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3rd INTERNATIONAL SCIENTIFIC CONFERENCE

»TEACHING METHODS FOR ECONOMICS AND BUSINESS SCIENCES«

EDITORS
ROMANA KOREZ VIDE
NATAŠA GAJŠT

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Nataša Gajšt

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TEACHING METHODS FOR ECONOMICS AND BUSINESS SCIENCES:

PROCEEDINGS OF THE 3RD INTERNATIONAL SCIENTIFIC CONFERENCE

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Abstract The author of the first paper explores how students perceive various types of active learning techniques. The second paper identifies the teaching methods that are accepted by Generation Y students. The author of the third paper addresses the characteristics of contemporary students and their implications for teaching strategies. The fourth paper explores the effects of interdisciplinary problem-based learning on the development of students' knowledge, skills, and competences. Gamification as a teaching strategy is discussed in the fifth paper. The sixth paper addresses the challenge of merging disciplines of entrepreneurship and finance in one study program. The approaches to increasing students' focus in learning finance-related subjects are discussed in the seventh paper. In the eighth paper authors expose the value of practical higher education as a response to the perceived phenomena of financial illiteracy and financial exclusion. The role of research results transfer into university teaching of transport economics discusses the author of the ninth paper. The authors of tenth paper explore the relevance of mastering Spanish for students of economics and business disciplines. The last paper discusses the authors' experiences with e-learning in higher education from the perspective of its extent and importance.

Keywords: higher education, economics, business sciences, teaching methods, teaching strategies, active learning techniques, generation Y, problem-based learning, practical gamification, e-learning.

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Table of Contents

TEACHING METHODS FOR ECONOMICS AND BUSINESS SCIENCES
PROCEEDINGS OF THE
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R. Korez Vide & N. Gajšt (eds.)

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Foreword

ROMANA KOREZ VIDE & NATAŠA GAJŠT

Due to contemporary turbulent political, economic, social and technological environment, teachers of economics and business face many new challenges. Employers expect economics and business graduates to be able to cope with continuously changing circumstances in which their organisations fulfil their missions. Students' motivation and engagement for studies have to be encouraged by teaching approaches which focus on their active participation in lectures and tutorials. The utilization of contemporary information-communication technology represents an important part of these approaches.

By organizing the international scientific conference on teaching methods for economics and business sciences for the third time, the Faculty of Economics and Business of the University of Maribor fulfilled an important part of its responsibility towards local, regional and international environment. This year's Proceedings bring interesting, meaningful and valuable findings on teaching economics and business disciplines.

The first paper, authored by Sandrina B. Moreira, discusses the implementation of active learning techniques within lectures. The author explores how students perceive various types of these techniques and proposes further research on their design and testing. In the second paper, Marta Martyniak presents her experiences

in the field of teaching Generation Y students. The paper describes the characteristics of this generation and suggests the types of teaching methods and exercises that are accepted by students. The third paper, authored by Ewa Wójcik, discusses the influences of the constantly changing environment on students' learning style and the importance of educators' role in this regard. The author addresses the characteristics of contemporary students and the implications of these characteristics for teaching strategies. Interdisciplinary problem-based learning founded on university-business collaboration is explored by Renata Petrevska Nechkoska and Monika Angeloska Dichovska who, in the fourth paper, show how this type of learning helps students develop their knowledge, skills and competences for contemporary complex, dynamic and information-rich global society. Gamification as a teaching strategy based on contemporary information-communication technology and aimed at the development of students' problem-solving skills and capabilities to engage in real-life social activities is discussed by Lyudmyla Remnova and Khrystyna Shtyrkhun in the fifth paper. The sixth paper, which was authored by Grzegorz Głód and Izabella Steinerowska–Streb, addresses the challenge of aligning theory with practice by discussing the achieved synergies that arise from merging two disciplines – entrepreneurship and finance – in one study program. The approaches to increasing students' focus in learning finance-related subjects by incorporating real examples from the world of finance into lectures and tutorials are discussed by Wojciech Kaczmarczyk in the seventh paper. Focusing on the discipline of finance, Tomasz Zieliński and Bożena Frączek, the authors of the eighth paper, highlight the value of practical higher education as a reasonable response to the perceived intensifying social phenomena of financial illiteracy and financial exclusion. The role of research and research results transfer into university teaching of transport economics as important means for facing new challenges of the European transport sector is addressed by Anna Urbanek in the ninth paper. Since mastering foreign languages enables business people to communicate and better understand the culture of their business partners on global markets, the authors of the tenth paper, Zuzana Kittová and Mária Spišiaková, explore the teaching and the relevance of mastering Spanish for students of economics and business disciplines. The last paper in this volume, authored by László Koloszár and Zsolt Tóth, discusses the experience of e-learning in higher education from the perspective of its extent and its importance in the framework of constructivist pedagogy.

Each paper represents an important part of this publication. The editors express their gratitude to the authors and the reviewers for their valuable contributions. We hope that the contributions comprising this volume will inspire readers to introduce innovations in their own teaching practice and that they will undertake new research in order to continuously improve higher education pedagogy in the field of economics and business.

ACTIVE LEARNING IN PRACTICE: STUDENTS' PERCEPTIONS IN AN ECONOMICS-LECTURE CLASSROOM

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Abstract In higher education, there is an increasing trend from teacher-centred to student-centred learning environments, wherein active learning experiences can play a decisive role. This paper assesses how students perceive the use of active learning techniques within the lecture framework, traditionally accepting students as passive listeners. To that end, a survey was distributed in a single class at mid-semester in order to evaluate and help refine the active learning approach conducted in an economics course. Results show that students have an overall positive response towards active learning, helping them to focus, engage and learn, and especially valuing the lectures as a whole as interactive and a valuable learning experience. Students' appraisal regarding the usefulness of key implementation rules like the what, when, who technique on slide-written instructions as well as the variety of active learning activities tested has also revealed that the designing and testing of active learning events need improvement.

Keywords: active learning, higher education, student perceptions, survey, economics course.

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Introduction

Active learning shifts the focus from teacher-centred learning to student-centred learning. According to Bonwell and Eison (1991), involving students in doing things and thinking about the things that they are doing can be referred to as active learning. Thus, through active learning techniques, students are engaged in more than passive listening and more emphasis is placed on higher-level thinking tasks such as analysis, synthesis and evaluation.

Research shows that active learning is essential for enhancing students' learning (Prince, 2004). Other related outcomes include higher academic achievement (Freeman et al., 2014), increased retention and development of higher-order thinking skills (Trego, 2016). However, there are many obstacles associated with the use of active learning. Apart from global barriers to change what is known as educational tradition, there are specific difficulties in designing and testing time-intensive active learning activities, in adequately covering all syllabus with activities perceived as taking too much time in the classroom, and in students lacking the necessary skills for active learning strategies that work (Felder & Brent, 2009).

While active learning techniques can be more effectively implemented in flipped classrooms (Brame, 2013) or active learning classrooms (Drake & Battaglia, 2014), modifying traditional lectures to incorporate active learning in the classroom is also an alternative even in large classes (Bonwell & Eison, 1991). Transforming the passivity of a traditional lecture-based large class by adding short activities that most students or all of them will do can make a substantial difference in the learning process with a minor impact on the syllabus and should not take much time (Felder & Brent, 2009). Moreover, letting students know the benefits of using this approach can help change the small fraction of the class that do not engage in active learning.

Nevertheless, how the students perceive or value the use of active learning techniques within the lecture framework needs further study. This paper is a first attempt at motivating the further use of an active learning approach within an economics-lecture classroom, resulting in the following research question: "*How can students perceive the active learning approach implemented in economics lectures?*". To that end, this paper gauges students' beliefs and attitudes toward both active learning principles and outcomes by using an 11 question Likert-type inventory as well as

responses to open-ended questions taken at mid-semester in an economics course. The remainder of the paper is organized as follows. Section 2 briefly overviews the topic by presenting both major advantages and strategies adopted in active learning. Section 3 describes the main features of the course-lecture and active learning approach at study, followed by a brief description of the survey and analysis of the main results. Section 4 concludes the paper.

Active learning in practice – overview

There are many broad definitions of active learning and the evidence that in order to learn, students need to do something is at their core. To consider something as active learning, students must be doing something other than just listening to a lecture or reading PowerPoint slides. A lecture does have its place and can be dynamic and engaging by itself. However, active learning is often contrasted to the traditional lecture and can thus be defined as "anything course-related that all students in a class session are called upon to do other than simply watching, listening and taking notes" (Felder & Brent, 2009, p. 2). Moreover, active learning is the idea that to be actively involved in the learning process, students must engage in the higher-level cognitive processes of applying, analysing, evaluating, and creating.[1] Consequently, according to Dale's Pyramid of Learning (Dale, 1969), students are expected to retain 70% of what they say and write and 90% of what they do compared with the fact that students generally remember only 10% of what they read and 20% of what they hear. Thus, active learning equals better learning.

Even though learning is the most consistent outcome of active learning, many other benefits have been well documented. For instance, in a meta-analysis of research on active learning, Prince (2004) reported improvements in the following: (i) both short-term and long-term recall of information; (ii) students' academic performance; (iii) conceptual understandings; (iv) retention in academic programs; (v) student attention; (vi) student engagement; (vii) critical thinking skills; (viii) student's self-esteem; (xix) interpersonal relationships; (x) teamwork skills (Drake & Battaglia, 2014). More recently, the meta-analysis of Freeman et al. (2014) showed that in

[1] Bloom's taxonomy of learning outcomes has six levels: (i) Knowledge / Remembering; (ii) Comprehension / Understanding; (iii) Application / Applying; (iv) Analysis / Analysing; (v) Synthesis / Evaluating; (vi) Evaluation / Creating.

undergraduate courses where active learning was used there was, on average, a 12-percentage point decrease in the failure rate.

The theoretical reflections outlined above lead to the following proposition:

Proposition One (P1): Students can perceive or value active learning expected outcomes such as focus, engagement, or learning.

The published literature on examples of active learning provides a rich menu of different approaches for students to become engaged learners and dynamic thinkers. For instance, active learning strategies reported in Drake and Battaglia (2014) include the following: brainstorming; classroom assessment techniques; clickers; collaborative learning strategies; concept mapping; concept tests; cooperative learning strategies; debates; experiments; field trips; games; interactive discussion; note check; panel discussions; performances; presentations, problem-based learning; question and answer pairs; research; role plays; service learning; simulations; team-based learning; the pause procedure; think-pair-share; writing-to-learn. The Florida State University handbook, on the other hand, provides a large sampling of active learning techniques, while noting that "grasping the principles of active learning will do far more for your teaching than simply using these activities as if they are templates to be filled in with your respective content" (FSU, 2011, p. 76).

Many of the above active learning examples can be applied in large lecture sections in which the traditional lecture is modified to integrate active learning into the classroom. Lecturing can be an active learning experience by simply asking a question, posing a problem or issuing some other type of challenge. Nevertheless, a modified lecture will not be considered active learning if the same few students answer the questions or if discussions engage only a small fraction of the class (Felder & Brent, 2009).

To get a clearer picture of what may constitute active learning in practice within the lecture framework, the present paper assesses an active learning approach that followed the guiding principles set forth in a one-day training session for higher education teachers on the subject. In accordance, five steps were recommended to set up an active learning activity: 1) prepare clear instructions guided by specific questions: What? (e.g. video with questions) When? (e.g. three minutes) Who? (e.g.

individually); 2) present the instructions to the class and ask students to follow them as written; 3) let the class decide if adequate instructions were given and start the activity, preferably with timers; 4) move around, going closer to students and seeking clarification if necessary; 5) ask students to share their results and promote discussion, providing feedback about the students' knowledge or misunderstandings (Sá, 2018). Subsequently, short-time activities were planned throughout each chapter of the syllabus and tested in lectures. The activities were of the following type: book exercises, case studies, debates, Full-Body Responses (FBR), one-minute papers, quizzes, T-analyses, and videos with questions.

Considering this set of active learning principles, the following proposition may be stated:

Proposition Two (P2): Students can perceive the usefulness of certain functioning aspects that set up active learning activities.

Findings from an Economics lecture classroom

Economics is a Curricular Unit to first-year students enrolled in one of the following first-cycle courses offered by the School of Business and Administration (ESCE): (i) Accounting and Finance; (ii) Accounting and Finance – evening classes; (iii) Marketing; (iv) IT Systems Management. Undergraduate students of (i) and (ii) attend Economics during the second semester while those of (iii) and (iv) attend it on the first semester. Table 1 presents the number of students enrolled in Economics subject in the last three academic years and the corresponding failure rates, usually measured as the percentage of students receiving a grade lower than 10, on a scale of 0 to 20, or withdrawing from the course in question.

Table 1: Economics in ESCE 1st Cycle Courses – Enrolment and Failure Rates

ESCE 1st cycle courses	Academic year	Enrolled students	Failure rates
Accounting and Finance	2015/2016	150	46.67%
	2016/2017	144	62.50%
	2017/2018	136	59.56%
Accounting and Finance - evening classes	2015/2016	66	57.58%
	2016/2017	63	73.02%
	2017/2018	64	65.63%
Marketing	2016/2017	131	45.80%
	2017/2018	107	65.42%
	2018/2019	109	60.55%
IT Systems Management	2016/2017	91	42.86%
	2017/2018	72	61.11%
	2018/2019	73	30.14%

As Table 1 reveals, ESCE Economics is a medium- to large-enrolment subject. Furthermore, it presents high failure rates with an average failure rate across the academic years and undergraduate courses of 55.9% (presented in Table 1). The worst situation is Economics taught to Accounting and Finance students in evening classes with a failure rate above 50% in the last three academic years.

Economics is traditionally delivered to undergraduate students in the form of lectures and practical classes. Lectures of three hours per week take place in medium to large size classrooms (100 students), whereas practical classes of one hour per week are in small to medium size classrooms (average size class of 45 students).[2] The teaching methodologies are consequently different: in the first case, both expository and interrogative methods are combined with the learning of the theoretical and conceptual economics framework; in practical classes, students develop analysis and discussion skills and solve different types of exercises. Moodle webpage supports student learning.

[2] ESCE Economics lectures are usually delivered twice a week; one lecture of one hour per day and a second one of two hours per day.

In the evening classes, one lecturer started to implement active learning activities at the beginning of the second semester 2018/19. The number of students currently enrolled in the class is 82, although only approximately one third attends Economics lectures on a regular basis. Table 2 summarizes the various active learning exercises done in the lectures of each week until mid-semester.

Table 2. List of Active Learning Activities within an 8-Week Economics-Lecture Framework

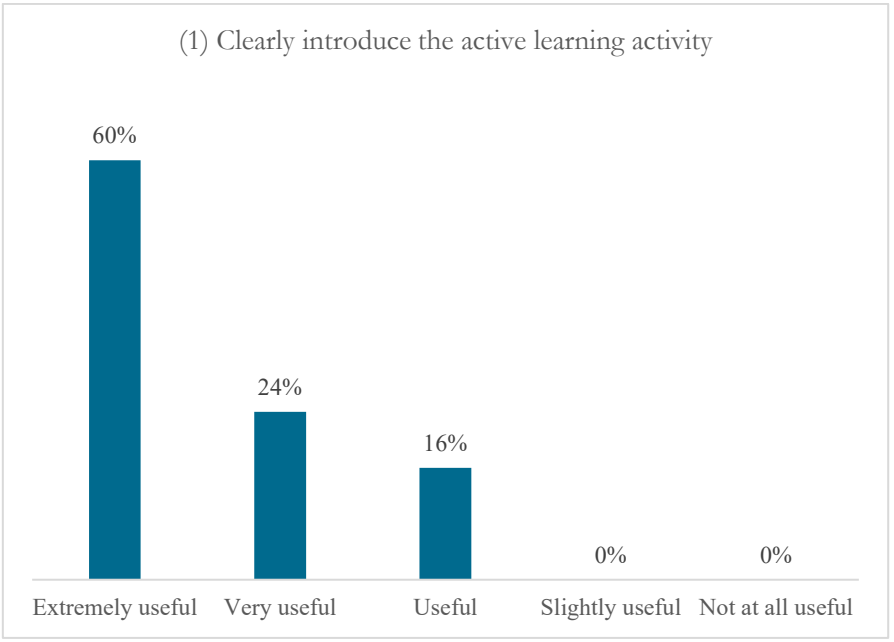
Economics Syllabus	**Lectures Topic**	**Lectures Week**	**Active Learning Activities**		
			What?	**When?**	**Who?**
1.1 – Definitions and Basic Concepts	Economics as a social science	**Week 1**	Quiz – three multiple choice questions	2 minutes	groups of two
	Microeconomics vs macroeconomics		Quiz – eight true or false questions	2 minutes	groups of two
	Normative economy vs positive economy		Quiz – eight true or false questions	2 minutes	groups of two
	Rational decisions, Cost-benefit principle	**Week 2**	Debate – open question for discussion	4 minutes	groups of two
	Production-Possibility Frontier (PPF), Opportunity costs		Book exercise	5 minutes	individually
	PPF - shifts of curves		Full-Body Response (FBR) – body position in accordance with answer chosen	10 seconds	individually
1.2 – Mixed Economy and the Government Behaviour	Government intervention, Market failure	**Week 3**	One-minute paper (OMP) – writing short response to two questions	4 minutes	individually
	Public goods		Debate – open question for discussion	2 minutes	groups of two
2.1 – Objectives, Instruments, and Macroeconomic Models	Macroeconomic policies	**Week 4**	Debate – open question for discussion	4 minutes	groups of two
	Economic activity, Labour market, Prices	**Week 5**	Case study – national statistics about Portugal	5 minutes	groups of two
	International trade		Case study – external trade statistics about Portugal	2 minutes	groups of two
	Gross Domestic/National Product, GDP vs GNP	**Week 6**	Quiz – two multiple choice questions	2 minutes	groups of two

2.2 – National Accountancy	National accounts		Book exercise	5 minutes	individually
2.3 – Economic Growth and Development	Sustainable Development Goals (SDG)		YouTube video with two questions	video duration(5:23)	individually
3.1 – Demand, Supply, Market, and Elasticities	Supply (S) and Demand (D)	**Week 7**	Quiz – two multiple choice questions	2 minutes	groups of two
	D - shifts of vs movement along curves		FBR – body position in accordance with answer chosen	30 seconds	individually
	D and S - shifts of curves		Debate – open question for discussion	2 minutes	groups of two
	Price controls		T-analysis – writing advantages on the left side and disadvantages on the right side	3 minutes	groups of two
	Price Elasticity of Demand (PED)	**Week 8**	Quiz – one multiple choice question	1 minute	groups of two
	Elasticity and revenue		Book exercise	3 minutes	groups of two
	Income Elasticity of Demand (IED)		Book exercise	4 minutes	individually

In order to evaluate students' perceptions about the activities listed in Table 2 above, a self-administered survey was distributed to students in lecture week 9. A total of 25 students responded anonymously to the questionnaire (91% of the average class attendance). 52% of the respondents were female and 48% were male. All the students surveyed attended evening classes and thus, not surprisingly, the majority of them (76%) were above 20 years of age and only 24% were aged between 18 and 20 years. In addition, the majority of the students (79%) are student workers and only 21% are full time students. In spite of these class characteristics, 92% of the respondents marked their class attendance in all or almost all cases, while solely 8% marked their class attendance in just some Economics lectures.

Apart from basic demographic questions and respondents' studying information, the one-sheet questionnaire comprised three different sections: (i) five questions about students' opinion on specific aspects of the active learning method used in classes with answering options ranging from 'extremely useful' to 'not at all useful' on a five-point Likert scale; (ii) five questions about students' opinion on active learning expected outcomes, with answering options ranging from 'strongly agree' to 'strongly disagree' on a five-point Likert scale; (iii) the overall impression that students had about their active learning experiences in the class, evaluated using both one Likert-type scale question and two optional open-ended questions.[3] Figure 1 shows students' responses to each of the questions related to (i).

[3] A non-response option (unable to judge) was also added in each multiple-choice question.



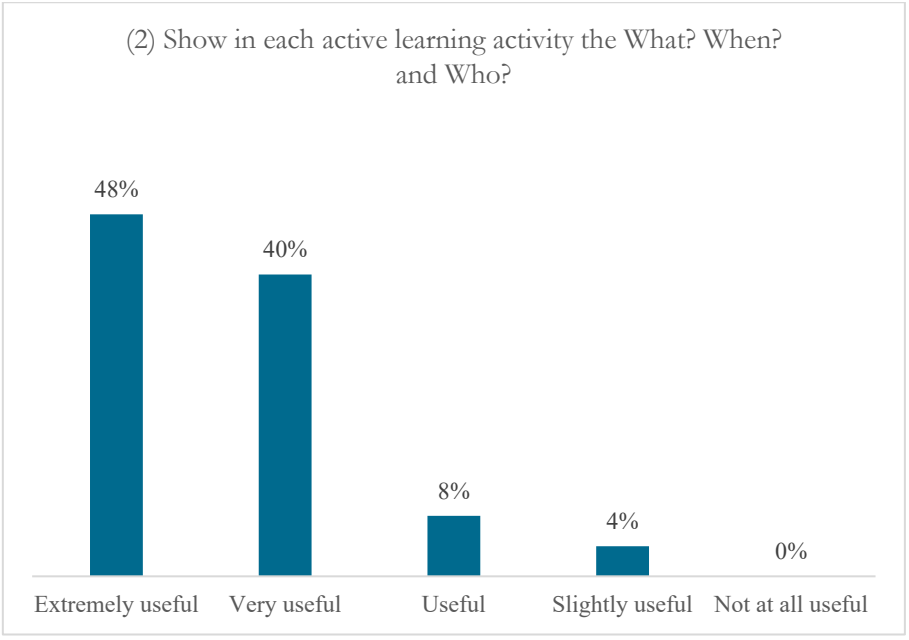


Figure 1: Responses to five questions on the active learning method of Economics lectures

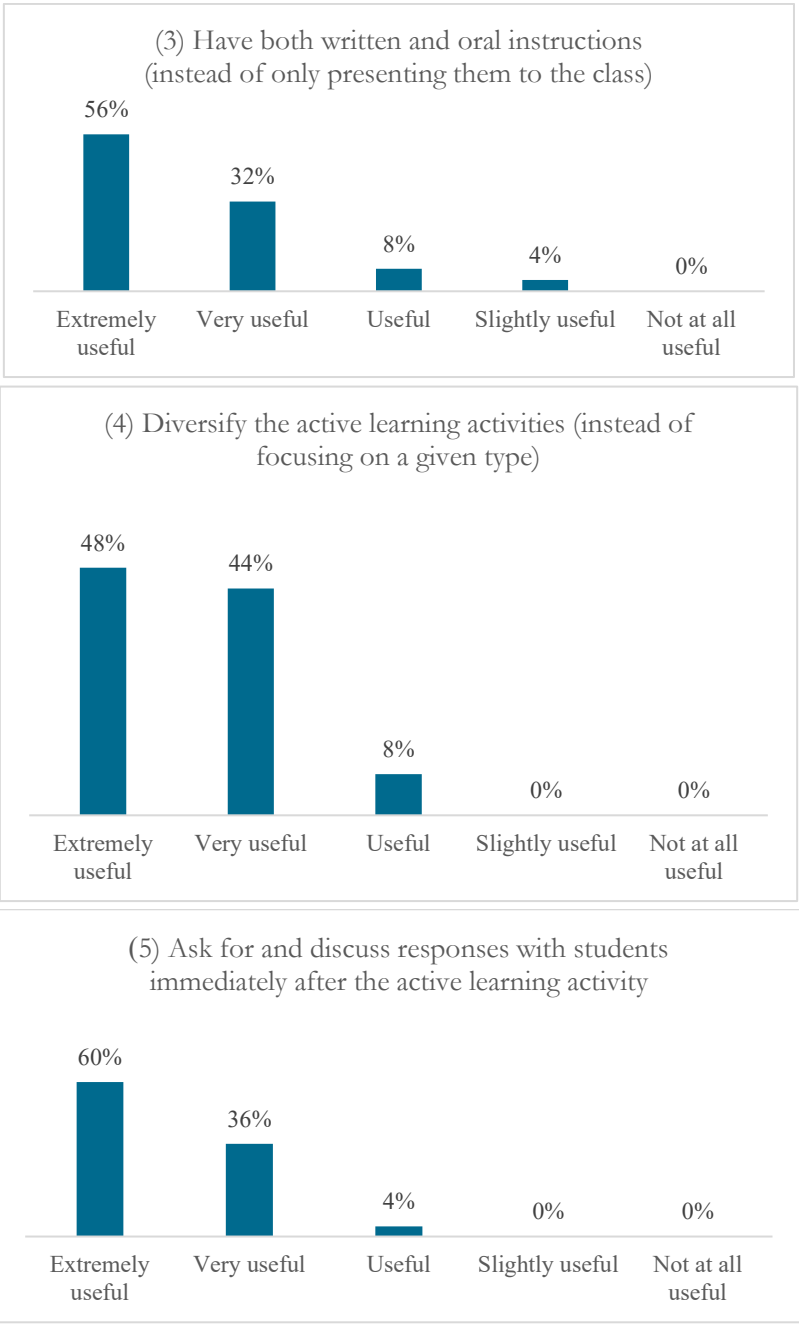


Figure 1.1: Responses to five questions on the active learning method of Economics lectures (continued)

As evidenced in Figure 1, students had an overall positive attitude towards active learning strategies implemented in the Economics lecture classroom; it was thus possible to validate research proposition P2. This is especially the case with regard to the feedback on activities where 96% of respondents perceived 'asking for and discussing responses with students immediately after the active learning activity' as either extremely useful or very useful. This finding is reinforced by the statement "better understanding, helping address students' misunderstandings" written by two students as a response to the open question regarding major positive aspects of their active learning experiences in the class. On the other hand, in response to question (2), 88% of students responded positively to clear instructions guided by the WWW technique, even though "not enough time to complete assignments" was stated by three students as the single top weakness of some active learning activities at the core of the discussion. The obtained result advises us to examine the miscalculation of the time allocated for most students to either finish or make reasonable progress toward finishing each activity, as specified in Table 2. However, as noted by Felder and Brent (2009), keeping the activities short prevents two common mistakes: (i) "making exercises too long" (say, ten minutes to solve a problem) and (ii) "calling for volunteers to respond after every activity"; thus making "active learning […] almost guaranteed to work" (Felder & Brent, 2009, p. 4).

