean by entrepreneurship education before we look at the effect of such education. The report will therefore include an initial section describing FFE-YE's understanding of entrepreneurship in education. Next, we describe the long-term study in lower secondary school in which we follow a group of young 9th-graders and present the first results. These will primarily be descriptive in nature but also relate to the young people's intentions, attitudes, ambitions, enterprising behaviour, and connectedness.

The study of entrepreneurship education at the university graduate level is still in the developmental phase. This means that the first year in the project primarily has been about developing the right methods and design of the study. That section of the report will therefore mainly be about the study design and the theoretical background, but will also include some preliminary indicators of what impact entrepreneurship education can have on students.

In a summary of the two studies, we present the overall findings and conclusions and point to what we will focus on going forward, where we believe the studies will take us, and the implications hereof.

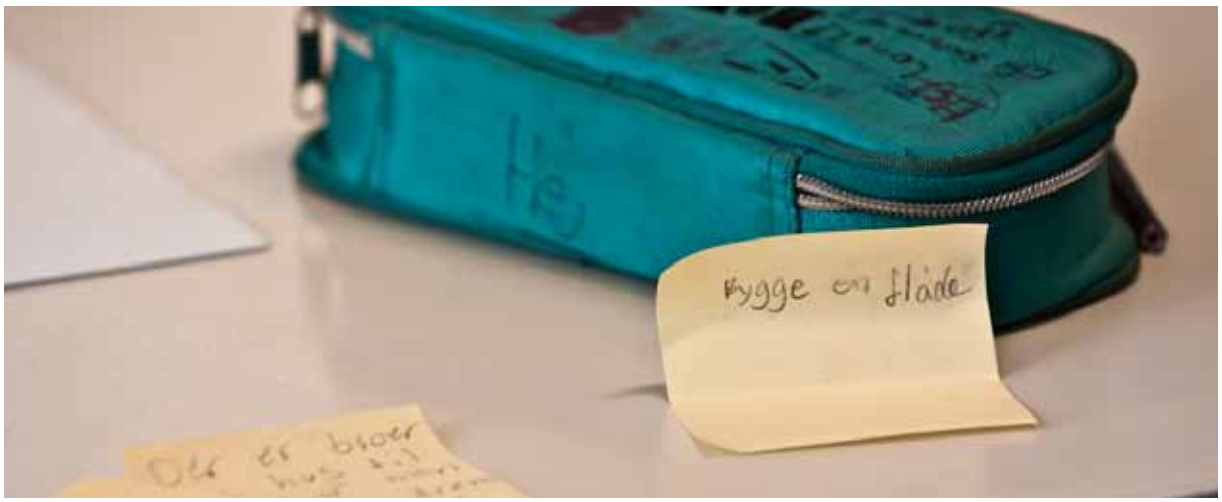
Entrepreneurship Education

In this context, Entrepreneurship Education is defined from a broad understanding of entrepreneurship:

Entrepreneurship is when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural, or social.

Entrepreneurship Education is practice-oriented education which involves the surrounding community, supports creativity, and encourages initiative and action. The pupil/student is active in the learning process, which takes place by interacting with others, and the teacher acts as advisor and role model. Entrepreneurship education is in the broad sense about pupils and students receiving information and gaining knowledge about entrepreneurship and entrepreneurial thinking and developing their abilities to act in an entrepreneurial way. In the classic understanding of the term, entrepreneurship is associated with starting a business. Much of the teaching in entrepreneurship deals with stimulating the start of a new business or exploiting opportunities to create new business areas in existing businesses, i.e. intrapreneurship. In recent years focus has, however, increasingly been on the fact that the term also covers other forms of implementation; many people are now, for example, concerned with the fact that entrepreneurship can be about seizing and acting on opportunities that create social or cultural value, for instance projects that help solve environmental problems or ensure social inclusion.

Apart from the business of starting new enterprises, literature speaks about the broader concept of enterprising or entrepreneurial behaviour which has to do with initiative and drive. You might also say that taking action and starting are important features of the entrepreneur.



Creativity and innovation are key concepts in the understanding of entrepreneurship. Creativity can in broad terms be understood as the ability to think in new ways - getting new ideas. Innovation is defined as a social process in which opportunities are spotted and creativity may be used to generate ideas for the creation of novel products, services, or methods which are of value to oneself and others.

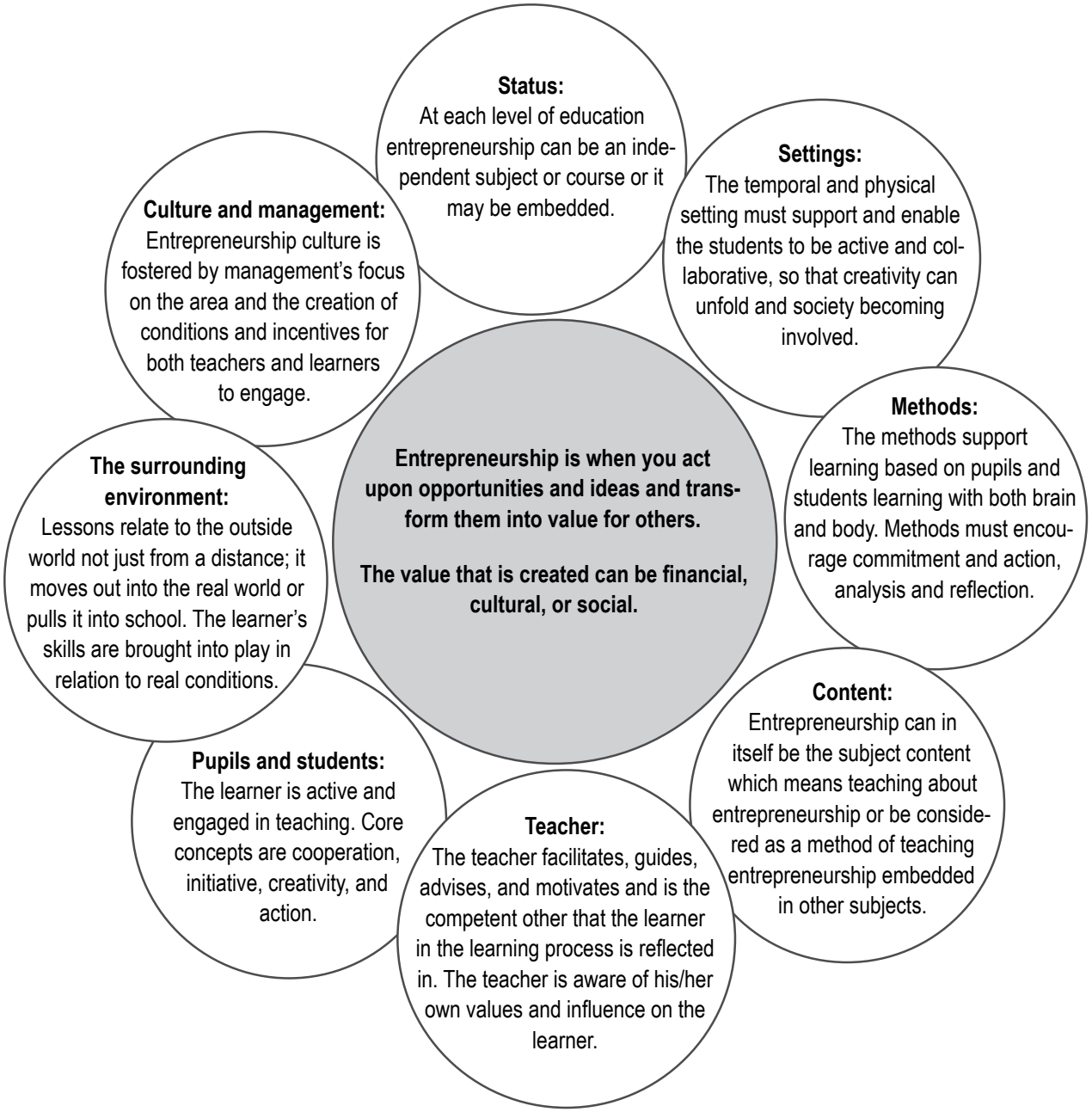
Entrepreneurship is when you exploit ideas and these are translated into value for others. Enterprising individuals discover or create opportunities in order to create valuable new products or services, transform them into ideas and act on them. Entrepreneurship is thus the action itself and the effort of transforming opportunities into value; if the entrepreneur does not succeed in the process, it does not make him/her any less entrepreneurial.

Just as recognizing, discovering, creating, and exploiting opportunities are central terms to the entrepreneurial process being able to handle uncertainty and risk are also closely related to entrepreneurship and one of the characteristics of the entrepreneur.

Entrepreneurship and intrapreneurship are not restricted to take place in the private industry. Entrepreneurship can occur in all parts of society, in both public and private sectors and, as mentioned earlier, be motivated by financial objectives as well as the desire to create social or cultural value.

Entrepreneurship Education includes several aspects such as the content which induces domain specific knowledge as well as pedagogical and didactic methods that develop and strengthen the students' entrepreneurial behaviour. In popular terms: teaching about and through entrepreneurship. Teaching about entrepreneurship can be compared with more traditional textbook teaching where it is about acquiring knowledge on the subject. Education through entrepreneurship is more practice oriented, and in this case, pedagogic and didactic teaching methods are used in which students act, feel, and do at the same time as and on the basis of acquired knowledge and experience.

As petals on a flower, the figure below illustrates the main features and characteristics to be considered regarding entrepreneurship education.



Throughout the educational system from pre-school to doctoral level, there will in addition to the gradual accumulation of knowledge in relation to the learner's stage of development also be an increased focus on entrepreneurship. One should therefore imagine that entrepreneurship teaching progresses in an academic level from one educational level to the next all the way through the educational system.

While focus in basic school mainly will be on entrepreneurial elements such as creativity and encouraging entrepreneurial behaviour, which could be called entrepreneurship teaching as a method, focus at the secondary level will typically also be on elements like business understanding and more detailed knowledge in the form of e.g. actual innovation projects or business plans. At the higher levels emphasis will also be on entrepreneurship in the classic sense that deals with acquiring knowledge of how to start a business. In higher education, the core of academic entrepreneurship is unfolded in specific courses and subjects in which the student is taught the underlying ideas and theories about innovation, design processes, growth, and business development.

At all levels, pedagogy and didactics imply a high degree of involvement by the students. The pupils and students get the drive and motivation needed for the learning process, when they experience how they can use what they have learned in school in other contexts, namely when they get real assignments from someone other than the teacher in the real world outside of school.

Entrepreneurship Education is practice-oriented teaching, which involves the outside world, supports creativity, and encourages initiative and action. It is the pupils and the students who are active in their learning process, which takes place by interacting with others; the teacher will then act as advisor and role model.

Longitudinal Study at Lower Secondary Level – 9th Grade Project

3.1. Introduction

In the Danish basic school, at least 5 per cent of the pupils are taught entrepreneurship[2]. But it remains an open question of how large the impact of entrepreneurship education in basic school actually is. A study of the effects of this teaching will hopefully give us the answer.

Based on a survey among school teachers presented in the latest mapping of entrepreneurship education, Entrepreneurship from ABC to PhD – 2011, an analysis was conducted of what entrepreneurship education encompasses at this level. At basic school level in Denmark, there is no specific subject called Entrepreneurship. Entrepreneurship is therefore integrated into the curriculum as an element or in special activities which are often interdisciplinary. The model that FFE-YE has developed to identify entrepreneurship education therefore includes a set of content-related and methodological themes which can be embedded in the ordinary subjects. In addition, the model relates to whether teaching is focused on creativity, innovation, and entrepreneurship, which can also be regarded as stages in an entrepreneurial project.

The analysis showed that in the youngest classes, teaching mainly focuses on creativity and innovation, which we have defined as Entrepreneurship as Method. In 7th - 10th grade, focus is to a high degree on entrepreneurship in the classical understanding in which finance and markets are content elements; we named it Classic Entrepreneurship. The general picture is that very few pupils get to the point of actually initiating or implementing a project or activity in practice.

2. Source: Entrepreneurship from ABC to PhD – 2010/2011. The Danish Foundation for Entrepreneurship – Young Enterprise. November 2011.

The study, which will run over a period of years, will be based on these two definitions of entrepreneurship teaching and in the long run we will measure the number of new start-ups, level of education, and income earned. In the near term, we conduct an impact survey focusing on the pupils' intentions, ambitions, entrepreneurial attitudes and behaviour, and their connectedness to school and community. These are considered to be indicators of future entrepreneurial behaviour.

