

What must a lecturer/instructor (teacher) be able to do to inspire entrepreneurship and business students?

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ABSTRACT

This paper discusses what a lecturer/instructor (teacher) must be able to do to inspire entrepreneurship and business students. Entrepreneurship, particularly start-up business, has become a top priority in national government policies due to its ability to drive creativity, innovation, competitiveness, employment and growth. The goal is not to make the students rush to become entrepreneurs or business-oriented professionals but rather provide them with tools that enable realistic self-evaluations and learn to recognize different opportunities around them.

The study seeks to define the skill sets that the inspiring entrepreneurship and business teachers consider essential to their work. Teachers expressed their views in small focus groups of their peers, i.e. other teachers. The theoretical framework consists of theories dealing with the general skill sets and expertise of the teachers. The empirical data were collected through a Finnish adaptation of the Canadian DACUM (Developing A CURriculum) model which is used to analyze the contents of the requirements of various occupations. A separate questionnaire has been used to support the data collection.

This study indicates that most of the entrepreneurship teachers are females whose pedagogical experience seems to be more comprehensive and long lasting than their male colleagues possess. However, they are often short of practical skills. On the contrary, the male colleagues have more experience in practice but with quite narrow pedagogical skills. The female entrepreneurship teachers tend to be inspired, but they often have too little experience in practical working life. According to today's trend, entrepreneurship teachers are anticipated to be not only traditional teachers but also entrepreneurs with their own company.

Keywords: Inspiring, Expertise, Entrepreneurship, DACUM model, Skill set, Teacher, Business students

Introduction

Entrepreneurship, as well as start-up business, has met much success in national government policies due to its ability to drive creativity, innovation, competitiveness, employment and growth. These are key

components of any sovereign country's welfare. Even though this is agreed on by most people, rather small steps are taken to develop those inevitable activities in many countries. (Suonpää, 2013) The process of becoming an entrepreneur is a long one, and to support this process, educational institutions should provide the students with tools that enable their growth to entrepreneurship. The students should be trained by an entrepreneurship teacher or a business-oriented professional to learn to recognize the different opportunities that arise around them. Students have various needs at different stages of their studies. In entrepreneurship studies supported by the counselling process, there are three key principles that should be taken into account. The counselling process should be:

- (a) holistic, i.e. considering a student's whole life situation;
- (b) individual and student-oriented; and
- (c) flexible and versatile (Römer-Paakkanen & Takanen-Körperich, 2011).

The students, teachers, and career counselors in educational institutions need tools for ideal learning results to anticipate and assess the future direction of the students' working life and their role in society. Today, and even more in the future, coping with work duties requires a self-directed approach to work:

People need to commit to an entrepreneurial attitude as they must repeatedly renew their competencies and skills. Such characteristics as willpower, intuitive thinking, spirit and communication skills impact on ability to manage practical problem-solving situations. The ability to learn from experience and lifelong learning are valued (Munch & Jakobsen, 2005).

As the role of an inspiring entrepreneurship and business teacher must be flexible and versatile, he/she must accept and take advantage of the changing learning environments.

Purpose of the study

The aim of this study is to describe and analyze the competencies, skills and attitudes that make up the expertise of the inspiring entrepreneurship teachers as expressed by them.

Analysis in this context refers to classification and not to cause-and-effect analysis. It is described what the entrepreneurship teacher and business-oriented professional must be able to do to inspire entrepreneurship and business students. The goal in entrepreneurship and business education is not to make the students rush to become entrepreneurs or business-oriented professionals but rather to provide the students with tools that enable realistic self-evaluations. The students should also be trained to learn to recognize different opportunities around them.

Research questions

The research problem is examined through the following study questions:

1. What are the core skills or skill sets that entrepreneurship and business teachers say make up their work?

2. What kinds of expertise make up the core skill and skill sets?
3. Which sub-skills make up the above core skills?
4. How can skill sets be classified into cognitive, psychomotor and affective elements?

The theoretical framework consists of theories dealing with the key concept of competence and the general skill sets and expertise of teachers. For purposes of this study, skill set embodies the competence and attitudes of the inspiring entrepreneurship and business teacher as illustrated in Figure 1.

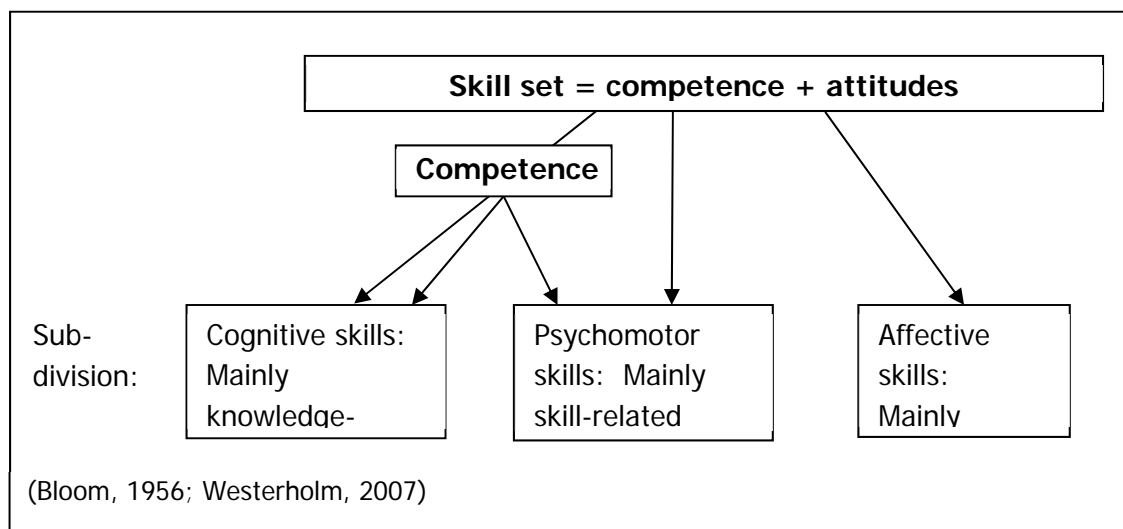


Figure 1. Conceptual Model of a Skill Set

The categories in the sub-division are not mutually exclusive, and they may overlap. A belief, for example, may be cognitive-affective by character while a skill may have a strong cognitive orientation.