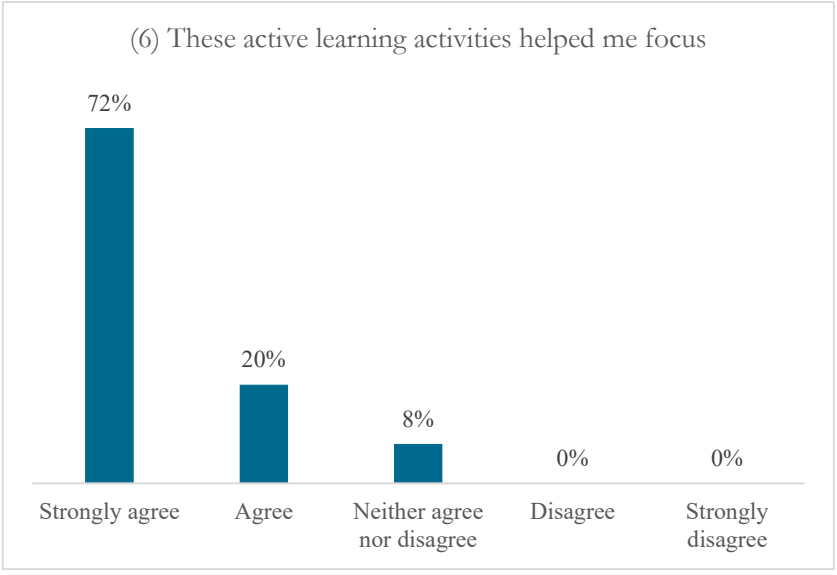
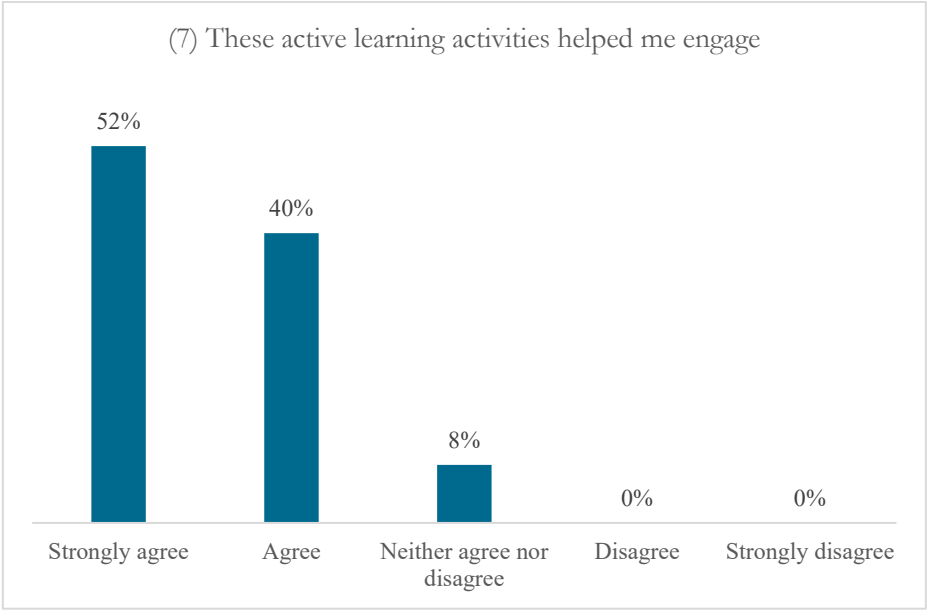


Figure 2: Responses to five questions on active learning expected outcomes



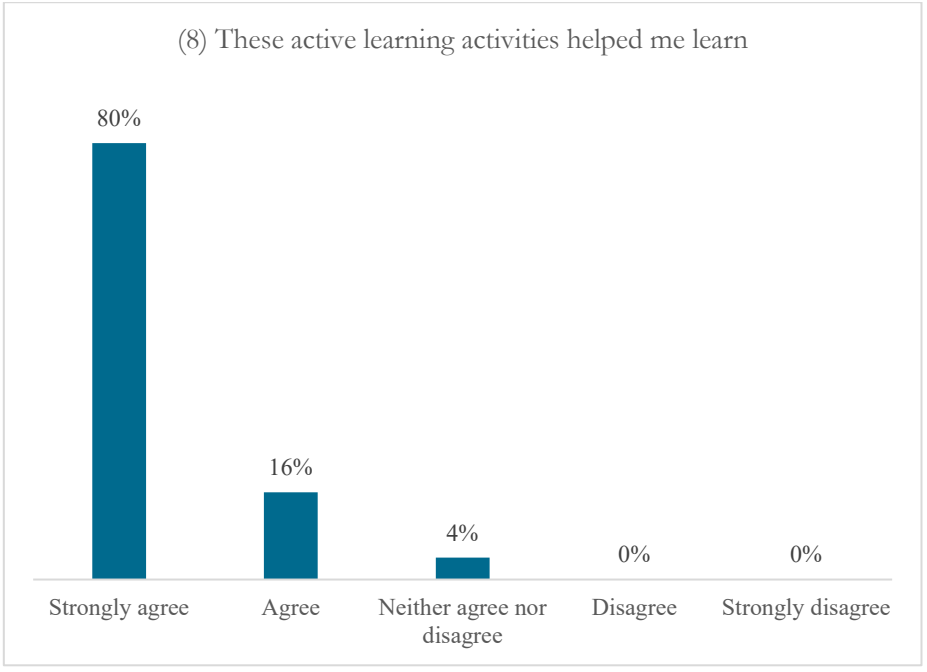
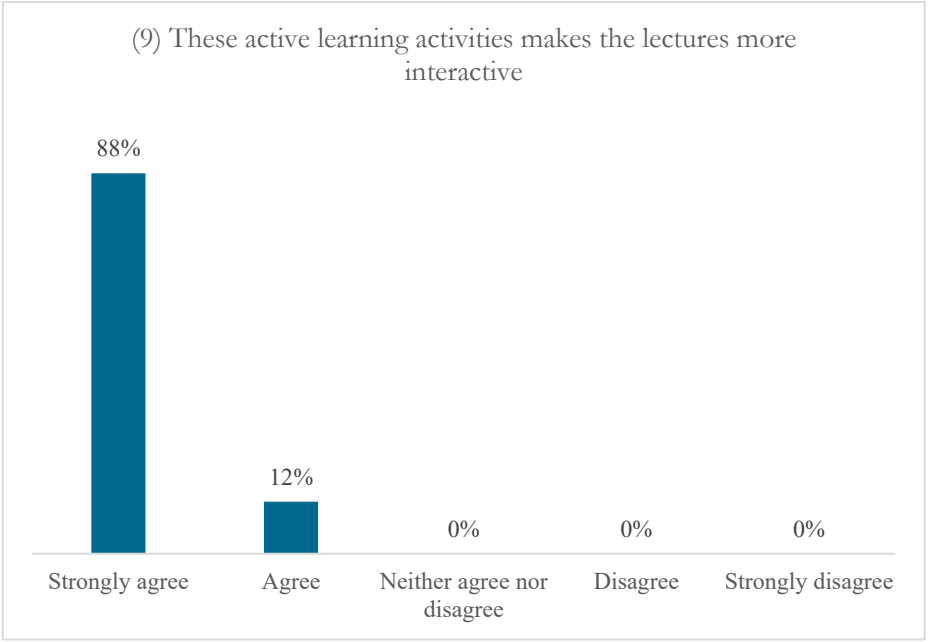


Figure 2.1: Responses to five questions on active learning expected outcomes (continued)



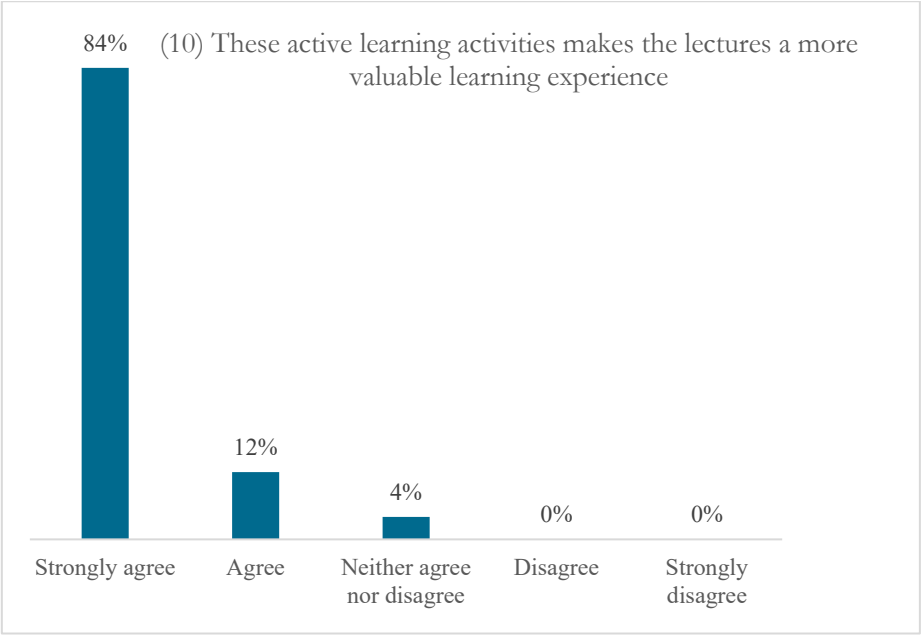


Figure 2.2: Responses to five questions on active learning expected outcomes (continued)

Concerning the responses for the second category of questions presented in Figure 2, all students agreed that active learning activities make Economics lectures more interactive. Indeed, interaction is among the most important positive aspects of these activities, identified as such by eight students in the corresponding optional open text question. Moreover, in response to questions (8) and (10), students responded quite positively with 96% in agreement on both the active learning activities within the Economics lecture framework helping them to learn and making the lectures a more valuable learning experience. Four students also expressly stated "improved understanding, helping students understand the course content" as the top strength of these active learning activities. These perceived findings are in line with the previously cited evidence of learning as the most consistent outcome. Moreover, the findings presented in Table 4 support research proposition P1 as students seem to perceive active learning as overwhelmingly positive.

Finally, the active learning format adopted in the Economics lectures was overall quite well received by students with 88% of them classifying it as very good and 12% as good on a five-point Likert scale (from 'very good' to 'very bad'). Nevertheless, a global comparison between graphs presented in Figure 1 and those in Figure 2 shows that, generally, students give more importance to positive aspects of active learning rather than the way in which active learning activities materialize in lectures. On average, 95% of students responded with either 'strongly agree' or 'agree' to the five active learning outcomes mentioned in Figure 2 compared with 90% of students who, on average, evaluated the five active learning strategies referred to in Figure 1 as either extremely useful or very useful. Results thus seem to suggest that students take for granted the teaching methodology, instead of making own judgements about alternative perspectives.

Conclusion

The findings indicate that students have a generally positive response towards active learning which helps them to focus, engage and learn. Overall, they especially appreciate interactive lectures as valuable learning experience. However, major potential limitations of the experiment are both teacher and student resistance. On the one hand, teachers may perceive the planning and the implementation of such active learning activities within classes as time consuming and resulting in not adequately covering the whole syllabus. On the other hand, this approach shifts a lot

of responsibility from the teacher to the students and, therefore, students may resent working in class, especially if this extra work is regarded as formative evaluation with no extra grade counting for their final assessment.

Furthermore, this investigation surveyed evening-class students' opinions prior to the examination scores and the end-of-year course evaluations. Therefore, two logical challenges follow: (i) To what extent do students' positive evaluations of active learning translate into better student performance in examinations?; and (ii) Will students in day classes (i.e. expectedly younger students and either non-worker or part-time students) embrace active learning within the lecture framework as well as students at evening classes did?. To those specific ends, first, the trial experiment within Economics taught to Accounting and Finance students in evening classes needs to proceed until the end of semester and, consequently, it needs to be adapted to day classes in accordance with the learning outcomes from a new assessment of method and results. Hopefully, the active learning approach in question can serve as an example of a beneficial tool that other lecturers should consider.

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References

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: creating excitement in the classroom. ASHE-Eric Higher Education Rep, 1*. Washington, DC: The George Washington University, School of Education and Human Development.

Brame, C. (2013). *Flipping the classroom*. Vanderbilt University Center for Teaching. Retrieved from http://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/

Dale, E. (1969). *Audio-Visual Methods in Teaching. 3rd Edition*. New York: Holt, Rinehart & Winston.

Drake, E., & Battaglia, D. (2014). *Teaching and learning in active learning classrooms – Recommendations, research and resources*. Michigan: Central Michigan University, The Faculty Center for Innovative Teaching.

Felder, R. M., & Brent, R. (2009). Active learning: An introduction. *ASQ Higher Education Brief*, *2*(4), 1-5.

Freeman, S., Eddya, S. L., McDonougha, M., Smith, M. K., Okoroafora, N., Jordt, H., & Wenderotha, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(23), 8410–8415.

FSU (2011). *Instruction at FSU – A guide to teaching and learning practices*. 7th edition. Florida: Florida State University (FSU), Office of Distance Learning.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, *93*(3), 223-231.

Sá, S. (2018). *Active learning.* Instituto Politécnico de Setúbal. Retrieved from http://mateas.wdfiles.com/local--files/thread%3Aactive-learning/APRESENTA%C3%87%C3%83O%20Active%20learning.pdf

Trego, M. (2016). *What is active learning? Northwest Iowa Community College.* Retrieved from https://www.youtube.com/watch?v=UsDI6hDx5uI

Teaching Millennials: Practice, Practice and Once Again Practice

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Abstract The presented paper contains a set of experiences and thoughts of the author in the field of teaching students belonging to Generation Y. The aim of the article is to show their needs and expectations towards the education process and to formulate exemplary activating exercises. Based on conversations with students and own academic experience, the author focuses on practical exercises. The paper also indicates specific proposals for universal exercises that can be used in working with students to simultaneously facilitate the acquisition of didactic material as well as stimulating them to work in classes and at home. This paper is of reflective nature, supported by examples from the classes in management and finance and is addressed to academic teachers and educators who want to enrich their classes with new stimulation methods and exercise, as well as to the students representing Generation Y interested in the subject matter.

Keywords: generation Y, millennials, examples of exercises, teaching students, teaching methods.

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Introduction

Millennials (Generation Y) are the subject of many discussions in the world of science as well as in business. What are they like? What do they expect? What are their needs? What determines and characterizes them? Should we love them or hate them? These are just a few questions that we all try to answer.

Many publications in this regard are particularly concerned with Generation Y as employees. Big companies and their human resources departments are interested in research on generations of employees especially in their capabilities and expectations as to the style of work. Our personal opinion is that a good employee is the one who is involved in the tasks entrusted to him, and each human resources department should pay attention not only to what grades the candidate has obtained, but how did he obtain them.

So why not try to characterize Millennials as a group of students? The period of study is the best time when young people should acquire both theoretical and practical knowledge. The skills they will gain during their studies and what interests they develop will largely determine their professional career. It is believed that Generation Y will revolutionize higher education (Phillips & Trainor, 2014) and we fully agree with this claim.

In this paper, we will characterize Millennials as a group of students and their expectations towards education. In addition, we will show examples of tasks that will diversify the traditional teaching style (based only on lectures) and that will be accepted by students representing Generation Y. These examples will be divided into two parts: (1) tasks related to the assimilation of the theory and (2) tasks requiring earlier preparation based on students' own work.

Characteristics of Generation Y as a group of students – Who are they and what do they expect?

Millennials entered higher education around the year 2000. Almost twenty years have passed since then and some changes in the higher education system are noticeable.

As the first generation that has grown up with mobile digital technology, they expect continuous interaction with their peers in forms that would be unimaginable for other generations of young adults. If we had to describe Millennials generation only in one sentence it would be: *I will send you an email.*

Millennials grew up during the development of social networking sites they use daily. They were the first to experience the possibilities of the Internet and they observed the development of mobile phones from the introduction of the first cameras to smartphones. It is no wonder that technology and fast communication is an important aspect of millennial life also in the area of studying.

Today, students who prepare for classes or exams can be seen in college corridors. This will never change. However, what distinguishes them from students from 20 or 30 years ago is technology. Most of them have electronic notes, which they read on the screens of laptops, iPads or smartphones. The technology also allows them to quickly reach many materials, scientific articles and even books in electronic form. Thus, if they do not have notes, they can try to prepare for the class in a different, electronic way. Alternatively, they ask other students via the Internet for these notes, e.g. on university forums or vial instant messenger platforms.

The communication process has also changed both between students and in the student-teacher relationship. In the era of ubiquitous technology, Generation Y prefers contact by phone or e-mail. Since instant messaging has appeared and e-mails can also be read on smartphones, the communication process is much faster. Students no longer have to wait for a teacher's consultation to ask questions and dispel their doubts. This also means that students representing the millennial generation often expect immediate responses not only from peers but also from teachers.

Millennials are often described as smart, ambitious, incredibly busy and as multitaskers. They can listen to music, learn and watch TV at the same time. They also study and work at the same time. They expect accurate information about the study program and how to pass the exam. Members of this generation also often ask questions about the practical application of the content. They also want to have a close relationship with their teacher involving more guidance and extra personal attention (Kotz, 2016). According to Wilson and Gerber (2008), Generation Y

prefers to work in small groups to working alone. Teams of two or three members, especially, were viewed as optimal.

Phillips and Trainor (2014) indicate that "millennial students have a preference for interactive and experiential learning experiences". Their research also confirmed that students prefer learning by doing and not by listening.

The literature on the subject of teaching and learning lately addresses the 'flipped classroom' concept as an increasingly popular approach to meeting the learning needs of Generation Y. In the flipped classroom model, the class lecture or instructional content are assigned as homework in a sense that students are required to prepare for the class in advance, generally by viewing an online lecture. This approach allows more time to be devoted to active learning. Additionally, it provides opportunities for greater relationship-building between the teacher and students as also for a peer-to-peer collaboration among students (Roehl, Reddy & Shannon, 2013). In this model, the class time is spent on problem solving, discussions, creating, criticizing and synthesizing knowledge in a dynamic and engaging environment (Phillips & Trainor, 2014; Towle & Breda, 2014). Fulton (2012) listed at least seven advantages of the flipped classroom, two of them being that students move at their own pace and that the classroom time is used more effectively and creatively.

This is, in short, what the members of Generation Y expect from studying. Millennials know what they want and are not afraid to reach for it.

Millennials as students in teaching practice – own experiences and observations

As a young scientist and academic teacher, also representing Generation Y, we always devote a few minutes of the first classes with students to a discussion about their lives and expectations. First of all, we want to know what their expectations about our classes are, and secondly what tasks and examples should be used to maintain their interest. We ask them the following questions: Why did they choose these studies?; What do they expect from the chosen direction?; How can we help them achieve their goal?; What do they expect from me as the teacher?; What can we do to motivate them to work?. The answer is always the same – the practical

application of knowledge and easy contact. We therefore receive my own confirmation.

During each class, we try to comply with their expectations. Almost all students, both in full-time and part-time studies, work. Therefore, they expect to receive from the teacher full information about the study program and how to pass the exam. They want to know what we will require from them; if there will be a test to pass; and the scope of material that will be required for them to study. They also expect to be contacted by e-mail and that we will send to them the materials from classes or the information on where to look for these materials.

The conditions set by us during the first classes satisfy both sides. We know what we can expect from each other. In addition, the teacher can prepare examples from their professional life, which often leads to many constructive discussions. The characterization of Generation Y presented above works one hundred percent. Millennials as students want to be involved both in the classroom and in their preparation. They like working in small groups, solving case studies and discussing problems. Most of them do not write anything in their notebooks because they receive the material prepared online or in the form of a printout in the classroom. They have full access to the materials during classes and can make their own annotations. They also do not want to waste time for writing down something they can easy find in books.

In the current academic year, we faced problems regarding the preparation of practical tasks for a purely theoretical subject such as the basics of management. This can be a problem for many novice teachers. The challenges were mainly related to how to make the students interested in basic concepts and definitions, and more importantly, to remember them; and how to make them put down their smartphones and get involved in classes. In the next chapter, we will present some examples.

Teaching Millennials in practice – examples of student tasks during classes

In this chapter, the examples of tasks from the classes in management and finance will be presented. They are addressed to academic teachers and educators who want to enrich their classes with new stimulation methods and exercises as well as to the students representing Generation Y interested in the subject matter.

These examples will be divided into two parts, i.e. the tasks related to the assimilation of theory and the tasks requiring earlier preparation and students' own work.