Several other countries have completed studies in this area, but it has been difficult to obtain an overview, because reports are published on a policy level and therefore not made available in the usual databases of academic publications. However, we do know about a project, based on studies of students who follow the U.S. NFTE program[3]. The project completed a pre-test and post-test on a group of upper secondary level students (14-18 years) and a control group. Furthermore, a study of participants in the Young Achievement program in the age group 15-18 years as well as a control group was conducted in Australia[4]. In Scandinavia, an evaluation of entrepreneurship education in basic school in Finland is based on a survey among teachers and principals.[5]

We have thus been able to draw inspiration from several foreign studies at different levels of education and with different emphasis, but none of them with a fully useable design. Therefore, it has been necessary to develop new methods and research designs for the purpose of this study.

We have in the development of this study been particularly inspired by the study of the NFTE programme conducted by researchers at Harvard University. NFTE stands for National Foundation for Teaching Entrepreneurship and aims to offer educational programmes that inspire young people from low-income areas to get an education, spot business opportunities, and focus on a successful future. The study is designed to address the progress of entrepreneurship among young people, including entrepreneurial thinking and behaviour.

3. Nakkula, M. (2004). Initiating, Leading, and Feeling in Control of One's Fate: Findings from the 2002-2003 Study of NFTE in Six Boston Public High Schools. Harvard University Graduate School of Education.
4. Peterman, N.E. & Kennedy, J. (2003). Enterprise Education: Influencing Students' Perceptions of Entrepreneurship. Baylor University.
5. Tiikkala, A. et al. (2010). Evaluation and values of entrepreneurship education in basic education. Lappeenranta University of Technology.

3.2. Data and Method

The aim of this study is to follow a group of pupils from lower secondary school throughout their education as well as their future work life. Studies inform that students are most likely to start their own business 5 years or more after graduation[6]. As a result, it is essential to follow the pupils over a long period of time. In addition, the intention is to expand the database annually with a significant number of individuals with the purpose of getting a large amount of participants. Initially, the database includes 2,000 individuals. The survey in 2011 is thus based on a sample of pupils born 1996 - representative by gender, age and geography. We have the name, address, and social security number of the pupils so we eventually can link the list with databases from Statistics Denmark, and retrieve information about the pupils' careers, such as education, job, start-ups, unemployment, and income.

By retrieving this information from Statistics Denmark we will get a complete data list which is much better than depending on the pupils to return the questionnaire, in which case we would expect a somewhat lower response rate.

3.2.1. Approach

We have conducted a survey among a representative sample of pupils, who presumably attend 9th grade in October, 2011. They were sent a letter with an explanation of the study and a questionnaire with 54 questions, which they were asked to fill in and return in the enclosed postage-paid return envelope or electronically via a link. To ensure a reasonable response rate, participants were promised a cinema ticket as appreciation for their participation.

In the cover letter we inform them that we will send out an additional questionnaire once a year. The goal is, as mentioned earlier, to follow the pupils over a number of years and eventually build up significant data material. The database is also extended annually with a new group of ninth graders, partly to gradually be able to identify a potential development and partly to ensure a significant data base for subsequent studies as we assume that the number of respondents will decrease over time.

6. Source: 2009 Entrepreneurship Index - Entrepreneurship Conditions in Denmark. The Danish Enterprise and Construction Authority.

Prior to the actual study, we conducted a test of the questionnaire in relation to the understanding of the questions and tested it on a small group of ninth graders. The questionnaire was then corrected accordingly. Since the questions are partly taken from other studies conducted in English, a so-called back-translation was done - that is a translation from Danish into English to ensure that the questions have the correct meaning in Danish.

3.2.2. Questionnaire

The questionnaire (see Appendix 1) is built up of several constructs (groups of questions).

Entrepreneurship Education - Has the pupil received entrepreneurship training?

The first set of questions deals with whether young people have been taught about entrepreneurship or with methods that lead to knowledge of entrepreneurship and entrepreneurial skills. We have used questions that harmonize with the method we have developed for mapping entrepreneurship education in basic schools[7]. We operate with two types of entrepreneurship education. Entrepreneurship as Method means building an entrepreneurial mind-set, while there is no emphasis on value creation in the financial or market sense. This is, on the contrary, what characterizes Classic Entrepreneurship, which is rooted in the financial domain. This distinction between different degrees of entrepreneurship education is due to the multiple conceptions of what entrepreneurship education should contain. In this analysis, Classic Entrepreneurship is a subset of Entrepreneurship as Method.

Entrepreneurial behaviour and ambitions - How enterprising are young people?

Pro activity and initiative as well as the understanding of how to apply your knowledge and take responsibility for your actions are all necessary competencies in today's society, and they all fit under the umbrella of enterprising behaviour. We will measure what impact entrepreneurship education and training has on each of these parameters, and examine how it affects young pupils' actual entrepreneurial behaviour. This is done by measuring how many leisure activities the respondents participate in and whether they are founders or leaders of any of these.

The measurements described above will allow us to look at how education affects the entrepreneurial mindset of the young people. We will also look at the impact in more general areas, such as the pupils' perception of their own knowledge and competencies, their attitudes to learning and to their school, and their aspirations.

Connectedness and aspirations for the future - How do young people feel about themselves, school, their peers, and their future?

Many young people experience a feeling of detachment from society and their role in it. This becomes visible in particular in their feelings as regards school. Entrepreneurship education and training requires students to learn how to apply their knowledge when solving practical tasks, finding practical application of abstract theories, and understanding who is responsible for the learning process. In this study we will examine what effects entrepreneurship education has on the pupils' sense of connectedness to their school and learning, as well as on their well-being. We will do this by applying the Hemingway scale[8], which has proven to be a very useful tool for assessing young people. We also measure their aspirations for the future by asking them about their future plans; whether they have plans to continue with upper secondary education, and what type of jobs (and how demanding they are) they aim to get.

7.Entrepreneurship from ABC to PhD – 2010/2011
8. Source: The Hemingway: Measure of Adolescent Connectedness. M.J. Karcher, The University of Texas.

Attitudes and intentions - How do young people feel about entrepreneurship and what are their intentions with regard to starting their own business?

If we want to measure the impact of entrepreneurship education on young people's entrepreneurial mind-set, we must look at their attitude towards entrepreneurship and what their intentions are in relation to a future as job creators or job takers. Entrepreneurship research has a long tradition of focusing on these two constructs and there are validated scales in this area. These two sets of questions have proven to be strong in relation to predicting future behaviour in adults, but we do not know the effect of using them in relation to young people. Therefore, as previously mentioned, we have supplemented with a set of questions that measures the effect on young people's entrepreneurial behaviour.

The collected data will be processed using the statistical program STATA and on a long term basis, various panel models will be used as analytical tools. Unless otherwise stated, we use a significance level of 5 per cent to describe differences.

In the following section we present and describe the group of pupils who have participated in the study. Also, we will look at the various indicators of the impact of entrepreneurship education. As described above, we will look at the young people's entrepreneurial behaviour, ambitions, connectedness, attitudes, and intentions.

3.3. Results and Conclusions

3.3.1. Survey Group

The questionnaire was sent out to 2,000 young people representing the birth cohort 1996; the group consists of 51.3 per cent boys and 48.7 per cent girls. We achieved a response rate of 44.8 per cent with 896 young people returning the question form. In the analysis 216 are sorted out because of incomplete response, whereby the number of respondents used in the analysis is 680, equivalent to 34 per cent. This number is considered more than sufficient to generalize from.

The proportion of girls (53.8%) is significantly greater among the 680 respondents who completed the questionnaire, than among all 2,000. Girls are thus overrepresented in the analysis. The downgraded responses do not differ in gender distribution from the ones used in the analysis.

The analysis also shows that there are no representation differences in the responses in relation to geography. The sample used is representative with regard to region – i.e. we cannot detect a bias among the respondents. This test is performed both on all 896 respondents and the 680 respondents (used in the analysis) and shows no bias in relation to the origin of the 216 that were screened out.

This means that the responses correspond to the overall distribution in regions of all young people born in 1996.

Total number of questionnaires sent out	2,000
Number of responses	896
Response rate	44.8%
Screened out due to incomplete responses	216
Total sample size in the analysis	680
Descriptive statistics of the 680 respondents who are used in the analysis	
Gender	
- Boys	46.2%
- Girls	53.8%
Region:	
Capital Region of Denmark	25.0%
Central Denmark Region	22.6%
North Denmark Region	13.1%
Region of Southern Denmark	14.6%
Region Zealand	24.7%
Proportion whose parents or grandparents have roots in another culture	23.2%
Proportion whose parents (both or one) are self-employed	25.0%
Percentage of pupils who work outside of school	58.7%
Percentage of pupils who are starting a business	2.4%

Note: We have chosen to use listwise deletion, ie. the reply is only included in the analysis if all questions are answered, therefore the number of responses that were screened out is fairly high.

Table 3.1. - Descriptive information and data on sample

Apart from information about gender distribution, we asked the pupils about their ethnicity, their parents' education, and whether or not their parents are self-employed.

We found that approx. 1 in 4 (23.2%) were not ethnic Danes. The question was: Do you and your parents (mother or father/both) or grandparents have roots in another culture than Danish?

With regard to parents' education, the respondents answered the following question: How long an education do your parents have (the one with the longest education)? The breakdown is shown in Table 3.2.[9]

Education	Number	Percentage
Primary education	41	6.0%
General/Vocational Upper Secondary Education	44	6.5%
Short-cycle programmes	172	25.3%
Medium-cycle programmes	257	37.8%
Master's and PhD programmes	166	24.4%
Number of respondents	680	100.0%

Table 3.2. – Parents' educational background

In other studies, it has proved to be of importance whether or not young people are influenced by their parents in relation to the possibility of becoming an entrepreneur[10]. Therefore, we also asked the young people if one of their parents has their own business, or if they know anyone who has started their own company/business within the last 3 years.

The analysis showed that one or both parents of 25 per cent of the respondents own a business/company and nearly half, 48.8 per cent, of the respondents know an entrepreneur.

The group of young people, whose parents are self-employed, are probably overrepresented. It is not something we can control for, but we can assume that the topic of the questionnaire is more appealing to this group than to others because they are already familiar with the area.

Response	Number	Percentage
YES - both	38	5.6%
YES - mother	31	4.6%
YES - father	101	14.9%
No	510	75.0%
Number of respondents	680	100.0%

Table 3.3 – Parents who are self-employed

9. In 2011, almost 26 per cent of the population between 15 and 69 years has completed higher education and 7 per cent a long-term higher education (Master's and PhD programmes). Primary education (pre-school to lower secondary) and vocational upper secondary education are the most common educations. The share is 30 per cent in primary, while 32 per cent have a vocational education. Source: News from Statistics Denmark No. 443. 22 September, 2011.
10. Source: Motivation for selvstændighed. ASE Analyse Juli 2011

We also know that 6 out of 10 of the respondents have jobs outside of school. The majority, 34 per cent, only work during holidays/summer vacation. Relatively more girls (65%) than boys (52%) have jobs outside of school.

Some of the young people work with their own business; as many as 16 of the young people are in the process of starting their own company/business - either as a school assignment or outside school. None of the 16 has applied for money for the project, but 10 of them have invested their own money in the company.

Only in relation to work we found significant differences in gender in the above areas.

3.3.2. Entrepreneurship education - Have the young people received entrepreneurship education?

The key question in the analysis is whether or not the young people have received entrepreneurship education and training - either in the general understanding: Entrepreneurship as Method or in the narrower sense: Classic Entrepreneurship. The analysis shows that 32 per cent have been trained in Entrepreneurship as Method. 58 students equivalent to 9 per cent of all students have been trained in Classic Entrepreneurship.

	Number	Percentage
Classic Entrepreneurship	58	9%
Entrepreneurship as Method	218	32%
No entrepreneurship courses	462	68%
Respondents	680	109%*

* Exceeds 100% because Classic Entrepreneurship is included in Entrepreneurship as Method.

Table 3.4 – Entrepreneurship education

For comparison, the survey of entrepreneurship in basic school[11] showed that 44 per cent of the teachers teach Entrepreneurship as Method and 11 per cent of the teachers teach Classic Entrepreneurship.

There are no significant gender differences in the group of respondents who have participated in entrepreneurship education. This result was to be expected, because entrepreneurship does not usually appear as a separate subject which the pupils can choose. However, on certain types of lower-secondary-level boarding schools the subject can occasionally be selected.

11. Entrepreneurship from ABC to PhD – 2010/2011. The Danish Foundation for Entrepreneurship – Young Enterprise

3.3.3. Entrepreneurial behaviour - How enterprising are the young people?

The young people were asked how many activities they participate in outside school, and whether they have led or initiated an activity outside of class. Only 10 per cent have not participated in any activity, while most (63%) have participated in 1-2 activities. 35 per cent have led an activity, while 25 per cent respond that they have initiated an activity or project.

