

ASSESSMENT OF ACTIVE TEACHING AND LEARNING METHODS APPLIED IN ENTREPRENEURSHIP EDUCATION

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Annotation. Following the analysis of scholarly literature, the article discusses the active teaching and learning (innovative) methods. Seeking for high quality evaluation of their significance, the written questionnaire survey of teachers was conducted during the 22nd Olympiad of Economics and Business of Lithuanian School Learners organised by the Ministry of Education and Science of the Republic of Lithuania and Lithuanian University of Educational Sciences 23 April 2016. The method of direct assessment (weight estimation) was applied for assessment of significance of active teaching and learning methods. The research results revealed that such active teaching and learning methods as *discussion, solving of practical business problems, presentation and consulting* are most efficient, whereas *method of evaporating conflict cloud, method of storyboard, method of logical branch* are used least frequently. The data received after the evaluation of significance of active teaching and learning methods applying the method of direct assessment (weight estimation) that discussion is the most significant method out of all the 17 assessed methods.

Keywords: *active teaching and learning (innovative) methods, teaching and learning methods, efficiency, entrepreneurship education, method of direct assessment (weight estimation).*

Introduction

Relevance. As it can be seen from the analysis of scholarly sources, the discussions among scholars, practitioners and experts about the most efficient methods for entrepreneurship education are active. Application of teaching and learning methods depend on the pedagogical approach and the context where teaching and learning occur. The emphasis is laid on the significance of teaching and learning methods developing entrepreneurship, the necessity to transit from traditional teaching methods to new and innovative ones, the application of which results in learning more from experience through creation of certain real life situations, where learners become more active and more interested in learning. Applying active teaching and learning methods the knowledge obtained while learning actively is longer stored in the memory, thinking skills of higher level are developed, the change in attitudes, values and expectations is ensured.

It is acknowledged that less efficient passive teaching (traditional) methods are applied for entrepreneurship education. The uniform and universally acknowledged practice of applying teaching and learning methods for development of school learner entrepreneurship is not available either.

The variety of entrepreneurship education curricular and the set education goals encourage for application of different teaching and learning methods because an ideal one, which fits all the cases, is not available (Fayoll & Gailly, 2008, p. 579).

Problem. The teaching and learning methods have been intensively discussed in numerous scholarly works but research studies focusing on significance of active teaching and learning methods applied for entrepreneurship education are scarce.

The efficiency of teaching and learning methods used for entrepreneurship education can be evaluated directly and indirectly but their evaluation is complicated and subjective because it is based on various research methods and approaches.

The goal: to identify significance of active teaching and learning methods applying direct assessment (weight estimation).

The research methods and the stages of research organisation

The analysis of scholarly literature, which serves as basis for discussion about active teaching and learning methods applied for entrepreneurship education.

The written questionnaire survey conducted seeking to identify the efficiency of teaching and learning methods for entrepreneurship education of school learners.

The sample of the research included 17 teachers from Lithuanian gymnasiums, who prepare 9th-12th formers for *the Olympiad of Economics and Business of Lithuanian School Learners*.

The analysis of the data of the teacher questionnaire survey was conducted with the help of the programme *Microsoft Excel 2010*.

To evaluate the significance of teaching and learning methods mathematically processing and systemising data, *the direct assessment method (weight estimation)* is used, when the sum of all the weights of components ω_i is equal to 1 and the highest value corresponds to the

best assessment (Podvezko, 2006, p. 162; Podvezko & Podvezko, 2014, p. 113). Applying the *method of direct assessment*:

$$\sum_{i=1}^m \omega_i = 1 \quad (m - \text{number of assessed components}). \quad (1)$$

The mean values of each assessed component as well as their weights ω_i (as a hundredth part of averages) are calculated:

$$\omega_i = \frac{\sum_{j=1}^r e_{ij}}{r} = \frac{e_i}{r}$$

(r – number of evaluators, e_{ij} – estimates of evaluators).
(2)

The sum c_{ik} of all estimations of every assessed component s_i and weights of components are calculated ω_i

$$s_i = \sum_{k=1}^r c_{ik} \quad (3)$$

$$\omega_i = \frac{c_i}{100} = \frac{s_i}{100 r} = \sum_{k=1}^r c_{ik} / (100 r). \quad (4)$$

Research results

The results of assessment of significance of active teaching and learning methods employing direct assessment (weight estimation), which are presented in the figure, reveal that *discussion* (the first place according to significance; $\omega_i=0.151$) is the most significant out of the 17 evaluated methods. This is a method applied on

fragmentary basis, which is used analysing a certain topic or problem within the curriculum of economics and entrepreneurship, when learners exchange information and share their experience. Actively engaging in discussions they develop self-confidence, critical thinking, ethic principles of communication and collaboration, ability to argue and assume responsibility for own actions (Petty, 2007; Bennett, 2006; Nussbaum et al., 2009; Mwasalwiba, 2010; Ammerman et al., 2012; Harkemaa & Popescub, 2015).

