

From Dream to Reality

Learning outcomes and didactic principles for teaching entrepreneurship in Nordic schools



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Nordic Council of Ministers

Ved Stranden 18 DK-1061 Copenhagen K Phone (+45) 3396 0200

www.norden.org



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Introduction

The Nordic Council of Ministers has been working in stages to strengthen the culture of entrepreneurship in education in the Nordic countries. Globalisation, technological development, speed of change, and demographic changes present challenges to both the Nordic welfare model and the individual. Over time a need has developed for the educational system to prepare pupils and students for a life in which they can actively participate in shaping the future.

The Nordic Council of Ministers' award-winning report Entrepreneurship Education in the Nordic countries¹ and the EU's Final Report of the Thematic Working Group on Entrepreneurship Education² report the need to develop a competence framework that can form a bridge between strategy, management, practice, and learning. A competence framework can also facilitate development in entrepreneurship teaching, and help to distinguish between a pupil who has been involved in entrepreneurship teaching and a pupil who has not.

A competence framework will enable entrepreneurship teaching to be based on what is to be learned rather than particular activities or processes. The aim of this competence framework is to fulfil this need, while respecting Nordic school traditions and the broad

understanding of entrepreneurship that has developed in parallel in the Nordic countries. In the Nordic school context, entrepreneurship is aimed at giving pupils competences that can be used in many different situations – personal, social, and in the wider society.

The competence framework is aimed at a number of stakeholders. It is primarily a tool for teachers and practitioners where they can find competence and learning goals, and didactic principles for teaching entrepreneurship. The document is also aimed at decision-makers who draw up legislation and frames relating to entrepreneurship teaching. The third target group is school leaders who, in their everyday work, provide structures, environments and educational development to ensure that entrepreneurship education becomes an integral part of the activities in primary and secondary schools.



Nordic Schools

Despite national differences in schools in the Nordic region, there are also many common features. These include the concept of education, influence from the enlightenment movement, and educational reform, and a more recent focus on international comparisons and evidence-based teaching aimed at the attainment of goals.

The concept of "general education"

Since state school systems were introduced, the concept of "general education" (called "dannelse" in Danish ("Bildung" in German)) has become part of the Nordic approach with regard to schools. The understanding

of general education implies that there is something that transcends disciplines and academic subjects, and concerns the virtually unfinished process of becoming a competent and authoritative person in a cultural context. In Nordic schools, this educational ideal is described in the overall objectives. However, general education and educational ideals are not fixed entities, and vary over time in response to shifting political and cultural contexts, as well as educational and philosophical trends. Consequently, general education is a dynamic concept that has fluctuated between a focus on personal development and one on attainment of pre-determined academic goals.³

³ Gustavsson (1998) Dannelse i vor tid, Forlaget KLIM.



¹ Nordic Council of Ministers (2012).

² European Commission (2015).



The Nordic democracies and welfare states have developed in close interaction with a democratic educational ideal, where pupils learn to take a position, take action, contribute to a democratic society, and behave as democratic citizens. Part of the concept of education concerns competences that promote self-determination, social responsibility, and the ability to be part of and shape society. This understanding is closely linked to Nordic entrepreneurial education and this competence framework.

One major challenge is differences in the understanding of the concept of general education, which often appears to conflict with academic subjects, despite these always being part of general education. Furthermore, it is often unclear what is to be learned and absorbed in order to be "educated". This competence framework is an attempt to give a tangible form to, and develop, some of the entrepreneurial education elements that already exist in school objectives.

Educational reform

Educational reform had a great effect on educational thinking in the Nordic region, and ended the era of the authoritarian school with tough discipline and learning by rote. Regardless of the current focus on academic subjects and measurability, teaching is constantly child-focused and is usually based on pupil needs and interests. Similarly, the pupils' active participation in learning through project, group and cross-curricular work is part of everyday life in Nordic schools. Along with the popular enlightenment movements, this has produced a situation where the relationship between

teacher and pupil is informal and equal, and education motivates the pupils, satisfying their wishes and interests.⁴

In broad terms, the liberated and reformed educational practices triumphed; the problem today is not the lack of freedom that the liberating reform was to remedy, but how we actually use freedom and liberation. Entrepreneurship teaching can be seen as an extension of the educational reform ideas, because it aims to support the pupils' ability to actively participate in society, to manage their own lives and careers, and to start initiatives that generate value for others, culturally, financially and socially. Consequently, entrepreneurship teaching is not liberating in the traditional meaning, but instead is aimed at strengthening the pupils' competence at freely making use of the opportunities available in life and in the world.