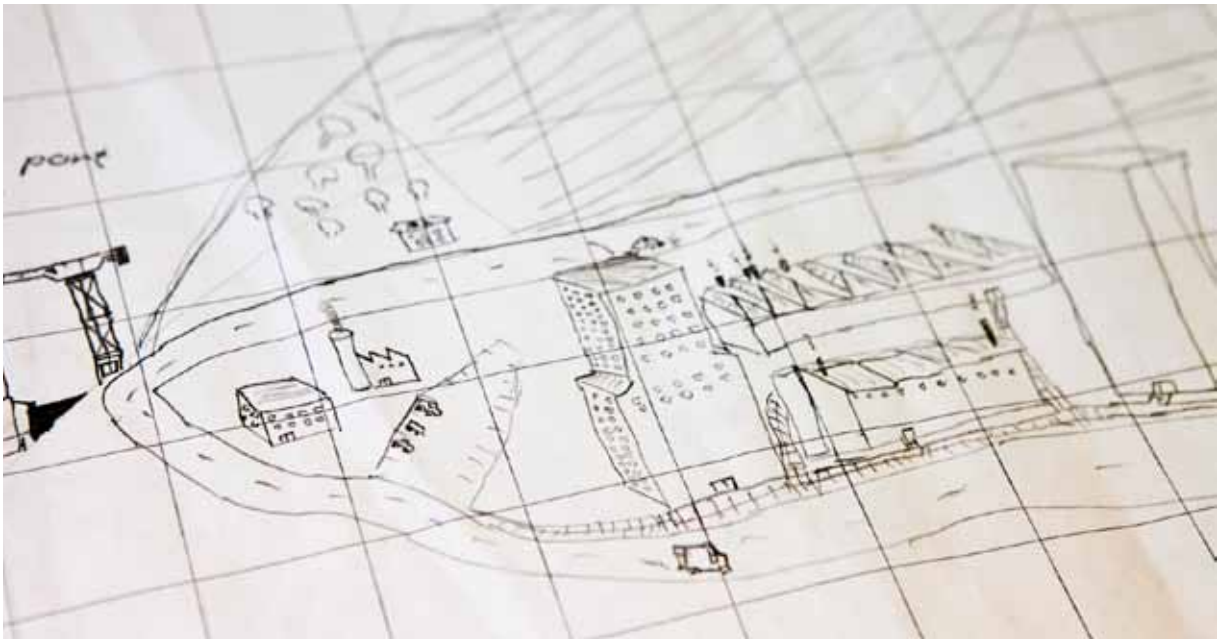
Significantly more boys (29%) than girls (22%) have initiated an activity or project.

We have investigated if there is a correlation between entrepreneurship education and young people's activities outside school. We found no correlation; neither in relation to Entrepreneurship as Method nor to Classic Entrepreneurship. We have thus tested in general for correlation between entrepreneurship education and young people's activity level and specifically if there is correlation to leading or initiating an activity. We found no significant correlation.

3.3.4. Ambitions - What ambitions do young people have in relation to future jobs and education?

To assess the ambition level among the young people, we asked respondents to list three jobs that they would like the most. In order to be able to analyze their responses, we used a categorization of job requirements on a scale from 0-4. The categorization is based on the education required for the job. The three job requirements are grouped into one unit which is the sum of the categorization based on the following definitions. This means that the maximum number of achievable points is 12 if all three would require a master's degree.

0 points: None indicated
1 point: General reference to a job
2 points: Vocational upper secondary education
3 points: Short- and medium-cycle higher education
4 points: Master's degree, or director, manager, entrepreneur, and the like.



There is a positive correlation (one-sided significant) between whether the young people have received entrepreneurship education and their aspirations for future jobs. It appears that the group of young people, who have received entrepreneurship training, have higher job aspirations than those who have not. Additionally, we see that girls have notably higher ambitions than boys.

There is a positive correlation between respondents' level of ambition in the measuring unit as described above and their parents' education; the higher the level of education of a parent, the higher the respondent's level of ambition.

In relation to whether or not young people feel they have something to contribute to society, we see that the group of respondents who have had training in Classic Entrepreneurship, feel they have more to contribute with than respondents without entrepreneurship education. For respondents who have had training in Entrepreneurship as Method, the significance is slightly weaker. This indicates that pupils, who have been trained in financials and markets, have a greater understanding of their own role and value in society.

Approximately 96 per cent of the respondents answered yes to the question whether they are planning to complete an upper secondary education programme (STX/HF, HHX, HTX, VET, Other[12]) ; only 3.7 per cent answered no. The majority of the respondents (80%) will continue on to a general upper secondary education. This is consistent with the government's goal that 95% of young people complete a youth educational programme.

More girls (83.3 per cent) than boys point to general upper secondary education (STX/HF, HHX, HTX); the corresponding figure for boys is 73.9 per cent. However, more boys than girls choose vocational training. This is not surprising since it reflects the actual distribution of upper secondary education where 55 per cent are girls. At STX/HF, which is the largest secondary school education, there are 61 per cent girls, while 57 per cent of the students in vocational upper secondary education are boys.[13]

The number of respondents who want to continue to a general upper secondary education is significantly higher if they have received training in Entrepreneurship as Method than the group who has not received any entrepreneurship training. This suggests that there is a correlation between training in entrepreneurship and ambitions for the future.

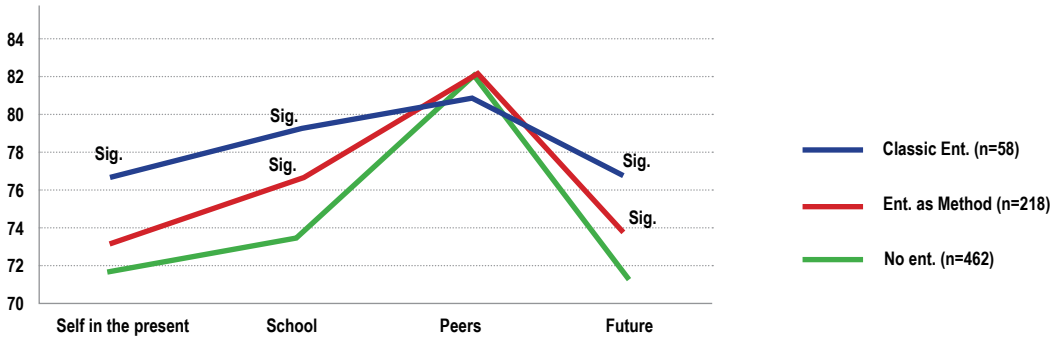
12. STX – Upper Secondary School Leaving Examination, HF – Higher Preparatory Examination, HHX – Higher Business Examination, HTX – Higher Technical Examination. The group Other includes 10th grade.
13. Source: Tal der taler 2009. The Ministry of Children and Education.

3.3.5. Connectedness - How do the young people feel about themselves, school, their peers and their future?

We have asked the young people a series of questions in order to be able to derive the degree of connectedness and see if we can detect a correlation to training in entrepreneurship. The chart 3.1 below shows the relationship between the two types of entrepreneurship training and how young people feel about themselves (Self in the present), school, their peers, and the future. The analysis shows that there is great coherence between Classic Entrepreneurship and connectedness. The young people who have received training in Classic Entrepreneurship feel significantly better about themselves than those who have never had any training in entrepreneurship. On top of that, they are more confident in school and about their future. The group who has received training in Entrepreneurship as Method (which includes those with Classic Entrepreneurship) is also significantly more confident in school and feels better about their future than those who did not participate in any entrepreneurship education. Relationship to peers is the only area in which there is no correlation to entrepreneurship training.

In general, students who have received entrepreneurship training are happier about school and more confident of the future than others.

Young people with roots in another culture than the Danish one are significantly more positive regarding their future than ethnic Danish youngsters.



NOTE: The Entrepreneurship as Method group also includes the Classic Entrepreneurship group, therefore the sum of n does not equal the total number of respondents=680.

Figure 3.1. – The correlation between Connectedness and entrepreneurship training.

If the pupil acts entrepreneurially (entrepreneurial behaviour), i.e. either answers yes to having led an activity or to having started an activity, the scores will be higher on the questions about Self in the present, School, and Future in the Connectedness construct. The difference is only significant, however, on Self in the present and Future.

There is significant positive correlation between ambitions (aspirations for future jobs) and Self in the present, School, and Future. There is no correlation to Peers here either; i.e. how the young people relate to their peers at school.

Research indicates that we should expect these results because entrepreneurship is a holistic process that places great emphasis on using and combining different types of knowledge. Training in entrepreneurship gives pupils a greater understanding of how various skills can be used practically, how they can be combined, how they relate to each other, and thus why they are important to learn. This correlation has not to our knowledge, however, been tested in research so far. Therefore, the result of this study is very interesting.

We found no correlation between the four questions in the Connectedness construct and whether parents are self-employed or not. Entrepreneurship Education cannot uniquely be attributed importance to young people's connectedness; there are other factors that may play a role, such as parents' influence. Young people are naturally very influenced by their parents at such a young age. Later studies will show whether this influence decreases as the youngsters grow older.

3.3.6. Attitudes and Intentions - What is the attitude of young people to entrepreneurship and what intentions do they have in relation to starting a company?

We have asked young people about their attitudes towards entrepreneurship. The vast majority thinks that entrepreneurship is valuable (94%), enriching (97%) and positive (95%), i.e. they answer either 3 or 4 on the four point scale. Young people are as it seems very supportive of entrepreneurship.

There is no difference in attitudes towards entrepreneurship among boys and girls.

As mentioned earlier, 2.4 per cent of the respondents are in the process of starting a company/business (nascent entrepreneurs), while as many as 53 per cent would like to. The analysis shows that the proportion of those who intend or want to start is higher, (reaching 63 per cent) if they know someone who has started a business within

the last 3 years. It is thus more than half of the respondents who want to start a business, and out of these most of them (58%) want work experience before starting a business.

For comparison, a study from 2007[14] showed that 2.3% of the adult Danes were nascent entrepreneurs, while 7.7% expected to start a business in the future.

Of the 363 young people who intend to or desire to start a business 180 are boys (49.6%) and 183 are girls (50.4%). Among adult entrepreneurs 73 per cent are men and 27 per cent women (in 2007)[15]. This could indicate that we can expect a more equal gender distribution among entrepreneurs in the future.

There is no correlation between entrepreneurship education and the intention or desire to start a business.

It is more likely that the young people want to become entrepreneurs if their parents are self-employed. 29 per cent answered yes if their parents are self-employed compared with 20 per cent if their parents are not self-employed. This is a significant difference. We also see a positive correlation between parents' educational level and the desire to start, although not a significant one. Parents thus seem to have great influence on their children.

Additionally, we see a tendency for respondents who are employed outside of school to be more likely to want to start as self-employed than those who do not have a job. This correlation does not necessarily mean that increased knowledge of the work environment leads to entrepreneurship, but may indicate that adolescents with contacts in industry also have an eye to the possibility of becoming self-employed. There is no difference in relation to ethnicity. Whether you come from a different culture other than Danish has absolutely no bearing on how great the desire is to start as self-employed.

Of the 16 respondents who are about to start their own business, 14 are boys (87%) and only 2 are girls (13%). We thus see a very large difference in the gender distribution in relation to starting a business or a project.

14. Source: Growth-Entrepreneurship in Denmark 2007 – studied via Global Entrepreneurship Monitor. Thomas Schøtt, University of Southern Denmark.
15. Source: The Danish Enterprise and Construction Authority.

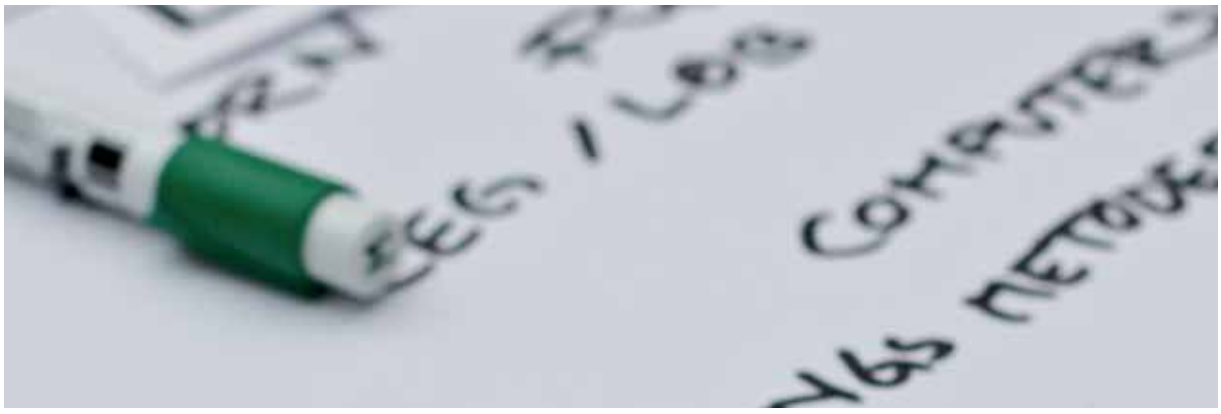
3.4. Summing Up

The results of this first study of the effects of entrepreneurship education and training at basic level are based on a survey among 2,000 representatively selected adolescents in Denmark born in 1996. The young ninth graders are about to make important decisions about further education or jobs. Of the 896 responses we received, 680 are included in the analysis.