The theoretical framework consists of theories dealing with the general skill sets and expertise of the teachers. The empirical data were collected through a Finnish adaptation of the Canadian DACUM (Developing A CURriculum) model which is used to analyze the contents of the requirements of various occupations. A separate questionnaire has been used to support the data collection.

Review of the literature

Skill sets considering earlier research.

The concept of competence embodies expertise, skill, qualification, ability, capacity, efficiency, proficiency, and skillfulness. It is an amalgam of knowledge, behavior, attitudes, and values referring to the mastering of a skill. Learning, or achieving a goal, is construed as a skill. Competence is also linked to

creativity, innovativeness, flexibility, endurance, precision, and accuracy (Westerholm, 2007). According to Ruohotie and Honka (2003), there is a large number of scientific literature available that deals with competencies and qualifications. Regardless, the use of these concepts has been inconsistent and no consensus has been reached on their semantic content (Nijhof & Streumer, 2001; Rychen & Salganik, 2003).

Earlier research on lecturer/instructor skills.

Teachers play a key role in promoting entrepreneurship education and learning (Hannula, Ruskovaara, Seikkula-Leino & Tiikkala, 2012). Suonpää (2013) states that “the role of the teacher is not to deliver the right knowledge to the students, but to support the students to construct their own knowledge in social process facilitated by the teacher. The teacher supports the students’ individual and collective learning goal setting based on the needs of the students rather than setting the learning goals for them” (p. 126). Knowledge is not seen as an objective substance owned and transferred by a teacher to students, but it is created in students’ active social processes in action. So, knowledge is contextual and subjective (Kyrö, 2005; Kirby, 2007).

Römer-Paakkanen and Takanen-Körperich (2011) established in their research that a distinct line should be drawn between how the teacher should meet the student, to be interested in students’ everyday life and how to teach entrepreneurial attitude. The teacher must comprehend the concept and totality of the business along with the distinctive characteristics of each sector, i.e. they must possess a cognitive knowledge of business activities. Affective and psychomotor competences are now highlighted in the expertise alongside the traditionally emphasized cognitive competence. The main target is to help the students to find out their own strengths and competencies in the future society and in future labour markets.

To adopt entrepreneurship as part of culture in vocational education means according to Koironen (2007) that each entrepreneurship teacher working in payroll system must find intrapreneurial feature in his/her teaching work. He/she owns an entrepreneurial responsibility for modern, high-class and desired teaching. In this way entrepreneurship for its part can have influence on the institution’s productivity.

Entrepreneurship education is an enormously complex web with many parties involved. Teachers are an important element because they are responsible for the actual teaching. Also, they are in contact with the students and the environment, and the teachers accumulate a lot of knowledge during the education. “Teachers’ own understanding regarding the objectives, methods and results, which make way for reflection, play an immense role in successful entrepreneurship education” (Seikkula-Leino, Ruskovaara, Ikävalko, Kolhinen and Rytkölä, 2013, p. 165). Moberg (2013) states that entrepreneurship education is a heterogeneous field with several perspectives. There is no real consensus stating which types of skills are more important than others when it comes to new venture creation, and it is often

contested what “real” entrepreneurial activity means. To capture these different views, an entrepreneurial self-efficacy scale needs to incorporate a large range of different skill-sets (Moberg, 2013). Entrepreneurship education is often wrongly comprehended as a homogeneous topic that can be taught to every student in the same way, without taking into the consideration their disciplinary background (Honig, 2004).

Interest in entrepreneurship education has been growing enormously over the last two decades (Kuratko, 2005). Today the trend has been that teachers meet new pedagogical challenges in their everyday work. According to Römer-Paakkanen and Pekkala (2008), growing to entrepreneurship could be understood as a triangulation process of socialization, education, and experiences. The process develops in different environments or systems in family (family system), in school (education system), and in free-time activities and hobbies (informal and non-formal systems). Counselling, coaching, and mentoring form a supporting system, and they are the catalysts in this process. Counselling focuses on an individual, and it produces self-directive actions. Its aim is to highlight competent learning and self-management. Entrepreneurial pedagogical culture supports this study and gives it importance in developing an entrepreneurial culture by fostering an entrepreneurial attitude, entrepreneurship skills and awareness of career opportunities (Commission of the European Communities, 2006; Römer-Paakkanen and Pekkala, 2008).

Methodology

This study follows a mixed-method design, and the research approach is qualitative and phenomenographic. It is based on the DACUM model outcomes and on a supplementary questionnaire.

One central perspective for the selection of research methodology is the discipline under which the research is presented and which it references. Every scientific discipline seeks to define its own characteristic methods and uses them to justify its specificity. Differences between disciplines are considerable in this respect (Kyrö, 2004).

The study of qualitative learning starts from the premise of intentionality. Instead of merely reacting to external stimuli, humans are autonomous subjects who seek to construct a view of the world for themselves. Phenomenography is the study of how the world appears to people, how people perceive, understand, interpret and experience things and events, how they form ideas about them, and what types of structures people construct in their minds about reality (Järvinen & Järvinen, 2004; Marton, 1994; Metsämuuronen, 2003).