Tasks related to the assimilation of theory

First, we will discuss the tasks related to the assimilation of the theory. Their use is justified when students need to learn many concepts and definitions in a short time. This material should already be known to them or discussed shortly before the task. If it is not necessary, the students can also rely on their own intuition.

Crosswords are one of my favourite tasks as well as of my students. The teacher can prepare them on their own or ask the students to prepare them. Here, it is important that each student has the same source material. Otherwise, they will not be able to solve them properly and instead of learning something, they will be discouraged from further action. All entries should be related to the subject of the classes and should include the study material required for the exam. If the students are requested to prepare the crossword, it will oblige them to read the material in advance and will make them memorize at least some of the concepts from the material. This task is also a nice change from the usual activities students need to do.

Similar effects will be triggered by a task based on the "charades" game. We use them during the basics of management classes in relation to the topic 'communication in the organization'. Here, students are divided into two groups. Each group has 10 minutes to prepare the topic-related concepts for the opposing team. The draw of concepts begins the game. The task of each team is to choose one or more persons who will present the drawn concept in such a way that other the group will be able to guess it. The team that guesses the most concepts is the winning team. The reward can be the ratings from the activity or the grades from the activity, which will additionally motivate Millennials to prepare thoroughly.

The guessed concepts must be associated with communication and management so that students can assimilate their definitions. This task has other advantages, too. It will improve group communication skills of participants and the awareness of nonverbal communication. It will also help people become increasingly more aware of their gestures as a communicative device (Zauner, 1971).

Matching definitions with concepts (i.e. puzzles) is another, similar task associated with the assimilation of theory. This task can be used, for example, as a repetition activity before the exam and even as one of the exam questions.

The tasks presented so far can be applied to all subjects during which students need to acquire many concepts and definitions in a short period of time. They can also be freely changed and improved according to the teacher's needs.

Tasks requiring earlier preparation and students' own work

While it is difficult to attract the attention of students, it is much more difficult to make them want to prepare something for classes by themselves. If for some reason they are not interested in the topic, they will not have the satisfaction of learning and preparing for classes. However, as teachers, we can make them acquire additional, non-standard experiences during classes. An example of such task can be to organize the Oxford debate in class.

The instructions on how to conduct the Oxford debate are available on the Internet in many languages. According to Bailey and Molyneaux (2008), at least twelve students should be involved in the task. Eight of them will take the role of speaker of the proposition and opposition (four people in each team). Each speaker has a different role which is described in detail in the instructions. The remaining participants will perform additional roles, such as: chairperson, who controls the debate, timekeeper, who are responsible for timing each speech and making audible signals at the appropriate times, and adjudicators, who are taking notes on what all the speakers say and award places for teams at the end of the debate.

The teacher should set the topic of the debate in accordance with the subject matter of the classes and divide the roles between the students. For this task to make sense, the teacher should give his/her students time to prepare. The best option is that the students prepare for the next class. The speaker taking part in the debate must have time to familiarize himself/herself with the subject matter and prepare arguments for or against the topic (thesis) according to the assigned role. The other participants in the debate must also have time to read the instructions of the debate and prepare to play their role.

From our experience so far, many students were sincerely involved in the debate. Also, other students who do not take an active part in the debate (i.e. the audience) were satisfied with the participation in the classes. After the debate and the announcement of the results, our students continued to discuss the topic of the debate and specific arguments.

Organizing such a debate is time-consuming and requires a lot of preparation on the part of students. However, it gives them the opportunity to conduct a serious and substantive discussion related to the study program. It also teaches them how to formulate arguments and how to depend their positions.

Case studies and group projects are another type of activities which we often use in our teaching. In our opinion, these are very common teaching methods that do not need to be described. Depending on the syllabus, you can use existing case studies or prepare your own. We are inclined to use examples that are the closest to our students' interests and to current business practice. This makes students more involved and helps find the right answers more easily.

One should also consider how to diversify classes in strictly financial subjects, where the main tasks concern the calculation and the use of mathematical formulas. The question arising here is whether this is possible at all. To answer this question, we should go back to the original observations regarding Generation Y as students. What they expect from their studies is the practical application of the obtained theoretical knowledge. Tasks should, therefore, take into account business practice and be as close as possible to the work performed by students. Therefore, the financial data of real enterprises can be used for calculations. Interpretations of the obtained results will have greater significance for Generation Y students.

Conclusions

In our opinion, Millennials as students are an interesting group. They are full of positive expectations for the future and rightly convinced of their own worth. We often identify their high requirements with the need for personal development and clearly defined life goals. We believe that as teachers, we should not only transmit knowledge but also broaden our students' horizons and allow them as many experiences as possible in many different ways. We should also give them a certain

degree of independence, for example, in selecting companies for a group project. Otherwise they will not be very engaged in the activity.

In our opinion, the best teaching effect can be achieved by combining the tasks related to the assimilation of theory and the tasks requiring earlier preparation and students' own work. The above tasks are some of the examples that can be used in the course of teaching and their selection should be adapted to the content of the subject. The teacher should prepare such tasks that will help students systematize the acquired knowledge and, at the same time, teach them practical application of the obtained knowledge. The existing teaching process which is based largely on students' work only during classes and learning at home with materials acquired in the lectures should be changed. Moreover, as the generation Z enters higher education the need for practical exercises will be even greater than in the case of Millennials as students.

Going back to the question asked in the first part of the article, i.e. "should we love them, or hate them", we hope that everyone interested in the topic will reflect on the answer to this question. First of all, we should try to understand them and not to judge them.

References

Bailey J., & Molyneaux G. (2008). *The Oxford Union Guide To School's Debating*. Retrieved from https://outspokenela.files.wordpress.com/2017/02/the-oxford-union-guide-to-schools-debating-copy.pdf

Fulton, K. (2012). Upside down and inside out: Flip your classroom to improve student learning. *Learning & Leading with Technology*, *39*(8), 12-17.

Kotz, P. E. (2016). Reaching the millennial generation in the classroom. *Universal Journal of Educational Research*, *4*(5), 1163-1166.

Phillips, C. R., & Trainor, J. E. (2014). Millennial students and the flipped classroom. *ASBBS Proceedings*, *21*(1), 519-530.

Roehl, A., Reddy, S. L., & Shannon, G. J. (2013). The flipped classroom: An opportunity to engage millennial students through active learning strategies. *Journal of Family & Consumer Sciences*, *105*(2), 44-49.

Towle, A., & Breda, K. (2014). Teaching the Millennial Nursing Student: Using a "Flipping the Classroom" Model. *Nursing and Health*, *2*(6), 107-114.

Wilson, M., & Gerber, L. E. (2008). How generational theory can improve teaching: strategies for working with the millennials. *Currents in teaching and learning*, *1*(1), 29-44.

Zauner, D. (1971). Charades as a teaching device. *The Speech Teacher*, *20*(4), 302. https://doi.org/10.1080/03634527109377912.

TEACHING ECONOMICS AND BUSINESS AS A GENERATIONAL CHALLENGE

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Abstract Contemporary students are to live and work in the environment of constant change. The educators' role should be not only to recognise the influence of the changes on students' learning style but also to understand how to better prepare them for the requirements of the labour and consumer markets. Teachers, in particular those of economics and business, are expected not only to provide students with tools of obtaining knowledge but also increase their awareness of the changing environment and stimulate readiness to respond. New generations of consumers have been found to react in a much more active way than previous generations. They readily participate and co-create the reality. Such active stance should be understood and stimulated. The purpose of the paper is to address the intergenerational differences resulting from growing up and getting mature in different realities, to address their implications and to discuss the ways of utilizing them in teaching strategies.

Keywords: generational differences, behaviour, active stance learning style, teaching strategies, education systems.

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Introduction

The changes we are witnessing in contemporary world will demand flexibility, agility and creativity not only to adjust but, even more importantly, to take advantage of the opportunities arising and to convert them into a strength for the future. For this to be viable, education systems should evolve to offer training options for more and more diverse population affected by demographic shifts as well as immigration.

Almost 20 years into the 21st century, the pace of changes is exponential. This refers, first of all, to new technologies which are more and more needed in everyday life. The changing demands of the labour market result from disappearing jobs and surplus skills while other skills useful for new emerging jobs are scarce. Highly skilled employees are demanded by companies in order to utilise new technologies, to be able to compete internationally, to be efficient in the global world and to follow the trends. Upgraded skills are necessary not only to actively participate in a job market but also to be independent and efficient in daily activities.

Knowledge-based society and globalisation are seen as the main features of the economic paradigm of the 21st century. The process of science and technology advancement has increased the reach and speed of communication and internationalisation and has increased competition driving the transformation of economies. This also affects individuals, their perception and their way of learning. Therefore, different generations will need to be educated in a way that reflects the changes in the environment, the economy and the society.

Demographic challenges of the 21st century

The changes in demography occurring now and in the near future are among the critical challenges of the 21st century to be faced by our society. While in 2015, there were 901 million people in the world aged 60 or above (accounting for 12% of the world's population), that figure is projected to reach 3.2 billion by 2100 (United Nations, 2015). Within the European Union, the population of the very old (80 years or older) is projected to more than double from 5.4% in 2016 to 12.7% in 2080. The number of people aged 80 and above will increase to over 66.1m in 2080. "Eurostat's projections indicate there will be substantial increases in the number of very elderly persons in the EU-28 with a progressively ageing population" (Eurostat, 2019b).

Most important for the labour market, the working population (defined as people aged 20-64) is expected to continue to decline up to 2050 as a growing number of people born during the post-war boom reach retirement. The result of these changes will be a shrinking proportion of working-age population within the EU and an increasing percentage of people in retirement (Eurostat, 2019a). It should be assumed that today's as well as future employees will be working much longer than now.

These demographic trends mirrored in statistics such as the median age of workers, which in 2018 reached record high of 43.1 years (Eurostat, 2019a), result in shifts in the age make-up of societies. Adjustments will be needed in order to lengthen working lives, avoid brain drain and meet the increasing demands of the silver economy.

The Bologna Process in response to societal challenges

The emerging learning and self-development needs have been among serious concerns of the EU institutions. The main initiatives and goals of the European Higher Education Area, defined by the Bologna Process, launched with the Bologna Declaration of 1999 and implemented in 48 states, refer to Life Long Learning (LLL). This has been seen as one of the priorities in a wider socio-economic context with the focus on the following issues:

- innovation,
- European knowledge societies,
- changing labour market,
- aging populations,
- wider and more active participation,
- maximisation of capacity and talent of all citizens,
- empowerment of citizens to be active and responsible.

The process is expected to ensure that higher education systems are inclusive with equal and widened access and participation in learning and teaching. According to the "Renewed EU agenda for higher education" (European Commission, 2017), the profiles of student populations should mirror the society and its needs. Moreover, the process should

be firmly anchored in the new reality and should reflect such trends as globalisation and accelerated technological development with respect to new learners and new types of learning.

The state of Life Long Learning in Europe

According to the EU statistics, the participation of the working population (aged 25-64) in education and training in 2016 was rather low at 10.8%. Moreover, in Bulgaria, Greece, Croatia, Poland, Romania, Slovakia and Macedonia, only the fraction of the employed are taking part in LLL; in 2016, it was below 5%. Even in some well developed countries a downward trend was noticed in 2016 as compared with 2011, e.g. in Denmark, the UK, and Iceland. Also, significant differences can be noticed between the populations in different European countries ranging from 32.9% of the population participating in LLL in Switzerland to 1.2% in Romania (Eurostat, 2016a).

Similarly, the data illustrating the participation rate in education and training across Europe (in the last 12 months in 2016) show significant differences ranging from 70% participation in the leading Swiss population with Norway, the Netherlands and Sweden following close behind at over 60% to less than 10% participation in Romania and Albania (Eurostat, 2016b) (Figure 1).

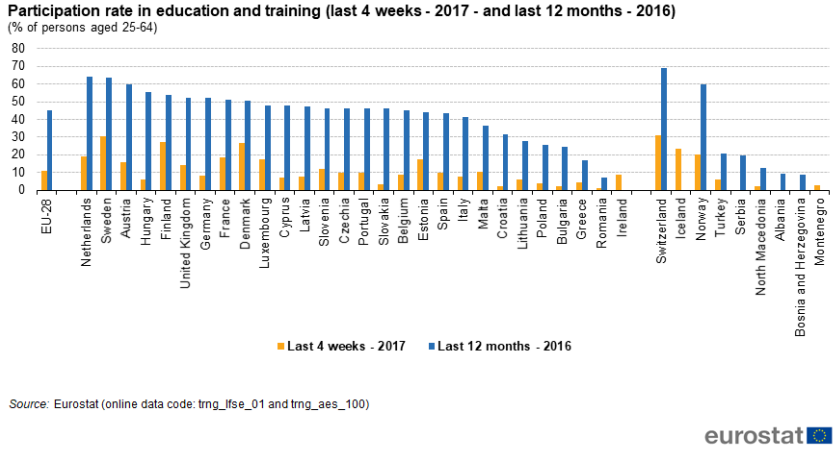

Figure 1 : Participation in education and training
Source: Eurostat (2016b)

Upgraded skills are needed in economies facing exponential speed of changes, in particular in new technologies. Not only are these skills necessary on the labour market but also in everyday life to a higher and higher degree to not only actively participate in a job market but also to be independent and efficient in daily activities. Both individuals and societies are affected by significant structural changes in the labour market and business functioning brought about by the information age. As a result, people's role is both active in shaping the changes as well as passive in having to adapt to the changes. Unfortunately, while the performance of the roles should be supported by literacy skills, they are found to be rather low, which can be partly attributed to poor participation in education and training.

According to the research carried out in 20 OECD countries, educational attainment is the most important predictor of literacy proficiency as scores on the literacy tests increase on average by about 10 points for each additional year people attend school. However, out of 20 countries taken into account in the literacy survey, in 14 of them, at least 15% of all adults were found to have literacy skills at only the most rudimentary level, which means that the rising demand for skills in the information age is difficult to meet. The countries with the largest numbers of citizens at the lowest level of literacy are Australia, Belgium (Flanders), Canada, Chile, the Czech Republic, Hungary, Ireland, New Zealand, Poland, Portugal, Slovenia, Switzerland, the United Kingdom and the United States. In the remaining countries, i.e. Denmark, Finland, Germany, the Netherlands, Norway and Sweden, less than 15% of adults were at the lowest level of literacy skills. The highest scores on the test were recorded in Sweden; however, even there, 8% of the adult population were found to encounter a severe literacy deficit in everyday life and at work. Interestingly, low literacy skills are found among significant proportions of the adult populations in all countries surveyed. It can be concluded that even the most economically advanced societies have a literacy skills deficit (OECD, 2000).

The process of science and technology advancement has been driving the transformation of economies. Highly skilled employees are demanded by companies to utilise new technologies and to be able to compete internationally, to be efficient in the global world and to follow the trends. The increase in the level of educational attainment of the population in OECD countries is both a cause and a consequence of these changes (OECD, 2000).

Education in knowledge-based economy

The term knowledge-based economy has been commonly used since the last decade of the 20th century. A core feature of knowledge-based economy is the dominance of services sector in employment structure and GDP and economic growth is determined first of all by high-tech sectors, which emphasises the importance of innovation (OECD, 1996).

According to Lundwall and Johnson (1994), the aspects of knowledge are facts, reasons, ways of conduct, people with knowledge and skills, referred to as "Know – What", "Know – Why", "Know – How" and "Know – Who". Therefore, knowledge-based economy in a broad meaning includes, apart from enterprises driven by the need to gain competitive advantage, individuals/natural persons, schools, social organisations and the state. Applying knowledge is attributed to human capital which is founded on and built by family and the environment, and enriched by a school system and social norms to finally form a mature individual participating in economic life (Galar, 2003).

As emphasised by Drucker (1999, p. 150- 151), knowledge-based economy is not built on theoretical assumptions such as the ones formed by classical, neoclassical or other mainstream economists. Nowadays, knowledge is created and applied in processes in enterprises and it is the various applications of knowledge that lead to growth of the economy. A constant process of product and service development and improvement (kaizen) is based on the exploitation of knowledge in new, different processes and ways. Thus, the potential of knowledge-based economy depends on its current condition and on the amount spent on its development. The foundation of this economy is knowledge capital, which consists of cumulated scientific knowledge (R&D) and the level of knowledge of the society (level of education).

"The knowledge-based economy is a network economy […] up until now, the network has been a complement or, at most, an instrument, at the service of a greater objective. These days, the role networks play is completely different. First of all because, in the knowledge-based society, networks are intrinsic to its operation and development. Through networks, knowledge is created and distributed,

organisations are transformed and a relationship is established with technology which brings about changes in society" (Torrent-Sellens 2009, p. 2).

One feature of network economy is the predominance of knowledge over other tangible resources. There is a need for enterprises to ensure favourable conditions for creativity and talent development and thus to encourage knowledge development. Knowledge is the only resource which can accrue in the process of gaining experience. Moreover, it is the resource which is possessed and controlled by individuals – employees, not by managers. The notion of scarcity has always been a central aspect of economics and management focused on the allocation of scarce resources. Today, in the era of the predominance of knowledge, this issue will need to be viewed from a different perspective and should be reflected in the teaching process.

Knowledge-based economy is one of the elements of a knowledge society. According to N. Dempsey, the Minister for Education and Science, Ireland, and Chair of the 2004 Meeting of OECD Education Ministers Building, the knowledge society involves getting the balance right between the needs of the economy and the wider social aims of the education system. The purpose of education should be to provide everyone with the opportunity to achieve their full potential both as an individual and as a member of society. However, a knowledge society does not imply that the contribution to society is only made by knowledge workers. "In addition to technological skills, competences in creativity, tolerance, appreciation of diversity and social skills form an important part of any high quality education system" (OECD, 2004). Therefore, education should be seen as the main factor strengthening competitiveness, employment and social cohesion in the global knowledge economy. Education cannot stand apart from the change, but needs to drive the changes.

On the other hand, the complexity of economies and business resulting from globalisation and the pace of changes makes educators plan for the unknown (OECD, 2004).

In the era of the globalized world, the unavoidable co-existence of representatives of different cultures, high- and low-context ones, should be addressed in business and education. In the light of the recommendation that tertiary education institutions should be more international and responsive to the societal changes, it seems these differing cultural types and their expectations will need to be perceived and catered for in the process of education. There can be differences in many areas, primarily in communication. According to Hall's (1996) concept of context, which defines the amount of shared versus transmitted information, cultures can be referred to as 'low-context' or 'high-context'. In low-context cultures, communication typically needs to be explicit, direct, formal and often written, while in high-context cultures, it tends to be more indirect, informal and symbolic.

The demand for knowledge society needs intensified efforts on the part of tertiary education institutions, which are expected not only to adapt to the current situation but also to provide for new solutions. Graduates should be able to take new roles in business; they must be more accountable and must build closer links with a range of stakeholders.

World organisations have risen to the challenges of the changing environment. The final report of the OECD Thematic Review of Tertiary Education outlines trends and policy directions and suggests that national strategies should respond to the growing internationalisation of tertiary education, which implies outward focus, greater autonomy and diversity (Santiago, Tremblay, Basri, & Arnal, 2008).

Generations

The changing age make-up of a society means that different generations make their presence felt in different proportions. Their needs demand alternative teaching methods to obtain new skills in an efficient way, which should be reflected in systems of education. Members of each cohort evince differing views and behaviours which, as research proves, change over time. Various skills deficiencies of generational cohorts may need to be catered for. Educators should be aware of different preferences in communication and learning styles.

As shown in Table 1, there are five commonly accepted generational labels defined according to year of birth, which are currently active in the economy. At present the following generations co-exist on the labour market: Baby Boomers, Gen. Xers, Gen Ys (a.k.a. the Millennials), and Gen Zs.

Table 1: The generations defined

Generations	Silent	Baby Boomers	Generation X	Generation Y	Generation Z
Born	1928-45	1946-64	1965-80	1981-96	1997
Ages in 2019	74-91	55-73	39-54	23-38	7-22

Sources: Pew Research Centre (2019), Catalyst (2019).

As the number of Generation Y representatives will likely surpass the numbers from previous generations on the labour market soon, they are the most crucial group of employees. However, Generation Z has also been the focus of much attention of late as its oldest representatives have now reached maturity and started appearing on the labour market. From the perspective of the future of business, it seems these two generations should attract the most interest.

Intergenerational differences are clear cut in several ways, such as living and attaining maturity at varying times in history and being shaped by specific events. Technological development, which defines the ways in which people communicate and interact, is an important generation-shaping consideration. The key formative experiences of various generations – world events and technological, economic and social shifts – are shown in Table 2.

Table 2: Generational profiles

Generation	Baby Boomers	Gen Xers	Millennials (Gen Yers)	Gen Zers
Formative experiences	-Western social values -Idealism Environmental issues -Space exploration	-Post-boomers' recession, layoffs -Fall of Berlin wall -Transformation of Central Europe	-9/11 attacks -Housing bubble -Recession of 2007 -Internet expansion -Globalisation -Uncertain economic future -Business agility	-Great recession (the oldest were 11 in 2008) -Mobile Internet and systems, **-Social networks on-demand entertainment, communication**
Technology	-Television expansion -Changed lifestyle	-Personal computers, computer revolution	-Internet explosion -Google, Facebook, Twitter -Video games	-All inventions of previous generations from birth -Facebook (broad use after 2008) -iPhone (first 2007) -Mobile devices -Wi-Fi -High-bandwidth cellular services -Social media
Communi-cation and interaction	-Written -Formal -Phone -Personal interaction	-Voicemail -Email -Direct -Immediate -Team player -Love meetings -Collaborative	-Text messages -Blogs -Emails -Participative	-Digital natives -Communicate through social media and texts -Constant connectivity
Character-istics	-"Work to live" philosophy -Redefinition of retirement -Conservative -Dedicated -Experienced -Knowledgeable -Workaholics	-Tech-literate -Focused on balance -Flexi-time -Telecommuting -Job-sharing -Adaptable -Want structure and direction -Sceptical -Diverse -Entrepreneurial	-Tech-savvy -Loyal to brands -Easily bored -Short-term focus -Individualistic -Need constant variety of stimulation, feedback, guidance, challenge	-"Undefined" -Radically "inclusive" -Pragmatic -Access instead of ownership -Realistic and mindful of financial issues and future career

	-Desire quality -Work efficiently -Idealistic -Competitive -Consumerists	-Challenging -Self-reliant -Status-oriented	-Tolerant -Multitasking -Goal-oriented -Globally concerned -Health conscious -Self-experience-oriented -"me generation"	-Need to express, show off individual identity, -Ethical consumption, **-Connected to interests, cultures, social circles around the world,** -YouTube
Resources/ media	-Books (cover to cover) -Lectures	-Books (by index)	-Computers, unlimited information available all time	-Live streaming content curation, augmented and virtual reality -No one source of knowledge called 'expert' -Expertise lies in collective knowledge
Learning tools / methods	-Listening -Instruction	-Lecture -Small group activities	-Network -Flexible learning environment	-Participatory, collective learning, -Can be self-taught through their network
Learning style	Linear	Modular	Networked	Collective / connected

Sources: Own considerations based on Business Insider (2018), McKinsey (2018), and Microassist (2012).

In the context of employment relations, Millennials are the first generation expected to operate in a multicultural work environment which is more internationally connected by proliferating technologies, and the first generation to coexist with older ones in the workplace for a longer period of time. At the same time, living in a world of intensified migration, they are expected to be more tolerant and open to cross-cultural training.