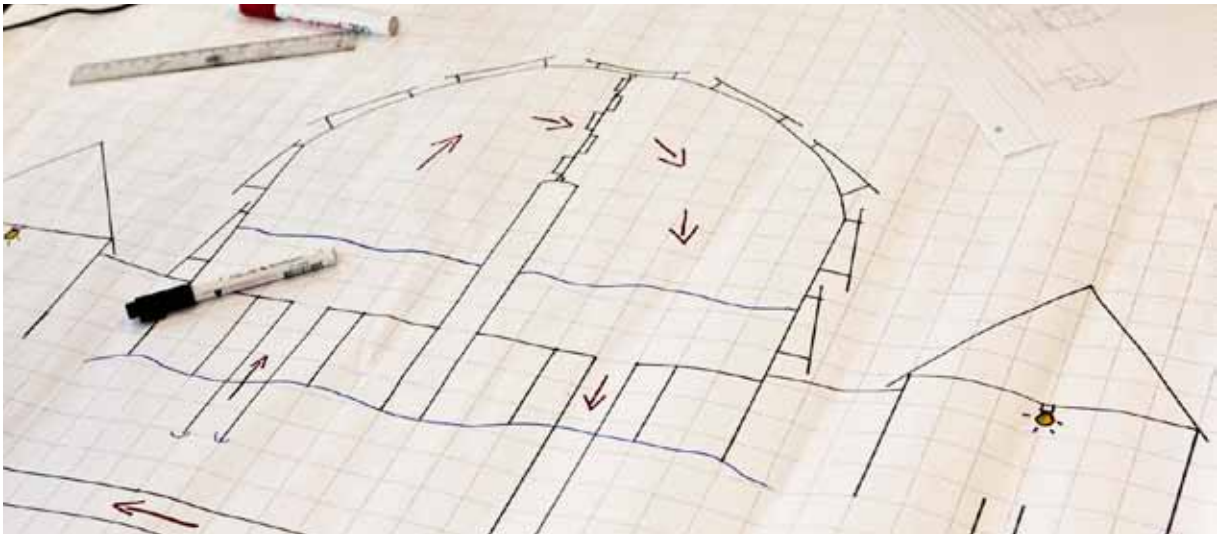
The key question in the analysis is whether the young people have received entrepreneurship education and training. In the definition of entrepreneurship education and training, we distinguish between the broad understanding of Entrepreneurship as Method and Classic Entrepreneurship, which includes education in financials and markets. The analysis showed that 32 per cent receive training in Entrepreneurship as Method. Of these, 58 students, (representing 9 per cent of all), have been trained in Classic Entrepreneurship. One third of the students have thus had training in entrepreneurship in some form.

We examined the young people's entrepreneurial behaviour by asking for their participation in activities outside school. We found that the vast majority of the respondents participated in some kind of activity; only 10 per cent did not. The responses indicate that young people are very active and 25 per cent even started an activity or a project. The fact that young people have led an activity or project outside of class strengthens the image of the young people's entrepreneurial behaviour; this applies for 35 per cent. However, we did not in the analysis find any correlation between participation in entrepreneurship education and training and young people's entrepreneurial behaviour. We had expected to find a correlation, but an explanation could be that we have not completed a before and after study. When all respondents are very active, as is the case in this first study, it is difficult to establish a connection. Eventually this longitudinal study will allow us to look at the young people in a 'before and after' setup, where we can better compare the two groups.

In relation to the young people's ambitions, we asked about their job aspirations, whether they feel they can contribute to society, and to their plans for further education. The analysis shows a positive correlation between participation in entrepreneurship education and job ambitions[16]. The same applies to the young people's sense of whether they can contribute to society. The relationship appears most clearly when the respondents have participated in Classic Entrepreneurship education, which indicates that knowledge of finance and market gives young people a greater understanding of their own role and value in society.



16. The NFTE study, which our study design is partly based on, gave the same result. The two studies are not directly comparable, though, since the NFTE study consisted of both a before and an after-examination.



The analysis shows no correlation between young people planning to complete an upper secondary education and participation in entrepreneurship education. But we do see, however, that the group who participated in entrepreneurship education is more likely to choose a general upper secondary education rather than a vocational upper secondary education. This also underlines a correlation between entrepreneurship education and ambitions. The distribution of respondents choosing STX/HF, HTX and HHX is similar in the group of pupils who have not received entrepreneurship training.

In the questionnaire, we composed a number of questions that could provide answers to young people's connectedness, i.e. their attachment to school and learning, their well-being and confidence in the future; the analysis shows that those who have participated in entrepreneurship education are happier about going to school and are more confident of the future than those who have not. In addition, the young people, who have participated in training in Classic Entrepreneurship, feel significantly better about themselves than those who have not participated in any kind of entrepreneurship education. The only area in which we do not find any connection with participation in entrepreneurship education is their relationship to peers.

The young people with an entrepreneurial behaviour; i.e. those who have either led or started an activity outside of school, tend to score higher on the questions relating to how good they feel about themselves, the school and their future. We found the same positive correlation with the questions about ambitions; the young people with high ambitions feel considerably better about themselves, school, and their future than others.

Almost all respondents (95%) are positive towards entrepreneurship. 2.4 per cent is already in the process of starting their own business (nascent entrepreneurs) and as many as 53 per cent would like to start one. This proportion is higher, reaching 63 per cent if they know someone who has started a business within the last 3 years. Thus more than 50 percent of the pupils want to start their own business and 58 percent of them would like to get some work experience beforehand.

We find no correlation between the young people who are nascent entrepreneurs and those who would like to start a business and entrepreneurship education. The 2.4 per cent that are nascent entrepreneurs are so few in number that it is not possible to perform reliable statistical tests.

What seems to affect young people's intentions in relation to entrepreneurship is their parents' educational level and whether they are self-employed or not. The analysis shows that there is a significant difference if the young people's parents are self-employed. The young 15-year-olds are naturally influenced by their parents. Later studies will show whether this influence decreases as they grow older.

The analysis shows that boys and girls relate differently in a number of cases. More girls than boys have jobs next to school, girls have a higher level of ambition in relation to future jobs than boys, and the vast majority of girls choose a general upper secondary education. For boys, a lower proportion is choosing a general upper secondary school education. Both boys and girls are very supportive of entrepreneurship and approximately equal proportions (49.6 per cent and 50.4 per cent respectively), intend to start businesses themselves. However, the analysis shows a great difference between the gender in terms of being about to start a business/company. In this group (2.4%) just two are girls, representing 13 per cent.

That such a large proportion of the girls wants to and intends to start their own business bodes well for the future, if the intention also leads to actual behaviour; also in conjunction with the fact that the recent mapping of entrepreneurship education in upper secondary education[17] showed that 41 per cent of the participants are girls. In comparison, just 27 per cent of adult entrepreneurs are women[18]. Later studies in this long term research will show whether intentions are a useful indicator of the actual number of start-ups.

In the analysis, we compared the issue of ethnicity to the different areas. We found a difference in one area; young people with roots in another culture than Danish are significantly more positive about the future than ethnic Danish youth. The Entrepreneurship Index 2009[19] informs that immigrants have a slightly higher tendency to become entrepreneurs than Danes and, in 2006, 11 per cent of the entrepreneurs were immigrants or descendants of immigrants. In this study, we do not see any correlation between ethnicity and the intention of becoming an entrepreneur.

In the analysis, we have focused on young people's intentions, ambitions, entrepreneurial attitudes and their connectedness with school and community; areas which are considered to be indicators of entrepreneurial behaviour, e.g. in the form of start-ups. We found some correlation with entrepreneurship education, but not in the classic

17. Mapping of Entrepreneurship education – 2010/2011. Fonden for Entreprenørskab – Young Enterprise.
18. Source: The Danish Enterprise and Construction Authority. www.ebst.dk
19. Source: 2009 Entrepreneurship Index - Entrepreneurship Conditions in Denmark. The Danish Enterprise and Construction Authority.

areas of entrepreneurial behaviour and intentions.

On the other hand, the analysis shows a positive correlation between entrepreneurship education and young people's ambitions, connectedness with school and community, and confidence of the future. These young people were significantly happier about going to school, and those who had training in Classic Entrepreneurship, also had a greater understanding of their own role and value in society.

These results are of great interest since they indicate that entrepreneurship education and training provides a learning effect, which enhances students' understanding of their own role in society, now and in the future, and why it is so important to take responsibility for your own learning process. Most people, i.e. educators, scientists, and politicians agree that at this level in the educational system focus should be on the soft aspects. It is only later in the education system that we should expect to see a correlation between education and entrepreneurial behaviour; but if students are well prepared with an understanding of how they can use and combine their professional knowledge practically and why it is important; the step from thought to action is not difficult.

Study of Entrepreneurship Courses at the University Graduate Level

4.1. Introduction

Can we increase the level of entrepreneurship in Denmark through education? Yes! This is a question that most researchers agree on. How the educational programs should be designed and how different content and pedagogical methods affect different types of students are questions that there is less agreement about. To further our understanding of these important issues, the Foundation for Entrepreneurship - Young Enterprise has started a long term research project in early 2011. It aims to assess the different kinds of influences that different types of educational design has on students. In this research, our focus group will be students at the university, spread over several fields of study. This will give us more specific knowledge about entrepreneurship education than the study of the general population could give. This study of entrepreneurship education at graduate level is still in the development phase which means that the first year has been spent on developing the right method and design of the study. In this section of the report we will therefore present the research design, and also bring some first indicators of what effect we can expect that teaching has on students.

4.2. Research Design

To assess the effect of a specific treatment (in this case, teaching), you ideally need to find situations where it is possible to isolate the treatment group, so you can perform real experiments and make sure that the effect is a direct consequence of treatment. This is obviously not possible when, as in our case examine the impact of entrepreneurship education on people who are exposed to numerous influences.

What we can do is try to control for these external influences and to use a longitudinal design, where we follow our group over a long period, and using control groups of similar students.

In our project, we have chosen to follow students at the graduate level, a student group that is close to the labour market over a period of seven years. We measure the students with a series of entrepreneurship-related issues (as will be described below) before they begin their graduate studies, after the first year and after graduation. We will then continue to follow them and collect data in one, three and five years after their graduation. Our goal is to gather data from a new batch of students every year, so a large database will be built up that will allow for advanced statistical measurements.

This is a project that requires patience, but given the considerable time lag between the exam and entrepreneurial activity[20], this is the necessary research design to use if we want to measure the real effects. Short-term results are also of great importance, though, because they will allow us to improve both our recommendations for the design of training programs as well as our research design. To do this, we need valid and reliable measurements that can be used to assess the development, i.e. the impact of entrepreneurship education, both short and long term. In the following we describe how these measurements have been developed.

4.2.1. Different Forms of Entrepreneurship Education

Most impact evaluations of entrepreneurship education has so far focused only on a single educational design and the question is whether this didactic design, and thus entrepreneurship education, improves entrepreneurial skills (or not). This does not supply us with very detailed results, because these are associated with a particular design that may or may not work in the teaching of a second type of student. The lack of comparison with other didactic design makes it also impossible to determine what type of different effects the different types of content and teaching methods may have.

In our study, we wish to avoid such results that are linked to a specific design, and have therefore assembled a number of educational programs and categorized them according to their focus on content and pedagogical methods.

4.2.2. Types of Content Focus

Entrepreneurship education is often considered (and treated) as a homogeneous subject. This is quite unfortunate, especially in the light of its short history and legitimacy as an academic field. There is considerable disagreement among researchers about what activities entrepreneurs are dealing with and the characteristics that are particularly important if entrepreneurs are to be successful. During the last decade this debate has evolved in two directions, which can be characterized in terms of what there is most disagreement about, namely whether possibilities are discovered or created?[21] It is beyond the scope of this text to elaborate on the philosophical question that these two positions or schools disagree upon; we will instead focus on how this affects entrepreneurship education in practice and how we will categorize programs in our sample according to the extent to which they focus on these different views.

20. The Entrepreneurship Index 2009 from DECA reports that in year 2006 72 percent of the entrepreneurs had 5 or more years of professional experience.
21. Alvarez, S.A., & Barney, J.B. (2007). Discovery and creation: Alternative theories of entrepreneurial action. Strategic Entrepreneurship Journal, 1 (1–2), 11–26.

4.2.3. The Discovery View

Researchers that believe opportunities are discovered see opportunities as something external to the person. Opportunities can be discovered, evaluated and exploited by alert individuals. This is a purposeful process in which competition should be assessed, needs of the market are predicted, and risks are minimized and avoided. An important competitive advantage for entrepreneurs, according to this view, is prior experience in a sector experiencing rapid change (often due to technological development). Based on this experience, the entrepreneur can identify opportunities that others do not see. Careful planning and assessment of future gains are most important for entrepreneurs, and risk should be minimized and preferably avoided.