The DACUM model provides training in multi-level thinking. The job analysis consists of breaking down the work into knowledge, skills and attitudes that directly correspond to Bloom’s Taxonomy. It is not a means of psychological testing but rather a quick and quite reliable method of analyzing different occupations and professions.

Execution of the empirical study and research setting

The data collection method in this study was the DACUM model which provided a tool for the precise determination and recording of the knowledge, skills and attitudes required in various occupations. Teachers were given an opportunity to express their views in a small focus group of peer teachers. Consensus opinions formulated by the groups were then meticulously documented, i.e. the DACUM model delivers a single-page occupation-analysis chart consisting of knowledge, skills and attitudes based on the session. The practical work of gathering the data in the DACUM sessions were performed by a facilitator and a recorder (Westerholm, 2007).

The DACUM model (Coffin, 2002; Glendenning, 1998) is built around general areas of competence (GAC), each of which involves different skills. General area of competence equals the key competences in the European Commission's recommendation on key competences (EU 2004 & 2006) and the core expertise in the framework concerning European expertise, making the general areas of competence in the DACUM analysis comparable to both. Besides specific knowledge, the general areas of competence may also comprise tacit knowledge that manifests in the context of the work (Alvarez & Busenitz, 2001; Barney, 1991; Polanyi, 1962). In Bloom's Taxonomy factual skills correspond to cognitive and psychomotor skills while personal skills mainly correspond to affective skills (Allahwerdi, Hietaharju, Kolstela & Laikio, 2006). In this study cognitive skills mainly correspond to knowledge-based competence while affective skills correspond to attitude and tacit knowledge can be in e.g. psychomotor skills.

The two researchers of this study act as a facilitator and as a recorder. The researchers and the organizer nominate participants and possible observers whose role in the DACUM session is to prompt discussion, not formulate opinions. The core skills from the work analysis charts of the two DACUM workshop groups abroad are presented in Appendices A and B and supplementary questionnaires in Appendices C and D as well as a Finnish sample in Appendix E. They were classified as cognitive, affective, or psychomotor as well as cognitive-affective, cognitive-psychomotor, affective-psychomotor, or cognitive-affective-psychomotor skills according to Bloom's Taxonomy. The classification here was performed by the researcher, who served as a facilitator to the groups. The classification was reviewed by the researcher and the experienced entrepreneurship teacher and pedagogue who attended each DACUM workshop and served as a recorder. The classification was based on subjective interpretation of both the work analysis charts of the two workshops and observations made during the workshop sessions. The supplementary questionnaires were talked over in the same way. Different opinions were discussed until consensus was reached. After classification, the various sub-skills were added together and the numbers of each sub-skill listed to facilitate comparisons. The result of the classification of competences and attitudes in the manner described above represents thus one interpretation based on five analyses, and as Ruohotie (2006) has noted, there are no clear-cut criteria for defining key competencies.

The empirical data are based on 26 samples of entrepreneurship and business teachers. These informants (21 female and 5 male teachers) are introduced in Appendix F. The consensus opinions formulated by the group were then meticulously documented. Besides the teachers' demographic data, their core competencies and supporting skills together with the attitudes were illuminated by a separate questionnaire which supported the DACUM data collection (Appendices C, D, and E).

In addition to Finland, the data were also accumulated at international conferences. This means in the DACUM workshops, where the participants came from Austria, Belgium, Finland, Great Britain, Greece, and Portugal and at the 89th International SIEC-ISBE conference in San Juan, Puerto Rico, July 2017, where the participants were from Finland, Iceland, Poland, Puerto Rico, Sweden, the Bahamas, and the United States. The research data were obtained from 12 Finnish and 14 foreign entrepreneurship and business teachers. Use of the DACUM model was limited to development undertaken in Canada and its partial Finnish application.

The essential aspect of describing expertise is the use of active verbs which reflect the levels of thought and cognitive function. For example, the following aspects were raised to be taken into consideration during the DACUM workshop at the International SPACE Network 28th AGM and Conference in Portugal, April 2017:

“As an inspiring teacher, I must be able to...

- learn (core skill) → reflect in and reflect on, have subject knowledge, learn by doing (sub skills)
- create safe environment (core skill) → establish shared values, understand needs and wants, respect (sub skills)
- trigger = inspire passion (core skill) → provide thinking space, notice (sub skills)
- facilitate (core skill) → listen, understand process, manage, question, adapt,
- compromise (sub skills)
- stimulate (core skill)
- collaborate (core skill)
- “storytell” (core skill) → accept failure to use it positively (sub skills).”

In the workshop during the 89th International SIEC-ISBE conference in Puerto Rico, July 2017, the following aspects were raised into consideration:

“As an inspiring teacher, I must be able to...

- engage (core skill) → be enthusiastic, open-minded, good communicator (sub skills)
- make relevant (core skill)
- be dynamic (core skill)
- trust myself (core skill)

- solve problems (core skill)
- integrate (core skill)
- accept mistakes (core skill)
- respect (core skill)
- mentor (core skill)
- have practical experiences (core skill)
- have team building (core skill)
- believe in students (core skill).”

Although the teachers were from different countries, different cultures, different ages (43–70), male and female, the challenges between them and their students were very similar (See Appendix F).

