Research on pedagogical entrepreneurship – a literature review based on studies from Finland, Iceland and Sweden

Michael Dal†, Janne Elo**, Eva Leffler***, Gudrun Svedberg**** & Mats Westerberg*****

Abstract
Strategies for entrepreneurship in the educational system are present not only in the Nordic countries, but also in the majority of other Western countries. Linked to these strategies different research efforts have been made. Although the research efforts have a common origin in supranational policies on entrepreneurship, there has been little research analysing the similarities and differences in how the topic is addressed by researchers in different countries. Being able to relate to both the policy and the available research in a nuanced way is important especially in the context of teacher education. The purpose of this article is to review the most recent research in pedagogical entrepreneurship from three countries: Finland, Iceland and Sweden. The aim is to discover whether the common phenomena of entrepreneurship in an educational context are approached differently in these three countries. The review of 21 articles in all, covering aim, method, concepts, references and results, draws a rather fragmented picture of the research. The main results are that the reviewed research was mostly qualitative and covered the entire spectrum from theoretical research to practice-oriented research. A variety of concepts were used. The analysis of the use of references uncovered a need to be more aware of including research from neighbouring regions. The research field seems to be quite lively and is still developing. However, it would benefit from a better dialogue between researchers in order to strengthen the contribution of Nordic research on pedagogical entrepreneurship.

Keywords: literature review, pedagogical entrepreneurship, Finland, Iceland, Sweden

Introduction
Today, strategies for entrepreneurship in an educational context are a global phenomenon that emanates from policy. Policy has thus been an important point of departure for research on entrepreneurship in a pedagogical context. The European Union, the Nordic Council, the OECD, UNESCO and the International Monetary Foundation are examples of different international players who use a rhetoric that

---

1Correspondence to: Michael Dal, School of Education, University of Iceland, Stakkahlí, IS-105 Reykjavík, Iceland. Email: michael@hi.is  
*School of Education, University of Iceland, Reykjavík, Iceland.  
**Faculty of Education and Welfare Studies, Åbo Akademi University, Åbo, Finland.  
***Department of Education, Umeå University, Umeå, Sweden.  
****Department of Applied Educational Science, Umeå University, Umeå, Sweden.  
*****Entrepreneurship and Innovation, Luleå University of Technology, Luleå, Sweden.  
©Authors. ISSN 2000-4508, pp. 159–182
implies entrepreneurship in educational contexts (Leffler, Svedberg and Botha 2010). As early as 1989, the OECD published the report *Towards an ‘Enterprising’ Culture: A Challenge for Education and Training* (OECD/CERI 1989). This report promoted enterprise education as an important part of education. Even if the business connotation is strong, the report can be understood as a starting point to a broader view on entrepreneurship. A broader view can also be found in early research (e.g. Gibb 1993) where enterprising education – especially among young people in primary school – is understood as developing enterprising skills and behaviours that makes individuals more self-reliant and better equipped to handle life.

In the late 1990s, the OECD published the epoch-making book *Fostering Entrepreneurship* (1998). It examines experiences with entrepreneurship in different fields, as well as addressing the increasingly important roles played by local and regional authorities and the emergence of entrepreneurship in transition economies. The OECD maintains its previously declared position that fostering entrepreneurship is not only a major economic imperative but also an urgent challenge that must be met to reconcile the goals of economic growth and social cohesion.

Since the publishing of these two reports, the educational systems in different countries have ended up focusing on political and economic initiatives attached to entrepreneurship. In the so-called Lisbon Strategy, entrepreneurship was described as an initial skill that is connected to education and lifelong learning. The successor strategy, called “Europe 2020,” gave priority to intelligent and sustainable growth for everybody and put forward the necessity of integrating creativity, innovation and entrepreneurship into school curricula (European Commission 2010).

Mahieu (2006) pointed out how global and societal driving forces and paradigms influence attitudes to teaching and learning. In the 1990s the pedagogical notions “learning to learn” and “learning by doing” got more attention, and by the end of the 1990s “shared learning” and “entrepreneurial learning” made their entrance. Different viewpoints have been offered on entrepreneurship in education. From the start, most researchers investigating the phenomenon had their roots in business research and primarily examined venture creation or business development. Thus pedagogical insights were regarded as context-specific (Pittaway and Cope 2007). The writing of Gibb (1993) also had its roots in developing and creating (small) businesses, but at the same time he was the forerunner for a broader perspective, emphasising the development of generic competences. Pedagogic research in Finland, Iceland and Sweden on entrepreneurship in a school context has mainly focused on how teachers understand and interpret the phenomenon (Backström-Widjeskog 2008; Gunnarsdóttir 2001; Leffler 2006). The research shows that there is a lack of common definition and that teachers are struggling with defining entrepreneurship and its contribution to teaching and learning. The increase of research from an educational perspective has broadened the field and invigorated
the dialogue about entrepreneurship in the educational system, including a strong pedagogical facet (Jones and Iredale 2010; Moberg 2014).

As the term ‘entrepreneurship’ originally derives from the economic sector, it is necessary to clarify its meaning in a pedagogical context. A narrow and traditional use of the term ‘entrepreneurship’ refers almost solely to business, including how people learn to start and operate an enterprise. This kind of entrepreneurial learning was especially popular during the mid-80s in the United States. A separate – and much broader – approach to the term is connected to the human qualities and skills that make it possible for individuals within organisations and communities to act flexibly and creatively when meeting rapid social and economic changes (Erkkilä 2000). This broader understanding of the term focuses not primarily on acquiring knowledge about entrepreneurship, but rather on developing an entrepreneurial mindset in dealing with others. Interest in the pedagogical aspects of both the broad and narrow approaches has grown over time. A narrow approach to entrepreneurship has led to focusing on how to build the most effective entrepreneurship programmes (mainly at universities, but also in upper-secondary schools). Over the years, different terms such as “entrepreneurship education,” “entrepreneurial learning” and “enterprise learning” have been used to describe the link between entrepreneurship and pedagogical practices (Skolverket 2015). In order to harmonise and focus on a broad definition, we choose to use the notion “pedagogical entrepreneurship” in this paper. By using this term, we also include pedagogical entrepreneurship that is concerned with how to foster an entrepreneurial mindset. Research reports and reviews (Sjøvoll 2011; Skolverket 2015) discuss and show how terms such as ‘creativity’ and ‘innovation’ are closely associated with the term “pedagogical entrepreneurship.” These reports and reviews examine, among other things, how pedagogical entrepreneurship has been introduced in policy documents and school curricula and how it has been implemented in the educational system. This perception of the term “pedagogical entrepreneurship” refers to a general definition that includes competences and qualities concerning problem solving, creativity, innovation, the planning of a study and/or work and students’ ability to work in teams. Thus, pedagogical entrepreneurship has been identified as important for school development and as an appropriate approach for improving teaching and learning methods where the focus is on developing individual skills as well as competences for working in teams in order to construct knowledge in a rapidly changing society. In this understanding, pedagogical entrepreneurship focuses on innovation, creativity and being an integrated part of the paradigm of social constructivism (Sjøvoll 2011; Skolverket 2015).