Educators, who believe that opportunities are discovered, have a greater focus on evaluation of opportunities and will teach their students to plan, very similar to strategic leadership. Prediction of demand in the market, financial knowledge and analysis of possible competitors are according to this view an important skill for future entrepreneurs to be able to identify and evaluate opportunities and achieve their goals by avoiding unnecessary risks and failures.

4.2.4. The Creation View

Keeping the viewpoint that opportunities are created, it is believed, however, that not only are opportunities created, but also markets and the world itself is created when the entrepreneur acts. This is done in a creative process where the entrepreneur will find imaginative ways to organize resources and exploit uncertainty in partnership with other stakeholders. True uncertainty, i.e. when neither demand nor supply is known, is understood as the real domain for entrepreneurs. It would be pointless to waste time on careful planning and time-consuming predictions about the future according to this view.

Educators, who hold this view, focus on teaching the future entrepreneurs how to use and exploit the given resources, and to make iterations rather than predictions. This action-based position is directly connected to the marshalling phase of the entrepreneurial project and aims to teach students how to manage and even leverage uncertainty by exploiting opportunities. Thus focus is on exploiting, not on evaluating / assessing.

4.2.5. How to Categorize the Programmes

The views presented here are set up as dualities to each other. Empirically that is, it is in practice difficult to determine which of the views explain entrepreneurship activities best, because in reality it seems that entrepreneurs often use a combination of both[22]. This is also true when it comes to entrepreneurship education. The individual courses may be able to focus on one of the two schools, but for a prolonged training, there will probably be overlapping. However, it should be possible to establish the overall focus and therefore the different effects of the two views are possible to measure. Table 1 presents our categorization model in terms of content focus. It should be mentioned that we will continue working on the categorization and some content could fall in between these two views, or belong to both. This will be discussed later in the text.

22. Edelman, L& Yli-renko, H, (2010). The Impact of Environment and Entrepreneurial Perceptions on Venture-Creation Efforts: Bridging the Discovery and Creation Views of Entrepreneurship. Entrepreneurship Theory and Practice, pp. 833-857

Discovery view	Creation view
Strong goal orientation	Strong mean (average) orientation
Focus on planning	Focus on marshalling
Focus on predicting the future	Focus on making iterations
Focus on evaluation of opportunities	Focus on exploitation of opportunities
Focus on avoiding risks	Focus on leverage uncertainty

Tabel 4.1 Different foci of the discovery and the creation views

Based on this categorization, it may look as if the discovery view is less action-oriented. Though, it would be a mistake to think that because an education is hands-on or not, that it would then have more to do with pedagogical methods than with content focus. For this reason, we also had to categorize the courses according to which didactical methods are dominant. We have chosen to categorize the courses in accordance with the degree to which the teaching methods Declarative and Functioning, which will be described below, are used.

4.3. Didactical Methods

According to education researchers John Biggs and Catherine Tang, teaching can have either a declarative or a Functioning approach[23]. The declarative approach resembles the classical view that the goal of teachers in higher education is to transmit information to students. This type of teaching is often lecture-based and the students are often evaluated on how well they can repeat the information they received, in a written exam. The goal of functioning didactics, on the other hand, is to provide students with skills. This didactic method is often problem-based and students will be evaluated on how well they are able to perform a given skill. Most researchers in entrepreneurship education agree that teaching should be action oriented and functioning didactic should therefore be preferred to declarative didactics. Yet there are many important elements in entrepreneurship education, which fit well to a declarative design, and there are strong institutional pressures with regards to exams forms, based on declarative didactics. Thus many entrepreneurship courses remain heavily focused on this form of teaching. In our model, we categorize the courses in accordance with their focus on these methods. A special focus will be on the types of exam forms they use. Figure 4.3.1 is the overall categorization of the courses shown.

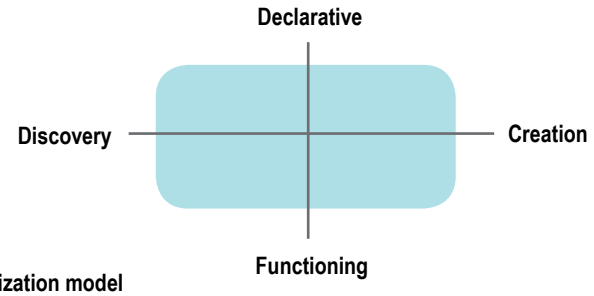


Figure 4.1. The categorization model

23. Biggs, J & Tang, C (2007). Teaching for Quality Learning at University – 3d edition. Open University Press. McGraw-Hill Education. Berkshire, England.

Our main source of information in our categorization of the programs will be interviews with the teacher. Two to three teachers from every entrepreneurship programme will be interviewed about their thoughts on how they have designed their curricula, the learning goals and what types of teaching methods they use, and after that we will ask them to categorize their education. This information will be supplemented by interviews with students, analysis of course descriptions and literature lists, as well as questions in surveys aimed at students.

4.4. The Sample

We have chosen to focus on students at the graduate level, because this period of training is suitable for studies with a longitudinal design, i.e. it is not too long and not too short. Two year courses allow for variability in curriculum structure, and there is enough time for a real and not just a superficial effect on knowledge, skills, attitudes and behaviours. Yet the students are close to work and future career choices, making it manageable in comparison to measurement results after the exam.

We follow six entrepreneurship courses at four different universities, three business management courses, an engineering education, an education in humanities and one that is a pure entrepreneurship education for students from all disciplines. The latter is somewhat different than the others because it is a one-year graduate-level education in a Swedish school of economics.

We have seven suitable control groups consisting of students from three Danish universities in our sample. These students have very similar characteristics and backgrounds and do similar courses as the students in the experiment group; the main difference is that they are not exposed to entrepreneurship teaching.

We've also included an entrepreneurship course at the undergraduate level in order to make comparisons between the two levels of education, wherever possible. For this group we have two different control groups.

In total there are 556 students in our first round of data collection, divided equally in the experiment group and control group. In our analysis, we used list wise deletion[24], thus our primary analytical group consists of 407 respondents. In the sorting process no significant changes in gender distribution and composition of the respective experiment and control group is seen.

We have established close cooperation with the teachers on these courses, which will allow us to more easily retrieve information about the students and keep them in the research study for a longer period of time.

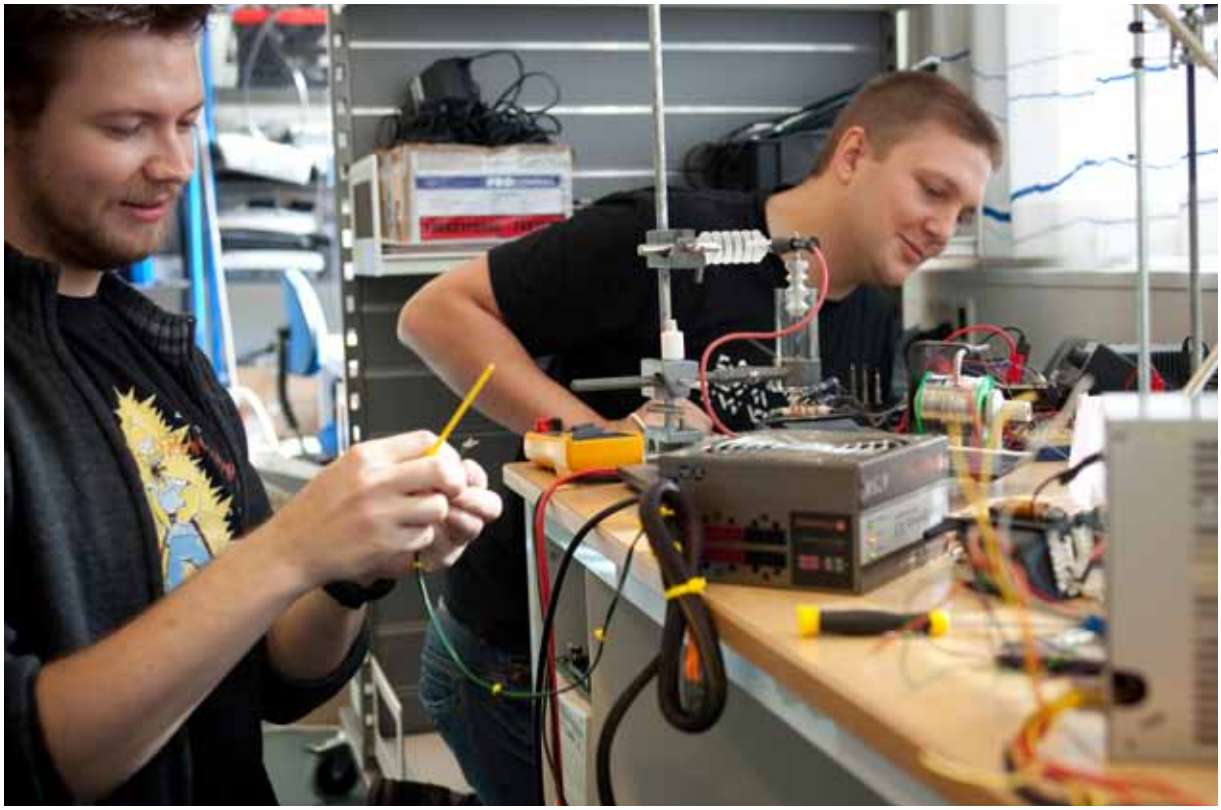
24. I.e. the respondents that have not answered all questions that are included in the constructs which we use for our analysis have been screened out.

4.5. Measurements

The raison d'être of education is to equip students with knowledge and skills that are suited for a career in a particular area. In relation to entrepreneurship education, this means skills and knowledge related to a career as an entrepreneur. Given the number of sectors, disciplines, and areas an entrepreneur can move into, this presents numerous challenges for evaluation. Does a tech-oriented entrepreneur need the same skills as a cafe-owner? Are certain skills equally important for students of humanities as for engineering students? Are there specific skills sets that all entrepreneurship educators should focus on? The answer is no to the first two questions, but in regard to the third, some initial results of this study indicate that this may be true, at least if focus is on the act of starting a business.

The concept of self-efficacy, i.e. the individual's belief in his/her ability to perform a specific task, which was developed by the social psychologist Albert Bandura[25], has proved to be a suitable measure to predict whether a person will pursue a career as self-employed, and whether it is going to be a success or not. This concept fits well in our research design as a measure of the short-term effect of entrepreneurship education. In order to measure progress and impact of entrepreneurship education, we need a measuring tool that allows us to measure entrepreneurial self-efficacy. There are many different measurement scales in research, but the problem is that the different scales (i.e., groups of questions) are quite heterogeneous in that they focus on different skills and abilities that are supposed to be important for entrepreneurs. Moreover, they all use language that is very unfamiliar to people who are not interested in business and entrepreneurship. This poses serious problems of validity and reliability of the measurement, and therefore we need to refine and develop metrics so they can be used in our research design.

25. Bandura, A. (1997) Self-Efficacy: The Exercise of Control. W.H. Freeman and Company. U.S.



We have discussed the various scales and questions with entrepreneurship educators in our sample group, and then used three dominant scales (all tested and validated) to develop a more robust scale that is suitable for our research design. We have chosen to use one of the three scales as a basis for comparing the three scales, because it is structured according to the different stages of an entrepreneurial project. The three scales overlap in focus on creativity, i.e. the entrepreneur's exploration phase; management and planning, i.e. the structuring phase; marshalling of resources, i.e. the iterative phase; managing uncertainty, i.e. the action phase, and financial knowledge.

The latter can be seen as being particularly important for the implementation phase, but it can also be argued that these types of knowledge and skills are important to all phases of the entrepreneurial project. Given that we use a control group of students that cannot be expected to understand the business and entrepreneurship terminology; we have changed the wording of the questions, so these have become more neutral and understandable.

Given our categorization of the courses the above five designs fit well with our research design. There is widespread agreement among researchers that these five competencies are important for entrepreneurs, but as explained above, there is disagreement about which of those skills are most important.

According to the creation view, focus should be on marshalling and managing uncertainty, and in a course focusing on this view, the curriculum should therefore increase the students' self-efficacy in these two skills the most.

The discovery view of course also focuses on these two skills, but planning skills are considered more important. Within the entrepreneurship field financial knowledge is strongly associated with programming skills and a course focusing on the discovery of opportunities should thus increase the students' self-efficacy the most in these two constructs. With regard to issues of creativity, the research literature does not indicate whether one of these two schools sees creativity as more important than the other so we cannot draw any hypothesis for the effect from this construct.

Our focus on didactic methods complicates this dichotomy somewhat. There is no indication in the literature of declarative didactics outperforming functioning didactics on any of the five skills sets that we use. It should be expected that especially functioning didactics will have a positive effect on the marshalling and handling of uncertainty self-efficacy (i.e. confidence that one has the abilities and skills to manage uncertainty). This could cause the reader to believe that a course focusing on the discovery of opportunities taught by functioning didactics would be the perfect match. However, we will remind the reader that we have not established which of the five entrepreneurial self-efficacy constructs that matter most in connection with entrepreneurial performance. In the next section we will present results from our first round of data collection, which is used to validate our scale and support our choice of research design.