Solving of practical business problems, i.e. completion of prepared tasks seeking to consolidate economic knowledge and to develop entrepreneurship skills (Ruškytė & Navickas, 2017, p. 177) is the second most significant method ($\omega_i=0.123$).

Presentation is ranked the third according to significance ($\omega_i=0.096$). This method embraces a public presentation of ideas, works, projects, which enables learners to demonstrate not only acquired knowledge but also subject-specific and general competencies, i.e. ability to analyse scholarly literature sources, to solve problems, to think logically and critically, ability to speak publicly, to use interactive means, etc. (Petty, 2007, p. 274, p. 310; Lazarev, 2011).

Consulting is the fourth most significant method ($\omega_i=0.081$), which is defined as information or guidance of teachers and business representatives (mentors) provided in an oral or written form regarding business establishment, project development, etc. (Martin, Kolomitro & Lam, 2014; Melnikas et al., 2014, p. 4).

As it can be seen from the assessment data, *the method of brainstorming* is ranked the fifth method according to significance ($\omega_i=0.068$). This is a method of business idea

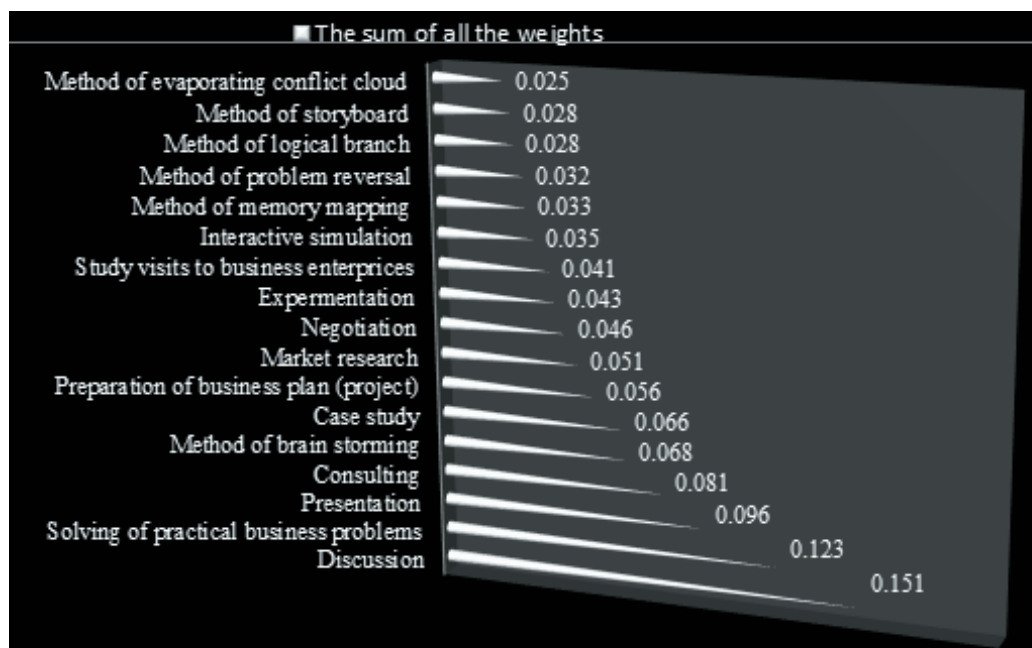


Figure. Establishment of significance of active teaching and learning methods applying the method of direct assessment (weight estimation)

generation in groups, which aims to create alternatives of problem solving and promotes initiative, creative and analytical thinking (Petty, 2007; Jakobsen & Rebsdorf, 2008, p. 89; Melnikas et al., 2014, pp. 203–204).

The *case study* is also an efficient method for entrepreneurship education (the sixth place according to significance; $\omega_1=0.066$) and it focuses on abilities to apply possessed knowledge in a real situation. This is an analysis of a specific social, economic phenomenon, situation or problem and its generalisation seeking to highlight essential aspects and interconnections (Rasmussen & Sørheim, 2006; Bennett, 2006; Ammerman et al., 2012; Martin, Kolomitro & Lam, 2014; Jakubavičius et al., 2014; Harkemaa & Popescub, 2015).