Generation Z is the least thoroughly examined generation, but researchers have already noted certain formative factors reflected in their characteristics, which are listed in Table 3.

Table 3: Generation Z: background and characteristics

Criteria	Features
Visibility	- have taken hold in pop culture and journalism
Diversity	- ethnically and racially, behaviourally and culturally more diverse than other generations
Environment	- "always on" technological environment
Realm	- first true digital natives
Connectivity	- unprecedented degree, 24-7 access
Pace of change	- accelerated shifts and technological trends
Attitude	- shifts in behaviour, attitude and lifestyle
Consumption	-search for "truth" in behaviour and consumption patterns
Employment	- creative jobs, e.g. teaching piano on YouTube channel, (70% of self-employed teens in the USA)
Technology	- overreliance on technology for answers to questions / social connections
Multitasking	- can multitask across 5 devices at a time
Facts vs opinion	- difficult to distinguish
Sense of entitlement	- anything on the Internet is available
Trust	- unlimited to the Internet
Attention	- short span, an 8 second attention filter
Patience	- need immediate response, - demand immediacy- access to social connections, feedback and content - no time for delays
Thinking	- non-linear fashion
Learning	- prefer *construct*ing to being *instructed,* - technology aided instruction should work seamlessly
Perspective	- global perspective to see issues and trends - look for solutions to problems based on the big picture
Knowledge	- propensity to be 'generalists' rather than 'specialists'

Sources: Own considerations based on McKinsey (2018), Microsoft (2015), and Seemiller and Grace (2015).

From educators' perspective, the representatives of Generation Z, the most dynamically changing and the least known generation, are likely to attract most attention. The following analysis exploits the areas with potential to be elaborated on in order to create the most effective system of education and learning environment. Generation Z has been found to be characterised by the following features / skills:

- active, want to be part of the process of learning,
- resourceful learners,

- attention span is hindered by a constant bombardment of information,
- creative,
- self-discovery skills,
- speed to process information,
- ability to handle multidimensional learning experiences
- sceptical, demand proof or opinions of others,
- need changing rewards and feedback,
- need to show off what they have created on a public forum / in person / online,
- think spatially and in 4D,
- drive for self-learning,
- practical,
- savvy,
- thrive on good challenge,
- content they are learning should be relevant on a global scale,
- brief and simple information,
- prefer micro-learning,
- more open to ask questions through network.

Researchers into this generation (McKinsey, 2018; Seemiller & Grace, 2015) think that the measure of their knowledge should be less connected to formal education, rather more with individual skills (e-Learning industry, 2017).

Implications for contemporary education

Social sciences including economics have a specific object of research which determines the empirical nature of the studies. They are based on induction which consists in drawing general conclusions from analyses of individual cases (from detail to generalisation).

Hence, a lot of attention is attached to learning from case studies. According to Czakon (2011), case studies have been very popular as a tool used for foundation of economics, in particular in management sciences. Contemporary research focusing on case studies are works of Chandler (1962), referring to structure and strategy,

social networks in strategy (Eccles & Crane, 1988) or quick decision making in the changing environment (Eisenhardt & Zbaracki, 1992).

However, traditional educational practices require thoughtful change in order to meet the needs of the emerging and future generations. For Generation Z, teaching of proper searching techniques, the evaluation of sources, the use of databases, and the synthesis of a vast amount of content should be a starting point. They should be taught how to discern facts vs. opinions, how to critically evaluate sources and to judge the content for its worth through modern information literacy skills.

The importance of the ability to ignore worthless pieces of writing as a main skill needed nowadays when we are bombarded with information is stressed by Kołodko (2008) and Wojtysiak-Kotlarski (2011).

Because of hyper-connectivity, the possibility to remain anonymous and due to the lack of boundaries, this generation is found to contact widely across the globe and be influenced by their social network. On the other hand, they are considered to be critical, which is promising in the view of scientific thinking. Its main attribute is contemplative, non-habitual thinking which is marked by scepticism, doubt or reflexion that undermine a fixed way of thinking and cultural axiom. It is not based on stereotypes, simplifications, dogmas, presuppositions and common sense approach, and provoked by contradictions or lack of consistence (Lipski, 2012).

The features necessary for scientific approach are scepticism and logical thinking, independence, curiosity and non-conformism. According to Popper (1993), the condition for the way of thinking to evolve to scientific thinking is to replace naïve monism by critical dualism, i.e. to distinguish natural, necessary and common attributes from social, variable, particular and unnecessary components.

For Kołodko (2008), economics is both a descriptive and a normative science. In management, description is used to show how things operate and normative approach is to indicate what should be improved and how. Observation is then needed to be able to formulate objective rules in processes and principles as the basis of theory. Interdisciplinary approach is a must, and the most interesting results can be obtained by research touching certain disciplines. Such skills should be taught by

tertiary education institutions to prepare staff for the dramatically changing business environment.

Heterodox, comparative, interdisciplinary and complex study is equally important in teaching economics for contemporary business. Moreover, social science must be implemented in business practice where the proliferation of knowledge is a must. Knowledge is popularised when theoretical assumptions can infiltrate business practice. Interestingly, constant changes in the subject matter make time a component of prime importance.

Generation Z's perceived creativity is their important feature and it can be treated as a foundation of their educational skills. Never before has any generation had such opportunities to be able to access so many sources of information and inspiration. For tertiary education institutions, it is a skill to be developed. Educators should eradicate or minimise the following factors hampering creative thinking:

- functional fixation, propensity to solve new problems by old methods, often ineffective to new issues,
- inflexible thinking based on an assumption that objects have constant features which cannot be changed at all or by new methods,
- perception deficiency, i.e. inability to perceive and take opportunities of new methods of work or new resources,
- limited interest in known things and issues,
- social conformity and being subjected to authority,
- lack of motivation or ambitions,
- insufficient brain agility,
- fright of criticism (Stachak, 2013).

As highlighted by the public consultation on future EU support for higher education undertaken in 2016, Europe's higher education systems face serious challenges. In order to meet them, the following activities should be undertaken:

1. tackling future skills mismatches and promoting excellence in skills development;
2. building inclusive and connected higher education systems;

3. ensuring higher education institutions contribute to innovation;
4. supporting effective and efficient higher education systems (European Commission, 2017).

Conclusions

The contemporary world is characterised by mass information. Its main consequence is the shortening attention span typical for human beings, one of the main prerogatives to be taken into account by all sectors where human being is a centre of attention, such as education and labour markets. In 2000, the attention span was 12 seconds while in 2013 it was only 8 seconds (Microsoft, 2015). The reasons are best illustrated by Herbert Simon (Nobel winner in economics in 1978) (Brainy Quote, 2001-2020):

> "What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention, and a need to allocate that attention efficiently among the overabundance of information sources that might consume it."

As a result, teaching techniques should be adapted to the changing perception and new emerging abilities should be exploited. Teaching information literacy throughout the curriculum should primarily include discerning facts vs. opinions, credibility of sources and critical thinking.

The pace of changes accelerated to be exponential rather than linear. What is more, today's innovations affect both the physical and the digital worlds. Such ideas as the cloud and relations built on the basis of connectivity affect the way innovation is diffused. As more of the world comes online, subsequent generations are becoming more global in their thinking, interactions and relations, and have more in common with their international peers than any previous generation. What is more, as never before, previous generations are assimilating the culture and behaviour of the youngest generations to be functional in a high-tech world, leverage technology and remain relevant (Jenkins, 2017). This implies education should be perceived from the perspective of Life Long Learning where different generations' needs will have to be recognised and addressed.

References

Brainy Quote (2001 – 2020). *Herbert A. Simons Quotes*. Retrieved from https://www.brainyquote.com/quotes/herbert_a_simon_181919

Business Insider. (2018). *Millennials love their brands, Gen Zs are terrified of college debt, and 6 other ways Gen Zs and millennials are totally different***.** Retrieved from https://www.businessinsider.com/gen-zs-habits-different-from-millennials-2018-6?IR=T

Catalyst. (2019). *Generations - Demographic Trends in Population and Workforce*. Retrieved from https://www.catalyst.org/research/generations-demographic-trends-in-population-and-workforce/

Chandler, A.D. (1962). *Strategy and structure. Chapters in the history of the American industrial enterprise*. Boston: MIT Press.

Czakon, W. (2011). *Podstawy metodologii badań w naukach o zarządzaniu*. Warszawa: Oficyna.

Drucker, P. F. (1999). *Społeczeństwo pokapitalistyczne*. Warszawa: WN PWN.

Eccles, R. & Crane, D. (1988). *Doing deals: Investment banks at work*. Boston: Harvard Business School Press.

Eisenhardt, K. & Zbaracki M. (1992). Strategic Decision Making. *Strategic Management Journal*, *13*(2), 17-37

eLearning Industry. (2017). *Here Comes Z: Strategies To Engage A New Generation Of College Students*. Retrieved from https://elearningindustry.com/engage-a-new-generation-of-college-students-strategies

European Commission. (2017). *The Renewed EU agenda for higher education*. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0247&from=DA

Eurostat. (2016a). *Lifelong learning*. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Category:Lifelong_learning

Eurostat. (2016b). *Participation rate in education and training*. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Participation_rate_in_education_and_training_(last_4_weeks_-_2017_-_and_last_12_months_-_2016)_(%25_of_persons_aged_25-64).png

Eurostat. (2019a). *Population structure and ageing*. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing

Eurostat. (2019b). *Demographic outlook for the European Union*. Retrieved from http://www.europarl.europa.eu/RegData/etudes/IDAN/2019/637955/EPRS_IDA(2019)637955_EN.pdf

Galar, R. (2003). *Gospodarka oparta na wiedzy-sześć wątpliwości*. [in] Kukliński A. (ed.) *Gospodarka oparta na wiedzy. Perspektywy Banku Światowego w Polsce*. Biuro Banku Światowego w Polsce. Warszawa: KBN.

Hall, E. (1996). *Beyond culture*. Retrieved from https://monoskop.org/images/6/60/Hall_Edward_T_Beyond_Culture.pdf

Jenkins, R. (2017). *4 Reasons Generation Z Will Be the Most Different*. Retrieved from https://www.inc.com/ryan-jenkins/who-is-generation-z-4-big-ways-they-will-be-different.html

Kolodko, G. (2008). *Wędrujący świat*. Warsaw: Prózyński i S-ka.

Lipski, A. (2012). *Metody badań społecznych*. Katowice: Wydawnictwo UE w Katowicach.

Lundwall, B.A., & Johnson, B. (1994). The learning economy. *Journal of Industrial Studies, 1*(2), 23-42.

McKinsey. (2018). *True gen': Generation Z and its implications for companies*. Retrieved from https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/true-gen-generation-z-and-its-implications-for-companies

Microassist. (2012). *Are learning differences between generations a myth?* Retrieved from https://www.microassist.com/learning-dispatch/arelearning-differences-between-generations-a-myth/

Microsoft. (2015). *Attention Spans Research Report*. Retrieved from https://pl.scribd.com/document/265348695/Microsoft-Attention-Spans-Research-Report

OECD. (1996). *The Knowledge-based economy*. Retrieved from http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=OCDE/GD%2896%29102&docLanguage=En

OECD. (2000). *Literacy of the Information Age - Final Report of the International Adult Literacy Survey*. Retrieved from http://www.oecd.org/education/skills-beyond-school/41529765.pdf

OECD. (2004). *Building the knowledge society*. Retrieved from http://oecdobserver.org/news/archivestory.php/aid/1218/Building_the_knowledge_society.html

Pew Research Centre. (2019). *Defining generations: Where Millennials end and Generation Z begins*. Retrieved from https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/

Popper, K. (1993). *Społeczeństwo otwarte i jego wrogowie*. Warszawa: PWN.

Santiago, P., Tremblay, K., Basri, E., & Arnal, E. (2008). *Tertiary Education for the Knowledge Society*. Retrieved from http://www.oecd.org/education/skills-beyond-school/41266759.pdf

Seemiller, C. & Grace, M. (2015). *Generation Z Goes to College*. New York, US: John Wiley & Sons.

Stachak, S. (2013). *Podstawy metodologii nauk ekonomicznych*. Warszawa: Difin.

Torrent-Sellens, J. (2009). *Knowledge, networks and economic activity. Revisiting the network effects in the knowledge economy*. Retrieved from http://knowledge4all.ae/Temp/Files/5b2ee283-1196-4708-b268-9dd3e453ce2a.pdf

United Nations. (2015). *World population ageing*. Retrieved from https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf

Wojtysiak-Kotlarski, M. (2011). *O metodologii nauk ekonomicznych. Wybrane zagadnienia teoretyczne, rozmowy z przedstawicielami profesji*. Warszawa: Oficyna wydawnicza SGH.

'MULTICREATION' – PARTICIPATORY LEARNING APPROACH FOR BUSINESS – ACADEMIA COLLABORATION

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Abstract In today's complex, dynamic, information-rich global society, operating in developing countries requires ingenuity and innovative capacity from all stakeholders due to limited resources (especially financial ones), turbulent socio-economic, political and environmental circumstances. Our motivation as relevant participants in the higher education system is to facilitate students to develop their knowledge, skills and competences for facing business world challenges; to help them become able to take entrepreneurial initiatives; and to boost their (self-) confidence. To properly address the multi-dimensional, multi-disciplinary, multi-participant world, we designed our 'MultiCreation' teaching/learning approach. Based on the knowledge matrix, we conceptualized, effectuated and validated it in a business-academia collaboration project during one semester as a problem-based, learning-by-doing, blended-learning approach that encompasses complete course content of four classes (Innovation Management, Change Management, Business Planning and Business Communication) and engages students, professors and managers in various roles towards individual and collective progress.

Keywords: problem-based learning, participatory learning, the knowledge triangle, business-academia collaboration, multi-disciplinary approach.

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Motivation and background work

There are various methods that provide practical application of knowledge and learning combined with techniques such as group discussions, case study work, debates, industry visits, workshops, problem-based learning, brainstorming sessions, etc. It is not uncommon that university lectures focus on specific, separate discipline and address case studies from a specific angle (Borrell-Damian, Morais & Smith, 2014), giving the students segmented view and knowledge. However, students need to encompass the big picture and integrated knowledge in order to apply it in real life. There are many types of university-business collaboration options such as R&D collaboration and commercialization, the mobility of academics and students, curriculum development and delivery, lifelong learning, entrepreneurship and governance (Davey, Meerman, Galán-Muros, Orazbayeva & Baaken, 2018), the approach we developed comprises several of them. In this paper, we will elaborate a method that enables multidisciplinary, problem-based, multi-stakeholder project work that enables the creation of many bridges, thus enabling the knowledge triangle among (i) higher education, research and technology, and business (Allinson, Izsak & Griniece, 2012) or (ii) knowledge-education-innovation (OECD, 2004) to function effectively.

The 'MultiCreation' approach integrates the content and instructional design of several courses (further in the text – subjects) in the first cycle studies at our Faculty of Economics. In the first instance, we included subjects Innovation Management, Change Management, Business Planning, and Business Communications. Complementary to multiple disciplines, this allows a broad scope of participants and traces a roadmap of collaboration and communication among the stakeholders towards an effective outcome. All these 2+ aspects are reflected in our decision to name the approach 'Multi-'. The 'Creation' part is self-explanatory; the approach aims to achieve co-evolution, coopetition (cooperation & competition) and emergent effects.

Higher education institutions feel the need to be very close to real business and real life. "More partnerships with companies would be beneficial to help universities provide courses based on the needs of the industry. Without such collaboration, universities will not be able to keep up. One way is through mentors and support systems. Encouragement and guidance make a difference in self-confidence and

motivation". These are the most recent comments of the City College of New York, Columbia, and NYU deans, who are highly experienced in business-academia collaboration (Goodrich, 2019). The institutions such as the European Institute of Innovation and Technology and the Knowledge and Information Communities perform rich sets of activities, research, events and platforms to activate and maintain the knowledge triangle so that it generates theoretical and applicable knowledge (Allinson et al., 2012). The Council of the European Union's vision for the European Research Area (European Research Area Vision 2020, 2002) is to promote the knowledge triangle and the university-business collaboration in every possible manner; therefore, we find proper alignment from all aspects in our efforts.

This paper will highlight and explain the analysis, the development, the design and the implementation stages and features of the 'MultiCreation' approach as well as the project-wide application and upgrade possibilities in various domains including a broad stakeholder and geographic scope. The argumentation for this lays in the fact that the method draws on managerial sense of problem-based participation and learning. The method implementation has enabled all participants to improve their collaboration, network, creativity, knowledge, skills and competences (CEDEFOP, 2019) and motivation for taking initiatives and investing in co-evolution and coopetition.

Methodology

It is in the essence of the sciences of economics and management to be practical, applicable. It is a core motivation of, especially, higher education teachers, to equip the students both with proper theoretical depth and real-life implementability of knowledge by using multimodal approach and manoeuvring with both traditional and contemporary tools. It is in the hands of the instructional design (David Merrill, Drake, Lacy, Pratt, & the ID2 Research Group, 1996; Wagner, 2011) or didactics (Tubbs, 2014) to effectuate these principles. In order to achieve this outcome, our aim was to design the roadmap for all stakeholders to follow. Our primary customers are the students and our secondary customers are the teachers, the businesses, the immediate and broader environment and other stakeholders. The ADDIE model (Kurt, 2017) introduces analysis, design, development, implementation, and evaluation in formative and summative sense. It is a rather appropriate recommendation for stable and/or dynamic environment where changes occur

rather frequently (students joining in or dropping out of the assignment; not performing, inability to obtain information; altered relations with a business partner; etc.). Different disciplines have different but also very similar ways to achieve consecutive design and evaluation designed around a problem, such as the Action Design Research – ADR (Sein, Henfridsson, Purao, Rossi, & Lindgren, 2011) in the information systems domain, in order to "respond to a dual mission: make theoretical contributions and assist in solving the current and anticipated problems of practitioners" (Sein et al., 2011). In addition, formative evaluation and summative evaluation are incorporated. Having the knowledge matrix (Anderson et al., 2001) in mind, we followed ADDIE with the addition of the ADR design principles in designing our problem-based, learning by doing, blended learning, multi-participant approach.

In the continuation, we will briefly outline the choices we made through the different stages of the development and implementation of the approach.

Analysis – A

In the winter semester of 2018/2019 academic year, a multidisciplinary project assignment under the title "Business analysis and innovative strategies and tactics for development" was realized in cooperation with the Faculty of Economics Prilep and a private IT company with an international outreach. The aim of this project task was to actively involve students from the Faculty of Economics in Prilep in solving the real problems in the business sector.

This project activity involved 52 students (divided into 11 combined groups by subjects and years of study from different study programs and with very discrepant knowledge and background) who attended the courses Business Planning, Change Management, Innovation Management and Business Communication in the winter semester of the 2018/2019 academic year.

The main objectives of the involved teachers were numerous because we adopted the participatory learning and growth approach. Hence, we will discuss the objectives for the following participants: students, higher education institution, and company (managers, owners).

Objectives for the students:

- to achieve theoretical depth and practical implementation of the acquired knowledge by students at the end of the semester;
- to enable students to obtain knowledge about a domain (in our case the IT domain) to the sufficient level to be able to perceive it from managerial and economic aspects and to contribute to its improvement with increased competences;
- to help students carry out the analysis and evaluation of a company, its internal and external context, and the creation of solutions that are theoretically founded and applicable;
- to improve the skills of problem solving, team-work, situation awareness, time management, creativity, innovativeness, adaptability, initiating change, professional communication;
- to increase the students' manoeuvrability for communication and collaboration platforms and tools;
- to provide a 'feel' for real life, real work and real professional/personal challenges;
- to boost the students' confidence in taking endeavours by themselves, to find ways to push an idea and see immediate and long-term effects; and
- to motivate students with personal example, portraying the worth of investing in our own development now to be able to grow tomorrow (monetarize, expand, improve quality).

Objectives for the higher education institution:

- to establish subject-to-subject and teacher-to-teacher collaboration in a multidisciplinary manner;
- to effectuate bridging academia-business and revive the learning triangle (business-research-innovation);
- to trace a multi-stakeholder collaboration focused around a problem by utilizing various resources in a broad and complex ecosystem;
- to complement lectures with practical use and applicability;
- to build referential reputation as being a competent center for scientifically sound business advice in order to increase partner network and future revenues;

- to promote the use of e-learning platform and portals per subject, per project, per study group; and
- to streamline the focus of different subject towards mutual compatibility – perceivable also by the students.

Objectives for the company:

- to become convinced in the quality of student profiles and their employability by offering hands-on experience in the collaboration and communication with the students;
- to be given another competent and relevant viewpoint of the company's internal and external context that will help them improve their business; and
- to gain positive reference for the expansion of collaboration and partnership network.

Some limitations occurred in the project early in the negotiations due to the confidentiality of information that the company cannot share with the teachers and students, some standardization that they needed to pay attention to, and the fact that there was no funding for the project – the teachers invested their own additional time and resources to implement it.

Design – D

The design principles of our approach were to achieve practice-inspired research and theory-ingrained artefact, reciprocal shaping of the participant and their context, and mutually influential roles of the multi-participant landscape (Sein et al., 2011).

We decided to have multimodal learner experience with blended learning mashup as elaborated in Petrevska Nechkoska and Mojsovska Salamovska (2017), consisting of the following e-platforms and traditional channels:

(1) Moodle as an e-learning platform was mainly used for the uploading of materials and for asynchronous, usually one directional, teacher-students communication as well as bi-directional communication through student assignments, forums and other activities. The project portal contained all instructions and the timeline of

developments so that every participant (students, managers, teachers) could always orient, revert, check and project their own and team's actions.

(2) Facebook groups were used for fast, immediate communication where confirmative response was expected.

(3) Storage space in the cloud, USB sticks, etc. were used to store and share information.

(4) Polls, collaborative writing and asynchronous remote project work were done by using the Google Sheets, Forms, Docs and similar tools.

(5) Skype/Viber served as a synchronous remote team communication.

(6) Free mobile apps/messengers for instant messaging were used for urgent matters.

(7) E-mail correspondence was used to communicate among the participants on non-urgent matters.

(8) Teaching and contact hours, as well as the person-to-person consultations and on-campus group/team consultations were organized to facilitate work and share information.

Each of these mashup components contributed to various means of obtaining feedback and taking corrective action for the next iteration.

Development – D

The development of such an extensive undertaking was intense. The teachers prepared numerous modules of materials, lecture and exercise content and timelines and discussed them with the managers. Here are the most important components:

- negotiations with a company, persuasion on potential benefits for the company, specification of problems to be addressed and setting up principles of work;
- memorandum for cooperation between the faculty and the company;

- agreement for internship – to guarantee that the students completed their internship requirements after the semester-long project work for the company;
- the appointment of mentors from the company and from the faculty and the specification of times per week for direct contacts between the students and the managers;
- students' willingness to participate in the project;
- administering e-learning platform portal for the project;
- the preparation of an all-in-one 'orientation' project document for all stakeholders with guidelines on the project, the expectations, the governing principles and communication rules;
- tracing the stages for group work;
- formulating the three problems to be addressed (1. Information sharing climate (bottom-up, lateral, top-down); 2. Employee satisfaction and motivation; and 3. Recruitment and retention in the IT domain);
- aligning the subject lecture and lab exercise materials with the project needs;
- drafting specific obligatory responsibilities for each student participant per subject (up to 10 such responsibilities to be evaluated and graded properly also relation to other non-participating students);
- drafting generic responsibilities for all students (from managerial aspect, professional communication, win-win mind-set, etc.);
- drafting a timeline of activities and paying attention to any necessary modifications;
- setting up teams of students from each subject;
- organizing the final event with all participants;
- organizing PR activities via multiple channels;
- organizing certificates, internship confirmations and other administrative and logistic issues; and
- providing an open communication channel with student information (name, surname, contact) and company recruitment offices responsible for potential employment.

