

Appendix 5: Greenland

Introduction

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

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

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

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

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

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

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

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

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

Methodology and Structure of the report

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

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

The three levels are:

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

The report is divided into chapters according to the three levels and the Micro Grant. As a background for the mapping, demographic data provided by Nordregio concerning population changes and employment situation in Greenland is shortly discussed.¹²⁹

Definitions of entrepreneurship and entrepreneurship education

In Autumn 2010, the Danish Foundation for Entrepreneurship formulated a definition of entrepreneurship with the aim of applying and incorporating it in a variety of educational contexts and of accommodating both a commercial entrepreneurial approach and an educational and competence-based approach. In 2013, a definition of entrepreneurship education was formulated.¹³⁰

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

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

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

Macro level

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

- Pre-strategy (based on individual initiative).
- Initial Strategy Development.

¹²⁹ <http://www.nordregio.se/> Nordregio is a leading Nordic research institute within the broad fields of regional development and urban planning.

¹³⁰ See www.ffe-ye.dk A Taxonomy of Entrepreneurship Education: Perspectives on goals, teaching and evaluation, 2015 for a detailed discussion of this.

- Strategy Implementation, Consolidation & Development of Practice.
- Mainstreaming.

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

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

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

Meso level

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

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

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

The Danish Foundation for Entrepreneurship has not previously conducted a mapping at the meso level. As a continuation of the Progression Model for Entrepreneurship Education Ecosystems in Europe, the Danish Foundation for Entrepreneurship therefore developed the questionnaire specifically for the mapping of the meso level in this project. "A Quality Standard for Enterprise Education", developed by Centre for Education and Industry, University of Warwick, and "HEInnovate", a self-assessment tool for entrepreneurial higher education institutions, initiated by the European Commission, DG Education and Culture and the OECD LEED forum,³³¹ both served as inspiration for elaborating the questionnaire for the Nordic Entrepreneurship Islands project. The questionnaire is also framed by the definitions of entrepreneurship and entrepreneurship education, which were formulated by the Danish Foundation for Entrepreneurship.

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

Micro level

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

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

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

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

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

³³¹ <https://heinnovate.eu/>

of Entrepreneurship education” for further elaboration on the entrepreneurial dimensions.¹³²

The four entrepreneurial dimensions examined are:

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

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

For the purpose of mapping entrepreneurship education at the tertiary education level, data were collected in the form of descriptions of courses within innovation and entrepreneurship and the number of students following these courses during the academic year 2015–16. To examine how and to which extent entrepreneurship and innovation are implemented at the tertiary level, “Stjernemodellen” is used as a tool for the categorisation of courses (see Appendix B for further details).¹³³

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

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

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

Micro Grants and the innovation ecosystem on the islands

All islands in the pilot project have had the opportunity to award a Micro Grant to a promising student start-up. The Micro Grant is a small financial aid of DKK 25,000 that allows the student start-up to take their business further. A small case written about

¹³² <http://eng.ffe-ye.dk/media/555477/taksonomi-eng-2.pdf>

¹³³ “Stjernemodellen” will henceforth be referred to as the Star Model.

the local start-up and Micro Grant recipient documents the effects, needs and possibilities for young people on the island after receiving a Micro Grant.

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

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

Limitations of the methodology

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

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

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

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

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

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

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

Demographics

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

Population and age structure

According to Nordregio's data (see Appendix C), the development in the period 2009–2015 was a *decrease* by 7.9% in the population aged 0–24 and an *increase* by 4.6% in the population aged 25+. Surprisingly, data also show that the youth dependency is much higher than the old age dependency rate, which is unusual compared to the other islands in this mapping, where the reverse situation is mostly the case. In Greenland, the youth dependency in the years 2009 and 2013 is 32.9% and 29.8%, respectively, whereas the old age dependency rate in the same years is 9.3% and 10.7%, respectively. During this period, the youth dependency rate fell (by 9.4%), while the old age dependency rate rose (by 15.2%).

Labour market

Of all islands presented in this mapping, Greenland has the lowest overall employment rate and in the period 2009–2013, the rate decreased from 65% to 63%. Greenland moreover has the highest unemployment rate of the seven islands, almost 10% in 2013, and a relative high youth unemployment rate (17%) in 2013. Unemployment is typically a bigger problem in villages and settlements than in cities in Greenland, but especially so for the very young people under 25 years of age.¹³⁴

Education level

It adds to the challenges in Greenland that the share of the population with a tertiary education is no more than approx. 14%, which is by far the lowest rate of all islands presented in this mapping. The unemployment rates for those with a higher education in Greenland is very low (0.8%), and for those in all other educational categories the unemployment rates are lower than the country average of 10.3%. According to Greenland Statistics, more than half of employed persons have only primary education. This number is however decreasing, while the number of employed persons in all other educational categories is increasing.¹³⁵

Macro level

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

The private sector, e.g. private companies and organisations, is also essential, because they represent the labour market. The collaboration between educational

¹³⁴ <http://www.stat.gl/dialog/main.asp?lang=da&sc=AR&version=201603>

¹³⁵ <http://www.stat.gl/dialog/main.asp?lang=da&version=201518&sc=AR&subthemecode=02&colcode=0>

institutions and the private sector helps shape efforts in the area and, again, influences policy makers to provide policies that will sustain these efforts.