**Aim**

At present, entrepreneurship is on the educational agenda in many Western countries and can therefore be regarded as a common educational concern. As a consequence,
teachers and teacher educators, as well as researchers in different countries, have to relate to the phenomenon and interpret it in an educationally meaningful way. Key parts in this process of interpretation, besides the national policies, are the different research efforts made on a national level. It is therefore of scientific value to examine how researchers in different countries approach the common phenomena of pedagogical entrepreneurship, in order to gain a better understanding of the possible differences and similarities in research approaches. This will produce a deeper understanding of the varying interpretations of pedagogical entrepreneurship and support the framing of the rather ambiguous concept in an educational setting. This is especially relevant in the context of teacher education, as it is expected to assist teacher students in giving “pedagogical entrepreneurship” meaning in the school context. The purpose of the present article is therefore to map recent research on pedagogical entrepreneurship in three countries, Finland, Iceland and Sweden, in order to gain insight into how the term has been approached and framed in recent research. To fulfil this aim, we map, analyse and discuss the contemporary research field, taking five review questions as our points of departure.

1. What aims are addressed?
2. What methods are used?
3. What concepts are used?
4. What references are used?
5. What are the main results?

Methods

In Finnish, Icelandic and Swedish research on pedagogical entrepreneurship, reference is often made to Anglo-Saxon research (Cope 2005; Gibb 1993; Shacklock, Hattam and Smyth 2000) and less often to studies from neighbouring countries, despite many similarities between the school culture and school systems in the Nordic countries. One explanation may be language barriers, but it is hardly the full explanation, as research – at least partly – is published in international journals. The present study was performed as a collaboration between researchers from each of the three countries studied. We considered expanding the research to include contributions from all the Nordic countries, but different issues – among other things, language – confined the study to these three countries.

To examine how research on pedagogical entrepreneurship in the three Nordic countries is carried out and what results it has generated, a systematic literature review and meta-analysis were conducted. The study includes scientific works in the categories of doctoral theses, licentiate theses, peer-reviewed articles in journals and peer-reviewed book chapters from Finland, Iceland and Sweden. The guiding principle for the choice of databases was to ensure that the latest international publications in English were included, as well as the latest publications in the national
languages, such as dissertations. Thus, large international databases such as ERIC, EBSCO or ProQuest were only appropriate to a certain extent. The information search for Finnish studies was mainly done through the databases Alma, Arto, Nelli and Google Scholar. The Icelandic contributions were found in the databases Leitir, Gegnir and Google Scholar. The Swedish part of the search used Diva, SwePub and Google Scholar. The selected databases are commonly used to search for educational research in the respective countries; it strengthens the reliability of the findings that the same hits often occurred in several of the databases.

The English search terms were kept the same (pedagogical entrepreneurship + school, enterprise learning + school, entrepreneurship education + school, enterprise education) and were also supplemented by specific keywords for each country. In the Finnish search, this meant both keywords in Finnish (yrittäjyyskasvatus, yrittäjämäinen pedagogiikka, yrittäjämäinen oppiminen) and Swedish (entreprenörskap i skolan, företagsamhetsfostran, pedagogiskt entreprenörskap, entreprenöriellt lärande, företagsamt lärande). In the Icelandic search, the English terms related to ‘entrepreneurship’ were supplemented with innovation concepts (innovation education) and were used together with keywords in Icelandic (nysköpun, frumkvðlannám). In Iceland, the official term for “pedagogical entrepreneurship” in school curricula is “innovation and the practical use of knowledge.” In fact, the term refers to the same educational concepts as “pedagogical entrepreneurship.” For the Swedish section, five Swedish concepts (entreprenörskap i skolan, företagsamhetsfostran, pedagogiskt entreprenörskap, entreprenöriellt lärande, företagsamt lärande) supplemented the English keywords.

The number of studies from each country was not predetermined but rather a result of the selection process. Although the keywords generated many hits, the majority of texts were not relevant to this study and a manual selection in several steps was carried out on the basis of title, abstract and content (Rumsey 2004). Our objective was to map the state of the art regarding current research in the three countries, making it relevant to limit the included studies to the last few years. At the same time a too-short time period would have led to the number of studies being decreased inappropriately. A couple of previous studies dealing with research based on similar issues in all the Nordic countries (Sjøvoll 2011; Skolverket 2015) also influenced the timeframe. Ultimately, a timeframe of 2011–2015, with an upper limit of eight contributions per country, was decided upon as appropriate, from the viewpoint of keeping the focus on current research and simultaneously allowing for a sufficient number of contributions for the analysis. Considering that Iceland is a small country with less published work, a smaller number of Icelandic studies were identified within the timeframe.

Because the aim of the study was to map the research on pedagogical entrepreneurship with relevance for teacher education, the studies in the selection focused on various forms of primary and secondary education, and studies
conducted in other types of educational settings (e.g. at university level) were omitted. The selection thus consists of research on pedagogical entrepreneurship conducted in contexts relevant for teacher education. After selecting the appropriate items from the search, the eight most recently published contributions were selected for the Swedish and Finnish sections and the five most recent Icelandic contributions. The studies were also restricted so that the same authors would only occur as the main author twice, to obtain a national overview. However, an exception to this was made regarding the Icelandic sample, since the volume of available research in the Icelandic context was smaller than that in Finland and Sweden.

The result of the searches was 21 contributions consisting of six chapters in books, 10 articles, four doctoral dissertations and one licentiate dissertation (Appendix A). The sample consists of 26 different authors, 19 women and 7 men. Only seven authors appear more than once.

The analysis was executed in two stages. First, each of the individual articles/dissertations was analysed according to the five research questions. The results for each contribution from stage one was summarised. In the second stage, the results for each individual research question from all 21 contributions from stage one were analysed in order to find general themes or categories. No predefined categories or theories were applied to the data. The categories emerged from the data during the analysis according to the research questions. Thus, the approach of the analysis relied on the principle of data-driven coding (Gibbs 2007). The analysis in stage two was repeated for several rounds until representative categories that included all relevant perspectives had emerged. Naturally, because the research questions were different in character, the analysis process for each question was a variation of the above-described process. For instance, the analysis of the methods used did not involve the same degree of finding thematic categories as, for instance, the analysis of the research questions or the results.

Results

What aims are addressed?

The first review question focused on analysing the aims of the dissertations, articles and book chapters with the goal of uncovering themes that outline current Nordic research. Five themes appeared in the 21 works: (1) description, (2) positioning, (3) student conceptions, (4) teacher development and self-assessment and (5) implementation.

The common denominator for the first theme, description, was a desire to explore and outline the characteristics of pedagogical entrepreneurship. The six studies categorised within this theme attempted to get a grip on what pedagogical entrepreneurship is. The theme was approached from a curricular perspective, as well as through teachers’ experiences and practices and the school settings.
Seven of the analysed studies were categorised as belonging to the second theme, *positioning*. The common denominator was to elaborate pedagogical entrepreneurship by positioning it in or against other educational settings, phenomena or theories. The studies looked at entrepreneurship in, for example, special education, music education or employability education. The theme also includes purely theoretical positioning of pedagogical entrepreneurship in relation to critical theory and cultural studies.