Focus on learning goals and monitoring

In recent years, measurable academic outcome and international comparisons have become part of the political agenda, and therefore also part of everyday activities in Nordic schools. At the same time, research findings that pupils learn more if the teaching is based on tangible learning goals and feedback has made a great impact.⁷ This has led to a series of reforms of school systems and the requirements placed on schools and teachers.

The development has taken place in parallel with the introduction of strategies for entrepreneurship. While school subjects have become more detailed and

measured, overall objectives, including entrepreneurial elements, have become intangible and unmanageable. Consequently, this competence framework is an attempt to clarify the learning outcomes for entrepreneurship, so they can form the basis of teaching, feedback and evaluation in a similar way to those of traditional school subjects. The framework makes it possible to focus on competence and learning goals instead of various process descriptions, teaching approaches, and forms of practice. The definition of entrepreneurship teaching therefore becomes very simple:

"Teaching that supports the development of entrepreneurial resources, competences and experiences."

A central reflection is that schools can give pupils specific competences, but how the pupils choose to use these competences is their own free choice. Consequently, entrepreneurship teaching is not aimed at motivating the pupils to lead their lives in any particular way, make special occupational choices, or adopt specific methods for becoming involved in the world.



⁴ Hammershøj (2012) *Kreativitet – et spørgsmål om dannelse*, Hans Reitzels Forlag.

⁵ Ziehe (2004) Øer af intensitet i et hav af rutine, Nye tekster om ungdom, skole og kultur, Forlaget Politisk Revy.

⁶Rasmussen, Revsbeck, Moberg (2015) *Taksonomi for entreprenørskabs-uddannelse*, Danish Foundation for Entrepreneurship.

⁷ Hattie (2009) Visible Learning, Routledge.

Entrepreneurial competences

The competence framework is based on available international research and on Nordic school objectives and entrepreneurship strategies. A reference group, comprising representatives from the five Nordic countries and Greenland, the Faroe Islands, and Åland, helped to ensure that the framework can be applied regardless of national conditions. The concept of competence is inspired by Illeris:⁸

"The holistic sensory and emotion-based capacities, dispositions and potentials that are related to possible areas of action, and that are acquired through evaluations, decisions, and actions in relation to known and unknown situations."

Consequently, the framework is designed as a series of competences, supported by knowledge, skills, emotions, and personal resources.

Knowledge and skills are basically tangible, and, if not always measurable, can at least be observed and placed in a taxonomy. The same does not apply to personal and subjective resources, which cannot be taught, tested and evaluated. For example, the ability to show perseverance is probably an essential resource; perseverance as such cannot be taught, but can be acquired through the methods and activities used in the teaching. Consequently, this part of the competence framework is more concerned with methods and didactic approaches than with the more tangible knowledge and skills areas.

Research

Research does not agree on which skills and personal resources constitute entrepreneurial competences. Similarly, there is no agreement on how these competences are to be built up. However, there are some central areas that concern both content and the educational form:⁹





- The emphasis on action; entrepreneurship teaching is to be based on pupils taking tangible action and participating actively.
- Creativity and the ability to see, sense and create opportunities, the ability to solve problems, think in different ways, and experiment with different forms of knowledge.
- Knowledge about, understanding of, and interaction with culture, the surrounding world and external parties.
- Pupils' subjective belief in and trust in how they can
 act in the world, the resources to facilitate this, and
 how they can realise dreams and visions, including
 perseverance and the ability to take action in
 uncertain contexts.

Nordic strategies and educational objectives

The overall educational objectives and national entrepreneurship strategies in the Nordic countries include a large number of knowledge, skills, and competence goals that are directly or indirectly related to entrepreneurship. Some of the areas concern external aspects that the pupil needs to recognise: "creative working methods, business development, finance, project management, networks", and skills they must be able to demonstrate: "take initiative, show responsibility, translate ideas into action, make decisions, communicate, collaborate, and solve problems". Other areas concern internal aspects,

and thereby emotional and personal resources: for example, "relate openly to opportunities, demonstrate endurance and perseverance, curiosity, self-confidence, creativity, and courage to take risks, and use imagination to exceed existing limits". The strategies also include a number of normative or ethical statements, such as "Contribute to a sustainable future".