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

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

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

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

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

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

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

Developing the national strategy framework

Greenland is very new in the entrepreneurship education area and has no national strategy for entrepreneurship education, no goals, ministry involvement or national definition. The island has just recently started focusing on entrepreneurship education with Greenland Business as the primary actor. Greenland Business is an organisation where one of the purposes is to function as the national business council. Moreover, Greenland Business functions as a consultancy service for companies and business people as well as for entrepreneurs /start-ups in Greenland. So far, they are the only national actor working directly with entrepreneurship education, even though their primary focus is the business sector rather than the education sector. Until now, there has not been a national budget allocated to entrepreneurship education in Greenland. However, during this pilot project, a proposal was submitted and in December 2016 during the second processing of the Greenlandic Finance Act 2017, EUR 175,000 was allocated to the establishment of a regional office in Greenland under the auspices of the Danish Foundation for Entrepreneurship. This will help to set things in motion in Greenland when it comes to entrepreneurship education.

The role of local and regional authorities

At the moment Greenland Business is the primary actor tapping in to entrepreneurship education through the only initiative directed specifically at young entrepreneurs in Greenland – the 3 year RYE connect project; an online training programme for young entrepreneurs. Actors like Arctic Circle Business and the regional Sermersooq Business Council offer guidance and advice to start-ups, however, not specifically to student start-ups. There have been other initiatives, which have, however, been closed again due to lack of interest and funds. Private actors who support entrepreneurs are also present in Greenland, however, in smaller scale. They include Brugseni which offers guidance and advice to entrepreneurs who want to start up a Greenlandic production, banks that offer advice to start-ups, and a few experienced entrepreneurs who act as guides for coming entrepreneurs.

Implementing entrepreneurship education

There is generally no provision of entrepreneurship education in educational institutions in Greenland, but data at the meso level show that a few educational institutions on upper secondary level offer courses in innovation and entrepreneurship.

Teacher education and training

There is no teacher training in entrepreneurship education in Greenland.

Engaging with businesses and private associations and organisations

The private sector's involvement in entrepreneurship education is relatively low in Greenland at a national level.

Meso level

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

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

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

Strategy & Form

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

Four out of 16 educational institutions in Greenland have participated in the survey. Niuernermik Ilinniarfik, Nuuk, Ilisimatusarfik, GUX-Nuuk and GUX Sisimiut. One of these schools (GUX-Nuuk) has a strategy for entrepreneurship education.

The schools' plan and goals for development of entrepreneurship education

The institution with a strategy also has a precise plan for the implementation of the entrepreneurship strategy and has created a common frame of understanding of entrepreneurship education and how to practise this form of teaching. However, the plan has not been communicated clearly across the educational institution (to teachers, students and other stakeholders such as cooperating partners outside the institution). It also appears that there is no plan for following up and revising the entrepreneurship strategy on a continuous basis.

Management of the institution with a strategy has set only one concrete target and goal for development of entrepreneurship education. It is the development of curriculum in order that it contains learning objectives and competences for innovation and entrepreneurship.

This means that they have *not* set targets and goals for:

- How innovation and entrepreneurship shall be part of the teaching (e.g. as special courses and/or integrated in every-day teaching).
- The establishment of project weeks in innovation & entrepreneurship.
- The cooperation between teachers and local businesses, public institutions and organizations in relation with entrepreneurship education.
- Teaching in entrepreneurship (learning objectives).
- Continuing education of teachers in teaching innovation & entrepreneurship.

No strategy but entrepreneurship activities

Although three out of the four institutions in the survey in Greenland have no entrepreneurship strategy, two of the institutions without a strategy state that entrepreneurship teaching and/or activities related to entrepreneurship are nevertheless taking place at their educational institution. This includes students being taught in innovation (how to start a business, or being taught in new and innovative ways), and students working with projects that bring them in contact with the surrounding society. One of the institutions also has collaboration with the local business industry concerning students' education and further working life/career.

Importance of strategy and education in entrepreneurship

Management from the four institutions in Greenland agree to the notion that education in entrepreneurship is relevant for their students. They also agree that it is, to some extent, important for the institution to formulate a strategy for entrepreneurship. On a scale from 1 to 5 the data from Greenland show a mean of 3.5 concerning the statement "It is important that my educational institution formulates a strategy for education in

innovation & entrepreneurship".¹³⁶ A higher mean (4.25) is found concerning the statement "It is relevant for all students at my educational institution to be taught innovation and entrepreneurship".

Importance of goals for entrepreneurship teaching

The institution with a strategy agrees that goals for education in entrepreneurship should be set to strengthen students' interest in their further education and career, and to upgrade teachers' skills within entrepreneurship teaching. Management also believes that the goals should be set to strengthen the cooperation between the educational institution and the local society. The latter purpose is something, that all four participating institutions agree to. Management from the institution with a strategy explains:

"Innovation and entrepreneurship play an important role at our institution but as part of the teachers' didactical approach to their subjects. We do not lecture in I&E separately but we have introduced the subject at specifically arranged theme-based days and other events for teachers and students."

Some but not all of the institutions without a strategy also agree that goals should be set for the following purposes:

- Strengthen students' interest in becoming an entrepreneur/starting a new business.
- Prepare students better for working life.
- Live up to new national/regional policy on the area of entrepreneurship education.
- Strengthen the profiling and promotion of my educational institution.
- Boost the development of the local area, for instance by contributing to new businesses through the skill development of young people.