4.6. Results and Conclusions

At this point in the research project, i.e. in the initial data collection phase before the students start their new training, we cannot say anything about the effect of entrepreneurship education. We can analyze differences between groups in our study group, and give an initial picture of how our investigation will evolve and how entrepreneurship education can influence these groups in different ways. We will focus on our five entrepreneurial self-efficacy measurements, and how these relate to entrepreneurial attitudes, intentions, and entrepreneurial behaviour.

Before the first round of data collection was carried out on a large scale, we made many pilot studies, which included a total of approx. 400 students in different courses, all of which gave results that supported the validity of our scale and convinced us that we could continue with the "real" investigation. Demographics and background variables for our study group are presented in Table 4.2 below.

Total number of respondents	556
- Respondents screened out because of lacking answers	149
Number of respondents included in the analysis	407
Descriptive statistics of the 495 respondents	
Gender	
- Men	61.7%
- Women	38.3%
Age (mean)	25,0
Exchange students	30.5%
Have close family members (parents, siblings, uncles/aunts)who are self-employed	58.5%
Have taken a course or training program in the past	32.2%
Have participated in extra-curricular entrepreneurial activities in the past	2%
Years of part-time work experience (mean)	6.4 years
Years of full-time work experience (mean)	2.3 years
Years of full-time education (incl. elementary, secondary and tertiary level)	15.8 years
Have, alone or together with others, started a business in the past	22.4%
Does, alone or together with others, operate a business today	13%

Table 4.2 - Basic characteristics of sample and data

4.6.1. The Reliability and Validity of the Measurements

When a new design of a questionnaire is used, it is important to validate whether it actually measures what we want to measure. We used a statistical test called Cronbach's Alpha test to validate that the various sub-questions in the questionnaire was explained by the constructs, i.e. the five different self-efficacy constructs, which we had derived from the previous scales. In order to make sure that there is an internal connection, i.e. that the questions are measurements of the same as the other related issues in the design, the Cronbach Alpha score should be higher than 0.70. As indicated in Table 4.3 below, our scores are well above 0.70. In fact, our scores are above 0.80 for all constructs except for the planning construct, which indicates a good correlation.

Construct	Cronbach's Alpha All	Cronbach's Alpha Experiment	Cronbach's Alpha Control
Creativity	0.84	0.84	0.81
Planning	0.75	0.77	0.74
Marshalling	0.81	0.81	0.80
Manage Uncertainty	0.84	0.86	0.81
Financial Knowledge	0.85	0.88	0.81
Entrepreneurial Attitudes	0.84	0.84	0.81
Entrepreneurial Intentions	0.88	0.84	0.82

Table 4.3 - Cronbach's Alpha scores. The internal consistency of our constructs.

We also wanted to test whether our scale was reliable in comparison to students in the control group, could the students understand the questions? We then performed separate Cronbach's Alpha tests of the two groups, which are also presented in Table 3.

It is clear that the scores for the control group are lower, but not much, and they are all well above the critical 0.70 score, which indicates a reliable internal consistency and that the students in the control group understand the wording of the questions.

4.6.2. Differences between Students in the Experiment Group and Control Group

To make an adequate impact analysis, the subjects in the experiment group (i.e. those receiving treatment) and control group (i.e. those not receiving any treatment) should be very similar. We therefore undertook statistical tests, called t-tests to examine how the mean values for the two groups were different on each design and whether the differences between the two groups was statistically significant. The results are presented in Figure 4.2.

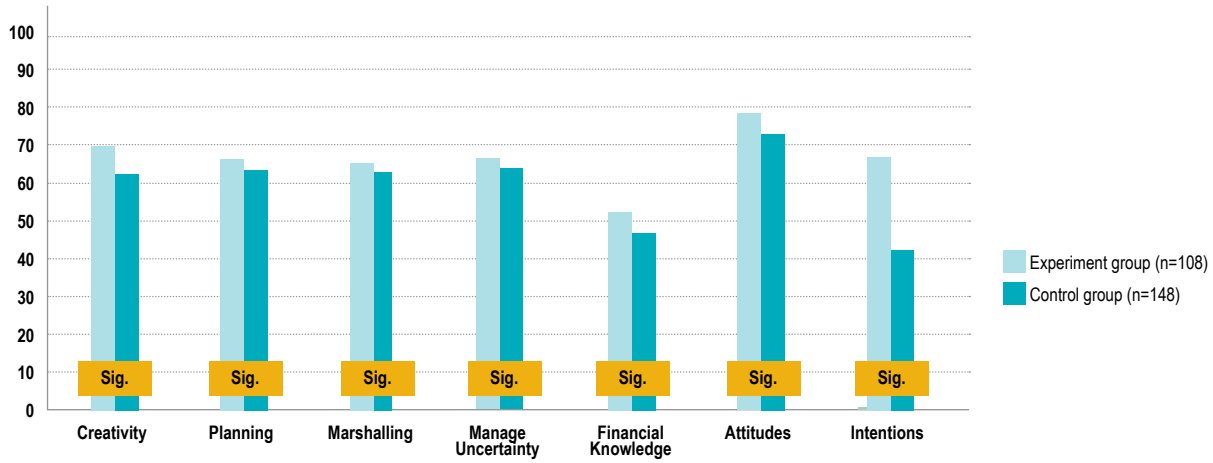


Figure 4.2 - The mean values between the experiment group and control group in our five entrepreneurial self-efficacy constructs, attitudes and intentions.

It should be noted that the various constructs are measured with a different number of questions, but all use a scale of 1-7. For clarity, we have converted these constructs to the same unit, so they can be compared with each other. All statistical tests are performed with the original data.

There was a significant difference between the two groups on all structures on a 1 per cent level, except planning and marshalling which only showed a significant difference at a 5 per cent level, which is the significance level we use[26]. This indicates that students in the experiment group and control group are different from each other in terms of entrepreneurial self-efficacy, attitudes and intentions. It is very likely that some of the students on the courses are already very positive about entrepreneurship even before they start the course. This is not ideal when you want to perform an impact analysis, but as long as the variables are known, they are simple to check for. There may be other factors besides the choice of training, which may explain the difference between the two groups of students, such as whether they are nascent entrepreneurs or not, which we will return to below.

4.6.3. Nascent Entrepreneurs

Nascent entrepreneurs, i.e. individuals who are actively trying to start a new business, are rare in the population and are often quite difficult to identify, in contrast to e.g. small business owners, employees and unemployed. In our study, we identify nascent entrepreneurs by asking this question: Are you trying to start a business for real as opposed to just evaluating an idea out of interest or as part of an academic exercise? If they responded positively to this question, they were asked to tick off a list of 19 entrepreneurial activities. If they selected two or more, we identified them as nascent entrepreneurs. 88 individuals, representing 22 percent, were identified as nascent entrepreneurs. 67 of these nascent entrepreneurs were found in the experiment group and 21 in the control group. If our scale measures the actual entrepreneurial self-efficacy as well as attitudes and intentions, there should be a large and significant difference between ”regular” students and students who are nascent entrepreneurs. We have therefore conducted statistical tests of the mean difference (t-test) between the two groups. The results are presented in Figure 4.3 below.

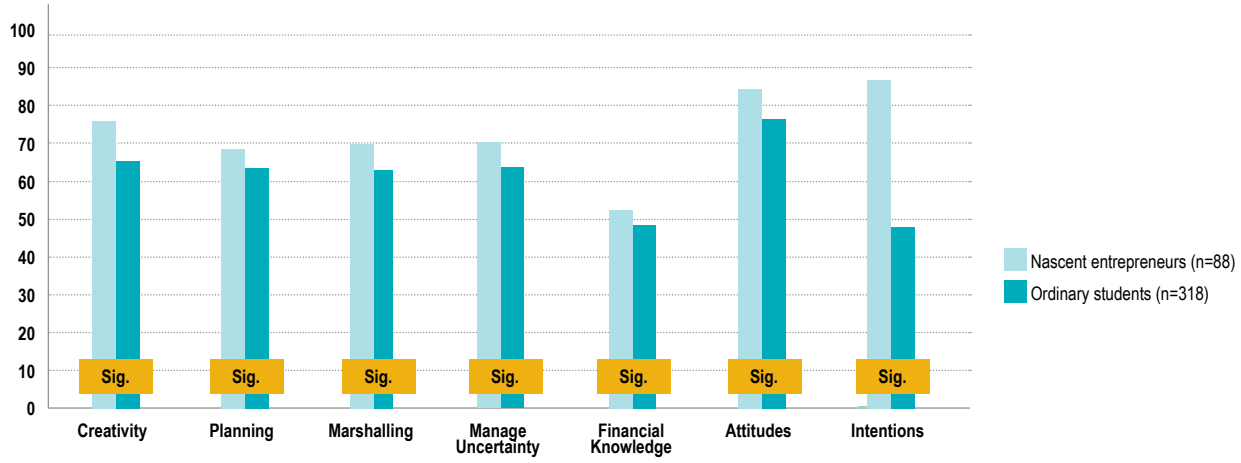


Figure 4.3 - The average differences between ordinary students and nascent entrepreneurs in our five entrepreneurial self-efficacy constructs, attitudes and intentions.

26. The level of significance tells how confident we are that our results are correct. We are 99 per cent sure when the level is 1 per cent.

It is evident that the differences between the two groups are large. The difference for these groups is significant at a 1 percent level for all constructs except Programming, which is significant at the 5 percent level. In other words, our measurements seem to measure entrepreneurial self-efficacy, attitudes and intentions in an appropriate manner. The most interesting aspect of the bars in Figure 4.3 is, however, when they are compared to the bars in Figure 4.2. The values for the nascent entrepreneurs are much higher than for the experiment group; the values for the ”regular” students, i.e. students who are not currently trying to start a business in Figure 4.3., are almost identical with the students in the control group in Figure 4.2.; despite the fact that the group also includes 170 students from the experiment group. This indicates that the difference between the two groups may be driven by entrepreneurial experience. To test whether the differences between ”ordinary” students in the two groups disappear if we control for entrepreneurial experience, we conducted a test in which students who are nascent entrepreneurs, run a business currently, or have run a business, were not included. In Figure 4.4., the results of this test are presented.

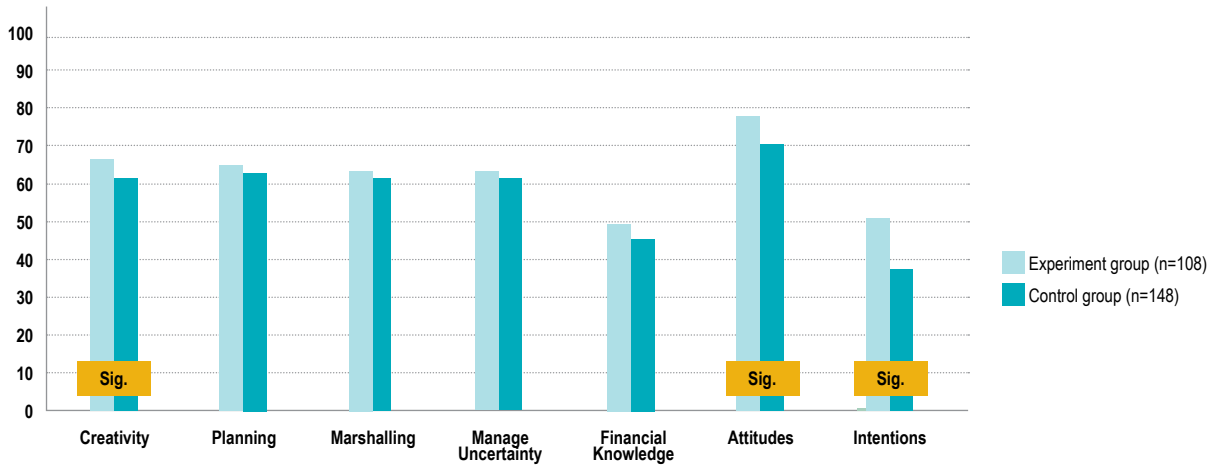


Figure 4.4. - The mean difference between the experiment group and the control group in the five entrepreneurial self-efficacy constructs as well as Attitudes and Intentions when controlled for entrepreneurial experience. (Sig. stands for significant difference.)

The difference between the two groups evens out when we control for entrepreneurial experience, and the statistical difference between the two groups actually disappears for Planning, Marshalling, Managing Uncertainty, and Financial Knowledge. The Creativity construct as well as the Attitudes and Intentions constructs remain significantly different. This suggests that the difference between the ”regular” students, i.e. those without entrepreneurial experience in the two groups not is so significant, especially when it comes to entrepreneurial self-efficacy. This is of great interest to us because this group of students most likely is influenced by entrepreneurship education. If a student already has entrepreneurial experience, education can improve individual knowledge and skills in the field, but it will be difficult to argue that it is because of the entrepreneurship education that the person has chosen to pursue a career as an entrepreneur.