Contribution of the reference group

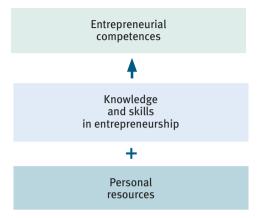
The reference group made a large number of contributions relating to knowledge, skills and competences. As in the overall objectives for schools, there are very varied knowledge, skills and competence goals that concern both external and internal aspects, such as: "Myself as an entrepreneurial person, how society is organised and functions, present myself and my ideas, see needs and identify solutions, creatively manage uncertainty, identify opportunities and be proactive, knowledge of the local community, country and the world."

There also seems to be a varying focus on "progression and taxonomy" (DK), a special type of "educational entrepreneurship" (N) and a special approach like "entrepreneurial learning" (S). The different approaches show that, despite the Nordic countries' relatively similar strategies, there is a great diversity of activities and types of practice.

⁸ Illeris (2013) *Kompetence – Hvad, hvorfor, hvordan?*, Samfundslitteratur.

⁹ Nybye & Rasmussen (2013) Progressionsmodel for innovations og entreprenørskabsundervisning, Danish Foundation for Entrepreneurship.

Competence framework



A compilation of the various contributions and statements from research findings, Nordic school objectives, and the research group identified four competences, of which three can be based on knowledge and skills. The fourth area concerns personal resources, and serves as a foundation for bringing the other areas into play. This enables the pupil to implement actions in the world through courage, responsibility, acceptance of error, etc. Conversely, personal resources in themselves do not necessarily lead to a qualified action or entrepreneurial competence and education.

- 1. Action competence: Plan, structure, execute, collaborate, communicate and manage finances and resources.
- 2. Creativity competence: Create, exceed, think divergently, think across borders, set up dreams, sense, experiment, solve problems and evaluate.

- 3. External competence: Knowledge of cultural forms, globalisation, societal organisation, business understanding, social conditions, networks, ability to understand and navigate in a complex modern life. The way we perceive our world and our surroundings, the impressions to which we are receptive.
- Personal resources: Courage, self-confidence, perseverance, managing complexity and uncertainty, acceptance of faults, initiative, responsibility and independence.

Consequently, entrepreneurial competences are acquired through internal knowledge and skills, action, creativity and the surrounding world, and this requires a number of personal resources.

The competence framework is presented for three levels in the school system: Year 3/early years, Year 6/intermediate level, and Year 9/leaving school. At all three levels, knowledge, skills and competences are expressions of an ideal picture and an ultimate goal.

Action competence					
Action competence The pupil can collaborate on tasks and, with support, carry out simple projects at school and in the local environment.		Creativity competence The pupil can work in an experiment- based and investigative way in simple creative processes, and can relate the results using basic academic knowledge.		External competence The pupil starts to understand their own identity and cultural background, and can orientate in simple local contexts.	
Skills The pupils can	Knowledge The pupils are aware of	Skills The pupils can	Knowledge The pupils are aware of	Skills The pupils can	Knowledge The pupils are aware of
Participate in simple projects Participate in simple collaborative relationships Present their own results and products in school and local environment Make contact in a personal network Work with simple visualisations and models Set up exhibitions of joint projects	Planning and setting objectives and goals Working together with others Communication and simple forms of presentation Personal network Representations and models	Use imagination and creativity in connection with teaching and activities Combine different areas of knowledge Play with knowledge Participate in simple ideagenerating processes Participate in discussions about evaluation of ideas Use sensory concepts and imagery	Imagination and creativity Simple creative processes Simple idea generation Sensory and simple aesthetics	Describe their own culture Apply the concept of money in simple mathematical calculations Discuss opportunities and challenges in the local environment	Their own and other people's cultures The concept of money Leisure time and working life Businesses and institutions in the local environment

The courage to challenge themselves.

Self-confidence in relation to their own abilities.

Take initiative with support from teachers and other adults.

Endurance and perseverance over short periods.