External network

In Greenland, the institution with a strategy gives their students the possibility for making contact with the institution's external network through:

- Guest lectures given by local business people, entrepreneurs, or others.
- Workshops in cooperation with external partners.
- Subject-/project weeks or -days in cooperation with external partners.

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

Two of the institutions without a strategy give the same possibility to their students. In addition, they give their students the possibility for contacting the institution's external network through exchange/trainee service in local businesses/organisations. One institution also organises visits to companies.

None of the institutions in Greenland give their students the possibility for making contact with the institution's external network through competitions at the educational institution, where external contacts function as judges.

Involvement from school governing body and local businesses

The degree of involvement from the governing body of the institution and the local business as a resource in the work with entrepreneurship education is slightly different at the four institutions. On a scale from 1 to 5 the institution with a strategy has a low degree of involvement from both the governing body of the institution and the local businesses as a resource in the work with entrepreneurship education.¹³⁷ The institutions without a strategy have an involvement which is between "to a small extent" and "to some extent" from the governing body of the institution and from local businesses. Interestingly enough, the institutions without a strategy have slightly more involvement from both governing body of the institution and from local businesses.

Organisation

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

Resources, structure and expectations

One of the institutions with no strategy has no resources at all earmarked to entrepreneurship education. The rest of the participating institutions in Greenland do have resources earmarked to entrepreneurship but there are differences as to what and how much. The institution with a strategy has earmarked both time and other resources such as staff with knowledge and expertise on the area. Also, a coordinator for entrepreneurship teaching, who has the full backing and practical support from the management and who is part of the management, has been appointed by the institution with a strategy. Time is also something, which two of the institutions with no strategy have stated as a resource. One of them has also stated that financial resources are earmarked to this area and other resources such as staff with knowledge and expertise on the area. None of the institutions with no strategy have a coordinator for entrepreneurship.

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

One of the institutions in the survey (one without a strategy) states that they have e.g. several requirements to the teachers and that they communicate their expectations to the teachers. Thus, entrepreneurship teaching is a part of the timetables and the annual teaching plans. And time is allocated to entrepreneurship teaching courses of a longer duration in the teaching plans, for instance project weeks, optional subjects, etc. They also require from the teachers that they describe in their annual plans how they integrate entrepreneurship in other subjects and that they include entrepreneurial learning objectives in their daily teaching and in the activities they set up with their students. The institution has also communicated their expectations to the teachers concerning where, when and how entrepreneurship teaching should be integrated at the educational institution.

Like most (82%) of the institutions in the survey (all islands), entrepreneurship teaching is a part of the timetables and the annual teaching plans at three out of the four participating institutions in Greenland, including the one with a strategy. This institution also uses a feedback system to ensure that the teachers follow up on the pedagogical goals and objectives. None of the other institutions have such a system. However, the institution with a strategy has not communicated to the teachers what their expectations are concerning where, when and how entrepreneurship teaching should be integrated at the educational institution.

Management at all four institutions in the survey support dialogue and corporation between teachers from different disciplines through cross-curricular teaching and/or interdisciplinary project groups. The institution with a strategy along with one of the institutions without a strategy supports the dialogue through dialogue and co-decision between teachers and students. One of the institutions without a strategy also supports the dialogue through common facilities across the educational institution's subdivisions.

Competence

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

Plan for teacher competence development

When it comes to a plan for teacher competence development, there is no apparent difference between the institution with a strategy and two of the institutions without a strategy. At all three institutions, the plan for competence development and knowledge sharing within entrepreneurship education manifests itself through knowledge sharing about entrepreneurship teaching and through special networks. At none of the institutions competence is development ensured through the continuing

education of teachers in entrepreneurship teaching, and their teachers do not have a cross-curricular cooperation within the subject of entrepreneurship. In one of the educational institutions, management presently has no plan at all for teacher competence development in entrepreneurship education.

Experimenting with teaching forms

All the participating institutions in Greenland allow their teachers to experiment with teaching forms. The institution with a strategy allows the teachers to experiment with teaching forms in general through project work / feature weeks. Two of the institutions without a strategy also allow the teachers to experiment through project work / feature weeks as well as through cross-curricular feature periods. One of the no-strategy institutions also allows this through cooperation with businesses.

Cooperation with surrounding society

All four institutions are involved in collaboration and knowledge sharing with the surrounding society/local area through institutions within the public sector and other knowledge organisations. Two of the institutions with no strategy are also involved through established business/industry and newly started businesses /entrepreneurs.

Extra-curricular activities

Extra-curricular activities to strengthen the entrepreneurial competences and mind-set of students are almost non-existent at the institutions in Greenland. Three of them do not at present offer such activities at all. One of the institutions with no strategy, however offers "other forms of advice and guidance for student start-ups and", they arrange business plan competitions and organize networks between students and entrepreneurs/business industry. This institution also mentions that they are working on establishing an incubator.

Practice

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

In practice, three out of four institutions have access to materials and teachers' aids, which can support their teaching in innovation and entrepreneurship, including the institution with a strategy. The institution with a strategy also has experience with actual teaching forms and programmes within entrepreneurship. In addition, the institution with a strategy also continuously validates and revises the learning objectives for entrepreneurship teaching with a view to updating its teaching programmes. None of the institutions without a strategy do this. However, two of them develop the curriculum in

co-operation with external stakeholders in order to get input concerning useful competences in future. None of the participating institutions in Greenland measure the impact of the entrepreneurship teaching before, during and after the course/teaching. One of the recipients describes their approach in this way:

“Our teachers are expected to think innovatively, which I am also convinced they do, but we are goal-oriented when it comes to entrepreneurship education.”