Development of business plan (project) is the seventh most significant method ($\omega_1=0.056$). The method includes planned, systemic and creative activities that embrace generation of business ideas, search for necessary information, its analysis, evaluation and application for implementation of selected ideas. Project development, which is usually related to investigation, stimulates curiosity, a desire to deepen theoretical knowledge, encourage to learn to adequately evaluate a situation and to adopt well-reasoned decisions, strengthen self-confidence and responsibility for implementation of the project (Mwasalwiba, 2010; White, Hertz & D'Souza, 2011; Pittaway & Thorpe, 2012; Ruskovaara, & Pihkala, 2013, Harkemaa & Popescub, 2015).

Market research is evaluated as the eighth most significant method ($\omega_1=0.051$). It focuses on collection of information on supply and demand of products or services, consumer needs as well as on processing of such information. This is a method that encourages a better understanding of the surrounding environment and application of the acquired knowledge and abilities solving various problems (Melnikas et al., 2014).

The research data show that *method of evaporating conflict cloud* ($\omega_1=0.025$) is least significant out of the 17 evaluated methods, though this method can be applied solving internal, interpersonal or group conflicts having clarified its causes, wishes of the conflicting parties and having identified the common goal, i.e. what links their needs (Goldratt, 1990; Mabin, 1999).

Method of storyboard and *method of logical branch* were ranked equally and both are in the fifteenth- sixteenth places.

Method of storyboard ($\omega_1=0.028$) is a widely applied method for business idea generation, creativity promotion and problem solving (Melnikas et al., 2014, pp. 210–211), which is rarely used in the process of entrepreneurship education.

Method of logical branch is a method based on cause-effect logic, which is applied analysing business processes or specific problems of business and helps school learners to foresee positive or negative consequences (Goldratt, 1990; Mabin, 1999). However, this method is also assigned

to teaching and learning methods that are rarely applied by teachers ($\omega_1=0.028$).

The data of direct assessment show that *method of problem reversal* ($\omega_1=0.032$), *method of memory mapping* ($\omega_1=0.033$), *interactive simulation* ($\omega_1=0.035$) and *study visits to business enterprises* ($\omega_1=0.041$) are evaluated as methods of little significance.

Method of problem reversal is a method, which aims at comprehensive analysis of problem considering various aspects and finding the most appropriate method of solution (Petty, 2007; Melnikas et al., 2014).

Method of memory mapping is a method for group work, strategic analysis, solving of marketing (demand and supply of goods, increase of competitiveness) and other problems, which creates conditions for exhaustive causal analysis (Petty, 2007; Melnikas et al., 2014, pp. 213–215).

Interactive simulation is a method applied for development and consolidation of entrepreneurship skills. During simulation such methods as case study, role play and other active teaching and learning methods can be applied (Zoroja, 2013).

Study visits to business enterprises is an efficient method of entrepreneurship education, which provides school learners with an opportunity not only to familiarise with activities of a specific local or foreign company, influence of processes occurring in the business world on decisions made in a company but also to carry out certain assignments and practically apply and consolidate possessed knowledge and abilities (*Building Entrepreneurial Mindsets and Skills in the EU*, 2012; Ruskovaara & Pihkala, 2013; Jakubavičius et al., 2014, p. 30); however, the results show that such a method is rarely applied in entrepreneurship education and is of little significance.

Conclusions

Applying the method of direct assessment (weight estimation) it was established that such active teaching and learning methods as *discussion*, *solving of practical business problems*, *presentation* are the most frequently applied and most significant methods in entrepreneurship education; *method of evaporating conflict cloud*, *method of storyboard*, *method of logical branch* are least significant.

The data of direct assessment revealed that *discussion* is the most significant method in entrepreneurship education out of all the 17 assessed methods. *Solving of practical business problems* is the second most significant methods, *presentation* is in the third place and *consultation* is considered to be the fourth method according to significance.

Following the assessment data, *method of evaporating conflict cloud* is least significant in entrepreneurship education out of all the active teaching and learning methods, which were assessed in the research.