The previously listed components are the foundations of the 'MultiCreation' approach, which can be upgraded and enhanced in the future depending on the scope of application and the number of stakeholders.

Implementation – I

The project was implemented during one semester, while the preparations took place few months before it. The announcement to students and the recruitment of interested students happened during the first few classes of the semester. The main selling points were that their participation in the project would be an important hands-on experience, especially for the ones aiming for higher grades and for those who would see their participation as a personal challenge. The participating students' average grades throughout their studies had normal distribution. A kick-off event with the presentation from the company was organized and students got a first-hand input from the managers and employees about the company. After the students received guiding materials, the access to the e-learning portal and initial instructions by the professors, they started working. Some synchronization was needed during the lectures and exercises, but students had to do an extra effort to communicate with the team, share responsibilities, set deadlines, etc., as well as communicate back and forth with the teachers and the company. They designed surveys, mystery shopping, online search, competition questioning, interviews and similar activities in order to acquire important knowledge about the IT domain, the global situation and the company from various sources. Twice in the semester, team consultations were held with the professors with participants having 20 minutes each to discuss their status report, plans and findings. Student teams had the responsibility to use the techniques such as brainstorming (Osborn, 1963), mind-mapping (Buzan, Griffiths, & Harrison, 2014), Ishikawa diagram (Ishikawa, 1986), SWOT analysis (Sarsby, 2016), Industrial analysis (Porter, 1979), etc., to identify problems and solutions; to capture the broad business ecosystem and to develop original model for tactical management with roles and accountabilities in order to suggest to the managers how to implement those creative solutions using the Denica method (Petrevska Nechkoska, 2019). Also, they had to communicate that through a written report and in a team presentation.

Evaluation – E

The evaluation of the project is discussed from both formative and summative aspects, which is comprehensive enough to help us determine the achievement of learning outcomes for the project, the goals of the project, and to help us iterate the project later on in other instances.

Formative evaluation happened on a daily basis via communication among all participants. The teachers kept all communication channels open 24/7, they discussed issues and gave answers to the students; the teachers and managers communicated as well and managed open issues in the course of the project. Also, the timeline of activities helped make parallels whether the teams progressed properly; the consecutive official consultations oriented all participants on what was achieved, on the problems and challenges, and on the activities that were still to be implemented. Keeping all communication channels open and enabling proactive questioning as well as initiative from the students enabled a fast recognition of interpersonal issues, intra-team problems, persons who left the project and student exchanges across the teams. It is our opinion that formative evaluation was very significant for bringing the project to completion.

Regarding **summative evaluation**, we gathered feedback about the experience from the project from the students and the company managers/owners.

The founder of the company and general manager and the HR manager were present also on the final event where the teams presented, elaborated and explained their work, their analyses and innovative solutions, and ceremonially handed their reports to the company. Both managers gave remarkable feedback to the students about the project, the professors and the Faculty. Brief excerpts from their evaluation are as follows. The founder/general manager of the company:

> "*With this project, these two professors have proven that everything is not up to the system. People live in the systems; some create, others make ruins. But there are people who change the systems – and your (to the students) two remarkable professors are the ones who change the system of higher education and the economy for the better. The students in the project gave me back my passion to work with young people in this country, to have faith, to apply to my company what you have proposed, and to open space in the IT company for new profiles of your kind – economists, consultants, advisors.*"

The HR manager:

> "*Every recruiter wants to hear what you've done, what can you do. You had one Mount Everest to climb, and you did it in extraordinary fashion. We got value, we had the opportunity to see our company from a completely different angle, we learned a lot, and we gained many innovative original contributions that we will revise with our managerial team.*"

The students were asked to fill in a questionnaire of 30 questions in different formats to assess and give feedback on their experience with the project to other the team members. At the end, they had to give their opinions in the essay form, which was meant for the company, for the faculty, for the professors, for the state institutions and ultimately, for themselves. All 52 students that reached the final stage gave remarkable statements and insights in the questionnaire. The analysis of the questionnaire helped us evaluate the effectiveness of the project as well as the specific aspects of introduced/improved knowledge, skills, competences we aimed for with this project. Using a 'heat-map' feature, Table 1 presents the most improved cognitive dimensions and knowledge dimensions. The darker colours denote the highest degree of progress made in the specific category whereas the lightest colour denotes the least progress made compared to doing regular seminar paper work and presentations. Considering the fact that for 60% of the students who participated in the project this was their first experience in project work, the clarity of their impressions is much more relevant than if they had participated in many others before.

Table 1: The cognitive dimension and the knowledge dimension categories and components for the 'MultiCreation' approach, presented via a heat-map feature.

The Knowledge Dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Facts	List, describe, Identify	Discuss	Illustrate	Analyse, break down	Rank, compare	Rearrange, reconstruct
Concepts	Reproduce, recall	Comprehend	Demonstrate	Differentiate	Criticize, defend	Model, generate
Processes	Outline, select	Translates	Perform	Investigate	Assess	Summarize, devise
Procedures	Know, explain	Interpret	Relate, use	Deconstruct	Appraise	Model, generate
Principles	Record	Defend	Choose	Solve	Argue	Modify, develop
Metacognitive	Recognise	Distinguish	Discover	Compare	Relate	Actualize

Note: The lightest scales mean little improvement compared to traditional seminar work; the darkest scales mean most improvement.
Source: Anderson et al., 2001.

It is evident that the students achieved the biggest improvement compared to the ones from the same classes who did not participate in the project and did the regular seminar work. The analysis of the questionnaire competed by 52 respondents confirmed numerous positive transformations from their participation in the project assignment such as team-work, enhanced self-esteem, creativity and motivation; recognizing comprehensive qualities; improved communication skills; the development of skills for research and analysis; improved presentation skills. The processed results identified three significant difficulties faced by the participants in the project: team-work and interpersonal relationships; a lack of materials and time; and insufficient knowledge in the IT domain.

The students emphasized the following seven key benefits from their active participation in the project (ranked highest according to the number of statements):

1. self-confidence,
2. team-work,
3. communication skills,
4. friendships and networking,
5. practice and experience,
6. new knowledge (IT domain), and
7. satisfaction, motivation and increased ambition.

These results as well as the fact that 100% of the students taking part in the project have an interest in re-participating in the same or similar projects and that 82% of them would like to appear as mentors in future projects confirmed that the set goals and learning outcomes for the students were realized.

The 'MultiCreation' approach components and roadmap

Considering the methodological framework, we differentiated the steps of our 'MultiCreation' approach in relatively generic terms in order to offer any audience a possibility to replicate and instantiate it.

Figure 1 presents the roadmap of how our 'MultiCreation' approach activates the knowledge triangle engine and generates knowledge, value co-creation, participation, and multidisciplinary, multi-stakeholder learning and growth.

Stage 0: Locating the **problem in a real environment** and finding business **partner(s) to collaborate;**
Stage 1: Examining the **study programmes** to find at least 2 subjects that can address the problems through the curriculum;
Stage 2: Responsible **team of professors** addresses the **knowledge base in the respective domains** and search for possible solutions. This step also encompasses the current scientific domains of the chosen subjects;
Stage 3: Informing the **business partner about the research and technology** that will be used to address their problem, examining their aspects of research and technology;

Stage 4: **Organizing** the main components within the HEIs: lectures, lab exercises, students, teams, timeline, documents, consultation, communication lines, etc.;
Stage 5: Investigating **the existing knowledge**, making foundations for the generation and creation of **new innovative solutions and contributions**;
Stage 6: **Guiding students** to apply what they learned in the subjects with what they investigated as possible solutions **towards applying and/or creating new knowledge**;
Stage 7: **Facilitating teamwork** on all sides, clearing up ongoing problems, maintaining communication channels, **receiving feedback (formative and summative)**;
Stage 8: **Checkpoints with the** business **partners** - briefings, fine-tuning, resolving issues, etc., and **finalizing** the project with presentations of the reports and solutions to the initially defined problems, **receiving feedback (formative and summative)**;
Stage 9: **Instigating curiosity** on the business partner's side for making sense of and the application of new solutions to the existing problems as offered by the students / professors;
Stage 10: **Contributing to the instructional design theory and practice**, as well as the **respective disciplines of the investigated problem**, and the **disciplines of the subjects** that took part in the project, **dissemination, multiplication, instantiation**.

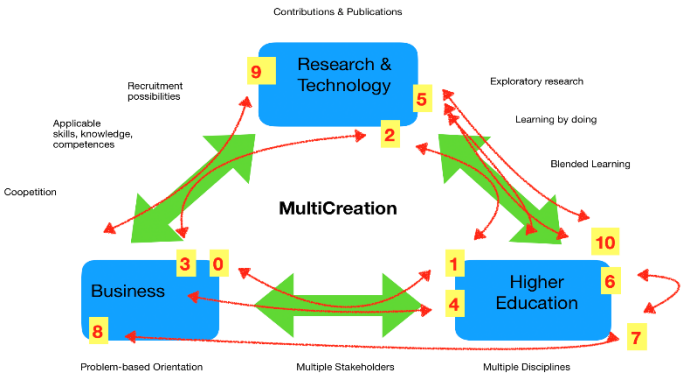

Figure 1: Roadmap of 'MultiCreation' approach activities presented on the Components of the knowledge triangle Source: Authors' research.

Conclusions and future prospects

With the design and the application of the 'MultiCreation' approach for business-academia collaboration, numerous benefits have been identified for all parties involved, as discussed in this paper. The 'MultiCreation' approach for business-academia collaboration was implemented over the period of one academic semester, with 52 students from four courses at the Faculty of Economics involved. Numerous benefits have been identified for all parties involved. This was done through formative evaluation that happened on a daily basis via communication among all participants and through summative evaluation by using a 30-item questionnaire for students and interviews with the main stakeholders.

However certain limitations are perceived as well. On the one side, it is necessary that businesses dedicate the resources (especially time and human resources) for the agreed action plan. The businesses considered the project as an auxiliary activity even though at the end they were the secondary beneficiary of the project outcomes. Also, high levels of synergy and collaboration are needed among the professors and among the professors and their students, which is not always the case. Paying attention to new guidelines, mind-sets and skills to make participatory learning happen is crucial and for this a lot of effort and individual investment and self-reflection are required. The implementation of this approach in the Western Balkans sometimes means doing it with no extra funding, extending the professional component to a voluntary component, which is always challenging, difficult and may sometimes sabotage the entire project.

For our future developments, we expanded the one-semester implementation of the project, we added societal issues by involving more stakeholders (schools, municipalities, governmental institutions, parents, pupils, students, professors, management, etc.) and we tested our 'MultiCreation' approach in a broader and different domain of social issues. Our further implementation of the presented approach has confirmed its usability not only in economics courses but also in technical sciences courses and its application at other faculties. What we are planning to tackle further on are business and societal modalities with by using crowdfunding, grants, etc. as our funding sources so that we can perfect the approach and its effectiveness especially (but not exclusively) for the context of the Western Balkans (in collaboration with the Western Balkans Alumni Association*).

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References

Allinson, R., Izsak, K., & Griniece, K. (2012). *Catalysing innovation in the knowledge triangle - Practices from the EIT Knowledge and Innovation Communities*. European Institute of Innovation and Technology. Retrieved from https://eit.europa.eu/sites/default/files/EIT_publication_Final.pdf

Anderson, L.W., Krathwohl, D.R., Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition). New York: Longman.

Borrell-Damian, L., Morais, R., & Smith, J. H. (2014). *University-business collaborative goals, outcomes and new research : Assessment tools*. The Euima Collaborative Research Project Report. Retrieved from https://eua.eu/resources/publications/371:university-business-collaborative-research-goals,-outcomes-and-new-assessment-tools.html

Buzan, T. Griffiths, C. & Harrison, J. (2014). *Mind maps for business: Using the ultimate thinking tool to revolutionise how you work*. London: Pearson Education Limited.

CEDEFOP. (2019). *Overview of national qualifications framework developments in Europe*. Retrieved from https://www.cedefop.europa.eu/files/8609_en.pdf

Davey, T., Meerman, A., Galán-Muros, V., Orazbayeva, B., & Baaken, T. (2018). *The State of University-Business Cooperation in Europe*. Final Report for European Commission. Retrieved from https://www.ub-cooperation.eu/pdf/final_report2017.pdf

David Merrill, M., Drake, L., Lacy, J .M., Pratt, J., & the ID2 Research Group. (1996). Reclaiming instructional design. *Educational Technology*, *36*(5), 5-7.

European Research Area Vision 2020. (2002). Implementing the European research area. *Science*, *295*(5554), 443. https://doi.org/10.1126/science.1068923.

Goodrich, J. (2019). *How Three Universities Are Keeping Up With Changes in Engineering*. IEEE Spectrum. Retrieved from https://spectrum.ieee.org/the-institute/ieee-news/how-three-universities-are-keeping-up-with-changes-in-engineering?mkt_tok=eyJpIjoiTWpjd1pqaG1aV0l3T1RCayIsInQiOiJTdnlLXC9sdUJnRVp&fbclid=IwAR3Ih4Qe35Qc0Qr-1mLdqpRqTK80slD56FeaskoJkWbSlYbY17qL6g-Y7E4

Ishikawa, K. (1986). *Guide to Quality Control*. Tokyo: The Asian Productivity Association.

Kurt, S. (2017). *ADDIE Model: Instructional Design*. Educational Technology. Retrieved from https://educationaltechnology.net/the-addie-model-instructional-design/

OECD. (2004). *Innovation in the knowledge economy: Implications for education and learning, knowledge management*. Paris: OECD Publishing. https://doi.org/10.1787/9789264105621-en.

Osborn, A.F. (1963). *Applied imagination: Principles and procedures of creative problem solving* (Third Revised Edition). New York, NY: Charles Scribner's Sons.

Petrevska Nechkoska, R., & Mojsovska Salamovska, S. (2017). Context-appropriate implementation of blended learning in higher education in Western Balkans. In I. Vrdoljak Raguz (Ed.), *DIEM : Dubrovnik International Economic Meeting* (Vol. 3, pp. 506–518). Presented at the DIEM : Dubrovnik International Economic Meeting, Dubrovnik. Croatia: University of Dubrovnik.

Petrevska Nechkoska, R. (2019). *Tactical management in complexity: managerial and informational aspects*. Heidelberg: Springer. Retrieved from https://www.springer.com/gp/book/9783030228033

Porter, M. E. (1979). How Competitive Forces Shape Strategy. *Harvard Business Review 57*(2), 137–145.

Sarsby, A. (2016). *SWOT Analysis: A Guide to SWOT for Business Studies Students*. United Kingdom: Spectaris Ltd.

Sein, M. K., Henfridsson, O., Purao, S., Rossi, M., & Lindgren, R. (2011). Action design research. *MIS Quarterly*, *35*(1), 37-56.

Tubbs, N. (2014). *The new teacher: An introduction to teaching in comprehensive education*. Abingdon, Oxfordshire: Taylor & Francis.

Wagner, E. (2011). Essay: In search of the secret handshakes of ID. *The Journal of Applied Instructional Design*, *1*(1), 33–38.

CREATIVE LEARNING OF FINANCE AND ECONOMICS THROUGH GAMIFICATION

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Abstract This paper shows good practices of using gamification for better learning of financial and economics courses at Chernihiv National University of Technology (Ukraine). In the paper, the authors present the application of different financial and economics games for developing students' creativity and problem solving as well as for activating their engagement into real-life social activities that are aimed at increasing financial literacy in local communities. Several gamification strategies applied while organizing students' *Volunteer Camp and FinCultural Marathon* in Chernihiv region local communities are presented. The main types of games used are described with reference to their educational aims, their level of complicity, the target group and the achieved results. The authors also summarize the application of the selected creativity development methods used in the game creation stage, game adoption to the selected target audience and during reflection.

Keywords: creative learning, gamification, finance and economics, financial literacy, teaching methods.

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Introduction

In the context of the Ukrainian course for the integration into the European educational environment, there is a great need for changing both teaching and learning of finance and economics in higher education institutions (HEIs) to move from the old authoritarian pedagogy to a student-centred model adequate for modern challenges of the 21st century. Student-centred learning is based on a new educational paradigm aimed at the humanistic development of the individual with the respect for his/her opinion and creative potential for further development and problem solving. Moreover, the new model significantly transforms both the role of teacher and the role of the student. Thus, in particular, a teacher who used to be the central figure of the educational process with a monopoly of knowledge in the old educational system nowadays has to become a mentor, a facilitator and a wise manager capable of organizing the creative educational environment, of providing reasonable advices for students and of effectively supervising economics and finance courses. At the same time, in a new educational model, a student should be actively involved in the studying process by gaining knowledge from various sources through communication and interaction with other students.

Thus, high dynamics of the global economic environment and the rapid development of the Internet make it topical to address the need for changing the stereotypes about learning as well as for providing further modernization of the educational process and the creation of up-to-date forms of educational environment in HEIs through the use of different creative learning technologies, including game-based techniques. The interest in this topic is explained by a great potential of gamification in enabling creativity learning in the changing environment.

The popularity of interactive games based on learning while playing is evident if we take into account the peculiarities of memorizing new information. According to the study by Tkachenko (2015), a person is able to remember almost 80 percent of the information through visual perception and practical usage, 20 percent while reading and only 10 percent through listening. For that reason, traditional teaching methods should be gradually supplemented and replaced by interactive ones, which involves studying the new material through a certain gaming action and applying the acquired knowledge to real situations. By using interactive game-based teaching and learning methods, students can learn new information much more easily due to enjoying an

exciting experience. Also, they can solve problems by simulating real conditions in a more simple and attractive way. At the same time, interactive games allow students to develop both general competencies and additional soft skills which are very useful nowadays in any profession.

According to the authorial approach of Werbach and Hunter (2012), gamification is defined as "*the use of game elements and game-design techniques in nongame contexts*" (Werbach & Hunter, 2012). Another and more detailed definition was given by Kapp (2012), who stresses that gamification assumes "*using game-based mechanics, aesthetics, and game-thinking to engage people, motivate action, promote learning and solve problems*" (Kapp, 2012). At the same time, it is worth mentioning the linkage between gamification and creativity development. That is, according to existing studies (e.g. Shabalina et al., 2016), game-based learning is the bright example of tripartite creative process including the teacher, the student and the technology, while the game itself is regarded as a didactic idea used to stimulate creative learning.

Despite continuous discussions on whether it is really possible to develop creativity via game-based technologies, the existing experience of HEIs in using various educational games proves their great potential in enhancing creative thinking skills while playing. For instance, good practices of using gamification for better learning of finance and economics courses have been introduced at the Chernihiv National University of Technology (Ukraine). Moreover, under the financial support of British Council, the university successfully implemented *FinCultural Marathon* social project in February-April 2019. The project was aimed at increasing financial culture and literacy of school youth, residents and local authorities of united territorial communities (UTCs) by involving them into interactive financial games that help the formation of prudent behaviour in managing both personal finances and financial resources of local communities.

The main aim of the article is to present the results of a research conducted at Chernihiv National University of Technology (CNUT), Ukraine, that was aimed to test the hypotheses regarding:

1. the usefulness of creative learning and game-based learning of finance and economics courses (Finance, Basics of Business, Marketing, Budget System, Local Finance, Tax System, Insurance),

2. the positive influence of game-based methods used for increasing financial literacy in local communities,
3. the usefulness of simulation strategy board games for increasing financial literacy, improving communication skills and teambuilding in local communities, and
4. the positive influence of *FinCultural Marathon* social project on increasing students-volunteers' motivation for and involvement in the educational process.

Data and methodology

The paper presents the data collected via a questionnaire and interviews.

The questionnaire was aimed at the assessment of the gaming methods used during the courses Basic of Business, Finance, Marketing, Budget System, Local Finance, Insurance, Tax System, and Investment Management. The data were gathered from the bachelor and master's degree students studying at the Faculty of Finance and Economics of the Chernihiv National University of Technology (CNUT) in Ukraine. The sample consisted of 160 respondents.

The questionnaire included open-ended and closed-ended questions such as: "*Do you like interactive methods of teaching the course?",* "*Was it useful for you to play interactive games during classes?",* "*Which skills did you develop thanks to using educational games within the course?", "Which interactive methods did you like most of all during studying the discipline and why?"* etc.

The interview was used for gathering information about students' attitudes towards game-based creative learning techniques and the qualitative evaluation of the achieved results. Interviews were used as an appropriate method for collecting in-depth information on people's opinions, thoughts, experiences, and feelings (Easwaramoorthy & Zarinpoush, 2006) and evaluating the usage of gamification within *FinCultural Marathon* social project aimed at increasing financial literacy in local communities by using games that were created and conducted by students-volunteers. The questions for interviews were selected with the aim to find out respondents' personal opinions.

In the framework of *FinCultural Marathon* social project, 29 students-volunteers of the Chernihiv National University of Technology were engaged in the implementation of the project. 78 pupils of one rural unified territorial community and 10 representatives of local self-government bodies were interviewed.

Main findings

The paper aims to conceptualize the main principles of using gamification for creative learning of economics and finance courses at the Chernihiv National University of Technology (Ukraine) based on the existing research and practical experience.

The conducted survey shows that during the past two years, university teachers have started to actively use different game-based teaching methods and have started to introduce game elements into students' assignments within economics and finance courses more often in order to stimulate their motivation, to increase their interest in the subject matter, and to provide full engagement and learning control.

Experience of using gamification during finance and economics courses at Chernihiv National University of Technology

By using on-line methods for checking off-line knowledge, game-based techniques help conduct effective mixed learning. In particular, online platforms Kahoot and Mentimeter are used actively for the assessment of students' level of knowledge about a certain course-related topic. The usage of these gaming tools means that the teacher creates his or her own online game prior to its use in class. To participate in the game during classes, students need to have smart phones with Internet access. The teacher provides an electronic link to which each student or a team of students must register on-line and log in. After that, questions appear one by one on the screen and the students are to select the correct answer in a given, limited time. Depending on learning goals, it is possible to use different combinations of games available on the above mentioned platforms. The most important element of this is that students have a choice to participate in the game either individually or in a team. Moreover, they can not only solve the games given by the teacher but can create their own game and demonstrate it for their classmates. In the latter case, they are

not only game consumers but also game creators, which is more important both for soft and hard skills development.

Furthermore, it is impossible to underestimate the opportunities for interactive learning games enabled by Moodle course management system. In addition to standard games aimed at checking the knowledge and understanding of discipline-related specific terms (e.g. crossword puzzles, Sudoku, "Who Wants to Be a Millionaire" type of game), gaming elements can be used as an indicator of progress (i.e. to determine the student's stage within the course), as a ranking block (i.e. to determine the student's rank among others), and as an experience and levels block (i.e. to accumulate experience by performing individual tasks (i.e. the student completes the tasks and moves from one level to another)) (Polovin, 2015).

According to the student survey conducted after teaching the courses Basics of Business, Finance, Marketing, Budget System, Local Finance, Insurance, Tax System, and Investment Management to bachelor and master's degree students at the Faculty of Finance and Economics of the Chernihiv National University of Technology, the hypothesis on the usefulness of creative learning and game-based learning of finance and economics courses was confirmed based on the results of 160 respondents. That is, 97% of students indicated that they enjoyed the use of creative learning methods based on the principles of democratic exchange of ideas and mutual enrichment during lectures and practical classes (Figure 1). At the same time, 90% of respondents stressed that the game-based techniques had greatly motivated them to study the course (Figure 2).