The third theme, *student conceptions*, consisted of four studies. They involved studying students’ experiences and views of entrepreneurship from different perspectives. The fourth theme, *teacher development and self-assessment*, consisted of four studies and involved studying teachers’ professional development through enacting entrepreneurship in an educational setting, as well as focusing on teacher self-assessment. Pedagogical entrepreneurship was studied as a means to develop teacher competence.

Fourteen studies were categorised as belonging to the fifth theme, *implementation*. All these studies attempted to better understand the process of implementation of pedagogical entrepreneurship. This included studying teachers’ views on the preconditions for pedagogical entrepreneurship, administrators’ and school leaders’ views on implementation, tensions between policy and practice, as well as modelling practices in schools.

Table 1 points out that many of the studies cover more than one theme. For example, Hietanen (2015) studied the implementation of pedagogical entrepreneurship in music education through action research focusing on the professional development of the teacher/researcher, as well as focusing on the students as diverse learners. The article covers implementation, positioning, teacher development and student conceptions. The analysed studies comprise the spectrum from descriptive to critical perspectives. The studies that most clearly adopt a critical perspective are Komulainen, Korhonen and Räty (2013), Persson (2014) and Berglund (2013).

**What methods are used?**

The second question focused on mapping the methods that were used in the studies. Regardless of the country or type of publication, qualitative research was the most common approach. In half of the studies, interviews and/or observations were carried out. They involved qualitative, individual interviews (Berglund and Holmgren 2013; Elo 2015; Jónsdóttir and Macdonald 2013; Koskinen 2015; Otterborg 2011; Sagar 2013; Thorsteinsson 2013; Wallin 2014), as well as group interviews (Sagar 2013). Most observations were somewhat participatory (Berglund and Holmgren 2013; Thorsteinsson 2013) or in alignment with an ethnographic approach (Jónsdóttir and Macdonald 2013; Koskinen 2015). Only one observational study was based on a social matrix (Gunnarsdóttir 2013). Half of the Finnish contributions applied
action-research approaches (Hietanen 2015; Hietanen and Järvi 2015; Koskinen 2015; Ruskovaara et al. 2015).

Three contributions used qualitative questionnaires (Hietanen 2015; Leffler & Hörnqvist 2014; Sagar 2013) and two used quantitative online surveys (Jónsdóttir et al. 2014; Ruskovaara and Pihkala 2015). Ruskovaara and Pihkala’s survey was

Table 1. Aims of research from Finland, Iceland and Sweden

| Description | Positioning | Student conceptions | Teacher development and self-assessment | Implementation |
|-------------|-------------|---------------------|----------------------------------------|----------------|
| **Finland** |             |                     |                                        |                |
| Koskinen (2015) | X | X | X | X |
| Elo (2015) |             |                     |                                        |                |
| Hietanen (2015) | X | X | X | X |
| Hietanen and Järvi (2015) | | | | X |
| Peltonen (2015) | | | | X |
| Ruskovaara and Pihkala (2015) | | | | X |
| Komulainen, Korhonen and Räty (2013) | | | X | |
| Ruskovaara et al. (2015) | | | | X |
| **Iceland** |             |                     |                                        |                |
| Gunnarsdóttir (2013) | X | | X | |
| Jónsdóttir and Macdonald (2013) | X | | X | |
| Thorsteinsson (2013) | | X | | |
| Jónsdóttir et al. (2014) | | | X | |
| Jónsdóttir et al. (2013) | X | X | | |
| **Sweden** |             |                     |                                        |                |
| Otterborg (2011) | | | X | |
| Wallin (2014) | X | | | X |
| Persson (2014) | | | X | |
| Leffler and Hörnqvist (2014) | | | | X |
| Sagar (2013) | X | | X | X |
| Berglund (2013) | | | X | |
| Berglund and Holmgren (2013) | | | X | |
| Leffler (2015) | X | | | X |
the most extensive with answers from 1,359 teachers. Only four studies were predominantly based on a literature review (Berglund 2013; Jónsdóttir et al. 2013; Leffler 2015; Persson 2014).

The studies ran the gamut from exclusively theoretical research to practice-oriented research. Persson’s (2014) study focused most clearly on a theoretical perspective. At the other end of the spectrum, Hietanen (2015), Hietanen and Järvi (2015), Ruskovaara et al. (2015) and Koskinen (2015) adopted action research. Primarily the voices of teachers, students and school leaders were heard. However, student teachers and, in one case, administrators in upper-secondary schools were included. Schools from all levels of education were represented within the selected samples, as well as one homeschooling family.

**What concepts are used?**

The third review question focused on concepts. When analysing how and which concepts have been used in recent Finnish, Icelandic and Swedish research, both similarities and differences were revealed. It was difficult to find a clear definition. Instead, it seems as if each author interpreted the concepts that were used for the analysis and discussion in each study. The concepts used were also context-dependent. This means that the authors used different concepts in the three countries and that different concepts were used within each country. There were also some language difficulties, as some Finnish and Swedish concepts cannot be translated into English.

The analysis revealed six key concepts: (1) entrepreneurship, (2) pedagogy of entrepreneurship education, (3) innovation and entrepreneurship, (4) enterprising education, (5) entrepreneurial learning and (6) innovation education. Some of the key concepts include several sub-categories. The concepts used in the analysed material are categorised and summarised in Table 2. The key concepts are highlighted in bold and the sub-categories appear in normal font.

As mentioned above, the concept of ‘entrepreneurship’ involves two approaches – narrow and broad. It is evident that Finnish and Swedish research has adopted both these approaches, even though it is more common in Finland to categorise entrepreneurship as ‘external’ and ‘internal’. In English, the same distinction is made by using the concepts ‘entrepreneurship’ (narrow/external) and ‘enterprise’ (broad/external).