The research setting of this study is illustrated in Figure 2:

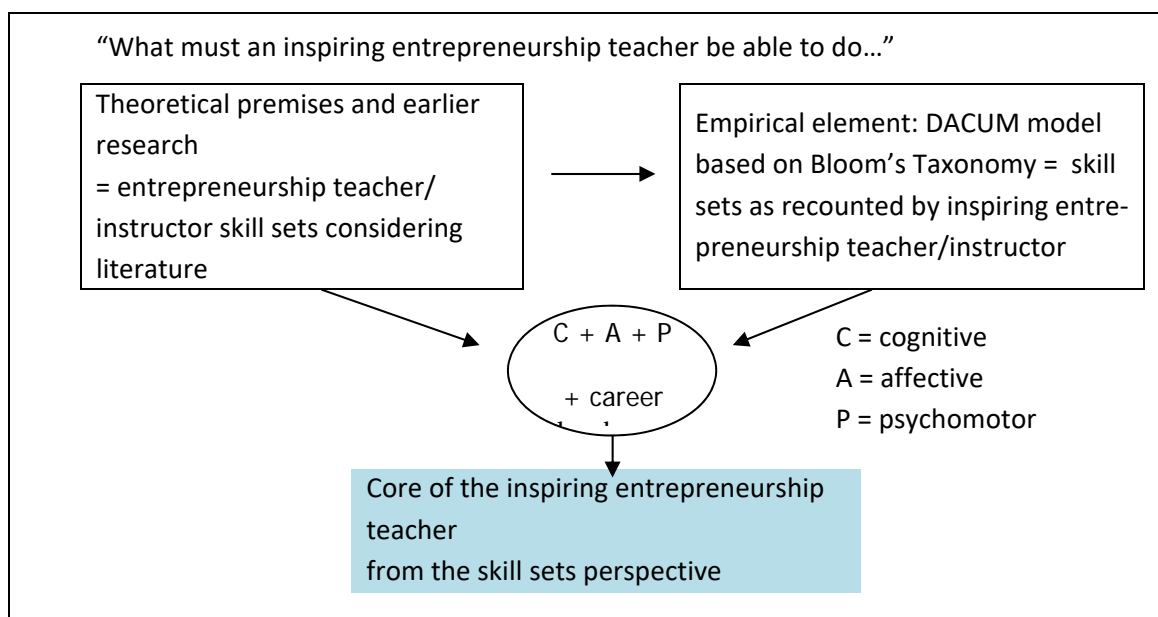


Figure 2: Research setting

The knowledge, skills, and attitudes appearing on the job analysis charts and in answers to questionnaires are organized into a portrait of the inspiring entrepreneurship and business teacher based on the Bloomian vision underlying the DACUM model (Bloom, 1956; Bloom & Krathwohl, 1956; Krathwohl, Bloom & Masia, 1964; Dave, 1967 & 1970) and expressed as cognitive (C), psychomotor (P) and affective (A) skills. This study based on the DACUM Analysis including the findings of the questionnaires gives rise to the outcome describing the core of pedagogical and educational skills, which in turn provide an answer to the question of what entrepreneurship and business teachers personally feel they must be able to do.

Discussion of the research findings

The study sought to describe what entrepreneurship and business teachers themselves feel they must be able to do to inspire entrepreneurship and business students. The study produced knowledge about their skill sets and partly about entrepreneurship education. The outcome shows that a distinct line should be drawn between how the entrepreneurship and business teacher meets the student to show interest in student's everyday life and how to teach entrepreneurial attitude and behavior in future working life.

The teacher must comprehend the concept and totality of the business along with the distinctive characteristics of each sector, i.e. he or she must possess a cognitive knowledge of business activities. Affective and psychomotor competence and attitudes are now highlighted in the teacher's expertise alongside the traditionally emphasized cognitive competence and attitudes.

Findings relative to earlier doctrine

Schools tend to increase their commitment of resources to entrepreneurship education. They seek a greater number of tenured and tenure track faculty with expertise in entrepreneurship. The field of entrepreneurship is in its growth mode, and there are no signs of it slowing down (Finkle, 2010, pp. 40-42).

As to this study, the entrepreneurship and business teachers should establish their shared values in main core skills by

- creating safe learning environment in mutual respect;
- creating inspiring atmosphere by contextual storytelling focused on success stories;
- teaching students to accept their failures and taking advantage of them in a positive way;
- promoting critical thinking; and
- using relevant technology.

Suonpää (2010) summarizes in her research that entrepreneurship education has three goals which are learning about, learning through and learning for entrepreneurship. Most students learn about entrepreneurship which often means designing their own business plan. If the studies are based on literature, students lack opportunities to learn through entrepreneurship. This involves the design of a pedagogical process to facilitate an entrepreneurial way of learning and behavior (Suonpää, 2010). According to questionnaire data (Appendices C, D, and E), Finnish entrepreneurship teachers showed mostly "learning through entrepreneurship" by CAP core skills, whereas the foreign entrepreneurship

teachers showed mostly “learning for entrepreneurship” at the conferences in Porto and Puerto Rico. After our classification these groups showed mostly A core skills.

This study indicates that now most of the entrepreneurship teachers are females whose pedagogical experience seems to be more comprehensive and long-lasting than their male colleagues possess. However, they are often short of practical skills. On the contrary, the male colleagues have more experience in practice, but with quite narrow pedagogical skills. The female entrepreneurship teachers tend to be inspired, but they often have too little experience in practical working life. According to today’s trend, entrepreneurship teachers are anticipated to be not only traditional teachers, but also entrepreneurs with their own company.

Entrepreneurship teaching consists of three factors which are social, psychosocial and pedagogical, and reaching them demands collaboration between educational institutions and employer sector. Thus, today practical skills are necessary. However, in our research the attitude is the most demanded quality in sub-skills.