Figure 1: Students' attitude towards creative learning methods used during the course

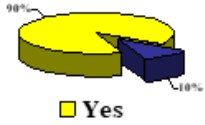

Figure 2: Usefulness of game-based learning techniques for students

Based on our research results, we can extract three main strategies for using gamification while teaching finance and economics courses at CNUT:

- introduction of gaming elements into open-ended assignments and occasional usage of gaming tasks for awakening students' competition and for increasing their involvement in learning;
- learning of separate or interlinked course-related topics by playing educational board games constructed by the teacher or worked out by professionals and bought by HEI for educational needs (including game simulators that enable the modelling of a real-life activity in the class); and
- deep learning of course material by involving students in creative game construction – here, students receive a task to create their own group or individual games, test them on their classmates, analyse their strong and weak points and later improve the game and take part in it in the role of a facilitator for other participants.

The answers to open-ended questions revealed that students like gaming methods because of:

- increasing their motivation and engagement in the learning process;
- developing creative thinking;
- increasing their initial interest in subject matter;
- creating a specific environment for developing natural capacity to learn quickly and generate new ideas;
- receiving useful experience in a creative manner; and
- providing self-control for learning results, etc.

At the same time, students did not have just external motivation but also deep internal motivation for their joint educational activities connected with knowledge assessment. Their creative abilities were better revealed in the simulation of practical problem situations when they had to find a creative joint decision in small research groups.

Gamification strategies applied within FinCultural Marathon social project for increasing financial literacy in local communities

FinCultural Marathon social project was implemented by the Chernihiv National University of Technology (Ukraine) in February-April 2019 under the financial support of British Council and was aimed at increasing financial culture and literacy of school youth, residents and local authorities of united territorial communities (UTCs) by involving them into interactive financial games that help provide the formation on prudent behaviour in managing both personal finances and financial resources of local communities.

The project comprised the following main stages with different goals:

1. *"EdCamp for the Training of Volunteers on Financial Education"* – to train student-volunteers for further processing of interactive games and cognitive activities within the framework of an interactive financial literacy marathon in the Ivanivka united territorial community.
2. *Financial game room "Steps to Success"* – to conduct interactive games for increasing financial literacy for pupils within several thematic modules (i.e. the familiarization of participants with the main principles of the functioning of the financial market, banking and tax system, etc.; raising students' awareness regarding the main financial categories and the raising their interest in financial education).
3. *Intellectual tournament "Daddy, mum and me – a financially competent family"* – to teach how to plan and control the use of family budget funds.
4. *Workshop on common ideas and actions "Smart Finance"* – to unify local governments and residents of the Ivanivka UTC in order to develop ideas for community-based projects and to find sources of funding for them.
5. *Simulation board game-training "World of the Community"* – to develop critical thinking, creativity, communication skills, teamwork skills; to make financial calculations, to control the use of common funds, to make conscious financial choices.

The conducted research showed a great efficiency of using a gaming format for increasing financial literacy in local communities. However, the most important result was that students-volunteers were game creators and game facilitators at the same time. This combination gave them a chance to use new knowledge obtained

within different finance courses in a new, unknown environment. Thus, they had to go through the following stages of creative learning: searching, selecting and analysing information on the topic (understanding of main problems), applying the gained knowledge for game creation and implementation, i.e. game testing – reflecting– mastering – facilitating. That process is very similar to creating innovation and provides students with very useful experience and skills development.

One of the games created within the project *FinCultural Marathon* was *Playground "Financial Erudit"*. The purpose of the game is to increase financial culture of schoolchildren and to raise interest in financial education, which is the key to making sensible financial decisions.

Playground "Financial Erudit" players (up to 3 players) roll a dice one by one and get a card with a question related to finance and economics. If the player answers the question correctly, he or she moves the circle according to the number on the dice. Also, game provides virtual currency called MaF!ns. There are three types of coins valued at 30, 20, and 10 units. All three types of coins are placed on each circle. The first player who moves to the circle takes 30 MaF!ns; if the second player moves the same circle, he or she picks up 20 MaF!ns, and the third one picks up 10 MaF!ns. In this way, the players, besides giving correct answers and increasing their financial literacy, are also strongly motivated by earning game money. There are also special circles with pictures (6, 9, 13, and 17), which are valued at 50 MaF!ns. For instance, circles 6 and 13 are a special bonus (i.e. circle 6 – "you have a deposit in the bank, it is time to take interest"; circle 13 – "you borrowed money from your friend, it is time to return it"). Circles 9 and 17 provide some expenses (i.e. circle 9 – "you took a loan to buy a house, you need to pay it back", 17 – "this is your travel expenses and something else"). Finally, the player who gained the most coins is a winner.

The hypothesis regarding a positive influence of game-based methods used for increasing financial literacy in local communities was confirmed based on the results of interviewing 78 pupils of one rural unified territorial community in Chernihiv region, Ukraine. The conducted interview showed that playing the games not only helped participants to remember new economic terms but also to deeply understand their meaning as a result of gaming situations and unforgettable emotions. Moreover, the game helped develop entrepreneurial thinking of young people, it

inspired them to learn finance deeply and become successful business people in the future.

Apart from that, the experience of using the simulation strategy board game *The World of Communities* (bought during *FinCultural Marathon* social project) was very useful for the development of financial literacy and engagement of students and members of local communities in real-life social activities and problem solving. *The World of Communities* is the first Ukrainian multiplayer co-operation strategy board game which closely models real life and real decision-making, conflict-resolution and community development. This tool is able to change the way of human being's thinking, interaction and co-operation. It is extremely useful because it helps its participants to develop critical thinking, creativity, communicative skills and the ability to work in a team; to carry out financial calculations, control the use of common funds and make informed financial choices; to understand the importance of entrepreneurial activity for the city/state budget; to understand the significance of each participant (his contribution and influence) for community development (Worldofcommunities.org, 2019).

The World of Communities gives the possibility to up to 6 players to build their community based on game scenarios. Each player has a personal social role such as entrepreneur, farmer, school teacher, an unemployed person, etc. To win the game, the players need to cooperate and develop the community by extending public infrastructure, managing community assets wisely and launching new businesses, developing professional skills, increasing level of health and happiness of community members. Furthermore, during the game, each player faces different life circumstances and makes important life choices. In this way, he learns how to effectively manage financial resources, balance life and work and personal interests as well as the welfare of the community as a whole.

After the game, the coordinators of the project reflected on some aspects of the game process and the participants of the game were interviewed. The list of the questions was the following:

1. What did you like mostly about the game?
2. What did you learn during the game?

3. What kind of relationship did you have with your money during the game? How does it relate to your relationship with money in real life?
4. What new thoughts or ideas arose during the game to improve your own well-being?
5. What experiences can you use in the real life of the next week? What steps should you take?

According to the survey, about 75.3% of respondents who used *The World of Communities* game noted a positive influence of the game on their professional activities (Worldofcommunities.org, 2019).

Interview results regarding the use of gamification for increasing financial literacy in local communities

The reflection of community members taking part in the co-operation simulation strategy board game *The World of Communities* has made it possible to confirm the hypothesis on the usefulness of simulation strategy board games for increasing financial literacy, improving communication skills and teambuilding in local communities.

One community member stated: *"At the beginning of the game, I chose the role of an entrepreneur because I know from the real life that they earn a lot. That is, at first my purpose was self-enrichment, but after several rounds, I realized that we should focus our efforts on making important decisions together to achieve the common goal of the community due to the gaming scenario."*

Another interviewed person stressed: *"During the second part of the game, I began to work a lot and earned more money not for self-enrichment, but in order to fill the community budget and accumulate enough money for building the infrastructure object necessary for common welfare. The game helped us to join efforts and increase the attractiveness of our community."*

Furthermore, most interviewers pointed out that the simulation strategy board game *The World of Communities* helped them to understand their own significant influence on community development, to increase their financial literacy, and to improve their communication skills and their ability to work as a team.

The study thus confirmed the hypothesis on positive influence of *FinCultural Marathon* social project on increasing motivation and on the involvement of students-volunteers in the education process. The main findings of the conducted interviews with 29 students-volunteers who processed educational games within *FinCultural Marathon* social project could be summarized in the following way:

- Most students highly appreciated their participation at the Camp for the Training of Volunteers on Financial Education and especially their involvement in the game creation process. That was new and challenging for them and it helped to deepen and systemize their knowledge in finance and economic courses greatly.
- The interviewed students-volunteers identified the following main results of using game-based learning for increasing financial literacy in local communities: fruitful collaboration, creative environment that stimulated the thinking process and helped to find interesting non-standard ideas, teamwork and positive emotions.
- Students-volunteers fulfilled their responsibility as facilitators; from one game to another, they tried to master the way to explain the rules of the game and the main financial concepts to players in order to make the rules more understandable and adoptable to real-life situations.
- Games helped students-volunteers to develop communication skills and their emotional intelligence when they collaborated with school youth in a shared language; they could witness quick transformation results and could observe how interested and happy the children were to play games under their coordination.
- The participation in the game-based social project helped students to demonstrate their civic position.

Therefore, in spite of using a non-serious format, such financial literacy activities are very important for children from local rural communities because educational games stimulate them to think about the welfare of their local communities and to generate new ideas for their own small business; further, they enable better financial inclusion. Also, the participation of students-volunteers in such projects enabled them to transfer their knowledge of finance and economics into practice and to take part in creating new useful gaming products within *FinCultural Marathon* social project,

which will contribute to the increase of financial literacy of different age groups in the future.

Conclusion

The results of the conducted research on the use of educational games within economics and finance courses (Finance, Basics of Business, Marketing, Budget System, Local Finance, Tax System, and Insurance) for students of the Faculty of Finance and Economics of the Chernihiv national University of Technology proved that educational games are a very effective teaching method. It has proven helpful in increasing students' motivation and engagement in the learning process; in developing students' creative thinking; in increasing students' initial interest in subject matter; in creating a specific environment for developing natural capacity to learn quickly and generate new ideas; in receiving useful experience in a creative manner; in providing self-control for learning results, etc. At the same time, the conducted study has shown that the effectiveness of game-based creative learning greatly depends on how learning content is integrated into the gameplay. The main point to be stressed concerning this dimension is that a successful educational game should not be simply a joy but should be a useful learning experience that participants go through in a creative manner. The necessary reward for performing tasks which stimulate motivation of the students involved and which support their interest in achieving learning results are among the most important features of the gamification strategy. The practice of using educational games shows that different types of incentives such as points, odds, levels, progress indicators, virtual currencies, chips, etc., can be used.

Based on the results obtained from interviewing 160 respondents at the Faculty of Finance and Economics of CNUT, educational games should be regarded as an effective instrument for the development of both hard and soft skills needed for students' future professional activity in the changing environment. The development of students' hard skills is provided via special gaming content which helps them to acquire professional knowledge and skills based on using specific instructions, algorithms and methods for solving real-life problems. Focusing on soft skills, we should mention that educational games help students to become more persuasive, sociable, and creative. They also develop leadership skills and learn how to manage time more effectively.

Our study has proven a strong positive influence of *FinCultural Marathon* social project carried out by the Faculty of Finance and Economics of CNUT both on the 29 students-volunteers as well as on 78 pupils of one rural unified territorial community in Chernihiv region, Ukraine, who participated in the project. The best results were reached when students were actively engaged in the process of creating their own games on the given topic for increasing financial literacy in local communities. Here, the students had to use creativity while constructing the educational game, testing it and using it for teaching others. Thus, *learning by playing educational games was combined with learning by game construction* in order to increase a positive influence of gamification. Based on the systemized experience at Chernihiv National University of Technology gained in this project, we can conclude that the proactive learning approach implemented within the project turns a game not only into a tool for student engagement and into a source of their motivation and excitement but also into a form of innovative creative development. Thus, it is useful to combine learning by playing educational games with learning by game construction.

References

Easwaramoorthy, M. & Zarinpoush, F. (2006). *Interviewing for research. Sectorsource.ca.* Retrived from http://sectorsource.ca/sites/default/files/resources/files/tipsheet6_interviewing_for_research_en_0.pdf.

Kapp, K. (2012). *The gamification of learning and instruction: Case-Based methods and strategies for training and education.* San Francisco: Wiley.

Polovin, B. (2015). *Gaming methods of distance learning [Ihrovi metody dystantsiinoho navchannia].* Retrieved from http://2015.moodlemoot.in.ua/course/view.php?id=126&lang=ru (in Ukrainian)

Shabalina, O., Malliarakis, C., Tomos, F., Mozelius, P. Balan, O., & Alimov, A. (2016). Game-Based Learning as a Catalyst for Creative Learning. Retrieved from https://www.researchgate.net/publication/308937828

Tkachenko, O. (2015). Gamification of education: formal and informal space [Heimifikatsiia osvity: formalnyi i neformalnyi prostir]. *Humanities Science Current Issues*, *11*, 303-309. Retrieved from http://drohobych.net /youngsc/AQGS/2015_11/Pedagogy/303-309.pdf (in Ukrainian).

Werbach, K., & Hunter, D. (2012). *For the win.* Philadelphia: Wharton Digital Press.

Worldofcommunities.org. (2019). *World of Communities.* Retrieved from: http://worldofcommunities.org/

THE STUDY PROGRAM OF "ENTREPRENEURSHIP AND FINANCE" AT THE UNIVERSITY OF ECONOMICS IN KATOWICE AS AN EXAMPLE OF PRACTICAL EDUCATION IN POLAND'S HIGHER EDUCATION SYSTEM

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Abstract Literature indicates the important role of education in stimulating the development of entrepreneurship. However, in order for this postulate to be fulfilled in an effective manner, synergy of education programs (formal education) with informal forms of extracurricular or non-academic education must appear in practice. Entrepreneurship education must therefore be supported by the institutional environment, in particular by broadly understood economic practice. In order to meet the expectations of candidates for economics studies, a decision was made to prepare a unique study program in the region, in which practical skills in the areas critical for small and medium-sized businesses will be delivered on a solid theoretical foundation. The first course of the study program of "Entrepreneurship and Finance" began at the Faculty of Economics of the University of Economics in Katowice in the academic year 2014/2015. The article presents the main conclusions related to the implementation of its practical profile in the conditions of Poland's higher education system.

Keywords:
entrepreneurship, entrepreneurship education, academic entrepreneurship, educational project, higher education.

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Introduction

In the changing business environment, education for entrepreneurship faces major challenges (Duval-Couetil, 2013; Morris, Kuratko, & Cornwall, 2013). In the face of globalization and new market challenges of enterprises, entrepreneurship education should change and move away from traditional forms of transferring knowledge and skills (Gibb, 2003). Curricula should include practical training based on cooperation with entrepreneurs, within which students should carry out real-life projects for enterprises collaborating with the university (Wach, 2013). The article aims to present the main assumptions and selected aspects of the practically oriented study program "Entrepreneurship and Finance" which is offered at the Faculty of Economics, the University of Economics in Katowice. An attempt was also made to evaluate this educational solution and formulate recommendations on how to improve this project in the future.

Entrepreneurship as a challenge for today's practically oriented education

Planning of curricula (including the content of subjects, teaching materials) and research that will help develop practical teaching materials can also be used to improve students' entrepreneurial intentions and graduates' skills (Chen at al., 2015). In this way, the need to help students in the development of entrepreneurial behaviour and attitudes can be addressed through the use of innovative teaching methods. Reflection in this field should involve looking for the right proportions between practice and theory, between learning and acting (Blenker, Dreisler, Færgeman & Kjeldsen, 2006). A practical approach has a greater impact and creates more interest, which is an argument in favour of experiential learning. Not only such activities provide practical experience, but at the same time they encourage entrepreneurial undertakings (Rasmussen & Sørheim, 2006; Sherman, Sebor, & Digman, 2008). Learning entrepreneurship involves not only repeating what was successfully done by others in the past and avoiding what failed, but also actively interpreting the experience by the learner (Otuya, Kibas & Otuya, 2013). At the same time, a dilemma emerges as to what extent entrepreneurship teachers should apply a realistic approach to entrepreneurship, which includes emulation and examples, and to what extent they should force students to find their own way so that they can gain a fuller understanding of entrepreneurial processes and discover their own way

of perceiving entrepreneurial opportunities (Powell, 2013). A modern model of entrepreneurship education can have an impact on the growth of entrepreneurship and innovation of students (Wei, Lu, & Sha, 2019). In this aspect, practical training is very important (Rashid, 2019). Recommendations in this area have also been formulated by the European Commission (2013).

An important issue in this respect is the measurement of student performance as the result of the use of innovative methods in entrepreneurship teaching (Matlay, 2008; Walter & Block, 2016).

Statutory determinants of practically oriented study programs in Poland's higher education system

The presented case study is based directly on the analysis of documentation related to the launch and conduct of the field of study and on the basis of statistical data provided by the university. Additionally, the authors of the article conduct classes in this field and are associated with the team that created and perfected the study program.

Formal requirements regarding the possibility of conducting higher education in Poland are specified in the Act on Higher Education and Science of 20 July 2018 (Journal of Laws 2018, item 1668). Studies are conducted as first-cycle programs, second-cycle programs and uniform master's degree programs. Study programs can be:

- practically oriented degree courses, when more than half of the ECTS points are assigned to classes and lectures developing practical skills;
- general academic degree courses, when more than half of the ECTS points are assigned to classes and lectures related to academic and research activity conducted at the university.
- Additionally, as part of:
- practically oriented study programs, at least 50% of teaching hours are delivered by academic teachers employed at a given university as their primary employer;

- general academic study programs, at least 75% of teaching hours are delivered by academic teachers employed at a given university as their primary employer.

Another formal requirement for practically oriented studies results from the Regulation of the Minister of Science and Higher Education of September 27, 2018, regarding the requirements for conducting studies (Journal of Laws 2018, item 1861). According to this requirement, the curricula of practically oriented program must comprise modules of classes related to practical professional development which were assigned ECTS points of more than 50% of total ECTS points. An additional requirement is a rule concerning the organization of classes. The classes related to practical professional preparation provided in the curriculum of a practically oriented study program are conducted:

1) under conditions consistent with a given profession, and
2) in a way that enables students to perform practical activities.

Finally, work placements in practically oriented study programs must be 6 months long for the first-cycle and 3 months long for the second-cycle. As part of general academic study programs, it is stipulated that a student has to complete a one-month work placement during first-cycle studies.

This legal framework imposes a particular organization of the course of studies, which is additionally relevant in the context of economic studies.

The study program of "Entrepreneurship and Finance" at the University of Economics in Katowice

Aiming to meet the expectations of candidates for economics studies, a decision was made to develop a study program unique on a regional scale which would deliver practical skills in critical areas for small and medium-sized businesses based on a solid theoretical foundation. The program implements the priorities of the University of Economics, i.e. educating economists and managers for the economy and public administration as well as for the non-governmental sector. The mission of the University of Economics in Katowice assumes the creation and dissemination

of knowledge as well as education for the economy and administration drawing on the latest trends, research results and R&D. Accordingly, the education in the field of entrepreneurship and finance is fully aligned with the principles of the University of Economics in Katowice by providing students with comprehensive knowledge on how to start and run a business combined with practical skills in this area aiming at creating innovation leaders – new entrepreneurs developing, animating and organizing the core of the Polish economy – small and medium-sized production, trade or service enterprises. This task is particularly important in the context of the role of small and medium-sized enterprises in Poland's and the EU's economy.

The first course of the practically oriented study program of "Entrepreneurship and Finance" was launched at the Faculty of Economics, the University of Economics in Katowice, in the academic year 2014/2015.

To date, the following number of students graduated:

- full-time first-cycle studies – 115 people,
- part-time first-cycle studies – 22 people,
- part-time second-cycle studies – 65 people.

As of March 2019, the following number of students is studying:

- full-time first-cycle studies – 212 people,
- full-time second-cycle studies – 159 people,
- part-time first-cycle studies – 84 people,
- part-time second-cycle studies – 102 people.

At full-time first-cycle studies, the number of teaching hours is 1,749, 735 of which are lectures (42%) and 1,014 are classes and laboratories (58%). In turn, at part-time studies the number of teaching hours is 1,050, 405 of which are lectures (38.6%) and 645 are classes and laboratories (61.4%). At full-time second-cycle studies, the number of didactic teaching is 840, 375 of which are lectures (44.6%) and 465 are classes and laboratories (55.4%). At part-time studies, the number of teaching hours is 516, 216 of which are lectures (41.9%) and 300 are classes and laboratories (58.1%). This division of teaching hours ensures conducting the majority of teaching

in the form of classes, which strongly contributes to the practical character of subject content delivery.

The practical dimension of the presented educational solution

The first-cycle study program "Entrepreneurship and Finance" builds the graduate's potential for professional activity. The acquired knowledge, skills and social competences allow the graduate to plan and run his own business, raise funding, manage its day-to-day operations and control its performance. He will also be prepared to work as a manager in particular areas of firm management; as a specialist in finance, human resources, accounting, customer service, ICT, e-business; as a member of project teams or task teams. The graduate can take up employment in small and medium-sized enterprises with different profiles of activity and in social economy entities. The knowledge and competences acquired by the graduate can also be successfully used at work requiring independent thinking and acting in other organizations.

From the start of the education process, emphasis is placed on the development of proactive behaviour, on the willingness to take calculated risks, and on innovation, which constitutes the core of small and medium-sized business. The development of these attitudes is paired with the delivery of knowledge and competences regarding the basic issues related to the day-to-day operations of small and medium-sized enterprises. Particular emphasis is placed on the financial aspect of running a business, which is crucial from the point of view of these companies, including raising funds for growth and the creative use of these funds. Thus, the first-cycle study program "Entrepreneurship and Finance" responds to the basic needs of the economy – it provides candidates for professional and well-shaped business owners-creators. On the other hand, teaching in the study program is aligned with the need of young people – candidates for studies in the field of knowledge and competences concerning the practical aspects of setting up new business organizations. The combination of economic, legal, financial, tax and human resources aspects with soft competences (communication, negotiating, and leadership) is aimed at educating graduates who not only manifest entrepreneurial attitudes and have their own business ideas but who are entrepreneurs well prepared to start their own business.

The primary aim of launching the second-cycle study program "Entrepreneurship and Finance" was to develop entrepreneurial attitudes within larger organizations, including skills involved in managing departments, task/project teams or entire organizations, acquiring resources and managing them, readiness to take risks, the ability to create ideas and the use of potential market opportunities with particular emphasis on strategic and international aspects of the operations of enterprises and their branches/departments. In-depth knowledge of planning, financing, organizing, streamlining operations, motivating employees and controlling performance allows the graduate to make rational decisions regarding the day-to-day functioning of medium-sized and large organizations and to take up employment in medium-sized and large production, service, trade, consulting, culture and e-business enterprises. The graduate is prepared to work both in the positions of specialists and managers, such as a manager in particular management areas, a contract manager, a financial analyst, a controller, a manager and organizer in social economy entities, a business owner.

In the case of practical subjects, fundamental principles are founded on the practical use of skills in the realities that best emulate the business environment, with the application of business cases, games and simulations of real-life situations delivered by practitioners with extensive expertise in the area of small and medium-sized business.