The concept of ‘enterprise’ or “enterprising education” has developed into “entrepreneurial education and learning.” This term is more often used in Sweden than in Finland or Iceland. Becoming entrepreneurial is interpreted as a way of acting as entrepreneurs and as being related to qualities such as being proactive, innovative, curious, creative, able to identify opportunities, and able to handle uncertainty and/or ambiguity. It is understood as a way of developing an
| Concept                        | Authors from Finland        | Authors from Iceland                        | Authors from Sweden              |
|-------------------------------|----------------------------|---------------------------------------------|----------------------------------|
| **Entrepreneurship**          |                            |                                             | Otterborg (2011)                 |
| Internal and external         | Komulainen, Korhonen and Räty (2013) |                                             |                                  |
|                               | Ruskovaara et al. (2015)     |                                             |                                  |
| Broad and narrow              |                            |                                             | Wallin (2014)                    |
|                               |                            |                                             | Leffler and Hörnqvist (2014)     |
|                               |                            |                                             | Berglund (2013)                  |
| Entrepreneurship education    | Elo (2015)                  | Hietanen (2015)                             | Berglund and Holmgren (2013)     |
|                               | Peltonen (2015)             |                                             |                                  |
|                               | Ruskovaara and Pihkala (2015) |                                             |                                  |
|                               | Komulainen, Korhonen and Räty (2013) |                                             |                                  |
|                               | Ruskovaara et al. (2015)     |                                             |                                  |
| Entrepreneurship in school    |                            |                                             | Wallin (2014)                    |
| Pedagogy of entrepreneurship education | Koskinen (2015)               |                                             |                                  |
| Pedagogical entrepreneurship   | Peltonen (2015)             |                                             |                                  |
| Fostering entrepreneurship (foretagsamhets-fostran) | Elo (2015)                   |                                             |                                  |
| Innovation and entrepreneurship|                                            |                                             | Jónsdóttir and Macdonald (2013) |
|                               |                                            |                                             | Jónsdóttir et al. (2014)         |
| Innovation and enterprising education |                                |                                             | Jónsdóttir et al. (2013)         |
| Enterprising education        | Ruskovaara and Pihkala (2015) |                                             |                                  |
| Enterprising                  | Komulainen, Korhonen and Räty (2013) |                                             |                                  |
|                               | Ruskovaara et al. (2015)     |                                             |                                  |
| Entrepreneurial learning      | Elo (2015)                  | Hietanen (2015)                             | Otterborg (2011)                 |
|                               | Hietanen and Järvi (2015)    |                                             | Sagar (2013)                     |
|                               |                            |                                             | Persson (2014)                   |
|                               |                            |                                             | Leffler (2015)                   |
| Concept                        | Authors from Finland                                      | Authors from Iceland     | Authors from Sweden   |
|-------------------------------|----------------------------------------------------------|--------------------------|----------------------|
| Entrepreneurial               | Komulainen, Korhonen and Räty (2013)                    |                          |                      |
|                               | Ruskovaara et al. (2015)                                 |                          |                      |
| Entrepreneurial approach      |                                                          |                          | Leffler (2015)       |
| Entrepreneurial competences   | Peltonen (2015)                                          |                          |                      |
| Virtual reality learning environment |                                                          | Thorsteinson (2013)     |                      |
| Innovation education          |                                                          |                          | Gunnarsdóttir (2013) |
enterprising mindset or self of the student. Dissatisfaction with traditional educational settings in schools is also a common motivation for working with pedagogical entrepreneurship. Iceland has chosen to interconnect entrepreneurship and innovation, with the former looked upon as a more business-oriented school practice. Innovation and entrepreneurial education in an Icelandic context is about using creativity and knowledge to solve problems that learners identify and analyse. Innovation education and entrepreneurial education have developed in Iceland into a concept where innovation is more commonly taught at the compulsory level and entrepreneurship at the secondary level of schooling. This is also in line with the use of the term in Finland and Sweden, as ‘entrepreneurship’ is used for activities connected to business at the secondary school level. The broad approach, or “enterprising education,” is more practised within primary education.

The concept of entrepreneurship education seems to be more common in Finland than in Sweden and the term is sometimes used as an umbrella concept. In Finland, the labels ‘pedagogy’ or ‘pedagogical’ are also used to emphasise that the concepts belong to educational and not economic activities and are understood as a contrast to traditional teaching.

The summary brings multiple interpretations of the concept to light and contributes to rather fuzzy definitions of entrepreneurship and pedagogical entrepreneurship. However, research in the three countries seems to agree that entrepreneurship (in education) involves two approaches: a broad/internal/enterprise approach and a narrow/external/entrepreneurship approach. The former refers to general education and learning processes implemented primarily in basic education. The latter seems to target older students and be tied more to knowledge about starting and running a business. The results from the research also suggest a common understanding of the twofold aim of pedagogical entrepreneurship: developing teaching and learning in a more creative and innovative way and developing an enterprising and/or innovative mindset in students.

What references are used?
Examinining the references of the 21 contributions, a number of observations can be made. First, the references used tend to favour national authors. Finnish authors tend to cite Finnish works and so on. This tendency is particularly apparent in the Icelandic contributions, where there are virtually no links to other Nordic research on pedagogical entrepreneurship. Similarly, none of the Finnish or Swedish contributions cite works from Iceland. The same trend is also visible in the Swedish and Finnish contributions, but there are at least some cross-border citations. Additionally, both the Finnish and the Swedish contributions cite Norwegian authors writing about pedagogical entrepreneurship to some extent. Citations from Danish works on the subject occur but are scarce.
Second, there is no obvious, canonical citation in these 21 papers. Many of the Finnish contributions cite the work of Paula Kyrö, and many of the Swedish authors cite the works of Bengt Johannisson (1984, 1996). The works of Alan Gibb are cited frequently, but no single author is cited in more than half of the papers. Third, many of the papers have no or only a weak link to entrepreneurship research. This is especially true for the Icelandic papers, where the term “innovation education” is used and the direct link to entrepreneurship is less obvious. A link to the roots of innovation research is also missing. Finally, there is no tie to central works on pedagogy. Vygotsky and Dewey are cited in some of the works, but there is clearly no single pedagogical authority or work that shapes the setting of the recent research on pedagogical entrepreneurship in these countries.

**What are the most important findings?**

Four themes emerged from the results and conclusions from reviewing the findings in the analysed theses, articles and chapters.

1. Defining entrepreneurship and innovation in the pedagogical practice
2. Views on pedagogical entrepreneurship and innovation education
3. Entrepreneurship and innovation education in culture, aesthetics and media
4. Tools to implement and reflect on entrepreneurship and innovation education

The first theme deals with the problem of defining entrepreneurship and innovation as a part of pedagogical practice. Gunnarsdóttir (2013) defined the phenomenon of innovation education in Iceland and suggested that it was a step towards identifying a structure for educational change evolving from the needs of the children and the teaching professionals. Jónsdóttir and Macdonald (2013), also from Iceland, were concerned with the problem of defining innovation education as a part of pedagogical practice. Three modes of pedagogy emerged from their analysis of the data from three compulsory schools based on an ethnographic approach. They classified these three modes as controlled, progressive or emancipatory pedagogy.

In the controlled mode, the control of the learner’s behaviour is strictly in the hands of the teacher. In the progressive mode, learners have freedom and agency within the lesson. Emancipatory pedagogy, however, is a method infused with a democratic and creative atmosphere. The latter mode is considered more suitable for a teaching practice where learners can be innovative and creative and can influence their own learning. Koskinen’s (2015) findings in Finland are similar. She revealed that the pedagogy of entrepreneurship education seems to bring an alternative to the traditional educational setting by emphasising the learner’s influence on his or her
own education and enabling progression at the learner’s own pace according to his or her own plan. Furthermore, Koskinen pointed out that pedagogical entrepreneurship particularly benefits students who have a negative attitude toward school, as well as students diagnosed with ADHD. In Sweden, Otterborg (2011) and Sagar (2013) pointed out that pedagogical entrepreneurship involves relationships with the surrounding world in pedagogical practice. On the other hand, Berglund and Holmgren (2013) proposed that entrepreneurship and innovation education can create a positive setting for innovation and creativity in teaching. However, care should be taken in framing entrepreneurship education as a completed concept and as a definitive solution to educational issues.