Accept their own faults and misunderstandings.

Withstand short-term uncertainty.

Focus on tasks and challenges.

Year 6						
Action competence The pupil can collaborate on tasks and, with support, carry out simple projects at school and in the local environment.		Creativity competence The pupil can work in an experiment- based and investigative way in simple creative processes, and can relate the results using basic academic knowledge.		External competence The pupil starts to understand their own identity and cultural background, and can orientate in simple local contexts.		
Skills The pupils can	Knowledge The pupils are aware of	Skills The pupils can	Knowledge The pupils are aware of	Skills The pupils can	Knowledge The pupils are aware of	
Describe uncertainty associated with projects Participate actively in projects Use a personal network Participate in collaborative relationships Present results and projects Communicate knowledge through models, sketches and visual expressions	Simple project management, planning, risks and resources Simple collaboration forms Communication, presentation forms and tools Personal and school-based networks Models, symbols and visual expression	Combine different areas of academic knowledge Experiment with knowledge Participate in academic problem solving Work in creative processes Participate in idea generation Discuss evaluation of ideas Use sensory concepts Discuss dreams relating to the immediate future	Imagination and creativity in connection with different academic areas Creative processes Idea generation forms Sensory and aesthetics	Compare cultures Discuss opportunities and challenges in the world Discuss their own understanding of the world Compile simple budgets Describe economy and other resources in society Describe whether a business enterprise is successful	Differences in cultures Structure and components of society Economy and different resources School, leisure time and working life Businesses and institutions in the local area	



Courage and desire to challenge themselves and peers.
Responsibility in relation to their own and joint projects.
Self-confidence in relation to their own abilities.
Take initiative together with others.
Willingness to change their own work forms, opinions and views.
Endurance and perseverance over long periods.
Acceptance of their own and other's faults and misunderstandings.
Overcome short-term uncertainty.
Focus on tasks and challenges over longer periods.



Year	9
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The pupil can work in an independent,

persevering, experiment-based and

Creativity competence

Action competence

In collaboration with others, the pupil

can initiate, plan, take responsibility for,

External competence

Against the background of their

understanding of their own identity

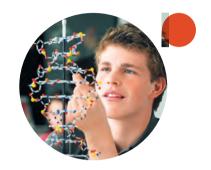
lead, organise and execute projects in a tangible context.		investigative way with creative processes, and evaluate the results on the basis of academic knowledge, experience, and aesthetic criteria.		and cultural background, the pupil can orientate in and evaluate technological, financial, cultural, and social contexts.	
Skills The pupils can	Knowledge The pupils are aware of	Skills The pupils can	Knowledge The pupils are aware of	Skills The pupils can	Knowledge The pupils are aware of
Manage projects together with others Evaluate uncertainty and risks associated with projects Participate in different collaborative relationships Make contacts outside the personal network Build and use their own network Present results and projects for a specific target group	Project management, planning, stakeholders, risks and resources Collaboration forms and processes Personal and professional networks Communication, presentation forms and tools	Combine different areas of academic knowledge Experiment with knowledge and academic subjects Work with academic problem solving Structure idea generation processes Work in different creative processes Discuss evaluations of ideas Use sensory concepts in relation to academic knowledge Describe dreams and visions for the future	Imagination and creativity in society Creative processes Different idea generation forms Senses and aesthetics Creativity in relation to academic knowledge	Describe and compare cultures Describe opportunities and problems relating to globalisation Compile simple budgets and accounts Analyse and describe resources Describe simple business models Challenge existing understandings of the world	Different cultures Globalisation and consequences Societal structure, components, problems and opportunities Working life and career opportunities Economy and resources