4.6.4. The Gender Distribution

There are 156 women in our sample (experiment and control groups), corresponding to approx. 38 per cent. They are fairly uniformly distributed with 80 in the experiment group and 76 in the control group, so that the gender effect is marginal. Women are on average far less likely to pursue a career as an entrepreneur[27], which also is evident in our data. Of the 112 nascent entrepreneurs in our total sample, only 30 (27%) are women. When we test for differences between men and women for the seven constructs, the results are clear. As shown in Figure 4.5., women have significantly lower values on all constructs except Planning and Entrepreneurial Attitudes.

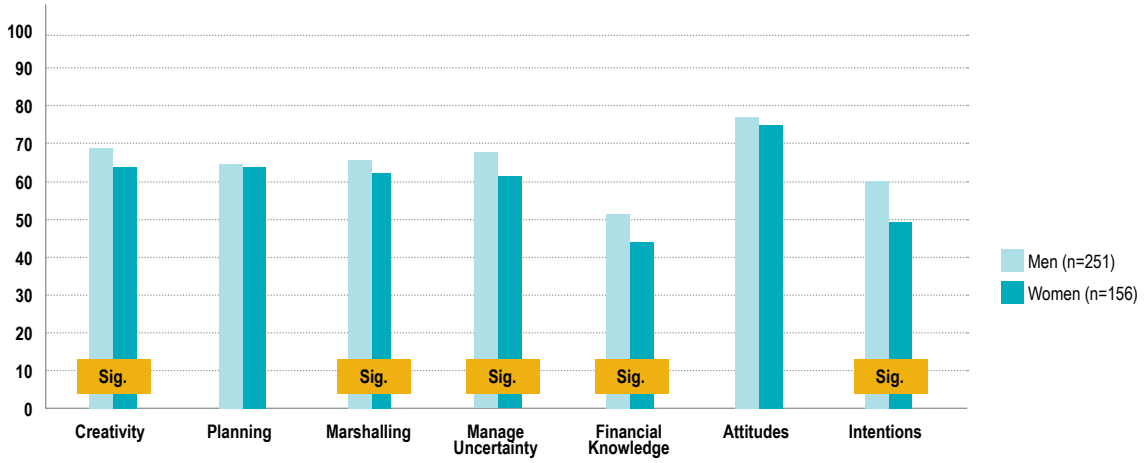


Figure 4.5. – The mean difference between men and women in our five entrepreneurial self-efficacy constructs and Attitudes and Intentions. (Sig. stands for significant difference.)

These differences may be superficial, if the case is that women are more truthful about their own abilities. The difference between men and women with regard to nascent entrepreneurs, however, indicates that these are the true values and that women on average have significantly lower entrepreneurial self-efficacy in relation to all skills, except Planning. There is a real gender effect in our sample. An interesting observation is that we cannot find a significant difference between men and women in terms of attitudes to entrepreneurship. Based on these results, it should be seen as positive that there is such a significant amount of women (40%) in our experiment group.

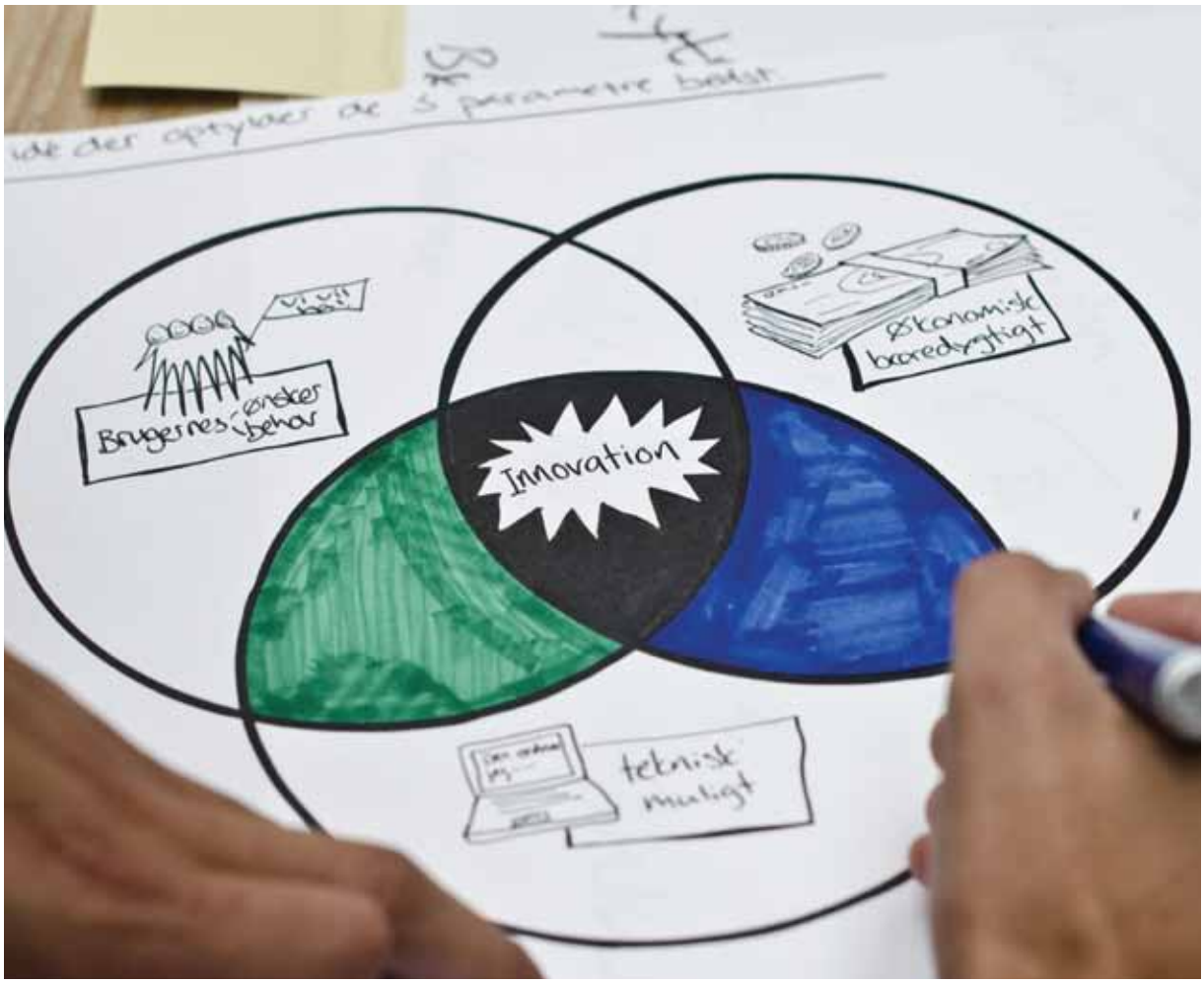
4.7. Discussion and Venues for Future Research

The results we have presented here should be viewed as initial findings that describes our data set and validates our measurement tools. The longitudinal nature of our research design does not make it possible to present concrete results before the second round of data collection is completed.

We have found that our entrepreneurial self-efficacy scale is suitable for measurement of entrepreneurial behaviour, but we are actually primarily interested in how changes in these constructs are related to behaviour. It will be interesting to determine whether a change in one of these constructs is more important than a change in others when it comes to intentions and nascency.

27. Among adult entrepreneurs 73 percent are men and 27 percent are women (in 2007). Source: The Danish Enterprise and Construction Authority. www.ebst.dk

Our research design is also primarily focused on the educational programmes for the unit of analysis, but since our goal is to build databases, interesting questions focused on individuals will also be asked. Of particular interest would be the amount of nascent entrepreneurs in our sample. These are very rare in the general population and difficult to identify. The 88 nascent entrepreneurs is equivalent to 22 per cent of all respondents used in the analysis. One might expect that many of the students in the experiment group are nascent entrepreneurs, and this is indeed the case; 31 per cent of the students in this group are categorized as nascent entrepreneurs. We are very surprised to discover that as many as 11 per cent of the students in the control group are nascent entrepreneurs. This proportion is much higher than in the population average, especially for our age group. A person who starts a business in Denmark is on average 38 years[28]; in our sample the average age is 25. The Global Entrepreneurship Monitor survey 2007 has established that nascent entrepreneurs represent only 2.3 percent[29] of the population. The number of nascent entrepreneurs, both in the experiment group and the control group is thus very high. This indicates that academic education at a high level is positive relative to entrepreneurial activity. This reinforces the results presented in Entrepreneurship Index 2009 that the importance of education is increasing for entrepreneurs.



28. Source: Entrepreneurship Index 2009. The Danish Enterprise and Construction Authority. Version 1.0, 06-11-2009.
29. Source: Growth-Entrepreneurship in Denmark 2007 – studied via Global Entrepreneurship Monitor. Thomas Schøtt, University of Southern Denmark.

4.8. Summary

In this part of the report we have presented the first results of our long-term study of the effects of different forms of entrepreneurship education at the graduate level at Danish universities.

We cannot currently say anything about the different effects of the programmes, contents, and didactics, but we can analyze our measurement instruments and compare different subgroups in our sample. It is clear that our instrument has good internal consistency and works well with a control group, which is crucial when performing an impact analysis. It is also evident that our instrument measures entrepreneurial self-efficacy, because the nascent entrepreneurs in our sample have significantly higher values on all constructs (groups of skills). The number of nascent entrepreneurs in our study group is 88, or 22 per cent, which is much higher than in the average population (2.3%). This makes our study group particularly interesting when it comes to research on start-up activities. We have also seen a significant difference between women and men with regard to all entrepreneurial self-efficacy constructs apart from Planning, but also that there are far fewer women who are nascent entrepreneurs. The latter indicates that these values are real values, not just a difference in how truthful men and women are about their entrepreneurial self-efficacy.

When our experiment group was compared with the control group, we could identify significant differences regarding all constructs in our scale. This suggests that young people who choose entrepreneurship education are already supportive of entrepreneurship; this can create serious problems for our research design. However, we found that the difference between the groups evened out when we controlled for entrepreneurial experience. This indicates that the difference between students without entrepreneurial experience in the two groups is not so great and that bias, relative to the constructs, which we measure, does not seem to be present.

Concluding Remarks

In this report, we have presented two different studies completed by the Danish Foundation for Entrepreneurship - Young Enterprise in 2011. Both studies are part of long-term projects that can provide valuable knowledge about the impact of entrepreneurship education.

In the long-term study at lower secondary level, we have measured the first time while the students attend the ninth grade which is close to the transition either to further education or to employment. The group consists of 2,000 Danish youth representative for the year 1996 by gender, age and geography. At age 15, the pupils are most likely still living with their parents and are under great influence of the closed environment.

The study yielded interesting results, since we in the analysis did not as expected detect any correlation between entrepreneurship education and the variables that are traditionally regarded as indicators of future entrepreneurship. This applies to young people's intentions to start a business, whether they are about to start a business, and their entrepreneurial behaviour (whether and how they participate in activities outside of school). However, we saw a correlation with the youths' ambitions, connectedness to school and community, as well as their faith in the future. The analysis showed that the group of adolescents who had participated in entrepreneurship education was significantly happier about going to school, and those who had had training in classical entrepreneurship, also had a greater understanding of their own role and value in society.

The results therefore suggests that training in entrepreneurship at this level of education focuses on getting young people to understand how they can practically apply and combine their knowledge from different fields to create value as well as getting them to understand the importance of taking responsibility for their learning process. This will equip the young people well for further education which will focus more on concrete and real entrepreneurial activities.

Almost all young people are positive towards entrepreneurship and more than half would like to start their own business; this applies to both boys and girls, there was no difference. It is surprising that 2.4 per cent of the young people were already in the process of starting a business which is similar to the proportion of the adult population (2.3%).[30]

30. Ibid.

The analysis of the young people's responses showed that the pupils tend not to be consistent in their responses, thus reflecting their young age and educational level. We will now follow the young people over the years and expect to see changes to their way of answering the questions as they get older. There was, as mentioned a lot of 'noise' or inconsistencies in their responses in this first measurement. It will be interesting to see if we in later analyses may see a progress also in relation to young people's attitude towards and entrepreneurship.

In the second part of the report we have presented the study of university courses at graduate level. The respondents in this study are on average 25 years old and about to start on the last part of their education. The sample consists of 407 students divided into an experimental group who participate in entrepreneurship education, and a control group who does not.