The second theme concerns the different views from various school constituents on entrepreneurship and innovation education. The results from the analysed studies include views from students, teachers and school leaders. The findings of Otterborg (2011) in Sweden indicate that students have varied perceptions of pedagogical entrepreneurship. Besides understanding, identifying and defining the entrepreneurial task, they also seem to understand pedagogical entrepreneurship as possible points of contact and communication with groups and actors outside the school. Team-building and student collaboration also seem to connect to pedagogical entrepreneurship, as well as to learning, in different social practices that look beyond the obvious. In Finland, Hietanen (2015) reaches more or less the same results and adds that the framework of pedagogical entrepreneurship seems to let the students experience initiative and self-confidence during school hours. Students also generally seem to find entrepreneurial activities useful in other school subjects and outside the school.

The findings of Sagar (2013), Wallin (2014) and Elo (2015) in Sweden and Finland indicate that teachers find it hard to define entrepreneurship as a part of the pedagogical practice. There is a lack of time for implementing pedagogical entrepreneurship and a lack of information about entrepreneurship education. Many teachers regard entrepreneurship to be the buzzword of the day rather than an approach to learning. Teachers also seem to understand and describe the concept of pedagogical entrepreneurship based on the narrow or broad approach discussed above. The results of the studies specify that there seems to be a conflict and some uncertainty about the framing of the content of pedagogical entrepreneurship. Therefore, teachers find that the content and the implementation of pedagogical entrepreneurship is unclear to some extent. Collaboration and peer learning are key words in pedagogical entrepreneurship, but the findings indicate that teachers perceive barriers to integrating collaboration in pedagogical practice due to lack of management support on an organisational level. However, the findings also indicate that a high degree of collegial coherence among a team of teachers compensates for a lack of school management support in many cases.
In both Sweden and Iceland, research has been done on how different school leaders understand innovation and entrepreneurship education. Leffler and Hörnqvist’s (2014) research with school leaders in preschool, primary, lower- and upper-secondary schools in Sweden and the research of Jónsdóttir et al. (2014) with school leaders in upper-secondary school in Iceland indicates that school leaders generally understand pedagogical entrepreneurship and innovation education as an opportunity to implement both a learner-centred curriculum and a social efficiency curriculum. Many school leaders understand pedagogical entrepreneurship as an opportunity for students to establish non-traditional learning spaces, to facilitate a creative atmosphere and to encourage cooperation among the students. School leaders also emphasise the importance of having time to discuss definitions and interpretations of entrepreneurial attitudes in relation to the staff’s mission and common goals. This is important in order to determine an objective and in order to be able to transform vision and goals into concrete activities. Thus, ideas about student autonomy, creativity and critical thinking appear to mix with ideas about training pupils and providing them with the knowledge and skills that they need to function within their culture according to the standards given by the authorities of the country.

The third theme deals with the connection between innovation and entrepreneurship on the one hand and culture, aesthetics and media on the other hand. The findings of Persson (2014) in Sweden reveal that concepts connected to culture and the humanities can move into the entrepreneurial context and appear as creativity, play and storytelling. In other words, there is an untold story between critical humanistic theory, innovation and pedagogical entrepreneurship. These findings are similar to the findings of Berglund (2013). She concluded that pedagogical entrepreneurship prompts us to exercise our work ethic and reminded us that we can always improve ourselves. The enterprising self can never be fully realised. One can talk about an entrepreneurial culture and mindset characterised by a constant wish to improve our lives. However, to be in pursuit of becoming our best means we can never be satisfied with who we are or feel content about ourselves. In this light, an entrepreneurial setting for learning can then be understood as putting students into a situation of shadow-boxing with themselves. Therefore, entrepreneurship and innovation education should involve critical reflection on its political dimensions, human limits, alternative ideals and the collective efforts that are part of entrepreneurial endeavours.

The fourth, and final, theme focused on tools to implement and reflect on pedagogical entrepreneurship and innovation education. The findings of Peltonen (2015) in Finland indicate that collaborative learning can be a helpful tool to develop teachers’ entrepreneurial competences. Collaborative reflection seems to strengthen teachers’ understanding that entrepreneurial competences are an essential part of their competence as a teacher. The results also point to the importance of the
affective and connotative, alongside the cognitive, dimensions of developing teachers’ perceptions of their profession. Ruskovaara et al. (2015) described the process of developing a measurement tool for entrepreneurship education. The outcome equals the results, according to Peltonen (2015). Collaboration between teachers and other stakeholders is looked upon as important and necessary. Gisli Thorsteinsson (2013) from Iceland wrote about how new technology can be a helpful tool to enable students’ collaboration and cooperation during their ideation work. In his research, he explored and evaluated the use of virtual reality learning environment technology (VRLE). The results were that VRLE seems to be beneficial for students collaborating and generating ideas. Students appear to quickly understand the innovation process and to rapidly become self-reliant.

Discussion

The analysis of the use of references seems to confirm that the reviewed work on pedagogical entrepreneurship is fragmented and has no common point of departure, apart from the common origin in supranational policy. The results suggest that there are many interesting conversations but that the researchers have missed the opportunity to build on each other’s work and, perhaps most importantly, have failed to recognise the forerunners in the field. Although it makes sense to refer to works from one’s own context and country, ignoring works that deal with the same issue in a neighbouring region might lead to flawed conclusions. One of the reasons for this bias is, of course, language. Swedes, Finns and Icelanders have great difficulty understanding each other’s languages. Publishing work in English could be one way to increase citations across borders, but this measure would only partly remedy the problem. Researchers also need to become more curious about the work being done in the respective countries while engaging in more cross-border conversations about what is being done in the region. It seems as if there is a lack of common canonical works or research that can serve as a starting point regardless in which country the work is done. Starting from scratch can be positive in some situations, but it would probably be beneficial for the research on pedagogical entrepreneurship in these countries to find their common roots and articulate these so more joint conversations can take place.

A certain ambiguity regarding the identity of pedagogical entrepreneurship can also be seen in the analysis of the aims of the 21 studies. Describing or positioning pedagogical entrepreneurship in different contexts can be interpreted as an attempt to create a clearer identity. This would indicate that, despite the term being present at curricular and policy levels for a number of years and despite being researched from numerous perspectives, there are still many questions among scholars regarding the nature of pedagogical entrepreneurship and what role it has or should have in education. The majority of the studies analysed were, to a certain extent,
occupied with studying the implementation of pedagogical entrepreneurship. This finding indicates that turning pedagogical entrepreneurship into educational practice is an area of great interest. It further implies that the understanding of the different forms pedagogical entrepreneurship can take in practice is still diffuse. There would appear to be some ambiguity concerning what pedagogical entrepreneurship is, what distinguishes it from other educational practices and in what ways it can be implemented.