PERSONAL RESOURCES

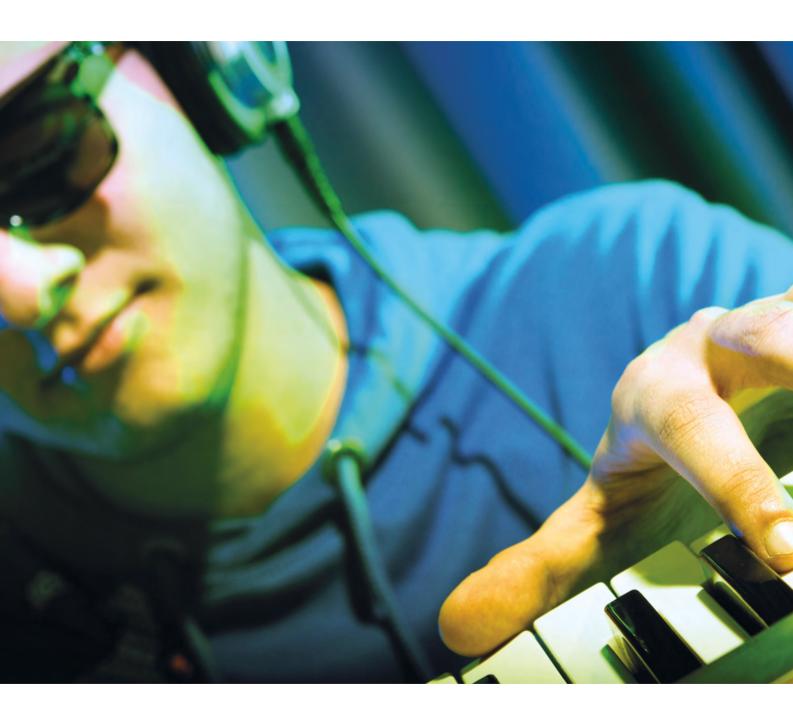
Courage and desire to challenge themselves and others.
Responsibility in relation to their own and joint projects.
Self-confidence in relation to their own abilities and potentials.
Take initiative independently and together with others.
Willingness to change in relation to existing perceptions and habits.
Endurance and perseverance over long and intermittent periods.
Acceptance of and learning from their own and other's faults and misunderstandings.
Accomplish uncertain and complex tasks.
Maintain focus on interrupted tasks and projects over a long period.

Entrepreneurial competences in educational practice

Entrepreneurship is not an academic subject in Nordic schools, so entrepreneurial competences must be incorporated in existing subjects and as special entrepreneurial processes. This means that teachers must be able to combine academic subjects with development of entrepreneurial competences, so that entrepreneurship becomes part of the everyday activities in schools. At the same time, schools must ensure that pupils are given the opportunity to participate in coherent entrepreneurial processes where the competences are applied, ideally in a valuegenerating exercise.







Didactic principles

This section describes a number of didactic principles that can help develop a pupil's competences and personal resources. Didactics concerns the coherence between teaching objectives, content and method, improving the probability that students learn what is required, and supporting pupils' further development and learning. Didactic principles are therefore tools a teacher uses when planning the teaching, and affect the ways in which the teaching is structured, organised and executed.

The ideas behind the principles are that they are independent of year group, level and academic context, and that they can facilitate the translation from competence goals to practice, and vice versa. The principles can be incorporated individually or several at a time, but it will probably not be appropriate or possible to apply all the principles at the same time.

Principles that help to develop action competence

- Work with value generating¹⁰/ changing activities.
- Involve and incorporate pupils.
- Give pupils responsibility for activities.
- Use knowledge and skills in different contexts.
- · Base activities on different contexts.
- Use networks and relationships.
- Stimulate various collaboration forms.
- Stimulate various presentation forms.
- Stimulate reflection on action.

Principles that help to develop creative competence

- Work with experiment-based activities.
- Provide time without assessment.
- Work with creative activities.
- Allow time for immersion.
- Set open / impossible tasks.
- Surprise and establish the unexpected.
- Involve several senses.
- Invite reflection in relation to imagination and creativity.

¹⁰ Value generation distinguishes entrepreneurial processes from other procedural teaching methods, such as problem-oriented project teaching or topic work. Value generation means that the activity generates value for others, as well as the pupil's own learning. In other words, the activities result in benefits, either actual in the form of tangible activities, or potential, such as plans and models.



Principles that help develop external competence

- Stimulate curiosity and wonder.
- Involve contemporary themes.
- Put academic subjects, knowledge and skills into a perspective.
- Involve social, financial and cultural contexts.
- Ensure interaction between the individual, school and the surrounding world.
- Seek knowledge and feedback from the surrounding world.
- Show how the world offers opportunity.
- Stimulate reflection in relation to the world outside the school.