Micro level

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

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

This chapter maps entrepreneurship education from the perspective of teachers in Vocational/VET and tertiary level education on different parameters. Upper secondary education is not a part of the survey due to insufficient answers.

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

Vocational/VET

At vocational/VET level data have been collected by means of a questionnaire directed at the teachers. The purpose of the survey is to map the number of pupils in

vocational/VET who in the school year 2015/2016 participated in education or activities leading to increased competence levels in innovation and/or entrepreneurship.

The questionnaire is divided into four main categories.

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

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

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

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

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

The result is comprised of answers from 6 teachers with a total of 51 pupils. Overall, 23 pupils at vocational/VET level in Greenland have encountered entrepreneurship education in the 2015/2016 school year. That is the equivalent of 0.9% of the 2,446 pupils in vocational/VET and upper secondary level in Greenland.

In comparison, a mapping in the 2014/15 school year shows that 36.9% of pupils in upper secondary education and vocational/VET in Denmark participated in entrepreneurship education.¹³⁸ However, this percentage includes pupils and students

¹³⁸ <http://www.ffe-ye.dk/media/783586/samlet-notat-omkring-kortlaegningstal-2014-15.pdf>

receiving teaching materials published by the Danish Foundation for Entrepreneurship (hand-outs as well as downloads) in Company Programme as well as in particular educational activities such as regional projects, supported projects, competitions etc.

The results in Table 1 show that the teachers only experience a clear policy on innovation and entrepreneurship to a lesser degree. The scores of 25% are both below the average of 33% and 32%, respectively.

Table 1: The results for vocational/VET from Greenland

Subject	Variable	Greenland
Basic information	Policy on innovation	25
	Policy on entrepreneurship	25
Teaching	Innovation in subject/course	38
	Innovation as a clear topic in practical training/apprenticeship	33
	Innovation as a clear topic in apprenticeship test	23
	Entrepreneurship in subject/course	35
	Entrepreneurship as a clear topic in practical training/apprenticeship	31
	Entrepreneurship as a clear topic in apprenticeship test	20
Entrepreneurship	Innovation, percentage	63
	Start-up of business / Entrepreneurship, percentage	25
	Other, percentage	38
Entrepreneurship education	Number of students receiving entrepreneurship education	23

Note: The result is comprised of answers from 6 teachers with a total of 8 classes and 51 pupils.

With regard to the teaching situation, the teachers find that the pupils encounter innovation and entrepreneurship in class instruction as well as their practical training and internships. In addition, a relatively large part of the pupils encounter innovation and entrepreneurship as a clear and obvious topic during their apprenticeship tests; the score here is 23 and 20 compared to an average of 11 for both areas.

According to the teachers in this study, more than 60% of the classes have participated in feature weeks, camps, projects or the like focusing on innovation, whereas 25% of classes have participated in similar feature weeks, camps etc. with a focus on business start-up and entrepreneurship. Further, 38% of pupils have participated in other innovation or entrepreneurship programmes.

Tertiary education

For the purpose of mapping entrepreneurship education at the tertiary education level, the islands were asked to send course descriptions of courses within innovation and entrepreneurship or courses that resemble this kind of teaching at this level along with

the number of students partaking in these courses during the academic year 2015–16. The received course descriptions were then screened on the basis of the categories in the Star Model – a model for identifying entrepreneurship courses.

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

Greenland has provided data about two educations at the tertiary level: Journalism and an Academy Profession Degree in Service, Hospitality and Tourism Management, "Serviceøkonom". The description of Journalism mentions idea development and creative thinking, but does not emphasise entrepreneurship or innovation in any way and is therefore not categorised as entrepreneurship education.

The description of "Serviceøkonom" (Academy Profession Degree in Service, Hospitality and Tourism Management) is very brief, but the general subject "Strategy and Marketing" includes strategic planning, marketing, innovation and quality management. This subject was taught to 39 students during 2015–16. Two of the students have specialised in Marketing and innovation where they have learned to elaborate and interpret analyses concerning marketing channels and campaigns in tourism as well as development of tourism and facilities.

Greenland has a total of 834 students in higher education. The 39 students participating in entrepreneurship education at the tertiary education level thus correspond to 4.7% of the total number of students at the tertiary education level. In comparison, the percentage of Danish tertiary level students who participated in entrepreneurship education was 13.7% in 2014–15. The percentage of Danish tertiary level student who participated in entrepreneurship education in 2015–16 is 15.8%.

Micro Grant

Since 2011, the Danish Foundation for Entrepreneurship has awarded Micro Grants to students at upper secondary and tertiary level with entrepreneurial ambitions. Initially the Micro Grants initiative was a pilot project but, since 2014, the Micro Grant initiative has taken the form of a larger programme. The Micro Grant should be viewed as an extra-curricular initiative and thus as a continuation of entrepreneurial education and the competences which the students obtain through their education. The objectives of

the Micro Grant Initiative are to enhance growth and employment. By supporting student start-ups, the long-term objective is to create growth companies that can contribute with more jobs, export incomes and societal growth. On a yearly basis, approx. 250 applications are submitted (corresponding to approx. 1,000 students) in Denmark, and approx. 65% of them have participated in entrepreneurship education. 70 grants (DKK 2.5 million) are handed out on a yearly basis.