The most natural environment for teaching has been the classroom where the teacher and the students meet their peers regularly under the guidance of the teacher, but today the trend is working life focused. However, the guiding role of the teacher is irreplaceable. The working life environment does not necessarily have pedagogical tools available for the teacher in the same way as the teacher has them in the classroom environment.

Results

The core skill set of the inspiring entrepreneurship teacher considering this study perceives both cognitive and affective core skills as extremely important core expertise, which is perceived as equally important in work situations, yet cognitive-affective-psychomotor skills are just as important. This even distribution of skills in each of the categories in Bloom’s Taxonomy would indicate the existence of the modern inspired entrepreneurship teacher. A slight difference was observed on the one hand between younger and less experienced teachers and on the other hand older and more experienced teachers. Barely any pure psychomotor skills can be found at the core of expertise. It is our observation that the inspired entrepreneurship teacher is not aware of the psychomotor nature of the transfer of cognitive knowledge. Cognitive knowledge thus transfers through action when necessary, yet the teacher does not perceive knowledge as action or takes it more or less for granted.

The teacher is an expert whose skills, knowledge, and attitude support the students to learn. Applying knowledge, putting theory into practice and using knowledge are required in inspiring teacher’s everyday work. His or her main tasks are to:

- help students in learning;
- act as a facilitator;
- motivate the students to communicate;
- improve the student to understand different behaviors;
- give tools for professional growth;
- deliver immediate feedback and ideas;
- promote critical thinking; and
- use relevant technology.

These facts have an outstanding possibility to come true in a classroom where the students support each other giving and getting feedback and peer evaluation. They share learning and work to reach the same goal and at the same time they take responsibility of the learning of their peers. The teacher is obliged to create a positive atmosphere and stay in active interaction with each student. At the same time a close collaboration with working life creates an active learning environment.

In summary, the empirical results illuminate that the inspiring entrepreneurship teacher is influenced partly by the knowledge and skills resulting from pedagogical and theoretical competence and attitudes, partly by the increasing work cooperation between educational institutions and an employer sector.

Conclusions and some practical implications

The researchers found that teacher education is in focus, and this data indicates that the teaching is holistic, when all forms of the teaching should work together in a concerted effort. The students should know whom to contact, when and if they need support. Understanding of overwhelming teaching and learning process is constantly required. The teacher must be open-minded to experience, willing to hear and reconcile conflict situations. Also, it is of great importance that students' attitudes are trained, not only by the teacher, but also by peer students.

An essential prerequisite for entrepreneurship education and career path is that the teachers and career or entrepreneurship counselors are skilled and enthusiastic in the field. Both the previous studies and literature and our studies indicate that inspiring entrepreneurship teachers in their work should be versatile, flexible and accessible to all students.

According to the researchers' studies, an entrepreneurship teacher should understand both career and entrepreneurship as a holistic phenomenon. An entrepreneurship teacher should also work like an entrepreneur being creative, dynamic, risk-taking, and initiative oriented, hard-working, responsible and action motivated. He or she should possess a positive attitude towards entrepreneurship. That means appreciating market economy, business life, business, enterprises, entrepreneurs and work. Also, he or she should understand entrepreneurship as a phenomenon giving it a holistic meaning. This approach

means developing knowledge, skills and attitudes needed in business life and improving students to manage their own career lives. And finally, an inspiring entrepreneurship teacher must adopt modern learning paradigms. He or she should encourage students to the entrepreneurship and use methods appropriate for transferring entrepreneurial knowledge, skills and attitudes. Such appropriate methods activate students, favor student-orientation and emphasize social interaction.

The experiences of the researchers and studies show that career and entrepreneurship education process in school environment or in higher education is not a linear process. Rather, it is more like a spiral process in which the different levels of career and entrepreneurship education are more inter-dependent and co-existing. The entrepreneurship student often finds spark to succeed in supporting of the inspiring teachers. These teachers should update their skill sets and ponder what they must know and be aware of so that they are able to inspire their students to become entrepreneurs. Thus, an outstanding change is focused on the greater influence of collaboration with working life.

The results of this qualitative and phenomenographic study can be implemented when planning and developing the training programs and curriculum from entrepreneurship and career point of view. Up-to-date and factually correct information along with positive attitudes towards entrepreneurship are prerequisites in helping young people to create their career and to become entrepreneurs. It is vital that students become familiar with the entire process, knowing how to set up an enterprise, design a business plan and making it grow and succeed. Above all they must know what it means on a personal level with correct attitude and what kind of opportunity this career choice can offer them and their families. Risks should also be charted and understood, but as the objective is to encourage people to adopt the field, entrepreneurship should be offered as a positive opportunity and challenge.

The entrepreneurship teachers in this research discovered many indispensable attitudes which they must be able to have to inspire the students in their studies and career options. These attitudes help the students to aim for personal growth and self-confidence in their future working life. As entrepreneurs-to-be, they want to become independent, and they want to regard themselves as experts in their career fields. Thus, future research should focus on students' abilities to invest more effort in effective entrepreneurial studies to establish startups.

References

- Allahwerdi, H., Hietaharju, P., Kolstela, K. & Laikio, K. (2006). Ammattitaito näytöksi ja sen arviointi. Näyttötutkintojen järjestämisen kehittämiskoulutus. Näyttötutkintomestari 15 ov. Helia Ammatillinen opettajakorkeakoulu.
- Alvarez, S. A. & Busenitz, L. W. (2001). The entrepreneurship of resource-based theory. *Journal of Management*, 27, pp. 755–775.