The emulation of the business environment in individual subjects will take place within selected subjects in the following manner:

- Basics of entrepreneurship (presentations of firms during classes, a study visit, practical tasks based on real-life case studies, use of design thinking methodology);
- Business plan (meetings with external experts in the process of student project work, use of the konkurencyjniprzetrwaja.pl portal);
- Financing of business activity (classes conducted partly by an external expert);
- Financial analysis (meetings with experts involved in assessing the financial standing of firms, e.g. their creditworthiness);
- Human Resources/Payroll (laboratories using HR and payroll software);

- Basics of self-accounting (laboratories using the financial and accounting system);
- Manager's work techniques (meetings with managers and managerial skills training based on the programs of training firms preparing candidates for job interviews);
- Taxes (classes taught by a practitioner);
- Customer service (company presentations, visits of company representatives, classes based on case studies, skills training);
- Negotiations (meetings with practitioners, skills training);
- Project management (meetings with practitioners, skills training).

The implementation of the project in subsequent semesters is an element reinforcing the practical character of the first-cycle study program. The classes span over four semesters, starting in the second semester and concluding in the fifth semester. They follow two variations: (1) Setting up business activity 4x30h = 120h (I. A business idea; II. Research into the market and conditions for running a business; III. Organizing a venture; IV. Market impact tools) or (2) Solving problems in a real firm 4x30h = 120h (I. Defining a decision problem; II. Acquiring and analysing data; III. Creating solution options and their evaluation; IV. Choosing an option and implementing solutions). In the subsequent semesters, the student is under the supervision of specialists (a lecturer and a representative of economic practice) in a given area.

Basic competences developed in the course of the second-cycle study program "Entrepreneurship and Finance" are those related to the issues of efficient leadership oriented towards opportunity seeking in organizational units or departments of large organizations. They are developed based on the body of knowledge in the field of day-to-day resource management (financial, human, information management), strategy building, identifying opportunities and threats with particular focus on financial issues as well as modern management techniques and methods. Its distinctive feature is the practical profile of classwork and the emphasis on the importance of knowledge allowing for the creation of a strategic vision for the development of an organization and the skills that facilitate its operations in the international environment. The study program "Entrepreneurship

and Finance" prepares students to perform tasks and pursue careers related to the broadly understood management of company departments and task/project teams.

Basic knowledge of planning, financing, organizing, enhancing operations, motivating employees and controlling performance will result in the ability to make informed decisions concerning day-to-day operations of medium-sized and large organizations and the capacity to work in medium-sized and large production, service, trade, consulting, culture and e-business firms. The knowledge acquired during the studies enables a flexible development of the career path, opening the possibility of taking up employment in large business entities as well as medium-sized companies oriented towards dynamic growth. The graduate's competences will result in independent problem solving skills and the appointment to managerial positions.

The knowledge and the skill set developed in the course of the studies will enable graduates to become managers and consultants in large organizations. They will be well acquainted with the business world and its issues, and their competences will allow for dynamic growth in the specific environment of large business entities. The practical nature of education also ensures that they will be specialists equipped with adequate professional skills necessary to solve complex problems in the operations of particular departments as well as entire large business organizations.

To ensure harmonious development of competences, the education in the field of knowledge will be supplemented with work placements and internships, involving the practical use of skills in the realities emulating the business environment through business cases, games and simulations of situations encountered in business practice. These will be delivered by practitioners with expertise in the operations of large business entities. The topics concerning strategy development, innovation management and financial engineering are taught by lecturers with practical experience. This allows for the marriage of the knowledge of the basics of economics, entrepreneurship and finance with practical aspects of applying this knowledge in various departments of modern, medium-sized and large business organizations.

The emulation of the business environment in individual subjects takes place within selected subjects in the following manner:

- Modern management concepts (workshops and study visits to companies declaring cooperation);
- Financial engineering (practical workshops conducted in a manner consistent with business practice);
- Customer relationship management (company presentations in the classroom, a study visit, tasks based on case studies);
- Coaching/career planning (practical workshops conducted by qualified professionals in a manner consistent with business practice);
- Sales management (company presentations, visiting representatives of business practice, tasks based on case studies);
- Tax optimization (laboratories with an expert);
- Business Intelligence (classes supported by a company implementing such solutions in business practice);
- Business game (classes in the form of the simulation of the process of managing an organization with particular emphasis on problems concerning financial management).

The study program "Entrepreneurship and Finance" uses, in particular, software SPSS 24 (PS IMAGO 4), SAS, Statistica, Mathematica, MS Visual Studio, the Office suite (including Excel, Access, Visio) Comarch Optima, Comarch Symfonia (financial and accounting module), SAGE Symfonia, Gretl, Xampp, Joomla! (online access), WordPress (online access), LEX, miniCRM (online access).

The selection of companies and institutions supporting this practically-oriented study program ensures a strong foundation for making the teaching process more practical and provides the opportunity to conduct study visits and work placements tailored to the needs of students pursuing this study program. The initiative to create this program attracted the support of many business organizations both at the stage of its development and at its implementation stage.

Conclusions and implications for teaching practice

Based on the experience stemming from the implementation of the practically-oriented study program, the authors made an assessment using a classic SWOT analysis. A synthetic summary of the analysis results is presented in the Table 1.

Table 1: The study program "Entrepreneurship and Finance" – SWOT analysis

Strengths	**Weaknesses**
1. The Faculty's strong scientific potential and diversified research projects, the results of which are included in the study offer. 2. The original and practical concept of teaching. 3. Strong teacher potential in entrepreneurship and finance in the field of content knowledge as well as practical and professional experience. 4. Extensive experience of teachers resulting from the implementation of consultancy projects in cooperation with the Center for Research and Knowledge Transfer operating at the University of Economics in Katowice. 5. Very good infrastructure (classrooms, library, computer labs). 6. A model for managing the study program with the participation of a curator, a manager and a program council.	1. A relatively weak but increasing level of internationalization related to student mobility. 2. Financial limitations connected with acquiring prominent experts to conduct practical classes. 3. Limited scope of the application of international experiences regarding vocational teaching methodology. 4. Moderate difficulties involving inadequate comprehension of the practical nature of the study program on the side of teachers.
Opportunities	**Threats**
1. Relatively dynamic and flexible adaptation of the study program to changes in the labour market. 2. The growing sector of small and medium-sized enterprises in Poland. 3. The increasing problem of succession in family businesses. 4. Growing motivation among young people to start their own business. 5. The intensifying process of professionalization of management in the sector of small and medium-sized enterprises. 6. The willingness of the business environment to establish cooperation as part of classes and projects conducted in the study program.	1. Partial working activity of full-time second-cycle students, resulting in a lack of expected commitment to studying. 2. Secondary school education prepares for teamwork and individual project work only to a moderate extent. 3. Recruitment for second-cycle studies of candidates who do not have economics education, which may result in lowering the education standards adopted for the study program.

Source: Own elaboration.

In the future, the following measures are proposed in order to improve the solution under consideration:

- to encourage entrepreneurs to intensify cooperation within such initiatives, pointing to their merits and positive experiences from projects already implemented;
- to strengthen the emphasis on the quality of cooperation between students and organizations during the implementation of joint projects;
- to extend the system for the evaluation of the quality of teaching in order to account for the practical character of certain programs;
- to develop the knowledge of academic teachers on modern teaching methods supporting practically oriented programs;
- to use the argument that the graduates will be well equipped for succession in a family business in the promotion of the study program to a greater extent;
- to promote companies founded by students/graduates on a wider scale and disseminate the effects of the projects implemented by students in cooperation with representatives of business practice;
- to further encourage students to seek international inspiration; and
- to pursue new forms of classes emulating the business environment in the best way.

Summing up, it can be concluded that the practically oriented study program "Entrepreneurship and Finance" which is offered at the Faculty of Economics, the University of Economics in Katowice, is an interesting educational solution under the requirements adopted in Poland's higher education system. The first years of this study program and the growing number of students along with the positive assessment of the Polish Accreditation Commission in 2018 allow for positive evaluation and provide ideas for potential measures with the aim to improve this unique solution in the future. The assessment does not contain accurate information such as the number the number of graduates who opened their own companies due to the short period of operation of the study program at the university despite the fact that several graduates of the faculty already have been running their own business. In the future, more thorough analyses can be an inspiration for further

scientific research in this area. The study program may extent to be an inspiration for other universities that would like to educate students in the field of entrepreneurship in the most practical way that meets the needs of the socio-economic environment.

References

Blenker, P., Dreisler, P., Færgeman, H. M., & Kjeldsen, J. (2006). Learning and teaching entrepreneurship: dilemmas, reflections and strategies. *International entrepreneurship education: Issues and newness*. Cheltenham: Edward Elgar Publishing.

Chen, S. C., Hsiao, H. C., Chang, J. C., Chou, C. M., Chen, C. P., & Shen, C. H. (2015). Can the entrepreneurship course improve the entrepreneurial intentions of students? *International Entrepreneurship and Management Journal*, *11*(3), 557-569. https://doi.org/10.1007/s11365-013-0293-0

Duval-Couetil, N. (2013). Assessing the impact of entrepreneurship education programs: Challenges and approaches. *Journal of Small Business Management*, *51*(3), 394-409. https://doi.org/10.1111/jsbm.12024

Gibb, A. (2003). In Pursuit of a New 'Enterprise' and 'Entrepreneurship' Paradigm for Learning: Creative Destruction, New Values, New Ways of Doing Things and New Combinations of Knowledge. *International Journal of Management Reviews*, *4*(3), 233-269. https://doi.org/10.1111/1468-2370.00086

Matlay, H. (2008). The impact of entrepreneurship education on entrepreneurial outcomes. *Journal of small business and enterprise development*, *15*(2), 382-396. https://doi.org/10.1108/14626000810871745

Morris, M. H., Kuratko, D. F., & Cornwall, J. R. (2013). *Entrepreneurship programs and the modern university*. Cheltenham: Edward Elgar Publishing.

Otuya, R., Kibas, P., & Otuya, J. (2013). A proposed approach for teaching entrepreneurship education in Kenya. *Journal of Education and Practice*, *4*(8), 204-209.

Powell, B. C. (2013). Dilemmas in entrepreneurship pedagogy. *Journal of entrepreneurship education*, *16*, 99-112.

Rashid, L. (2019). Entrepreneurship Education and Sustainable Development Goals: A literature Review and a Closer Look at Fragile States and Technology-Enabled Approaches. *Sustainability*, *11*(19), 5343. https://doi.org/10.3390/su11195343

Rasmussen, E. A., & Sørheim, R. (2006). Action-based entrepreneurship education. *Technovation*, *26*(2), 185-194. https://doi:10.1016/j.technovation.2005.06.012

Sherman, P. S., Sebora, T., & Digman, L. A. (2008). Experiential entrepreneurship in the classroom: effects of teaching methods on entrepreneurial career choice intentions. *Journal of Entrepreneurship Education*, *11*, 29-42.

Wach, K. (2013). Edukacja na rzecz przedsiębiorczości wobec współczesnych wyzwań cywilizacyjno-gospodarczych. *Przedsiębiorczość-Edukacja*, *9*, 246-257.

Walter, S. G., & Block, J. H. (2016). Outcomes of entrepreneurship education: An institutional perspective. *Journal of Business Venturing*, *31*(2), 216-233. https://doi.org/10.1016/j.jbusvent.2015.10.003

Wei, X., Liu, X., & Sha, J. (2019). How Does the Entrepreneurship Education Influence the Students' Innovation? Testing on the Multiple Mediation Model. *Frontiers in psychology*, *10*, https://doi.org/10.3389/fpsyg.2019.01557

Stimulating Creative Thinking Using Practical Knowledge in Case of Financial Subjects

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Abstract Nowadays, it is often very difficult to catch students' attention, especially in financial subjects like financial mathematics, finance management et cetera. One of the reasons is the fact that for many students it is hard to imagine how theoretical knowledge can be used in practice. As a result, students are not interested in learning the whole material and are focused just on passing the exam. This publication is a reflection and opinion paper based on personal experiences of the author who combines university work with running his own law firm specialized in banking and insurance issues. Giving real examples both from consumer and company finance is an effective way to encourage students to become active and improve their knowledge gathering process. Additionally, practical examples (more complicated than theoretical examples) are inspiring creativity in students.

Keywords: practical work, financial subjects, creative thinking, creativity, teaching methods.

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Introduction

It is important to state that it is very difficult for students to learn mathematical subjects by themselves (in library, at home etc.). Therefore, if they do not understand most of the material during the lectures, they will probably never learn it in the future. Even if they are trying to improve their knowledge, they are unsuccessful, which eventually results in disaffection towards all mathematical subjects.

During their further years of studies, such students try to avoid all subjects related to mathematics, which leads them to even skipping some parts of not typically mathematical subject's programme (such as accounting, management) because it can appear to them as too closely related to mathematics. Students are often wrongly convinced that they are just unable to acquire any kind of mathematical knowledge.

As a final result, when graduating, these students do not have the knowledge needed in their future job (they are still convinced that this is the fault of the university and not of their own). Further, they are dissatisfied with the received higher education. This situation maintains the conviction that knowledge offered during university studies is not useful and, in this way, we come full circle.

On the other hand, the author's own business experience shows that even students who learn well have big problems with using their acquired knowledge in practice. Even if they know all theoretical bases, it is very difficult for them to see the link between the practical task and the methods learned. Very often, when they finally find the solution, they are confused when they realise that it was enough to use simple, well-known methods.

This paper is based on the author's personal experience with and reflections about using practical knowledge and examples while teaching the students from finance, economics and management faculties. The author runs his own business that is closely connected with financial subjects and also works as an academic teacher focused on subjects related to mathematics.

The aim of this paper is to discuss and find teaching methods which are useful in the case of financial subjects. The author will discuss the methods used and try to indicate which of them are particularly beneficial. For the purposes of research, the following hypothesis was adopted:

H: The use of practical examples increases the interest of students and improves the acquisition of knowledge in the field of finance.

Literature review

The transfer of knowledge related to finance and economics has already been the subject of research. Published results clearly show that today's students are more interested in practical usage of knowledge and the benefit they gain from it (Kotz, 2016).

Additionally, students prefer interactive and experiential learning approaches and are much more focused on experiential classes because they are interested in practical applications of courses (Phillips & Trainor, 2014). Thus, using data and examples from practice is a perfect way to show them how they can use mathematics-related subjects in their future career.

On the other hand, some researches prove that even students themselves prefer chalk and talk method of teaching, which is quite an unexpected result. But one study suggests that 80-84% of students surveyed want to have more discussion about current economic issues (Andreopoulos & Panayides, 2009). Recent studies show that the case method of teaching is considered as more effective because it places students at the centre of the learning process and active engagement (Volpe, 2015).

Also, studies conducted in Poland indicate that the practical use of knowledge (case study) is considered by students as a beneficial solution. In particular, students pointed out that cases facilitate theoretical understanding of knowledge and increase their involvement in classes. In addition, the case study method used in students' assessment allows better understanding of economic reality and develops both analytical and social skills (Gawel & Pietrzykowski, 2014).

Polish book publications are also recommended to incorporate real-life examples, especially surprising and controversial ones, which effectively attracts and maintains students' attention (Całek et al., 2007). It may also be useful to provide students with additional materials on topics that have not been discussed in detail in class (Kordos, 2009).

Additionally, students, like most people nowadays, have problems with selecting, validating the quality of and using information. If they have more data than needed in a formula, they often try to use everything they have. This stems from the phenomenon called "overloading of information", the issue which should also be addressed in the teaching process (Fazlagić, 2010).

Research results

In the author's opinion, a successful method of solving this problem is to use different kinds of practical examples and to show in which way students will use the presented material in the future. Often, just the fact that the teacher has practical experience makes students more interested (independently from way the material is presented). However, it is better when the teacher shares his practical knowledge during lectures. Practical examples can be prepared in the form of a typical exercise yet based on real data or in the form of a case study based on real events.

Exercises based on real data are similar to typical, theoretical exercises, but they show the students that the subject's material can be used in practice without any changes, modification or additional knowledge. Examples based on real events (such as a case study) are more complicated but also more interesting, especially if the situation was already described in press, etc.

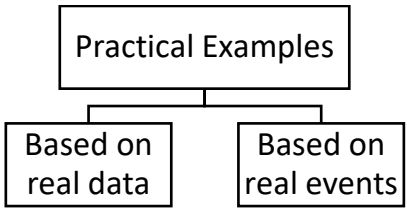

Figure 1: Proposal for the division of practical examples
Source: Author's own work.

Of course, it is sometimes impossible to give a practical example or exercise in basic and theoretical material such as in mathematics for first-year students. In such situations, we need an idea which is maybe not directly connected with practice, but looks very interesting for students (especially if they are already bored with the presented theory). Some reflections about both types of examples are presented in the continuation.

Examples based on real data

The author's experience clearly shows that even giving exercises based on real data (without a real context) can highly increase students' interest and consequently increase their knowledge level. However, the example must be properly selected for the group – merely using real data will often not have any effect at all.

For example, exercises focusing on dividend models (especially the Gordon Model) can be based on theoretical data or real data from stock exchange. It is very important to choose a company connected with group characterization. To illustrate, using companies like KGHM or JSW (the biggest mining companies in Poland) as an example will not raise students' interests – for most of them, there is no visible difference between "Company A" and "JSW S.A." while computing the exercises (both are boring for them).

On the other hand, using data from a company that is well known by students, especially if they have some good experience with it, can dramatically change the situation. A good practice is also to give more information about the company (how it was started, how it is growing, and what its plans for future are), which will additionally attract students' attention.

In groups containing mostly females, all examples based on CCC company (i.e. shoe shop company) will guarantee their interest and consequently a higher level of acquired knowledge. It is worth to start this example with generally unknown information about the CCC acronym (i.e. C*ena Czyni Cuda* – price is doing wonders) and the beginning of this business (i.e. the owner of CCC was a trader on a bazar and was asked by his colleague to help him with selling shoes). Examples of theoretical and real data exercises are shown in Table 1.

Similarly, for prevalently male groups, it is easy to find an interesting example such as Żywiec S.A. (i.e. one of the most well-known beer brands in Poland). Some basic information like its being part of the Heineken group and additional details (e.g. the type of water used by the company) also makes students more interested.

Table 1. Examples of theoretical and real data exercises

Theoretical exercise	Real data exercise	Real data, interesting exercise
Company A paid 10 PLN of dividend this year. It is estimated that the dividend will grow by 5% each year. Required rate of return is 7%. What is the stock value (basing on the Gordon Model)?	Śnieżka S.A. paid 3.20 PLN of dividend this year. The dividend is growing constantly year by year by 0.05 PLN. Required rate of return is 5%. What is the stock value (basing on Gordon Model)?	CCC S.A. (CCC is for *Cena Czyni Cuda*) is a Polish company which started on a bazar with one stand with shoes (the founder of CCC observed that selling shoes is a great business while helping his colleague). Now, CCC sells shoes in more than 15 countries and has recently bought the internet shoe seller eobuwie.pl. The company paid 2.30 PLN of dividend this year. It is estimated that the dividend will increase by 8.50% each year. Required rate of return is 10%. What is the stock value based on the Gordon Model (the latest stock price is 201 PLN, but 7 years ago it was just 50 PLN)?
Just calculating theoretical value of a non-existing "Company A". No suggestion of possibility for using the knowledge in practise.	Practical usage is shown – possibility of valuating real company. Due to company being not interesting (paint manufacturer), only students focused on financial market will be interested.	Practical usage is shown – the possibility of valuating real company. Students' good knowledge of company (probably a lot of them use its products) and additional information should interest most of the group.

Source: Author's own exercises.

Additionally, while giving a real-data example, it is advisable to give some additional information not necessary for solving the task. Such exercise forces students to think more creatively and consider what they really should calculate. Examples of such exercise are presented in Table 2. If possible, the exercise can consist only of real financial statements (whole data) and task.

Table 2: Examples of exercises without and with extra data

Exercise without extra data	Exercise with extra data
The net profit of PZU S.A. (Powszechny Zakład Ubezpieczeń S.A. – the biggest insurance company in Poland) for 2018 was PLN 5.368m. There are 863,347,220 shares. How much is EPS (Earnings Per Share)?	The gross profit of PZU S.A. for 2018 was PLN 7.086m and the company paid 1.718m in taxes. There are 863,347,220 shares. Assets total PLN 328,554m and equity capital is equal to PLN 37.407m. How much is EPS (Earnings Per Share)?

Source: Author's own exercises.

Examples based on a real event

Another type of 'real' cases is examples based on real events taken directly from business practice. Such examples are a perfect way to clearly show how the presented knowledge can be used by students in the future. Students often get more interested when they are told that they can use the study material to avoid making a bad decision, especially if there is the possibility to show them real effects of somebody's acting without the needed knowledge.

Of course, just giving a task similar to a real situation is not a good solution. The real situation is often too complicated and can be analysed only by a small group of professionals who operate in a certain business area. The example must be prepared in such a way that it will make it easier and more interesting for students.

In author's opinion, there are two ways of converting a real situation to an interesting and easy example which can be used during lectures.

The first option is to prepare a simplified version of a real situation by focusing only on the lecture's topic. For example, while showing the differences between different types of loans, it is better to skip the changes in interest rates (usually based on EURIBOR, LIBOR, etc.). Students should be informed that the presented task is only a simplified version of the real situation and what kind of data from the real situation is skipped. The essential part of this approach is to focus on the most interesting problems only.

The second method is to show the whole real situation as an example without doing the calculation during the lecture. In fact, the best way is to prepare all calculations before and just present the method used and the final results. The aim of this method is to attract students by describing real events typical in their environment and then to show the way how the presented knowledge can be used and how it can help in practice. The example based on somebody's mistakes can show how using the knowledge in practice helps making a correct decision.

Real examples are also useful to show how some complicated phenomenon works in practice. Last year, there was a great example involving GetBack S.A., a company named a rising star of Polish stock market until it unexpectedly lost liquidity and all of its stocks were suspended. A lot of people had bought GetBack S.A. shares, bonds or even more complicated products based on GetBack assets. In fact, all these instruments, especially bonds, were offered as an alternative to bank deposits.

One of the author's own examples based on GetBack S.A. story is presented in Figure 2. This chart mainly focuses on showing how the risk of Polish stock exchange looks in practice. It shows that in every situation, the investor should make the decision by themselves. Before showing this picture to students, it is good to give them some commercials of based on GetBack S.A. products and ask them for their opinion.

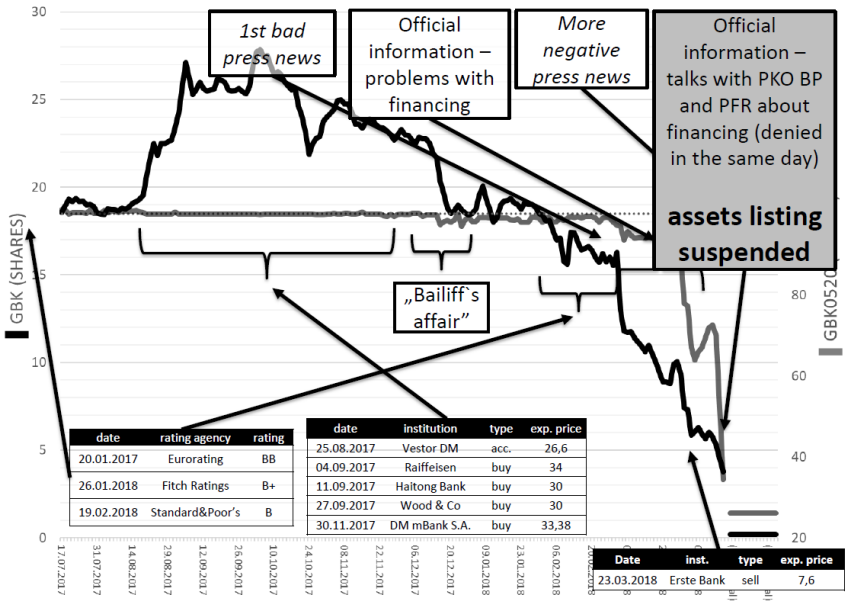

Figure 2: Example showing most of GetBack S.A. problems
Source: Author's own work.