A large part of this project is to develop a credible research design that can be used to measure the effect of different types of entrepreneurship education. In this study, we go much deeper into the measurement of actual teaching than in the study of the ninth graders, and focus in particular on the impact on the respondents' entrepreneurial self-efficacy, i.e. the students' confidence that they are able to perform entrepreneurial activities. The analysis shows that there is a good internal consistency in the structure of the questionnaire, and we have verified that entrepreneurial self-efficacy is actually measured. The longitudinal nature of the study design means that it is only possible to present concrete results after the second round of data collection, but we have initially tested and established appropriate measurement tools.

However, we also been able to infer a few things such as the proportion of nascent entrepreneurs, i.e. persons who are about to start a business. The share of nascent entrepreneurs were expected high of 31 per cent in the group of students who participate in entrepreneurship education, but also in the control group entire 11 per cent are nascent entrepreneurs. Similar to the results from the survey in lower secondary school, the analysis also here showed that the proportion of men who are about to start a business is far greater than the proportion of women.

We will also follow this group over time and measure the impact of entrepreneurship education again after the first year of graduate study, and after graduation. In the longer term, when the effects in the form of start-up companies probably give greater results, we follow them one, three and five years after completion of the exam.

These studies will eventually give us knowledge about what works and why it works, i.e. what kind of education provides which effects. This can be used in the work to develop courses in entrepreneurship and be of great value in relation to the efforts and investments in the education. It will be unique new knowledge that will be beneficial both at the practical level in the classrooms of teachers and trainers and the strategic plan among education leaders and politicians.

Appendices

Appendix 1 - Questionnaire for 9th Graders

Please put an X to what extent you agree:	Not at all			Completely
1. In school I have worked project-oriented and across subjects.	1	2	3	4
2. In school I have been taught about international relations and obtained knowledge about other cultures.	1	2	3	4
3. In school emphasis was put on the role of the entrepreneur in society.	1	2	3	4
4. In school I have been taught how to create a new activity or starting a company.	1	2	3	4
5. In school I have gained financial knowledge and knowledge about the market.	1	2	3	4
6. In school we have collaborated with local businesses, the municipality, associations and the like.	1	2	3	4

7. How many activities outside of school do you participate in? For example: sports, culture, politics, outdoor life, voluntary work.
O 0 O 1-2 O 3-4 O 5 or more

8. Have you been leading an activity or a project outside of school?
O Yes O No

9. Have you initiated an activity or a project outside of school?
O Yes O No

10. Name the three jobs you would like the most to occupy in the future:
1. _____
2. _____
3. _____

Please put an X to what extent you agree:	Not at all			Completely
11. Do you feel that you can contribute to society?	1	2	3	4
12. I can name 5 things that others like about me.	1	2	3	4
13. I work hard in school.	1	2	3	4
14. My classmates often bother me.	1	2	3	4
15. I will have a good future.	1	2	3	4
16. There is not much that is unique or special about me.	1	2	3	4
17. I enjoy being at school.	1	2	3	4
18. I like pretty much all of the other kids in my grade.	1	2	3	4
19. Doing well in school will help me in the future.	1	2	3	4
20. I can name 3 things that other kids like about me.	1	2	3	4
21. I get bored in school a lot.	1	2	3	4
22. I like working with my classmates.	1	2	3	4
23. I do things outside of school in order to prepare for my future.	1	2	3	4
24. I really like who I am.	1	2	3	4
25. I do well in school.	1	2	3	4
26. I get along well with the other students in my classes.	1	2	3	4
27. I do lots of things to prepare for my future.	1	2	3	4
28. I have special hobbies, skills, or talents.	1	2	3	4
29. I feel good about myself when I am at school.	1	2	3	4
30. I am liked by my classmates.	1	2	3	4
31. I think about my future often.	1	2	3	4
32. I have unique interests or skills that make me interesting.	1	2	3	4
33. Doing well in school is important to me.	1	2	3	4
34. I rarely fight or argue with the other kids at school.	1	2	3	4
35. What I do now will affect my future.	1	2	3	4

36. Do have plans about taking an upper secondary education?
O stx O hhx O htx O eud O hg Other _____ O No

37. Do you and your parents (mother or father/both) or grandparents have roots in another culture than Danish?
O Yes O No

38. How long an education does your parents have (the one with the longest education)?
O Basic school O Upper secondary/Vocational O Academy profession (2-3 years) O Professional bachelor (3-4years)
O University (3-5 years)

39. Are your mother and father self-employed?
O Yes – both O Yes – mother O Yes – father O No

40. Do you know anyone who started their own business/enterprise within the last 3 years?
O Yes O No

41. Do you have paid work outside school?
O Yes – 2 days or more a week O Yes – 1 day a week
O Yes – less than 1 day a week O Yes – work only during holidays/vacations
O No – have no paid work next to school

42. Have you worked/do you work in a newly started business (max. 3 years old)?
O Yes O No

Please put an X to what extent you agree:	Worthless			Worthwhile
43. In general entrepreneurship is …	1	2	3	4

Please put an X to what extent you agree:	Disappointing			Rewarding
44. In general entrepreneurship is …	1	2	3	4

Please put an X to what extent you agree:	Negative			Positive
45. In general entrepreneurship is …	1	2	3	4

46. Would you like to start a business?
O Yes O No

47. If yes, when?
O Within the next year O After my upper secondary school/ vocational training
O After my university studies O After I have had a few years of work experience

48. Are you currently starting a business?
O Yes O Yes, as a school project O No – you have finished the survey

49. Do you spend a lot of time thinking about being an entrepreneur?
O Yes O No

50. Have you made a business plan?
O Yes, committed to paper O Yes, in my head O No

51. Have you explored whether there is a market or demand for your idea?
O Yes O No

52. Have you invested your own money in your business?
O Yes O No

53. Have you applied for money in order to develop your business?
O Yes O No

54. If yes, from whom?
O The bank O My parents O Friends O Other _____

Thank you for answering the questionnaire. You will receive a ticket to the cinema by post approximately one week after we have received your response.

If you or your parents have questions regarding the project or would just like to hear more, you are welcome to contact us.

Kind regards,
Lene Vestergaard

Teamleader, Knowledge & Analysis
Mobile: +45 2442 0675
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Appendix 2 – Questionnaire for survey for Entrepreneurship Courses at the University Graduate Level

How much confidence do you have in your ability to....?	Low						High
1. Lead and manage a team	1	2	3	4	5	6	7
2. Identify ways to combine resources in new ways to achieve goals	1	2	3	4	5	6	7
3. Improvise when I do not know what the right action/decision might be in a problematic situation	1	2	3	4	5	6	7
4. Manage time in projects	1	2	3	4	5	6	7
5. Tolerate unexpected change	1	2	3	4	5	6	7
6. Brainstorm (come up with) new ideas	1	2	3	4	5	6	7
7. Put together the right group/team in order to solve a specific problem	1	2	3	4	5	6	7
8. Conduct analysis for a project that aims to solve a problem	1	2	3	4	5	6	7
9. Read and interpret financial statements	1	2	3	4	5	6	7
10. Form partnerships in order to achieve goals	1	2	3	4	5	6	7

In general, starting a business is...							
11. Worthless	1	2	3	4	5	6	Worthwhile 7
12. Dissapointing	1	2	3	4	5	6	Rewarding 7
13. Negative	1	2	3	4	5	6	Positive 7

How much confidence do you have in your ability to....?	Low						High
14. Persist in the face of setbacks	1	2	3	4	5	6	7
15. Identify potential sources of resources	1	2	3	4	5	6	7
16. Network (i.e. make contact with and exchange information with others)	1	2	3	4	5	6	7
17. Set and achieve project goals	1	2	3	4	5	6	7
18. Perform financial analysis	1	2	3	4	5	6	7
19. Learn from failure	1	2	3	4	5	6	7
20. Get others to identify with and believe in my visions and plans	1	2	3	4	5	6	7
21. Manage uncertainty in projects and processes	1	2	3	4	5	6	7
22. Design an effective project plan to achieve goals	1	2	3	4	5	6	7
23. Exercise flexibility in complicated situations when both means and goals are hard to establish	1	2	3	4	5	6	7
24. Clearly and concisely explain verbally/in writing my ideas in everyday terms	1	2	3	4	5	6	7
25. Work productively under continuous stress, pressure and conflict	1	2	3	4	5	6	7
26. Think outside the box	1	2	3	4	5	6	7
27. Control costs for projects	1	2	3	4	5	6	7
30. Make decisions in uncertain situations when the outcomes are hard to predict	1	2	3	4	5	6	7
29. Identify opportunities for new ways to conduct activities	1	2	3	4	5	6	7
30. Estimate a budget for a new project	1	2	3	4	5	6	7
31. Identify creative ways to get things done with limited resources	1	2	3	4	5	6	7
32. Proactively take action and practically apply your knowledge	1	2	3	4	5	6	7

To what extent do you agree to the following statements	Do not agree						Agree
33. For each problem I will find a solution	1	2	3	4	5	6	7
34. In difficult situations I will find a way	1	2	3	4	5	6	7
35. No task is too difficult for me	1	2	3	4	5	6	7
36. I master difficult problems	1	2	3	4	5	6	7
37. There is no task which is too demanding for me	1	2	3	4	5	6	7
38. I even master new tasks without problems	1	2	3	4	5	6	7
39. I welcome every new challenge	1	2	3	4	5	6	7
40. I can master difficulties	1	2	3	4	5	6	7
41. I have a lot of confidence in myself	1	2	3	4	5	6	7
42. I always find a solution to a problem	1	2	3	4	5	6	7

43. It is very likely that I will start up a business within...
O The next year O Three years O Five years O Ten years O Never

44. When you think of the word 'entrepreneur', how closely do you fit that image? Please type a number from 0 (does not fit at all) to 100 (fits perfectly). _____

My family and friends...	Do not agree						Agree
45. Support my decision no matter what my career choice might be	1	2	3	4	5	6	7
46. Think that I should NOT pursue a career as self-employed	1	2	3	4	5	6	7
47. Their opinion matters a great deal to me	1	2	3	4	5	6	7

48. If I would like to start up a business today, I would have access to the sufficient amount of financial capital.
O Yes O Yes, because the amount needed would be very limited O No
IF YES, please reply to question 49.

49. This financial capital would mainly come from...
O My own pocket O My family O My friends O My network O My employer O The bank O Other

I ...	Do not agree						Agree
50. Strongly consider setting up my own business	1	2	3	4	5	6	7
51. Am willing to work hard to set up my own business	1	2	3	4	5	6	7
52. Have been preparing to set up my own business	1	2	3	4	5	6	7

53. Gender
O Male O Female

54. Age (in years)
[ ]

55. Exchange/international student O Yes O No

56. Do you have close family members (parents, siblings, uncles/aunts) who are self-employed? O Yes O No

57. Have you taken a course or training program that focuses on entrepreneurship / Self-employment in the past? O Yes O No

58. Have you participated in an extra-curricular activity that focuses on entrepreneurship / Self-employment? O Yes O No

59. How many years of part-time work experience do you have? [ ]

60. How many years of full-time work experience do you have? [ ]

61. How many years of full-time education do you have? [ ] (including elementary, secondary and tertiary level)

62. Have you, alone or together with others, started a business in the past? O Yes O No

63. Do you, by yourself or together with others, operate a business today? O Yes O No

64. What bachelor degree do you have? [ ]

65. Are you trying to start a business for real as opposed to just evaluating an idea out of interest or as part of an academic exercise? O Yes O No If YES, have you initiated or completed any of the following activities?

(Check all that apply)

66. O Prepared a business plan

67. O Received bank funding for your business

68. O Organized a start-up team

69. O Received government funding for your business

70. O Looked for facilities/equipment

71. O Applied for a license or patent, etc.

72. O Acquired facilities/equipment

73. O Hired employees for your business

74. O Developed a product/service

75. O Conducted sales promotion activities

76. O Conducted market research

77. O Registered your business

78. O Devoted your full time to starting a business

79. O Received a first payment/sale in your business

80. O Saved money to invest in your own business

81. O Applied for government funding for your business

82. O Invested your own money in your business

83. O Achieved a positive net income (income greater than expenses) in your business for a single month

84. O Applied for bank funding for your business

I would like to participate in the Danish Foundation for Entrepreneurship / Young Enterprise's longitudinal research project also after my graduation. O Yes O No

Email address: _____

Thank you for your participation!

FONDEN FOR ENTREPRENØRSKAB
YOUNG ENTERPRISE DANMARK

The Danish Foundation for Entrepreneurship – Young Enterprise
Ejlskovsgade 3D, 5000 Odense C, Denmark

The Danish Foundation for Entrepreneurship – Young Enterprise works to ensure that more students at all levels of the Danish educational system are introduced to and participate in entrepreneurship education and training thus integrating entrepreneurship as a part of the educational system.

The corner stone of the Foundation is that entrepreneurship can be learned and taught. There are plenty of activities and methods for teaching entrepreneurship and more are constantly being developed. The Foundation for Entrepreneurship – Young Enterprise covers all levels of education thus ensuring progression in entrepreneurship education – from primary school to higher education, i.e. more than one million students and their teachers.