

PILOTING ENTREPRENEURIAL COMPETENCE SURVEY FOR PRIMARY/LOWER SECONDARY SCHOOL PROFESSIONALS

Maja Ljubić, SEECEL

Efka Heder, SEECEL

Ivana Batarelo Kokić, University of Split

Abstract

U radu je dan prikaz rezultata kvantitativnog dijela istraživanja studije strateškog pilotiranja instrumenta za poduzetničko učenje koje je razvio istraživački tima SEECELa. Instrument je pilotiran u 31 osnovnoj školi u osam zemalja s ciljem ostvarivanja ishoda učenja, stručne izobrazbe nastavnika i zaposlenika u upravi škola koje rade po različitim kurikulumima. Europski kompetencijski okvir temelji se na Bloomovoj taksonomiji obrazovnih ciljeva te sadrži tri domene učenja: kognitivnu, afektivnu i psihomotornu. Prilikom određivanja poduzetničkih kompetencija stručnjaka u osnovnim školama, istraživači su koristili upitnik putem kojeg su se mjerili ishodi vezani uz poduzetničku kompetenciju. Jedan dio upitnika je bio usmjeren isključivo na procjenu znanja iz područja poduzetništva (kognitivna domena – niže razine učenja), dok je drugi dio upitnika bio usmjeren na procjenu stavova prema poduzetništvu. Faktorska analiza varijabli putem kojih su se procjenjivali stavovi o poduzetništvu rezultirala je s dvije skale. Prva skala odnosi se na ishode vezene uz učenje o poduzetništvu u kognitivnoj domeni (više razine učenja), s Cronbach alpha vrijednosti koja iznosi 0,853. Druga skala odnosi se na ishode vezene uz učenje o poduzetništvu u afektivnoj domeni, s Cronbach alpha vrijednosti koja iznosi 0,892. Visoke vrijednosti koeficijenta konzistentnosti dokaz su vrijednosti upitnika za procjenu poduzetničke kompetencije te su dane smjernice za korištenje upitnika u daljnjim istraživanjima.

Key Terms: entrepreneurial learning, Blooms taxonomy, cognitive domain, affective domain, psychomotor domain

1. Introduction

In the recent years, there has been a growing emphasis on education for entrepreneurship within education systems. Sustainable development of a lifelong entrepreneurial learning system requires focus on all levels of formal education. According to the Oslo Agenda (European Commission, 2006), entrepreneurship education should be included in the primary school curriculum as a horizontal element in all fields of study and in order to promote an entrepreneurial way of thinking. It is not possible to have an entrepreneurial student in entrepreneurial school without an entrepreneurial teacher; hence there is a large importance of teachers' entrepreneurial competence development. When arguing about importance of teachers' entrepreneurial competence and considering different approaches to teachers' entrepreneurial competence development, it is important to emphasize the role of evaluation in the implementation of entrepreneurship programs on different levels of education.

There are substantial difficulties in undertaking evaluations which provide findings that clearly indicate program impact due to the problems of assigning causality for subsequent behaviour to a single intervention and the complexities of measuring different domains of learning (OECD, 2009). The entrepreneurship program objectives determine the required outcomes, which in turn should provide evaluation indicators. In addition, there is a permanent demand for reliable data-gathering instruments. This paper presents findings of the quantitative section of the study of strategic piloting of entrepreneurial learning instrument developed by SEECEL1 (Heder, Ljubić, & Nola, 2011). The instrument was strategically piloted at 31 schools in eight countries and was aimed at the implementation of learning outcomes, in-service teacher training and school management training in different curricula and different curriculum systems. The European Competences Framework was a basis for design of the questionnaire for measuring entrepreneurship-related learning outcomes, which was used in determining teacher and school management staff entrepreneurship competence. For the purpose of this study, it is important to emphasize that the European Competences Framework has fundamental grounds in the Bloom's Taxonomy of Educational Objectives consisting of the three domains of learning: cognitive, affective and psycho-motor (Anderson & Krathwohl, 2001).

1 The South East European Centre for Entrepreneurial Learning (SEECEL) is a regional institution with the mission to promote the development of a lifelong entrepreneurial learning system and entrepreneurship as key competence in eight pre-accession countries of South East Europe (SEE) and Turkey. SEE countries collectively expressed the need for strategic regional cooperation, and one of the identified key areas for action was integrating entrepreneurial learning on the all levels of education. SEECEL was established in 2009 as direct result of the initiative of the countries of South East Europe/in the pre-accession region. SEECEL is financed by the European Union (EU) through the Multi-beneficiary Package under the Instrument for Pre-Accession Assistance and from the state budget of the Government of the Republic of Croatia through the Ministry of Entrepreneurship and Crafts.