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, pp. 99–120.
- Bloom, B. S. (1956). Bloom's Taxonomy. <http://faculty.washington.edu/krumme/guides /bloom.html>
- Bloom, B. S. & Krathwohl, D. R. (1956). Taxonomy of Educational Objectives: The Classification of Educational Goals, by a committee of college and university examiners. *Handbook I: Cognitive Domain*. New York: Longmans, Green.
- Coffin, L. (2002). *DACUM Facilitator Manual*. Charlottetown, PE: Glendenning Educational Resources.
- Commission of the European Communities. (2006). *Entrepreneurship Education in Europe: Fostering Entrepreneurial Mindsets through Education and Learning*. Brussels: European Commission.
- Dave, R. H. (1967 & 1970). Developing and Writing Behavioural Objectives. R. J. Armstrong (ed.) *Educational Innovators*.
<http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm>
- EQF – European Commission (2004). "Implementation of Education and Training 2010". *Workprogramme. Key competences for Lifelong Learning. A European Reference Framework, November 2004*. Republished 2006.
<http://europa.eu.int/comm/education/policies/2010/doc/basicframe.pdf>
- Finkle, T. A. (2010, February). Entrepreneurship Education Trends. University of Acron. *Research in Business and Economics Journal*, 1. pp. 35-53.
- Glendenning, D. (1998). A Brief Description of the DACUM Model. Charlottetown, PE: Holland College.
- Hannula, H., Ruskovaara, E., Seikkula-Leino, J. & Tiikkala, A. (2012). Evaluating Finnish teacher educators as entrepreneurship educators. Improvement by Evaluation. 8th International Conference on Evaluation for Practice, *A Conference for Experts of Education, Human Services and Policy* (pp. 101-109). Pori, Finland, 18-20 June 2012.
- Honig, B. (2004). Entrepreneurship education: toward a model of contingency-based business planning. *Academy of Management Learning and Education*, 3(3), pp. 258-73.
- Kirby, D. (2007). Changing the entrepreneurship education paradigm. In A. Fayolle (Eds.). *Handbook of Research in Entrepreneurship Education*, Volume 1. Cheltenham, UK: Edward Elgar Publishing Limited, pp. 21-45.
- Järvinen, P. & Järvinen, A. (2004). Tutkimustyön metodeista. Tampere: Opinpaja, p. 189.
- Koiranen, M. (2007). "Yrittäjyys tuo ammatillisiin oppilaitoksiin palveluhenkisyyttä ja rikkoo luutuneita rakenteita", *Ammattikasvatuksen aikakauskirja, Saarijärvi*, 3/2007, 84.

- Krathwohl, D. R., Bloom, B. S. & Masia, B. B. (1964). Taxonomy of Educational Objectives: *The Classification of Educational Goals. Handbook II: Affective Domain*. New York: David Mckay.
- Kuratko, D. F. (2005). The emergence of entrepreneurship education: development, trends, and challenges. *Entrepreneurship Theory and Practice*, 29(5), pp. 577-97.
- Kyrö, P. (2004). Tutkimusprosessi valintojen polkuna. Tampereen yliopisto, ammattikasvatuksen tutkimus- ja koulutuskeskus. Hämeenlinna: Saarijärven Offset, p. 104.
- Kyrö, P. 2005. Entrepreneurial learning in a cross-cultural context challenges previous learning paradigms? In P. Kyrö & C. Carrier (Eds.). *The dynamics of learning entrepreneurship in a cross-cultural university context. Entrepreneurship Education Series*. Hämeenlinna: University of Tampere, pp. 25-30.
- Marton, F. (1994). Phenomenography. In *The International Encyclopaedia of Education*. 2nd edition , Vol. 8. T. Husén & T. Neville Postlethwaite (eds.). Oxford: Pergamon, pp. 4424–4429.
<http://www.ped.gu.se/biorn/phgraph/civil/main/1res.appr.html>
- Metsämuuronen, J. (2003). Tutkimuksen tekemisen perusteet ihmistieteissä. Helsinki: International Methelp, pp. 174-175.
- Moberg, K. (2013). An entrepreneurial self-efficacy scale with a neutral wording. In A. Fayolle, P. Kyrö, T. Mets and U. Venesaar (Eds.). *Conceptual Richness and Methodological Diversity in Entrepreneurship Research*. European Research in Entrepreneurship. Cheltenham, UK: Edward Elgar Publishing Limited, pp. 67-94.
- Munch, B. & Jakobsen, A. (2005). The concept of competence in engineering practice. Engineering and Product Design Education Conference. 15-16 September 2005.
- Napier University (n.d.). Edinburgh, UK. <http://www.napier.ac.uk>
- Nijhof, W. J. & Streumer, J. N. (2001). Key Qualifications in Work and Education. Dordrecht: Kluwer Academic.
- Polanyi, M. (1962). Personal knowledge: Towards a post-critical philosophy. Chicago: University of Chicago.
- Ruohotie, P. & Honka, J. (2003). Ammatillinen huippuosaaminen. Hämeenlinna: Saarijärven Offset.
- Ruohotie, P. (2006). Ammattikorkeakoulun kompetenssiprofiili.
<http://www.ncp.fi/ects/seminarit/tampere/Ammattikorkeakoulun%20kompetenssiprofiili,%20Pekka%20Ruohotie.ppt>
- Rychen, D. S. & Salganik, L. H. (eds.). (2001). Key competencies for a successful life and well-functioning society. Göttingen: Hogrefe & Huber.