Despite efforts to implement an innovative, creative and entrepreneurial pedagogy in several schools over the last 20 years or so, the research results indicate that the developing setting for pedagogical entrepreneurship is not based on a flexible infrastructure in the schools but more on a rather firm school structure. Though the administrators and teachers, to a certain extent, accept colleagues working with pedagogical entrepreneurship, there seems to be a demand for concrete pedagogical activities. Jónsdóttir and Macdonald (2013) put forward three main types of school settings: enclosed, developing and feasible. The results indicate that many schools in the three countries operate from an enclosed and/or a developing setting. This implies that the school structure is mostly rigid and firm and that school leaders and teachers accept pedagogical entrepreneurship and are even willing to make adjustments to the day-to-day operation to include it. There are only a few indicators that schools have a feasible setting for pedagogical entrepreneurship to become a possibility as intended by the curriculum. This possibility mostly revolves around an exemplary setting where emancipatory pedagogy can be performed structured around workshops and a creative atmosphere.

This can also be understood as one of the reasons why some school leaders and teachers in the three countries seem to understand and define “pedagogical entrepreneurship” under the narrow approach as opposed to the broad approach. However, the analysed research implies that a broader definition of “pedagogical entrepreneurship” is gradually emerging in the three countries. The analysed viewpoints from students, teachers and school leaders suggest that this is the case.

The viewpoints expressed by the research data further imply that there are different understandings of the concept of pedagogical entrepreneurship. In Iceland, researchers suggest an interconnection between innovation and entrepreneurship, where the latter is more business-oriented than typical school practice. In the first school years, the focus should be on creative works and honing creative skills. It is first at the lower- and upper-secondary level that students move towards actualising enterprising ideas. In that way, the Icelandic research expresses a differentiation in the use of the concepts – especially associating innovation/creativity with the first years of school and implementation and actualisation of creative ideas with the last part of students’ education. Categorising pedagogical entrepreneurship in this way can be of operational importance. The disadvantage is, however, that innovation
education and practising innovation can then be understood as two separate issues and not as an integrated operation. Using the Icelandic concept of pedagogical entrepreneurship can be identified as a pedagogical approach where the individual can and should be a part of creating and developing the human environment – a rather broad and general definition. In Sweden and Finland, researchers emphasise that the concept of pedagogical entrepreneurship refers to a greater extent to developing a student’s enterprising mindset. Although innovation and creativity are key concepts in the first years of school, it seems as if educational activities directly connected to business and economy are more visible in the upper-secondary classes. Moreover, the term is used to describe learning environments or approaches enabling the learner’s personal growth. Compared to the Icelandic definition, this can be defined as a slightly narrower approach to pedagogical entrepreneurship, where enterprise and business construction are more visible.

The methods in the reviewed studies were mostly qualitative and many of them tried to define their understanding of pedagogical entrepreneurship by collecting viewpoints from students, teachers and administrators on the phenomenon. As such, a majority of the reviewed studies belong to a knowledge tradition that rests on an interpretive approach with its roots in hermeneutics and phenomenology in the sense that the researchers attempt to create objective conditions for studying topics that are considered to be subjective. The applied methods in the studies scarcely differ from other school research in Nordic countries.

Such an interpretive approach seems generally to be common and popular when studying pedagogical entrepreneurship but can be criticised for being too descriptive and restrictive. Mahieu (2006) and Svedberg (2007) describes how a policy perspective can be in conflict with a practitioner perspective on pedagogical entrepreneurship. A clash between the two perspectives can become distinct when political administrators make policy in the area and when making political decisions introducing pedagogical entrepreneurship in schools. In some cases, the policy goes against the understanding and interpretation of those who work and give meaning to the phenomenon of pedagogical entrepreneurship in a school context. An interpretive approach also implies that the phenomenon is mostly studied and interpreted in light of the context in which it appears. This contributes to the diversity of concepts and various aspects of the concepts studied within the field.

Critical studies on pedagogical entrepreneurship are scarcer. Critical studies generally rest upon a quest for social justice, conflictual views and efforts to reveal hidden political agendas. Critical research on pedagogical entrepreneurship has primarily articulated a critique of neo-liberal ideologies, conflicts and tensions between policy and practice and the presence of paradoxes in research on pedagogical entrepreneurship.
In a review such as this, one could expect studies inspired by the functionalist tradition. However, none of the studies described pedagogical entrepreneurship as a defined concept, approach or method in order to study its effect and clarify it from the point of view of what is working. In Thorsteinsson (2013) and Ruskovaara et al. (2015), different teaching and assessment tools were admittedly tested and developed, but they cannot be understood as purely functionalist studies because of their participatory approaches. Different legitimate knowledge traditions exist within educational research. Therefore, it is often beneficial to relate research design and perspective to one of several possible constructions or research traditions. At the same time, it seems as if specific traditions can take over a field. In educational research, and in the presented research about pedagogical entrepreneurship, the interpretative approach seems to be dominant.

**Conclusion**

After reviewing the recent research on pedagogical entrepreneurship in Finland, Iceland and Sweden, we conclude that there are varied understandings of the term and it seems as if the field of pedagogical entrepreneurship is still looking for a common identity in these countries, despite its common origins. However, the term seems to be used in both a narrow/external and a broad/internal meaning in all the countries. The latter meaning is often used to facilitate creativity in primary education and the former to implement a more business-oriented outlook in secondary education. In all three countries, pedagogical entrepreneurship is practised as an approach for implementing new, innovative and emancipatory pedagogy as a contrast to the more traditional and rigid approach to teaching and learning.

We also found no common theoretical foundation used as a guideline for the research and therefore it appears fragmented. The researchers are each engaged in interesting conversations, but they only include research from the neighbouring regions to a certain extent and do not seem to recognise the forerunners in the field of pedagogical entrepreneurship. This makes the research more nationally oriented and a common Nordic impact on the research in the field is not as strong as it could be.

The review shows that the research on pedagogical entrepreneurship in the three studied countries is still developing. In order to better frame pedagogical entrepreneurship in a northern European setting, there seems to be a need for closer dialogue between researchers in different countries. The fragmented research field is a challenge for teacher education since finding a coherent foundation in educational research is assumably a challenge. Without such a foundation the discussion on pedagogic entrepreneurship in teacher education runs the risk of being rooted mainly in policy documents, without a solid research foundation providing a variety
of perspectives in a manner comprehensible for the individual teacher or teacher educator. The multitude of perspectives, interpretations, concepts and theoretical foundations make the field challenging to approach and gives little support for teachers or teacher educators in their attempts to give pedagogical entrepreneurship a meaningful content.

*Michael Dal* is an associate professor and head of the Centre for Research in Foreign and Second Language Learning at the School of Education at the University of Iceland. His primary research interests focus on pedagogical entrepreneurship, foreign language acquisition, didactics in foreign languages and the use of new technology in foreign language learning.

*Janne Elo* is a university lecturer in general and adult education and project manager for the research project *Företagsamhetsprojektet* (the "Enterprise Project") at the Faculty of Education and Welfare Studies at Åbo Akademi University in Finland. He has a PhD in sloyd education and his primary research interests are entrepreneurship education, enterprise education and sloyd education.