Principles that help develop personal resources

- Ensure success experiences.
- Set appropriately challenging tasks.
- Allow an appreciative approach.
- Work consciously with uncertainty.
- Involve and incorporate pupils.
- Provide support and guidelines.
- Invite reflection over personal resources.

Examples of how to use the didactic principles

The following examples have been developed by practitioners and have been tested in Nordic schools. Subjects and the overall competence areas are taken from the common teaching objectives. The examples show quite common teaching processes that, when used with the didactic principles in addition to the subject goals, also help develop entrepreneurial competences. The relevant didactic principle is shown in italics in parentheses.

Biodiversity, Year 3

The process includes academic goals from the Science/ Technology subject area, and the competence areas "Investigation" and "Communication".

The process starts with a discussion about the concept of biodiversity. The pupils then independently investigate various databases about animals and habitats (Seek knowledge and feedback from the surrounding world). Pupils and teacher then collaborate on planning a field trip (Involve and incorporate pupils), where pupils in small groups look for animals in the local environment (Stimulate curiosity and wonder) with particular focus on known habitats and fauna in the local area (Use knowledge and skills in different contexts).

The pupils then choose an animal, and carry out academic investigations (Allow time for immersion), create sketches and drawings (Involve several senses) in order to make academic presentations (Work consciously with uncertainty). During the presentations, the other pupils are instructed to give praise and make suggestions for improvements to future work (Allow an appreciative approach).

As a conclusion, ideas are discussed as to how the pupils can help to secure biodiversity in their local environment (Show how the world offers opportunity).

Furniture for Friends, Year 6

The process includes academic goals from the Craft and Design subject area, and the competence areas "Preparatory Work", "Materials" and "Design".

The pupils are given the task of making a furniture item suitable for when they spend time together with friends. The process starts with discussions and teacher presentations about the background and history of furniture, developments in design, and how furniture is both functional and aesthetic (*Put academic subjects*, *knowledge and skills into a perspective*). Pupils then visit a furniture company (*preferably in reality, but Internet-based investigation is also possible*) and investigate different designs, materials and properties (*Seek knowledge and feedback from the surrounding world / Ensure interaction between the individual, the school and the surrounding world*).

Pupils choose a furniture item with the aim of describing it in writing (*Use knowledge and skills in different contexts*). Pupils then develop ideas for their own furniture item within a framework, where the furniture item is to be used when spending time together with friends (*Set open / impossible tasks*). Pupils build models of the furniture at an appropriate scale (*Involve several senses*), and give each other constructive feedback (*Provide time without assessment and Allow an appreciative approach*).



In the final activity, the pupils investigate whether the model could be made into a full-scale, tangible product, and whether production could form the basis of an enterprise (*Stimulate reflection on action*). The process ends with pupil preparing and practicing a sales pitch for the product.

Applied Mathematics, Year 8

The process includes academic goals from the Mathematics subject area, and the competence area "Mathematical competence".

Pupils are divided into small groups. Each group is given an everyday object, such as milk carton, a bicycle wheel, a glass, or a newspaper (*Surprise and establish the unexpected*). The pupils are then asked to devise as many mathematical problems as possible in the supplied object (*Set open / impossible tasks*, *Work with experiment-based activities*). The pupils work independently with the task, and the teacher, challenges, comments and supports the pupils during the process (*Provide support and quidelines*).

The groups then exchange objects and mathematical tasks. Finally, the groups compare their results and calculations, and give feedback on the work (*Allow an appreciative approach*).

Advertising, Year 9

The process includes academic goals from the Danish subject area, and the competence areas "Production", "Interpretation" and "Communication".

At the start of the process, the pupils investigate advertising in the local area, take photos, and then analyse the advertisement with academic models and concepts. They then evaluate advertising in relation to target groups (*Stimulate curiosity and wonder*). The pupils then produce a structured interview with the advertiser/business (*Work consciously with uncertainty*).

Pupils then develop different advertisements/logos for the analysed businesses (Work with experiment-based activities, Work with value generating / changing activities). An exhibition is arranged, where the pupils present their results and products for a professional, who evaluates the products and gives them feedback (Interaction between the individual, school and the surrounding world). The process ends with a joint discussion and reflection over the process, contact with the surrounding world, and the academic learning (Invite reflection in relation to imagination and creativity).



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