- Römer-Paakkanen, T. & Pekkala, A. (2008). Generating entrepreneurship and new learning environments from student's free-time activities and hobbies. *The Finnish Journal of Business Economics*, 3. Liiketaloustieteellinen yhdistys ry, Helsinki, pp. 341-361.
http://lta.hse.fi/2008/3/lta_2008_03_a5.pdf
- Römer-Paakkanen, T. & Takanen-Körperich, P. (2011). Get a life project: Dynamic career and entrepreneurship counseling for university students. *The Review*, 151, pp. 7-16.
- Seikkula-Leino, J., Ruskovaara, E., Ikävalko, M., Kolhinen, J. & Rytkölä, T. (2013). Teachers' reflections on entrepreneurship education: their understanding and practices. In A. Fayolle, P. Kyrö, T. Mets and U. Venesaar (Eds.) *Conceptual Richness and Methodological Diversity in Entrepreneurship Research*. European Research in Entrepreneurship. Cheltenham, UK: Edward Elgar Publishing Limited, pp. 146-171.
- Suonpää, M. (2013). *Constructing an Opportunity Centred Collaborative Learning Model in Higher Education through and for Entrepreneurship*. Jyväskylän yliopisto.
- Westerholm, H. (2007). A journey into the core of the professional skill sets of small business entrepreneurs. A study based on a review of literature and a DACUM analysis. (English version 2010).

APPENDIX A

Summary of the core skills and sub-skills of the lecturers/instructors at the SPACE Conference DACUM workshop in Porto/Portugal, May 27, 2017

“As an inspiring teacher, I must be able ...

Core Skills		Sub-skills					
To learn	CAP	Reflect in, reflect on CA	Have subject knowledge C	Learn by doing P			
To create safe environment	CA	Establish shared values CAP	Understand needs and wants CAP	Respect A			
To inspire passion = trigger	A	Provide thinking space CP	Notice CAP				
To facilitate	CAP	Listen CA	Understand process CP	Manage C	Question CA	Adapt CAP	Compromise CAP
To stimulate	A						
To collaborate	CAP						
To accept failure and use it positively	C	Storytell CAP					

	Core Skills	Sub-skills
C = Cognitive	1	2
CA = Cognitive-Affective	1	3
CP = Cognitive-Psychomotor	0	2
A = Affective	2	1
P = Psychomotor	0	1
AP = Affective-Psychomotor	0	0
CAP = Cognitive-Affective- Psychomotor	3	6
Total	7	15

APPENDIX B

Summary of the skills and sub-skills of the lecturers/instructors at the SIEC-ISBE Conference in Puerto Rico DACUM workshop, July 27, 2017

“As an inspiring teacher, I must be able (n=12)...

Core skills		Sub-skills		
To engage	CAP	Be enthusiastic A	Be open-minded A	Be a good communicator CA
To make relevant	C			
To be dynamic	A			
To trust myself	A			
To solve problems	C			
To integrate	CP			
To accept mistakes	CA			
To respect	CA			
To mentor	CAP			
To have practical experiences	CAP			
To have team building	CAP			
To believe in students	A			

	Core Skills	Sub-skills
C = Cognitive	2	
CA = Cognitive-Affective	2	1
CP = Cognitive-Psychomotor	2	
A = Affective	3	2
P = Psychomotor	0	
AP = Affective-Psychomotor	0	
CAP = Cognitive-Affective- Psychomotor	4	
Total	12	3

Appendix C

SPACE Conference, Porto

Summary of a supplementary questionnaire

Core skills		Supporting skills		Attitudes	
Be a risk taker	CA			Organization skills	CAP
Be a good facilitator	CAP			Autonomy	A
Be creative	A			Motivation	A
Have own company	CP			Patience	A
Energy	P			Energy	P
Flexibility	A			Word awareness	C
Competence	CAP	Flexibility	A	Flexibility	A
Passion	A	Tolerance	A	Passion	A
Guidance	CP	Respect	CA	Problem-solving	C
Patience	A	Listen	CA	Optimism	A
Inspire/lead	AP			Courage	AP
				Empathy	A
Able to listen	A	Understand different levels of experience	CAP	Patience	A
Coaching	AP	Empathy	A	Understanding	A
				Entrepreneurial	CAP
				Collaborate/network	CAP
				Open-minded/into new things	A
				Parenting young people/energy	AP
Subject knowledge	C				
Up-to-date research	C				
Teaching skills	CAP				

	Core Skills	Sub-skills
C = Cognitive	2	2
CA = Cognitive-Affective	1	2
CP = Cognitive-Psychomotor	2	0
A = Affective	5	13
P = Psychomotor	1	1
AP = Affective-Psychomotor	2	2
CAP = Cognitive-Affective- Psychomotor	3	4
Total	16	24

APPENDIX D

SIEC-ISBE Conference, Puerto Rico

Summary of a supplementary questionnaire

Core skills		Supporting skills		Attitudes	
Knowledge	C	Understanding	CA	Open-minded	A
Motivated	A			Big believe in students	A
				Supporting, engaging	AP
				Inspiring	A
Sensitive to new ideas	CA	Open to diversity	CA	Positive	A
Assertive	AP	Technical skills in information system	CP	Supportive	A
To be facilitator	CA P	Analytical skills	CP	Open mind	A
Good rapport with students	AP	Know cultural climate	CA P	Be pleasant at all times	A
Patience	A	Be available to students	AP	Be fair in dealing with students	AP
Updated in knowledge	C	Willing to explain and re-explain topics	A	Be a co-operative and helpful co-worker	CA P
Get to know names quickly	A	Be aware of possible student problems and needs	CA		
Engage students	CA P	Utilize relevant information	CA P	Positive	A
Use relevant technology	CP	IT skills	CP	Respectful	A
Promote critical thinking	CA P	Team building	AP	Discovery	CA
Problem solving	CA P	Decision making	CP		
Flexibility	A	Brave	A	Positive	A
Curious	A	Motivated	A	Support	A
Open minded	A	Knowledge	C	Open attitude	A
				Feedback	CA P