Analysis shows that the Micro Grant Initiative has a catalytic effect and contributes to enhancing employment in Denmark.¹³⁹ Only 4–12 months after receiving a Micro Grant 50 grant recipients created the equivalent of 79 full-time positions in Denmark. Put in another way: For every million invested more than 40 full-time positions have been created in the period. Micro Grant recipients also actively seek new capital after receiving a grant. Two out of three grant recipients have had contact with private investors after receiving the Micro Grant. Nine grant recipients have achieved growth capital (up to DKK 2.3 million) within 4–12 months. None of the control group achieved further growth capital in the period.

In Greenland there are 12 upper secondary educational institutions and 4 tertiary educational institutions. The total number of students in the school year 2015–16 is 3,280. At present, there are no funds earmarked for student start-ups in Greenland.

During the project trial granting Micro Grants of DKK 25,000 in Greenland, one application from student start-ups was received. Normally, a student start-up is comprised of 2 to 6 pupils or students. The team that received the grant is comprised of students who have all completed an innovation course during their upper secondary education and who have, on multiple occasions, participated in Greenland Business' Start-up Greenland entrepreneur workshops. The Micro Grant was marketed through Facebook, the local press, through e-mails sent to teachers and principals as well as a variety of news platforms.

Effects

After careful consideration, the student start-up decided not to use the Micro Grant, and thus it is not possible to ascertain the effects of the grant. However, it is obvious that the student start-up has gained experience throughout the process. As such, the project manager says:

¹³⁹ <http://www.ffe-ye.dk/media/699249/effektmaaling-mikrolegater-oktober-2015.pdf>

- It has given the entrepreneur courage to take action and contact suppliers, the Danish Ministry of Foreign Affairs' Trade Council etc.
- The project began as a project for the business school, but due to a the application for the Micro Grant among other things, it has become an actual business.
- Getting input from the panel on the presentation of the project has given the entrepreneur valuable knowledge and insight in how others see the potential and challenges of the project.
- The local, experienced entrepreneur who was part of the panel has offered to mentor the entrepreneur due to the Micro grant.
- The entrepreneur has been taken seriously in the bank since she could show that others supported her idea.
- The bank wants to realise the project regardless of her not using the Micro grant. Furthermore, they want to be part of the Greenlandic entrepreneurial environment in future.

Derivative effects for the island and local community as a consequence of the idea can be seen even though this idea did not create jobs or the like. However, the grant has created role models who may inspire other pupils, students and young people in general to believe in their own business ideas.

Needs and possibilities

The student start-up believes that there are plenty of opportunities to receive advice and support from the pre-existing arrangements. Yet, she says: "The companies owned by the Greenland Self-government Authorities is seen as a disadvantage for start-ups as it can be difficult to compete and it is in your best interest to stay on good terms with them"

Micro grant recipient

Arctic Fresh Supply

The idea is to sell fresh air in a bottle in China. The production costs and preliminary expenses are very low. The challenges are marketing and delivery.

Future entrepreneurial potential

Greenland experiences challenges with depopulation, especially of young people, low education levels, and high youth dependency. Even though there has been a decrease in youth dependency from 2009 to 2013 it is still much higher than the old age dependency. It adds to the challenges in Greenland that youth unemployment is relatively high, especially in villages and settlements. In addition, the employment rate in Greenland is low and has been decreasing. There are also geographical challenges in Greenland such as long distances within the island, where some villages and settlements are quite isolated, and the infrastructure is insufficient. Many people are employed within traditional and seasonal trades such as fishery and hunting, especially in the more secluded villages and settlements.

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

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

Forecasting entrepreneurship education and Micro Grants for Greenland

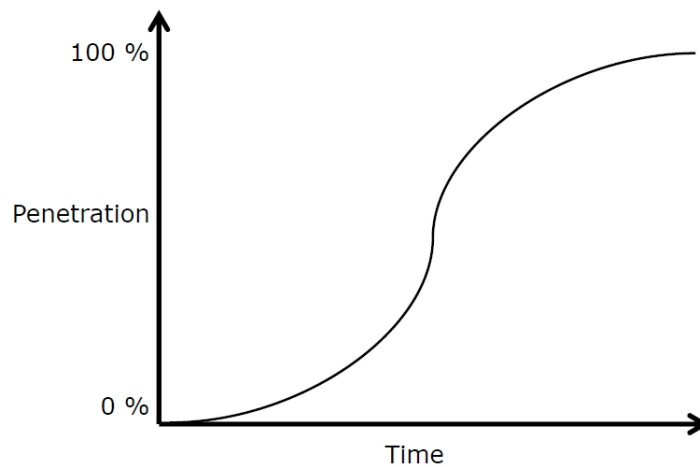
This pilot project is the first step in securing a solid foundation for implementing and anchoring future initiatives in Greenland. The quantitative objective is to ensure that young people at different educational levels will engage in entrepreneurship education at least once during their education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

Vital for this development is an informed forecast in terms of the possible percentage increase in students receiving entrepreneurship education, student start-

ups receiving a Micro Grant and the annual costs to obtain this increase over a period from 2015/2016 to 2020/2021.

When looking at the penetration rate for entrepreneurship education it develops according to an S-curve (Figure 1). Greenland is at the very beginning of the s-curve development of the S-curve.