*Eva Leffler* is an associate professor at the Department of Education at Umeå University. She has a PhD in educational work and her primary research field is school development and entrepreneurial education, with a focus on teacher leadership and gender.

*Gudrun Svedberg* is a university lecturer at the Department of Applied Educational Science at Umeå University and has a PhD in educational work. Her primary research field concerns the school-to-work transition for youth with intellectual disabilities and entrepreneurial learning and education.

*Mats Westerberg* is a professor of entrepreneurship and innovation at Luleå University of Technology. He heads the Center for Entrepreneurial Learning at Luleå University of Technology and is involved in research and education revolving around entrepreneurial learning.
References
Backström-Widjeskog, B. (2008). Du kan om du vill – Lärarens tankar om företagsamhet. Ph.d. diss., Åbo Akademis förlag, Åbo.

Berglund, K. (2013). Fighting against all odds: entrepreneurship education as employability training. Ephemera: Theory and Politics in Organization, 13(4), 717–735.

Berglund, K. and Holmgren, C. (2013). Entrepreneurship education in policy and practice. International Journal of Entrepreneurial Venturing, 5(1), 9–27.

Cope, J. (2005). Towards a dynamic learning perspective of entrepreneurship. Entrepreneurship Theory & Practice Journal, 29(4), 373–397.

Elo, J. (2015). Företagsamhet i skola och utbildning – Lärarens tankar om förutsättningarna att nå målen i temaområdet Deltagande, demokrati och entreprenörskap. Åbo: Åbo Akademis förlag.

Erkkilä, K. (2000). Entrepreneurial Education: Mapping the Debates in the United States, the United Kingdom and Finland. New York: Garland Publishing Inc.

European Commission. (2010). Europe 2020. http://ec.europa.eu/europe2020/index_en.htm (Accessed 2010-08-04).

Gibb, A. (1993). The enterprise culture and education. International Small Business Journal, 11(3), 11–34.

Gibbs, G. (2007). Analyzing qualitative data. London: Sage.

Gunnarsdóttir, R. (2001). Innovation education: defining the phenomenon. Ph.D. diss., School of Education, University of Leeds.

Gunnarsdóttir, R. (2013). Innovation education – defining the phenomenon. In The Routledge International handbook of innovation education, L. V. Shavinina (ed.), 17–28. London: Routledge.

Hietanen, L. (2015). Entrepreneurial learning environments: supporting or hindering diverse learners? Education + Training, 57(5), 492–511.

Hietanen, L. and Järv, T. (2015). Contextualizing entrepreneurial learning in basic and vocational education. Journal of Enterprising Communities: People and Places in the Global Economy, 9(1), 45–60.

Johannisson, B. (1984). Local mobilization. Ideology, organization and strategy. Växjö: Högskolan i Växjö.

Johannisson, B. (1996). Entrepreneurship: exploiting ambiguity and paradox. Halmstad: Scandinavian Institute for Research in Entrepreneurship, SIRE.

Jones, B. and Iredale, N. (2010). Enterprise education as pedagogy. Education and Training, 52(1), 7–19.

Jönsdóttir, R. S. and Macdonald, A. (2013). Settings and pedagogy in innovation education. In The Routledge International handbook of innovation education, L. V. Shavinina (ed.), 273–287. London: Routledge.

Jönsdóttir, S. R., Bórólfsson, M., Karlsdóttir, J. and Finnbogason, G. E. (2013). Rætur nýskópunar- og frumkvöðlamenntar í íslenskum námskrám og skólamálaumræðu. Netla – Veftrimarit um uppeldi og menntun. http://netla.hi.is/serrit/2013/fagid_og_fraedin/006.pdf (Accessed 2014-10-25).

Jönsdóttir, S. R., Bórólfsson, M., Karlsdóttir, J. and Finnbogason, G. E. (2014). Að uppfæra Ísland: Sýn stjórnenda íslenskra framhaldsskóla á nýskóðunar- og frumkvöðlamennt og framkvæmd námsvíðsins í námskrárframleiðslu líðsi. Netla – Veftrimarit um uppeldi og menntun. http://netla.hi.is/greinar/2014/ryn/011.pdf (Accessed 2015-02-09).

Komulainen, K. J., Korhonen, M. and Räty, H. (2013). On entrepreneurship, in a different voice? Finnish entrepreneurship education and pupils’ critical narratives of the entrepreneur. International Journal of Qualitative Studies in Education, 26(8), 1079–1095.
Koskinen, S. (2015). Yrittäjyykskasvatuksen pedagogiikka vaativassa erityisopetuksessa – Itsesäätehtaitojen kehittäminen ja tulevaisuusorientaation vahvistaminen yrittäjyykskasvatuksen pedagogiikan keinoin. Tampere: Tampereen yliopisto.

Leffler, E. (2006). Företagsamma elever: Diskurser kring entreprenörskap och företagsamhet i skolan. Ph.D. diss., Umeå universitet.

Leffler, E. (2015). Entreprenöriellt förhållningssätt till undervisning och lärande. In Grunnskolelærerutdanning gjennom pedagogisk entreprenørskap, F. O. Haara and I. K. Røe Ødegård (eds.), 80–95. Oslo: Cappelen Damm Akademisk.

Leffler, E. and Hörnqvist, M.-L. (2014). Entreprenöriellt förhållningssätt i skolan – möjligheter och utmaningar för skolledare. In Ledarskap i centrum. Om rektor och förskolechef, M. Törnsen and H. Årlestig (eds.), 131–143. Malmö: Gleerups.

Leffler, E., Svedberg, G. and Botha, M. (2010). A global entrepreneurship wind is supporting or obstructing democracy in schools. A comparative study in the North and the South. Education Inquiry, 1(4), 309–328.

Mahieu, R. (2006). Agents of change and policies of scale: A policy study of entrepreneurship and enterprise in education. Umeå: Institutionen för svenska och samhällsvetenskapliga ämnen, Umeå universitet.

Moberg, K. (2014). Two approaches to entrepreneurship education: the different effects of education for and through entrepreneurship at the lower secondary level. International Journal of Management Education, 12(3), 512–528.

OECD. (1998). Fostering entrepreneurship. Paris: OECD – Centre for Entrepreneurship.

OECD/CERI. (1989). Towards an ‘enterprising’ culture. A challenge for education and training. Paris: OECD/CERI.

Otterborg, A. (2011). Entreprenöriellt lärande: gymnasieelevers skilda sätt att uppfatta entreprenöriellt lärande. Jönköping: School of Education and Communication, Jönköping University.

Peltonen, K. (2015). How can teachers’ entrepreneurial competences be developed? A collaborative learning perspective. Education + Training, 57(5), 492–511.

Persson, M. (2014). Blåst? Från kulturindustriell manipulation till entreprenöriellt lärande. Educare, 2014(1), 32–55.

Pittaway, L. and Cope, J. (2007). Entrepreneurship education: a systematic review of the evidence. International Small Business Journal, 25(5), 479–510.