	Core Skills	Sub-skills
C = Cognitive	2	1
CA = Cognitive-Affective	1	4
CP = Cognitive-Psychomotor	1	4
A = Affective	6	15
P = Psychomotor	0	0
AP = Affective-Psychomotor	2	3
CAP = Cognitive-Affective- Psychomotor	3	3
Total	15	30

Appendix E

SIEC Finland members

Summary of a supplementary questionnaire

Core skills		Supporting skills		Attitudes	
Spontaneity	A	Motivate students	A	Inspiring	A
Experience	CP	Diverse teaching methods	CAP	Motivating	A
Innovativeness	AP			Mastering my field	C
Professional competence in business	C	Social competence	A	Engagement	CAP
Pedagogical content knowledge	C	Present and moderate skills	P	Self-reflection	A
Management	C	Methodological skills	C	Self-dependence	A
Managing information	C	Learning skills	CAP	Positive attitude	A
Commitment to quality	P	Engagement/eye for details	CAP	Motivational attitude	A
Continuous learning	CA	Motivation	A	Flexible attitude	A
Entrepreneurial spirit	CAP	Knowledge of new media	C	Patience	A
Own experience	CP	Good general knowledge	C	Open mindset	A
Intercultural competencies	CAP			Professional	C
Up-to-date business knowledge	CP	Communicate the topics in question	CP	Coaching, not teaching	AP
Pedagogical alternatives in use	CAP	Visualize future opportunities	AP	Inspiring & motivating	A
Cooperation and collaboration	CAP	Motivate and engage	CAP	Committed & interested	AP
Pedagogical competence	CAP	Risk taking	CA	Opportunity centered	A
Substance competence	CAP			Positive outlook	A
Innovative competence	CAP			Flexible	A
Competence in substance	CAP	Capability to adapt	AP	Positive	A
Teaching skills	CAP	Capability to learn new	AP	Cooperative	A
Interaction skills	CAP	Capability to understand different ways of learning	AP	Openness	A
Entrepreneurship talent	CAP	Open mind	A		
Innovativeness	AP	Communicative skills			
Experience in entrepreneurship	CAP	Professional skills	CAP		
Inspiring atmosphere	A	Knowledge	C	Supportive	A
Flexible ways to succeed	AP	Empathy	A	Inspiring	A
Commit to success	P	Understanding different ways	CAP	Enthusiastic learning	CAP
Creating supporting atmosphere	CA	Understand different cultures	CAP	Inspired	A
Be clear and supporting	A	Empathy skills	AP	Ability to listen	A

Flexible and able to adapt to students' ideas	CAP			Supportive	A
Student centered attitude	A	Questioning and listening skills	AP	Everything I do aims to help the students	A
Versatile teaching methods	CAP			Don't forget the big picture	CAP
Willingness to help learning	CAP	Flexibility/creativity	AP	Open mind	A
Master your field	C	Good examples from real life supporting	C	Positiveness	A
Business	C	Motivation, inspiration	A	Empathy	A
Marketing	C	Supportive	A	Group leading	CP
Communication	CAP	Group dynamic leading	AP	Supporting	A
Teamwork	CAP	Social skills/ updating networks	AP	Guts to understand	A
Entrepreneurship skills	CAP	Leadership skills	CAP	Entrepreneurship	CAP
Business skills	CAP	IT-skills, understanding and training sports	CAP	"long nerves"	A

	Core Skills	Sub-skills
C = Cognitive	7	7
CA = Cognitive-Affective	2	1
CP = Cognitive-Psychomotor	3	2
A = Affective	4	35
P = Psychomotor	2	1
AP = Affective-Psychomotor	3	11
CAP = Cognitive-Affective- Psychomotor	19	14
Total	40	71

Appendix F

Demographics

Gender	Age	Country	Working area	Years as lecturer	Teaching area
Female	56	United Kingdom	University	30	HRM
Male	51	United Kingdom	University	30	Linguistics
Female	70	Belgium	Retired/coach in EU-projects	53	Economics
Female	58	Austria	University	29	Finance, intercultural communication
Female	43	Belgium	Polytechnic	10	Finance, economics
Male	45	Greece	Polytechnic	15	Marketing
Female	58	Belgium	University	17	Business management
Female	51	Finland	Polytechnic	17	Entrepreneurship, marketing
Female	50+	Finland	Polytechnic	25	Int. business. languages
Female	48	Finland	Polytechnic	11	Languages, digital business
Female	43	Austria	Polytechnic	14	Business education, business teacher education
Female	70	Germany	Adult college	23	Finnish for foreigners
Female	53	Finland	Vocational	22	Entrepreneurship, health services
Male	58	Finland	Polytechnic	1	Business administration
Female	54	Finland	Vocational	21	Marketing
Female	-	Finland	Polytechnic	29	Chem. technology
Female	-	Finland	Polytechnic	16	Business communication
Male	47	Finland	Vocational	15	Tourism, international business
Male	39	Finland	Vocational	?	Entrepreneurship, international studies
Female	51	Sweden	Vocational	20	Entrepreneurship, business, e-commerce, administration
Female	56	Sweden	Vocational	19	Economics, leadership, marketing, events

Gender	Age	Country	Working area	Years as lecturer	Teaching area
Female	52	Puerto Rico	University	24	Management
Female	70+	Bahamas	University	48	Business
Female	60+	USA	University	21	Human sciences, personal finance, resource mtg, consumer economics
Female	55	Finland	Vocational	28	Student counseling, leadership skills
Female	44	Finland	Polytechnic	13	Digital Business

	Female Teachers	Male Teachers
Number	21	5
Age	43 – 70	39 – 58
Years as Lecturer	6 – 53	1 – 30