REFERENCES

1. Ammerman, P., Gawel, A., Pietrzykowski, M., Rautkienė, R., & Williamson, T. (2012). *The Case Study Method in Business Education*. Poznań: Bogucki Wydawnictwo Naukowe.
1. Bennett, R. (2006). Business Lecturers Perception of the Nature Entrepreneurship. *International Journal of Entrepreneurial Behaviour & Research*, 12(3), 165–188. <http://dx.doi.org/10.1108/13552550610667440>
2. *Building Entrepreneurial Mindsets and Skills in the EU*. (2012). Office for Official Publications of the European Union. Luxembourg. doi: 10.2769/40659
3. Fayolle, A., & Gailly, B. (2008). From Craft to Science: Teaching Models and Learning Processes in Entrepreneurship Education. *Journal of European Industrial Training*, 32(7), 569–593. <http://dx.doi.org/10.1108/03090590810899838>
4. Goldratt, E. M. (1990). *What is this thing called the Theory of Constraints?* North River Press, Croton-on-Hudson, NY.
5. Harkemaa, S., & Popescub, F. (2015). Entrepreneurship Education for Adults: a Case-study. *Procedia – Social and Behavioral Sciences*, 209, 213–220. doi: 10.1016/j.sbspro.2015.11.218
6. Jakobsen, H. S., & Rebsdorf, S. O. (2008). *Idejų plėtra ir kūrybinės inovacijos*. Vilnius: VšĮ Lietuvos inovacijų centras.
7. Jakubavičius, A., Strazdienė, G., Vilys, M., Burinskienė, A., Žemaitis, E., & Pipirienė, V. (2014). *Žiniomis grįsto verslumo skatinimas: metodai ir taikymo praktika (Promotion of Knowledge-based Entrepreneurship: Methods and Practice of Application)*. Vilnius: Technika.
8. Lazarev, D. (2011). *Prezentatsija: luchshe odin raz uvidet'!* Moskva: Al'pina Publisher.
9. Mabin, V. (1999). *Goldratt's "Theory of Constraints" Thinking Processes: A Systems Methodology linking Soft with Hard*. School of Business and Public Management Victoria University of Wellington. Martin, B. O., Kolomitro, K., & Lam, T. C. M. (2014). Training Methods: A Review and Analysis. *Human Resource Development Review*, 13(1), 11–35. doi:10.1177/1534484313497947
10. Melnikas, B., Jakubavičius, A., Strazdas, R., Chlivickas, E., Lobanova, L., & Stankevičienė, J. (2014). *Intelektinis verslas (Intellectual Business)*. Vilnius: Technika.
11. Mwasalwiba, E. S. (2010). Entrepreneurship Education: a Review of its Objectives, Teaching Methods, and Impact Indicators. *Education and Training*, 52(1), 20–47. <http://dx.doi.org/10.1108/00400911011017663>
12. Nussbaum, M., Alvarez, C., McFarlane, A., Gomez, F., Claro, S., & Radovic, D. (2009). Technology as Small Group Face-to-face Collaborative Scaffolding. *Computers & Education*, 52, 147–153.
13. Petty, G. (2007). *Šiuolaikinis mokymasis: praktinis vadovas (Teaching Today. A Practical Guide)*. Vilnius: Tyto alba.
14. Pittaway, L., & Thorpe, R. (2012). A Framework for Entrepreneurial Learning: A Tribute to J. Cope. *Entrepreneurship & Regional Development*, 24, 9 (10), 837–859. doi:10.1080/08985626.2012.694268
15. Podvezko, V. (2006). Neapibrėžtumo įtaka daugiakriteriniams vertinimams (Multicriteria Evaluation under Uncertainty). *Verslas: teorija ir praktika = Business: Theory and Practice*, 7(2), 81–88. Retrieved from http://vddb.library.lt/fedora/get/LT-eLABa-0001:J.04~2006~ISSN_1648-0627.V_7.N_2.PG_81-88/DS.002.0.01.ARTIC
16. Podvezko, V., & Podvezko, A. (2014). Kriterijų reikšmingumo nustatymo metodai (Methods of Estimation of Weights). *Lietuvos matematikos rinkinys. Lietuvos matematikų draugijos darbai, serija B*, 55, 111–116. Available online at: <http://www.mii.lt/LMR/B/2014/55B21.pdf>
17. Rasmussen, E. A., & Sørheim, R. (2006). Action based Entrepreneurship Education. *Technovation*, 26(2), 185–194. doi:10.1016/j.technovation.2005.06.012
18. Ruskovaara, E., & Pihkala, T. (2013). Teachers Implementing Entrepreneurship Education: Classroom Practices. *Education + Training*, 55 (2), 204–216. <http://dx.doi.org/10.1108/00400911311304832>
19. Ruškytė, D. & Navickas, V. (2017). Efficiency of teaching and learning methods for development of learner entrepreneurship. *Pedagogika = Pedagogy*, 126(2), 168–184. doi: 10.15823/p.2017.27
20. White, R., Hertz, G., & D'Souza, R. (2011). Teaching a Craft – Enhancing Entrepreneurship Pedagogy. *Small Business Institute® Journal*, 7 (2), 1–14. Available online at: <http://www.sbij.ecu.edu/index.php/SBIJ/article/viewFile/101/63>
21. Zoroja, J. (2013). Usage of Business Simulation Games in Croatia: Perceived Obstacles. *Managing Global Transitions*, 11(4), 409–420. Available online at: http://www.fm-kp.si/zalozba/ISSN/1581-6311/11_409-420.pdf