Figure 1: S-curve for entrepreneurship education penetration rate



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

The forecast is based on:

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

And the forecast is based on the assumptions that:

- There are no changes from school year 2015/2016 to 2016/2017.
- The number of students is constant.

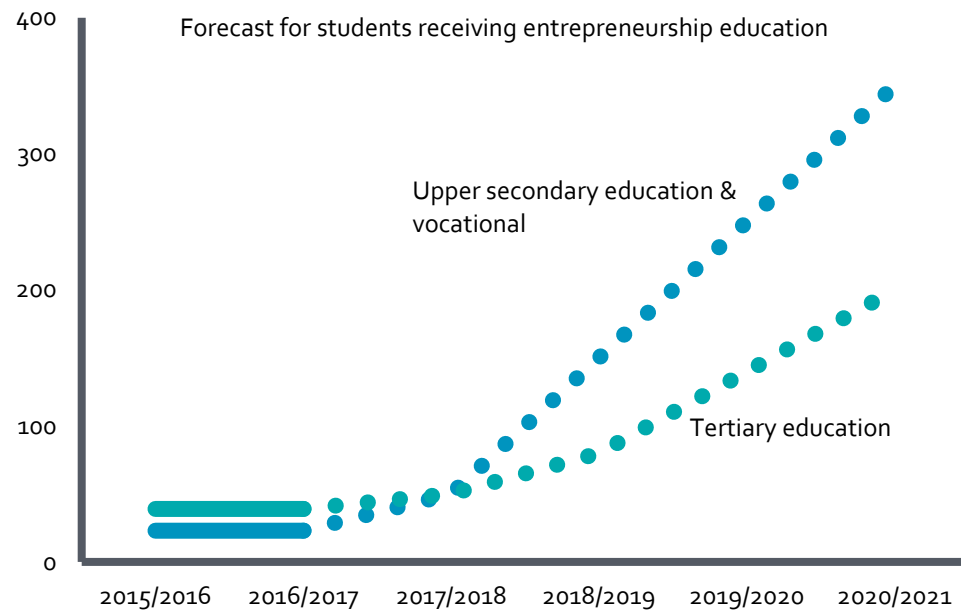
- A percentage increase in the number of students receiving entrepreneurship education which corresponds to the historic percentage increase in Denmark.
- Annual costs per student corresponding to the annual costs per student in Denmark (based on the average of total costs during the last three years).

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

Table 2: Forecast for Greenland

Forecast for entrepreneurship and micro grants until the school year 2020/2021						
	Greenland					
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Upper secondary education & vocational/VET						
Students in total	2,446	2,446	2,446	2,446	2,446	2,446
Students receiving entrepreneurship education, forecast	23	23	50	150	250	350
Share of students receiving entrepreneurship education, percentage	0.9%	0.9%	2.0%	6.1%	10.2%	14.3%
Tertiary education						
Students in total	834	834	834	834	834	834
Students receiving entrepreneurship education, forecast	39	39	50	80	140	200
Share of students receiving entrepreneurship education, percentage	4.7%	4.7%	6.0%	9.6%	16.8%	24.0%
Applicants receiving a grant						
Accepted applicants	1	1	2	3	4	5
Average annual costs (4 years) in DKK	DKK 1,900,000–2,400,000					

Figure 2: Forecast for Greenland



Recommendations for Greenland

- A national strategy and a cross-ministerial collaboration are necessary means to build a strong foundation for developing regional and island strategies. It is estimated that Greenland would profit immensely from sustained efforts in the entrepreneurship education area to meet some of the challenges mentioned above. Fortunately, the potential of entrepreneurship education is recognised in Greenland, and the first steps towards a national strategy have been initiated. However, the development of a national structure for entrepreneurship education is still in its very early stage. A higher political commitment to the area is required in order to create an overall national strategy for entrepreneurship education covering all education levels. Hence it is recommended to take the entrepreneurship education agenda to the political and strategic level to ensure a policy platform and priority of the area from top level and to start planning a structure for implementation at national level. Experiences from other countries show that the development of a national strategy for entrepreneurship education with a specification of clear responsibilities of key actors on both policy and implementation levels helps to gain an overview of the area, to systematise efforts and initiatives, and to benefit from synergies between the different initiatives. Such a strategy should moreover contain clear indicators and

evaluation measures for the strategy. A national strategy for entrepreneurship education should also set clear objectives for each education level, which would help to integrate entrepreneurship education more systematically at all levels and in all types of education, as well as contain measures for teacher training.

- A national operator/ responsible organisation is important to secure implementation and make the link between political level and the educational sector. This also helps to avoid ineffective parallel initiatives. In December 2016 during the second processing of the Greenlandic Finance Act 2017 it was decided to establish a regional office in Greenland under the auspices of the Danish Foundation for Entrepreneurship.
- A specifically dedicated budget for development and activities is necessary. There have been no resources for entrepreneurship education and no or limited resources for student entrepreneurs in Greenland until now. However, during this pilot project, a proposal was submitted and in December 2016 during the second processing of the Greenlandic Finance Act 2017, EUR 175,000 was allocated to entrepreneurship education. Financial resources should be allocated both at national and local level (on the island). This should be a collaborative effort between public and private sector.
- Strong stakeholder relations are essential. Private sector, public sector and the educational institutions should cooperate when implementing the national and regional strategies. This could take form as a cross-sector board in a national/regional organisation. The board of the regional FFE office in Greenland will entail members from educational, public and private sector.
- Promote entrepreneurship and entrepreneurship education. An important part of the efforts at national level is to communicate broadly the focus on, and goals for, entrepreneurship education to all important stakeholders in the Greenlandic society; educational institutions, teachers, students, parents as well as private and public sectors and local and regional authorities. The acceptance and willingness to embrace entrepreneurship education as a development tool for Greenland is essential. Entrepreneurial role models with differences in gender, industries, size of start-up etc. are key players in developing this cultural acceptance.
- Support and collaboration with schools and educational institutions on all levels. Danish research shows that in order to achieve the greatest effects entrepreneurship education must be differentiated on the respective levels of education and must be provided to pupils as early as possible during their education. Entrepreneurship in higher education is the most effective way to foster long-run student start-ups.
- Collecting data to secure knowledge on the development in penetration of entrepreneurship education should not be underestimated. Mapping entrepreneurship education and subsequently compiling impact studies is vital for support from ministries and private sector.