2. Theoretical background

The researchers argue that understanding of entrepreneurial practice is crucial for developing competent entrepreneurs and valid competence-based assessments (Gulikers, Kester, Kirschner, & Bastiaens, 2008). Also, the understanding of what entrepreneurship means in a particular entrepreneurship course or training should be the basis for the assessment (Dall'Alba, 2004). While recognizing differences among entrepreneurial learning programs, the starting point in discussing the variety of evaluation approaches are the program objectives which should determine the required outcomes and finally provide evaluation indicators.

The definitions of education for entrepreneurship vary in different areas of study, but commonly deal with range of skills and attributes, including the ability to think creatively, to work in teams, to manage risk and handle uncertainty (OECD, 2007). Furthermore, entrepreneurship education differs across different educational systems. In primary/lower secondary schools, the levels of inclusion of entrepreneurship education differ among countries. In Finland, entrepreneurship education is included in the national core curricula as a cross-curricular theme at all education levels (Ruskovaara, Pihkala, Rytkölä, & Seikkula-Leino, 2010). In Brazil, entrepreneurial learning starts in a very young age when pupils are trained to think in terms of defining dreams or contexts.

In this approach, there is a shift from the approach focusing on knowledge transfer rather than learning how to think independently and proactively (Filion & Dolabela, 2007). According to Davis (2002), in the United Kingdom, curriculum authorities place emphasis on three main components of employability: enterprise capability; financial literacy; and economic and business understanding. Besides, these components are more specifically defined through the knowledge, skills and attitudes which they require. When discussing teacher entrepreneurial competence development, Snoek (2006) writes that teachers should participate in collaborative learning communities and they should be innovators and entrepreneurs. Hence, teacher education should include these qualities in their curricula and to prepare their students to become agent of change in schools. Consequently, mentioned qualities should be included in the instrument assessing teachers' entrepreneurship competence.

The primary consideration that influenced this study is a promotion of entrepreneurship as a key competence in early education (ISCED 2). According to the European Framework for Key Competencies for Lifelong learning, competence consists of knowledge, skills and attitudes (European Communities, 2007). Kozlinska (2012) writes that the European Competences Framework has fundamental grounds in the Bloom's Taxonomy of Educational Objectives consisting of the three domains of learning: cognitive (knowledge, comprehension and critical thinking), affective (concerning attitudes, emotions and feelings) and psycho-motor (focusing on skills).

Hence, in determining the teachers' and school management staff's entrepreneurship competence, the assessment instrument is designed with intent to test different domains of learning. While the questions in one of the questionnaire sections focused solely on the entrepreneurial knowledge (cognitive domain – the level of remembering and understanding), the other assessment instrument section focused on the participants' entrepreneurship-related attitudes. It included variables which could be linked to the affective domain and the cognitive domain (higher levels of learning), according to the revised Bloom's Taxonomy (Anderson & Krathwohl, 2001).

Following the Anderson (1982) notion that for novices, the skill-based learning outcomes should be translated into cognitive learning outcomes, the questionnaire is designed with idea that questions that belong to the cognitive domain and are covering higher levels of learning could be translated into the learning outcomes that belong to the psychomotor/skill-based domain.

3. Methodology

3.1. Analysis

The quantitative section of the study of strategic piloting is based on a quasi-experiment, the experimental method in which units are not assigned to conditions randomly (Shadish, Cook, & Campbell, 2002). Outcome measures were taken on two occasions: before and after the strategic piloting. The unit of assignment was the school, whereas the primary unit of analysis were ISCED 2 school teachers and the school management staff. The outcome measure was the ISCED 2 school professional questionnaire which consisted of demographic questions (country, institution, participants gender, age, subject area, curriculum area, type of employment, length of work experience), 20 Likert scale questions (5 levels) related to the entrepreneurship and an entrepreneurial knowledge test with 8 questions.

3.2. Results

While one of the questionnaire sections focused solely on the entrepreneurial knowledge (cognitive domain – the level of remembering and understanding), the another part of the questionnaire accounted for the participants' entrepreneurship related attitudes. Factorial analysis of the variables focusing on the entrepreneurship related attitudes resulted with two scales (table 1). First scale with the entrepreneurship-related learning outcomes in the cognitive domain for higher levels of learning, with a Cronbach's alpha score of 0.853. The second scale with the entrepreneurship-related learning outcomes in the affective domain with a Cronbach's alpha score of 0.892.