Rumsey, S. (2004). How to find information: a guide to researchers. Maidenhead: Open University Press.

Ruskovaara, E. and Pihkala, T. (2015). Entrepreneurship education in schools: empirical evidence on the teacher’s role. The Journal of Educational Research, 108(3), 236–249.

Ruskovaara, E., Pihkala, T., Seikkula-Leino, J. and Rytikölä, T. (2015). Creating a measurement tool for entrepreneurship education: a participatory development approach. In Developing, shaping and growing entrepreneurship, A. Fayolle, P. Kyrö and F. Liñán (eds.), 40–57. Cheltenham: Edward Elgar Publishing Limited.

Sagar, H. (2013). Teacher change in relation to professional development in entrepreneurial learning. Gothenburg: Department of Physics, University of Gothenburg.

Shacklock, G., Hattam, R. and Smyth, J. (2000). Enterprise education and teachers work: exploring the links. Journal of Education and Work, 13(1), 41–60.

Sjövoll, J., (ed). (2011). Kreativitet, innovasjon og entreprenørskap i utdanningsystemene I Norden. Köpenhamn: Nordiska ministerrådet.

Skolverket. (2015). Skapa och växa. Om entreprenörskap i skolan. (reviderad upplaga). Stockholm: Skolverket.
Svedberg, G. (2007). Entreprenörskapets avtryck i klassrummets praxis: Om villkor och lärande i gymnasieskolans entreprenörskapsprojekt. Umeå: Umeå universitet, Institutionen för svenska och samhällsvetenskapliga ämnen.

Thorsteinsson, G. (2013). Developing an understanding of the pedagogy of using a virtual reality learning environment to support innovation education. In The Routledge International handbook of innovation education, L. V. Shavinina (ed.), 454–470. London: Routledge.

Wallin, J. (2014). Entreprenörskap i skolan. Formulering och transformering av GY11 inom gymnasieskolans hanterksprogram. Linköping: Linköpings universitet, Institutionen för beteendevetenskap och lärande.

Appendix A – References/Sources

**Finnish research**

Elo, Janne. (2015). Företagsamhet i skola och utbildning – Lärarens tankar om förutsättningarna att nå målen i temao mödet Deltagande, demokrati och entreprenörskap. Åbo: Åbo Akademis förlag.

Hietanen, Lenita. (2015). Entrepreneurial learning environments: supporting or hindering diverse learners? Education + Training, 57(5), 492–511.

Hietanen, Lenita and Järvi, Taina. (2015). Contextualizing entrepreneurial learning in basic and vocational education. Journal of Enterprising Communities: People and Places in the Global Economy, 9(1), 45–60.

Komulainen, Katri Johanna, Korhonen, Maija and Räty, Hannu. (2013). On entrepreneurship, in a different voice? Finnish entrepreneurship education and pupils’ critical narratives of the entrepreneur. International Journal of Qualitative Studies in Education, 26(8), 1079–1095.

Koskinen, Sanna. (2015). Yrittäjyyyskasvatuksen pedagogiikka vaativassa erityisopetuksessa – Itsesäätylyytaitojen kehittäminen ja tulevaisuusorientaation vahvistaminen yrittäjyyyskasvatuksen pedagogiikan keinoin. Tampere: Tampereen yliopisto.

Peltonen, Katarina. (2015). How can teachers’ entrepreneurial competences be developed? A collaborative learning perspective. Education + Training, 57(5), 492–511.

Ruskovaara, Elena and Pihkala, Timo. (2015). Entrepreneurship education in schools: empirical evidence on the teacher’s role. The Journal of Educational Research, 108(3), 236–249.

Ruskovaara, E., Pihkala, T., Seikkula-Leino, J. and Rytikölä, T. (2015). Creating a measurement tool for entrepreneurship education: a participatory development approach. In A. Fayolle, P. Kyörö and F. Liñán (eds.), Developing, shaping and growing entrepreneurship. Chelterham: Edward Elgar Publishing Limited, 40–57.

**Icelandic research**

Gunnarsdóttir, Rosa. (2013). Innovation education – defining the phenomenon. In L. V. Shavinina (ed.), The Routledge International handbook of innovation education. London: Routledge, 17–28.

Jónsdóttir, R., Svanborg and Macdonald, Alyson. (2013). Settings and pedagogy in innovation education. In L. V. Shavinina (ed.), The Routledge International handbook of innovation education. London: Routledge, 273–287.

Jónsdóttir, S. R., Póroflsson, M., Karlssóttir, J. and Finnbogan, G. E. (2014). Að uppfæra Island: Syn stjórnenda íslenskra framhaldsskóla á nýskópunarn- og frumkvöðlamannt og framkvæmd námssviðsins í námskráfræðilegu ljós. Netla – Véftimarit um uppeldi og menntun. http://netla.hi.is/greinar/2014/ryn/011.pdf (Accessed 2015-02-09).

Jónsdóttir, S. R., Póroflsson, M., Karlssóttir, J. and Finnbogan, G. E. (2013). Retur nýskópunarn- og frumkvöðlamanntar í íslenskum námaskrám og skólamálaumræðu. Netla –
Thorsteinsson, Gisli. (2013). Developing an understanding of the pedagogy of using a virtual reality learning environment to support innovation education. In L. V. Shavinina (ed.), The Routledge International Handbook of Innovation Education. London: Routledge, 456–470.

**Swedish research**

Berglund, Karin. (2013). Fighting against all odds: entrepreneurship education as employability training. *Ephemera: Theory and Politics in Organization, 13*(4), 717–735.

Berglund, Karin and Holmgren, Carina. (2013). Entrepreneurship education in policy and practice. *International Journal of Entrepreneurial Venturing, 5*(1), 9–27.

Leffler, Eva. (2015). Entreprenörriellt förhållningssätt i undervisning och lärande. In F. O. Haara and I. K. Roë Odegård (ed.), *Grunnskolelærerutdanning gjennom pedagogisk entreprenørskap*. Oslo: Cappelen Damm Akademisk, 80–95.

Leffler, Eva and Hörnqvist, Maj-Lis. (2014). Entreprenörriellt förhållningssätt i skolan – möjligheter och utmaningar för skolledare. In Monika Törnsén and Helene Årlestad (ed.), *Ledarskap i centrum. Om rektor och förskolechef*. Malmö: Gleerups, 131–143.

Otterborg, Annica. (2011). *Entreprenörriellt lärande: Gymnasieelevers skilda sätt att uppfatta entreprenörriellt lärande*. Ph.D. diss., Jönköping University.

Persson, Magnus. (2014). Blåst? Från kulturindustriell manipulation till entreprenörriellt lärande. *Educare, 2014*(1), 32–55.

Sagar, Helena. (2013). *Teacher change in relation to professional development in entrepreneurial learning*. Ph.D. diss., Department of Physics, University of Gothenburg.

Wallin, Jessica. (2014). *Entreprenörskap i skolan. Formulering och transformering av GY11 inom gymnasiestolans hantverksprogram*. Licentiate diss., Institutionen för beteendevetenskap och lärande, Linköpings universitet.