- Involvement from school management and building strategies at education institution level is essential. School management provides the very important link between a national/regional strategy level and implementation level in the form of teachers who teach entrepreneurial skills to pupils and students. Contributing to a (new) ideal of education where students learn to act in an entrepreneurial and innovative way is not only a pedagogical and didactical exercise, it is also a managerial and organisational practice.
- Communicating the educational institutions' entrepreneurship strategy to all stakeholders both internally (teachers and students) and externally to collaborating partners outside the institution is essential for the strategy to have any impact on the penetration rate for entrepreneurship education on the island. What is needed is an educational focus on entrepreneurship as a viable career path and entrepreneurship education in general.
- A plan and resources for providing and ensuring the teachers the necessary competences in the area are necessary elements from the beginning. There are no resources for entrepreneurship teachers' competence development (e.g. further education in entrepreneurship teaching and networks) in Greenland. Teacher competence development should be of special interest to the educational system in Greenland, especially through the continuing education of teachers in entrepreneurship teaching. Primarily because the island is new to the area but also because data from the survey on the meso level show that competence development and knowledge sharing within entrepreneurship education is not receiving particular focus at the moment.
- Greenland will, through the soon to be established region, have access to Junior Achievement programmes and country specific teaching programmes, all of which are tested and well-functioning entrepreneurship teaching programmes. Studies show that JA programmes subsequently create significantly more entrepreneurs and higher income and they have a positive impact on the pupils' motivation to study, their school engagement and their academic confidence and they have positive impact on the primary school pupils' grades.^{140, 141, 142}
- Extra-curricular entrepreneurship activities such as; incubators, business plan competitions and advice and guidance for student start-ups could be a supplement to the curricular teaching and thus function as a job creator. This is particularly relevant for educational institutions at tertiary level. The delegation from Greenland mentioned Skylab on DTU as a possible inspiration to these activities at the conference in Copenhagen in November 2016.

¹⁴⁰ Elert, Andersson & Wennberg (2015) developed a propensity score matching on three cohorts of Company Programme pupils, who had finished their training 11 years earlier. 10,103 CP- pupils were matched with 214,735 non CP-pupils.

¹⁴¹ Johansen (2008) conducted a survey on 1,400 9th grade pupils and 1,700 VET pupils.

¹⁴² Johansen and Schanke (2014) conducted a survey on 1880 secondary pupils and 1160 primary school pupils who participated in Junior Achievement's programmes.

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

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Appendix A. A Progression Model for Entrepreneurship Education Ecosystems in Europe¹⁴³

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

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
National ¹⁴⁴ strategy, frameworks	No formal strategy in place. Entrepreneurship education covered – if at all – in disparate policy documents. Little or no effective inter-ministerial cooperation. No or rudimentary platforms for dialogue with relevant social partners.	Development and promulgation of strategy, with identification and agreement of entrepreneurship education objectives and of competences, roles and responsibilities of key players. Mechanisms being established for cooperation between key ministries. Platforms being established to include wider stakeholders. Vision (and intended outcomes) in process of being determined, which may involve reconciling competing agendas within government and between public and private sectors etc. Mapping and analysis of entrepreneurship education. Good practice examples being identified. Collection of effective teaching methods and materials. Launching of communications campaigns to stimulate interest of business community. Awareness raising with teachers.	Specification of learning outcomes, objectives, indicators and targets. Methods being developed for assessing learning outcomes; and development of appropriate qualifications. Regular cooperation mechanisms being embedded at various levels of system, with relative roles and responsibilities of different stakeholders clearly defined and accepted. Development of funding streams: allocation of dedicated resources. Implementation support mechanisms being put in place. Resource banks of teaching materials available. Dissemination and broad-based application of the effective teaching methods identified. Research base being developed.	On-going monitoring and regular evaluation of entrepreneurship education in terms of quality of activity and learning outcomes being achieved. Implementation support mechanisms part of everyday teacher and school development; entrepreneurship education fully integrated into initial teacher training for every teacher. Continuous application and refinement of effective teaching methods. Robust funding mechanisms established.

¹⁴³ *Towards Greater Cooperation and Coherence in Entrepreneurship Education*, European Commission, 2010.

¹⁴⁴ Or regional strategy and frameworks depending on governance structures.