Table1. Factorial structure of entrepreneurship-related learning outcomes scale: factorial weights and Cronbach alpha coefficient

	1	2	A
Factor 1: Entrepreneurship-related learning outcomes in the affective domain			0.892
04. Entrepreneurs can bring added value to our school.	0.642	0.481	
05. My friends value entrepreneurial activity above other activities and careers.	0.450		
08. Entrepreneurs are welcome in my classroom.	0.645	0.421	
11. Being an entrepreneur implies more advantages than disadvantages.	0.599	0.420	
12. I believe that concrete results are necessary in order to judge professional success.	0.551	0.516	
17. Entrepreneurs are job creators.	0.706		
18. Entrepreneurship can be learned.	0.714		
19. Entrepreneurship is the basis of wealth creation, benefiting us all.	0.728		
20. Teachers should think entrepreneurially.	0.732		
Factor 2: Entrepreneurship-related learning outcomes in the cognitive domain – higher levels of learning			0.853
01. The culture in my country is highly favourable towards entrepreneurial activity.		0.472	
02. Innovations are a central factor in the life of our school.	0.421	0.561	
03. I invest a considerable amount of my time in making the school function better.	0.475	0.562	
09. A creative atmosphere in my school inspires me to develop ideas for new activities.	0.467	0.507	
13. In the last two years, our school has implemented many activities that had not been tried previously.		0.677	
14. Most people in my country consider it unacceptable to be an entrepreneur.		0.763	
15. I believe entrepreneurial competence can be developed.		0.752	
16. I have always worked hard in order to be among the best in my field.		0.752	

3. Conclusions

While focusing on the European Competences Framework which has grounds in the Bloom's Taxonomy of Educational Objectives consisting of the cognitive, affective and psycho-motor domains of learning, the main paper objective is to present the assessment instrument designed in order to determine teacher and school management staff entrepreneurship competence. This assessment instrument was developed by SEECEL and used in the quantitative section of the study of strategic piloting. The instrument is implemented in eight SEECEL member countries on a large sample of teachers and school management staff. Total of 518 participants completed the questionnaire before and 520 participants completed the questionnaire after the received training. The factorial analysis of the attitudes section of the questionnaire indicates high consistency of the cognitive domain (higher levels of learning) and affective domain scale. The promising statistical consistency results are important for the further development of the questionnaire and indicate possibilities for its wide usage. Also, it is important to emphasize that the questions that belong to the cognitive domain and are covering higher levels of learning could be translated into the learning outcomes that belong to the psychomotor/skill-based domain.

In the recent years, assessment and evaluation of the programs for education and training in the area of entrepreneurial learning is a common theme among area experts in the European Union member countries. The special attention is devoted to the development of assessment instruments. The results of factorial analysis and implementation of the SEECEL assessment instrument on a relatively large sample in 8 countries suggest a high validity of the instrument and indicate possibilities for its wider application. This instrument could find its usage in the creation and development of education and training programs in the field of entrepreneurial learning for teachers and school management staff.

4. References

- Anderson, J. R. (1982). Acquisition of cognitive skill. *Psychological Review*, 89, 369-406.
- Anderson, L., & Krathwohl, D. R. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York, NY: Longman.
- Davies, H. (2002). *A Review of Enterprise and the Economy in Education*. HM Treasury
- European Commission (2006). *Oslo Agenda for Entrepreneurship Education in Europe*. Oslo: Author.
- European Communities (2007). *The Key Competences for Lifelong Learning – A European Framework*. Luxembourg: Office for Official Publications of the European Communities.
- Filion, L. J., & Dolabela, F. (2007). The Making of a Revolution in Brazil: The Introduction of Entrepreneurial Pedagogy in the Early Stages of Education. In Fayolle, A. (Ed.) *Handbook of Research in Entrepreneurship Education, Volume 2*. Northampton, MA: Edward Elgar: 13-39.
- Heder, E., Ljubić, M., & Nola, L. (2011). *Entrepreneurial Learning: A Key Competence Approach – ISCED Level 2*. Zagreb: SEECCEL.
- Gulikers, J. T. M., Kester, L., Kirschner, P. A., & Bastiaens, Th. J. (2008). The effect of practical experience on perceptions of assessment authenticity, study approach, and learning outcome. *Learning and Instruction*, 18, 172-186.
- Kozlinska, I. (2012). *Fundamental view of the outcomes of entrepreneurship education*. Tartu: University of Tartu.
- OECD (2009). *Evaluation of Programmes Concerning Education for Entrepreneurship*. Paris: OECD Working Party on SMEs and Entrepreneurship, OECD.
- Ruskovaara, E., Pihkala, T., Rytkölä, T. & Seikkula-Leino, J. (2010). *Studying Teachers' Teaching Methods and Working Approaches in Entrepreneurship Education*. Proceedings of the ESU Conference 2010 on entrepreneurship. 22-28 August, Tartu.
- Shadish, W. R. Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin Company.
- Snoek, M. (2006) *Teacher competences in an era of change*. Proceedings of the 31st Annual ATEE Conference. Portoroz, Slovenia: Association of Teacher Education in Europe.