Stage	Pre-Strategy (based on individual initiative)	Initial Strategy Development	Strategy Implementation and Consolidation & Development of Practice	Mainstreaming
Indicative timeframe	Starting position	0–2 years	c. 2–5 years	c. 5 years +
Schools	Penetration of entrepreneurship education highly variable; much ad hoc activity. Tends to be an “add-on” to the mainstream curriculum with emphasis on “entrepreneurship” as running a business. Tends to be focused in secondary education and in specific subjects. No or sporadic formal assessment of learning outcomes. Use of (unaccredited) prizes and awards to recognize achievement.	Role of schools articulated in strategy – recognition of central role. Entrepreneurship education starting to be developed across the curriculum as an embedded set of competences, not just as a separate subject. Development of entrepreneurship education beyond secondary level especially, e.g. at primary level: and school clustering.	Entrepreneurship education being made available in every school, embedded within the curriculum as part of the overall teaching concept and also as a separate subject. Progressive establishment of partnerships with businesses in all schools (e.g. through pilots).	High quality entrepreneurship education being made available to every student in every phase/type of education. Clear linkages established between different phases/types of education. Progressive development of wider linkages as part of development of local entrepreneurship ecosystem. Learning outcomes assessed.
Teachers	Strong reliance on individual teacher’s enthusiasm. Entrepreneurship education often delivered outside core school hours as extra-curricular activity. Teacher training very limited. No or little in-service training.	Role of teachers articulated in strategy – recognition of central role. Good practice examples being identified: teacher training; teaching materials.	Teachers making increasing use of national/regional and local support mechanisms (e.g. training or exchange platforms). Use of pilots to spread good practice and increase numbers of teachers engaging with entrepreneurship education agenda. Initial or in-service training on entrepreneurship made available to all interested teachers.	All teachers receiving entrepreneurship education as an integral part of their initial and their continuous in-service teacher training. All teachers teaching entrepreneurship education as integral part of the curriculum.
Regional and local authorities ¹⁴⁵	Patchy involvement: some authorities involved in development of local partnerships; others not involved at all.	(Potential) role of local authorities considered in strategy development process. Development of good practice examples of school clusters and education-business partnerships at local level.	Local authorities playing an increasingly important role in school cluster development and education-business links.	Full participation of local authorities in organising entrepreneurship education. Possible establishment of statutory requirement for organisation of partnerships based on municipality geography.
Businesses, private associations and organisations	Involvement of businesses tends to be patchy, unstructured, and often reliant on individual initiative by parents. Use of programmes developed by private organisations (e.g. JA) tends to be ad hoc on individual school basis ... but plays vital role in providing essential experiential and “hands-on” learning.	Key role of businesses and private organisations articulated in strategy. Businesses (increasingly) involved through social partner organisations in policy development and in delivery of entrepreneurship education in schools.	Consideration of potential to upscale the role played by businesses and private organisations in entrepreneurship education: extension and deepening of that role. Businesses being more systematically engaged at local level – movement away from ad hoc approaches to establishment of mechanisms for brokerage and establishment of long-term, sustainable relationships with schools.	Full participation of businesses in entrepreneurship education in all schools/universities. Businesses support for entrepreneurship education at all levels increasingly delivered through structured channels, e.g. education-business partnerships, organised brokerage.

¹⁴⁵ The role of regional and local authorities depends on the distribution of responsibilities between tiers of government.

Figure 3: Two young students explaining their idea concerning safety in traffic at the regional Edison competition



Photo: Rasmus Degnbol.

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

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

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

Figure 1 below illustrates the overall structure of “the Star Model” which consists of two dimensions 1) Teaching design and 2) Phases in the entrepreneurial life cycle. The categories under Teaching design on the horizontal axis are divided into two main categories each of which describes the subject content and teaching approaches and methods, which together form a unifying concept for the pedagogics, didactics and methods which characterise the teaching or education. The categories on the vertical axis describe the phases in the entrepreneurial life cycle. To read more about the Star Model, see the report about examination forms, *Eksamensformer*, on the website of the Danish Foundation for Entrepreneurship.¹⁴⁶

¹⁴⁶ <http://www.ffe-ye.dk/videncenter/entreprenoerskabs-undervisning/eksamensformer>

Table 4: The Star Model

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

Appendix C. Demographic data on the seven islands

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

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

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

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

Source: National statistical institutes and Eurostat.

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

Unit	Employment rate*			Unemployment rate**			Youth unemployment rate***			Tertiary education****
	2009	2013	Change	2009	2013	Change	2009	2013	Change	2014
Norway	76.6	75.6	-1.3	3.2	3.5	9.4	9.2	8.6	-6.5	
Andøy	75.6	72.8	-3.7	2.8	4.8	71.4		12.7		26.6
Finland	68.4	68.4	0	8.4	8.4	0	21.5	19	-11.6	
Pargas	74.5	73.2	-1.7	4.9	4.6	-6.1		14.3		43.2
Denmark	75.1	72.3	-3.7	6.1	7.2	18.0	11.8	14.1	19.5	
Bornholm	68.8	69.3	0.7	8.9	8.9	0		19.7		23.7
Faroe Isl	88.1	90.8	3.1	4.8	3.9	-18.8		9.9		35.9
Greenland	64.9	63.3	-2.5	7.5 (2010)	9.7	29.3		17		14.4
Sweden	72.4	74.5	2.9	8.5	8.3	-2.4	25	23.7	-5.2	
Gotland	74	77.4	4.6	8	6	-25				31.1
Iceland	78.3	81.1	3.6	7.2	5.4	-25	16	13.6	-15	

Note: National statistical institutes and Eurostat.

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

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

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

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