Note: All values are in PLN, the left scale shows the share prices while the right side shows the of GBK520 bonds; PKO BP – Powszechna Kasa Oszczędności Bank Polski S.A. – one of the largest banks in Poland; PFR – Polski Fundusz Rozwoju S.A. – Polish Development Fund S.A..

The examples based on stories like GetBack S.A. downfall can be used in many different finance-related subjects in connection with topics such as stock exchange, banking, accounting, risk management or even financial and consumer law. Using such examples can also stimulate creative thinking. Further, it shows that pure theoretical knowledge is not always working in a proper way.

Creative examples

As it was already mentioned above, it is sometimes impossible to design a practical example illustrating core knowledge. Many times, the author observed that students have problems with learning how to calculate integrals after learning how to calculate derivatives. Greatly simplified, calculating derivatives and integrals involves the same

process but in the opposite direction. Most students who understand this rule have no problem learning how to calculate integrals.

Unfortunately, integrals look deterrent for many students and it is difficult to convince them that calculating them much simpler than they think. The question how to do it arises. In author's opinion, using art is a perfect method to interest students with mathematical content. One example is the woodblock print *The Great Wave off Kanagawa* (Figure 3). This globally well-known work is interpreted in totally different way by the Japanese people and the people from Western countries, which results just from the reading direction.

For people reading from left to right, this is the story about poor fishermen who will sink in a moment after being struck by a huge wave. On the other hand, for people from Japan who read from right to left, this is the story about brave fishermen who are not scared and are flowing forwards despite the wave. Telling the history of *The Wave* and its real interpretation to the students always proves interesting to them. Also, there is a big similarity between *The Wave* and learning how to calculate derivatives and integrals – everything depends only on the direction.

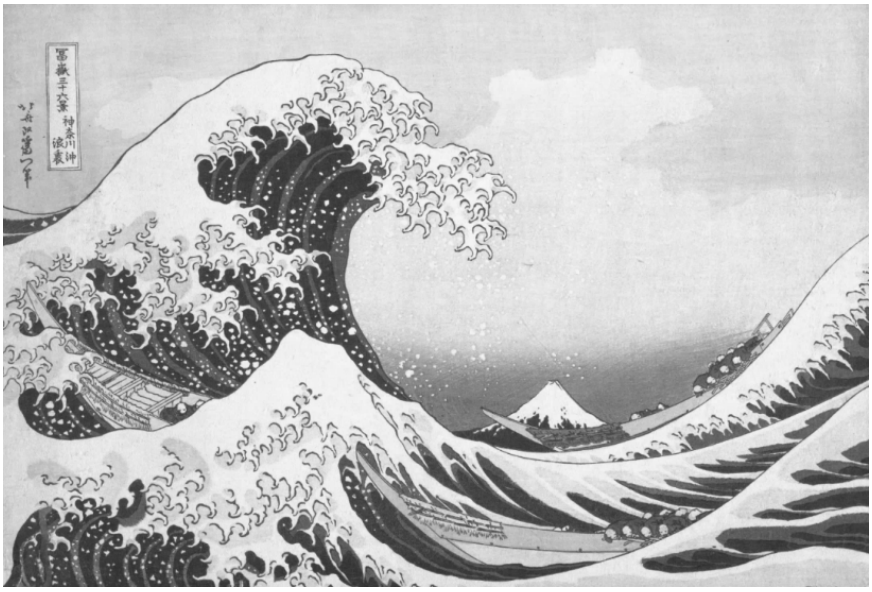

Figure 3: The Great Wave off Kanagawa
Source:www.en.wikipedia.org/wiki/The_Great_Wave_off_Kanagawa.

Of course, in case of pure mathematics, it is still necessary to use typical, theoretical exercises. However, using the example of *The Wave* simplifies the teaching process. In the end, even if understanding of the material will be too difficult for some students, they will at least learn something about art.

Conclusions

In author's opinion, all presented methods improve the teaching process and inspire students to think more creatively. Giving practical examples not only results in increasing students' interests but also teaches them competences needed in their future career. The analysed teaching methods are particularly desirable for more complex (mathematical) subjects.

Such examples are especially useful in subjects related to economics and finance. The analysis and the reflections presented in this publication lead to the conclusion that the hypothesis presented above should be confirmed. That is, the use of practical examples improves the teaching process.

However, a big problem how to generate sufficient amount of exercises and examples based on real data or situation still remains. Most academic teachers are not connected with business and have no access to real market problems (the problems described in press or journals are often a bit outdated).

In future, universities must cooperate more closely with business. However, for this to happen, it is necessary to change academic attitude. Low salaries and a lot of bureaucracy make business practitioners usually not interested in teaching students. The result is that universities have problems with providing real benefits for enterprises in terms of student education.

References

Andreopoulos, G., & Panayides, A. (2009). Teaching Economics To The Best Undergraduates: What Are The Problems? *American Journal of Business Education*, *2*(6), 119.

Całek, A., Kasperek, K., Polok, G., & Wysokowicz E., (2007). Poradnik dydaktyka szkoły wyższej. Katowice: *Wydawnictwo Akademii Ekonomicznej w Katowicach*, 93-94.

Fazlagić, J. (2010). Zjawisko "nadmiaru informacji" a współczesna edukacja. *E-Mentor*, *4*(36), 37-42.

Gawel, A., & Pietrzykowski, M. (2014). „Studium przypadku" jako metoda nauczania studentów ekonomii i zarządzania. *Zarządzanie Zasobami Ludzkimi, 1*(96), 88-92.

Kordos, J. (2009). Z doświadczeń nauczania statystyki matematycznej i wnioskowania statystycznego na uczelniach ekonomicznych. *Acta Universitatis Lodziensis. Folia Oeconomica*, *14*(227), 29-35.

Kotz, P. (2016). Reaching the Millennial Generation in the Classroom. *Universal Journal of Educational Research*, *4*(5), 1164.

Phillips, C., & Trainor, J. (2014). Millennial students and the flipped classroom. *ASBBS Proceedings*, *1*(21), 519-530.

Volpe, G. (2015). Case teaching in economics: History, practice and evidence. *Cogent Economics & Finance*, *3*, 12-18.

THE DILEMMA OF PRACTICAL AND GENERAL ACADEMIC EDUCATION CONSIDERING THE EFFECTIVENESS OF "FINANCIAL LITERACY" AND "FINANCIAL INCLUSION"

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Abstract One of the key issues resulting from the growing significance of finance is how it affects the society and how to cope with its negative implications. It can be demonstrated that some problems arising from financialization are of an educational nature. They can be referred to as the issues of "financial illiteracy" and "financial exclusion", making a part of the society unable to diagnose threats on the one hand and, on the other hand, making them unable to take advantage of new opportunities. The problem originates from an ineffective education in economics and finance relating to academic level of education as well. This gave rise to a discussion about the practical and general-academic model of university courses. The distinction between these two approaches has been reflected both in legal regulations and in the daily routine of academic education. The aim of the paper is to present some theoretical and empirical aspects of the abovementioned issues on the example of Poland.

Keywords: financial literacy, financial inclusion, practical education, general-academic education, teaching methods.

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Introduction

Contemporary economy, often referred to as the information economy, is characterized by the increasing ontological and epistemological complexity. The growing number of concepts and relations creates new areas which are impossible to be examined thoroughly. One of the phenomena that increase the complexity of modern economy is financialization, which limits sustainable development of economies. Despite the growing significance of finance in a market economy, the perception and understanding of these new phenomena is ambiguous. The theoretical discussion over financialization oscillates between the acceptance of natural evolution of the market economy towards the growing importance of financial sector on the one hand, and the warnings of the destructive role of finance in economic, social and ethical aspects of sustainable development on the other. The intangible, informative nature of finance made its rules completely different from the ones of the past when the value of money originated from its intrinsic value, and banks – institutions of public trust – made earnings mostly on the margin between the interest rates on loans and deposits. The schemes developed at that time, often recalled in economics textbooks nowadays, have become outdated. The phenomena of increased information asymmetry and information gap seem to affect the results of investment decisions even stronger than any financial measures and indicators. This leads to the number of adverse social phenomena. The wealth is increasingly concentrated in the hands of the richest. Only they can afford information management tools powerful enough to be able to gain competitive advantage. The others lose their ability to succeed. The phenomena of financial illiteracy and financial exclusion make an increasing part of the society unable to diagnose threats on the one hand and, on the other hand, make them unable to take advantage of the new opportunities. Doubtlessly, one of the reasons for this is the ineffectiveness of education in the area of economics and finance. Referring to academic level of education, it can give rise to a discussion about the practical and general-academic model of university courses.

The main purpose of the paper is to discuss the idea of empirical education involved in the process of promoting financial literacy of the society. In the first section, the phenomena of financial literacy and financial inclusion are presented as consequences of a growing information gap and the asymmetry of information. In the authors' unanimous opinion, they all lead to unfavourable state of making a part

of the society unable to diagnose the threats and to take advantage of the new opportunities. The second section presents some philosophical aspects of the discussion over the gap between theoretical and practical cognition. In section three, selected aspects of legal implementation of empirical approach to higher education system in Poland in terms of financial literacy and financial inclusion are presented. Remarks given in the last section lead to our final conclusion that practical education could be a very powerful way of improving the effectiveness of the education as a whole. However, the uncritical abandonment of general academic approach can make us admittedly better in knowing the "how to do" something but, at the same time, it makes us unable to figure out the "why" and the "what for".

Low level of financial literacy and financial inclusion as consequences of information gap and asymmetry of information

Financial literacy can be defined in different ways. In this article, the concept of financial literacy includes basic financial knowledge, skills and financial awareness and confidence that affect attitude and behaviour to improve the financial decision-making and management in order to achieve financial well-being (Frączek, 2017; Monticone, 2018; OECD/INFE, 2013). Financial inclusion means the access to and the usage of basic financial products and services (e.g. banking accounts and payments, savings, credits/loans) which are offered to meet consumers' financial needs and are offered at affordable prices and delivered in a responsible and sustainable way (Sarma & Pais, 2011; World Bank, 2019). The level of financial literacy and the level of financial inclusion are relatively low in the world. The results of substantial research conducted in many countries as well as at the international level confirm very different and at the same time unsatisfactory levels in both developing and the developed countries concerning this issue (World Bank 2012, 2015, 2018; World Bank Development Research Group & GFLEC, 2015). There are many factors influencing the level of financial literacy and financial inclusion. Considering the factors, the attention should be paid to both economic and non-economic factors as well as to those occurring both on the demand side and on the supply side. The hierarchy of factors is also important. The following factors are the most important factors influencing the level of financial literacy: income and level of education (Atkinson & Messy, 2012; Spataro & Corsini, 2013), gender (Berggren & Gonzalez, 2010; OECD/INFE, 2013), age (Atkinson, McKay, Collard & Kempson, 2007; Atkinson & Messy, 2012; Chen & Volpe, 1998), and cultural norms

and motivation (Mandell & Klein, 2007). A very similar set of factors can be listed in the case of financial inclusion. Basically, income is the most important factor of financial inclusion, which is understood as both disposable income of households an as the GDP / GDP per capita (Demirguc-Kunt et al., 2015; Diacon & Maha, 2015; Frączek, 2012). The other important factors are education (Frączek, 2017), gender (Gammage et al., 2017; Johnson, 2004; OECD/INFE, 2013), age (Frączek, 2017; Park and Mercado, 2015), cultural and social norms (Gammage et al., 2017) as well as many others.

Our literature review confirms that the factors on the demand side are more important (García-Herrero & Turégano, 2015). However, the factors on the supply side should not be ignored. The factors that require special attention are the information gap and information asymmetry. Financial institutions preparing products and services often, consciously or unconsciously, limit the transparency of information relating to their financial offers. This constitutes a key barrier to effective and informed participation in the financial market and influences the unsatisfactory level of financial inclusion. This improper information policy is a very wide problem regarding its relation to financial offers, which results in the lack or the limitation of information in the financial market and can threaten the development of the financial market and consumers' financial well-being. Considering the problem of information gap and information asymmetry from the perspective of financial inclusion, attention should be paid to these issues in the areas of capital allocation (savings) and borrowing money (credits/loans). Our literature analysis distinguishes the following forms of information gap:

A. In the area of capital allocation:

- concealing true information,
- providing partial, selective information,
- giving false information, and
- shaping the false image of the institution and its offers;

B. In the area of borrowing money:

- lack of basic information about the terms of lending products with the implication of real costs (e.g. lack of all elements of the costs),

- partial or misleading information (e.g. small amount of credit and low interest rates given as an example),
- not standardized information (e.g. different way of calculating the Annual Percentage Rate – APR),
- hidden information (e.g. about the consequences of earlier or late repayments),
- inaccurate information (the lack of information about the costs of loans and credits collateral), and
- ambiguity of information (e.g. about the costs).

More detailed examples of information gap and information asymmetry in both presented areas cover (Kordos, 2013; Rutkowska, 2006; Wiśniewski, 2012):

- unfair advertising and unreliable information about financial products and services – influencing financial decisions making,
- limited information about the structure of contracts relating to a financial instrument, containing illegal (abusive) clauses,
- lack of transparency in the process of creating, issuing and trading in financial instruments,
- limited information transparency regarding the financial condition of the financial instruments issuer,
- lack of independence and biased information provided by intermediaries and financial advisors,
- limited access to information on additional costs affecting profitability of investments, and
- false information and the manipulation of information.

All presented examples of information gap result in a difficulty of understanding and interpreting the nature of financial offers. In addition, the unreliable information policy of many entities acting on the financial market widens the information asymmetry between those people who may have access to confidential information (insiders) and the investors who do not have access to such information. The offers of financial institutions operating out of the supervised part of financial markets, e.g. financial pyramids or private lenders, are extreme examples of the information gap or the lack of information transparency on financial markets. These entities expose

financial consumers to the loss of their capital (Cantoni, 2009; Makusiewicz, 2014; Potocki, 2012; Radziwinowicz, 2012; Schiller, 2015). Despite many factors influencing the level of financial inclusion being recognised and despite the multifaceted development of financial market, there are still many households with limited (or none) access to the financial system. Even the accompanying financialization which results in the increasing role of finance in economic and social life and the expanding financial sector may not be sufficient to reach those people that are still not part of financial system.

With respect to the presented facts, financial education seems to be the rational way (tool) to increase the level of financial inclusion. Deficiencies of financial literacy and financial inclusion emphasize a very important role of financial education. Financial education may improve financial knowledge about the availability of various types of products or their features and may enhance the awareness of population about the access to financial offers. The process of financial education facilitates the consumers' understanding of their rights and obligations and gives them a greater chance for making rational and informed financial decisions. In addition, in many cases, this encourages the changed attitudes and patterns of financial behaviours, which, at the same time, influence the increasing level of financial inclusion (OECD/INFE, 2013).

In most countries in the world (including Poland), the process of financial education covers formal and non-formal education (Kozup & Hogarth, 2008). A rich offer of activities includes the options for people of every age. Formal education is carried out according to a given set of laws and norms; therefore, it is an organized, systematic, structured and administered form of education. It usually uses a mono-directional methodology, which is rather poor, ineffective and not creative, because regardless of the number of students, the same methodology is usually adopted. Formal education in areas of finance realized at different levels (e.g. primary, secondary, etc.) is usually very poor. Therefore, it does not sufficiently support financial inclusion. Non-formal education seems to be more focused on students and their previously identified needs and possibilities. This form of education is intentional from the learner's point of view and it gives the possibility of immediate practical application for the student's personal and professional growth. The programmes of non-formal financial education may be also prepared and/or provided by governments, various public institutions, non-governmental

organizations as well as banks, stock exchanges and other stakeholders interested in and responsible for financial education of societies. Non-formal education is mostly non-compulsory and is addressed to the entire population, although particular programmes may be directed to a specific target group or level of school education. It may be seen as supplementary financial education, but its range and scale underline its highly significant role in financial education as a whole. Among many forms of non-formal education, the following options may be distinguished: educational programmes, projects, competitions, Olympic games, campaigns and many more. At the end, it is also worth mentioning that hands-on practice is sometimes qualified as being part of non-formal education and is referred to as informal (separate) form of education process. This type of education opens the discussion about the superiority of practical education over the general academic one. At the same time, this dilemma could be restricted to even more fundamental one, the one considering fundamentals of theoretical and empirical cognition.

From theoretical towards practical cognition

The dilemma of theoretical and practical cognition has accompanied humans from the origins of the epistemological trend in philosophy. At the very beginning of human history, several positions emerged considering various ways of studying:

- empiricism (sensualism), proclaiming fundamental role of experience (the Sophists, Epicurus);
- intuitionism, which assigned a cognitive role to the intuition reaching over empirical and theoretical knowledge (Heraclitus); and
- rationalism, stressing the autonomy and cognitive self-sufficiency of human reasoning (Parmenides, Plato).

There were also opinions that made knowledge dependent on non-cognitive factors (will, feelings, beliefs) and those that undermined the informative value of human cognition (subjectivism, scepticism, agnosticism, relativism). In Aristotle's opinion, the first objective of human cognition is *being* and not *cognition itself,* and that cognition is updated along with the experience of real, tangible particulars. The cause of cognition and its measure is the real being; therefore, theoretical reflection on cognition must not ignore it. Otherwise, it could lead to extreme attitudes such as reductionism (empiricism, rationalism, ecstatic intuitionism) or absurd (subjectivism,

scepticism, agnosticism, relativism). In *Metaphysics*, Aristotle refers in particular to the dilemma between empirical and theoretical knowledge. He claims that a man has a natural desire to know for the sake of cognition not just for action.

> "For not only with a view to action, but even when we are not going to do anything, we prefer seeing (one might say) to everything else. The reason is that this, most of all the senses, makes us know and brings to light many differences between things." (Aristotle, *Metaphysics*).

What makes a man superior to other species is just the ability to reason and create art.

> "The animals unlike a man live by appearances and memories, and have but little of connected experience; but the human race lives also by art and reasoning." (Aristotle, *Metaphysics*).

Hence, a question of the importance of experience in human life seems apt. Does experience play an important role in human life? Is the experience itself a cognition?

> "An experience seems pretty much like science and art, but really science and art come to men through experience. (...) For to have a judgement that when Callias was ill of this disease this did him good, and similarly in the case of Socrates and in many individual cases, is a matter of experience; but to judge that it has done good to all persons (...) this is a matter of art." (Aristotle, *Metaphysics*).

Aristotle then puts forward the theoretical cognition over the empirical one, and those who can reason are appreciated more than those who derive their knowledge from experience only.

> "We think that knowledge and understanding belong to art rather than to experience, and we suppose artists to be wiser than men of experience (...); and this is because the former know the cause, but the latter do not. For men of experience know that the thing is so, but do not know why, while the others know the 'why' and the cause." (Aristotle, *Metaphysics*).

Nowadays, the term *knowledge* is being often replaced by *information*. Information becomes a commodity having an intrinsic commercial value. When teaching our students, we often restrict ourselves to filling their brains with succeeding gigabytes of information. Facing the moral dilemma "to have or to be" (Fromm, 2013), we rather make them have more information instead of them being wiser. Ultimately, we compete with Google's search engine supplying new data and forgetting that knowledge and wisdom are not just information but also the ability to analyse, interpret and use it in action.

Is then experience such a bad thing? Even being so critical of *empirical knowledge*, Aristotle himself admits:

> "With a view to action experience seems in no respect inferior to art, and men of experience succeed even better than those who have theory without experience. The reason is that experience is knowledge of individuals, and actions and productions are all concerned with the individual. If the physician has the theory without the experience, and recognizes the universal but does not know the individual included in this, he will often fail to cure." (Aristotle, 2018).

Today, living in the highly commercialized and financialised world, we need to be more pragmatic despite respecting ancient philosophy. As economists, we have to accept that in order to maximise cognition, the reduction of such adverse phenomena as financial illiteracy and financial exclusion could be obtained by a proper combination of the three constituents: the fundamental information, the experience and the reasoning. The main task of a university teacher is to achieve balance between them. Only then will the university graduate be not only efficient in standard activities but also remain creative and open-minded to new phenomena, concepts and solutions.

Selected aspects of legal implementation of empirical approach to higher education system in terms of financial literacy and financial inclusion – a case of Poland

The dilemma of empirical and general academic education has existed in legal regulations for several years now. The widely emphasized goals of the education policy are to:

1. discourage mass participation in higher education by promoting appropriate student-to-staff ratios;
2. push forward greater internationalisation by applying appropriate financial incentives (the algorithm for the distribution of State-budget subsidies) and institutional arrangements (the establishment of the National Agency for Academic Exchange); and
3. intensify activities encouraging quality enhancement. (Higher Education in Poland).

In recent years, ensuring a closer link between the programmes offered and labour market needs has become a particularly important objective of higher education policy. Its implementation caused the institutional duality of Higher Education Institutions (HEIs). Until 2005, HEIs were divided into *higher education schools*[1] and *schools of higher vocational education*[2]. They were established and operated on the basis of separate legislation (1990 Higher Education Act, and 1997 Act on Schools of Higher Vocational Education respectively). The 2005 Law on Higher Education, which repealed the legislation previously in force, made a distinction between *university* HEI[3] and *non-university* HEI[4]. This distinction remained in force also in the amendment to the Higher Education Act passed in 2018 (The Law of HE&S, Art.14.1). Today, a HEI can become a university HEI only if it conducts scientific activities and has the scientific category A+, A or B+ in at least 1 scientific or artistic discipline. A university-type HEI is authorised to award doctoral degrees. It offers first-cycle programmes leading to a Bachelor's degree, second-cycle or long-cycle programmes leading to a Master's degree, and doctoral programmes. A non-

[1] szkoła wyższa (pl)
[2] wyższa szkoła zawodowa (pl)
[3] uczelnia akademicka (pl)
[4] uczelnia zawodowa (pl)

university HEI, referred to as a school of *higher vocational education*[5], conducts education taking into account the needs of the socio-economic environment and is obligated to offer first-cycle degree programmes. It may also offer second-cycle or long-cycle programmes leading to a Master's degree, but is not authorised to award doctoral degrees or offer doctoral (third-cycle) programmes. In addition to the level of the study, there is also a distinction of fields, modes (full-time and part-time study programmes) and profiles (academically-oriented and practically-oriented programmes). Academically-oriented programmes consist of modules relating to research fields conducted by a given HEI and ensure that more than half of the curriculum, as defined in ECTS, covers courses that enable students to gain more in-depth knowledge. Practically-oriented curricula consist of modules designed to develop students' practical skills and social competences and ensure that more than half of the curriculum, as defined in ECTS, covers practical courses developing such skills and competences (The Law of HE&S, Art.64.1). As for higher vocational schools (non-university HEI), only practically-oriented programmes are eligible (The Law of HE&S, Art.15). To be authorised to offer programmes of any profile, university-type and non-university HEIs are required to comply with the same rules laid down in the Regulation of the Minister of Science and Higher Education of 27 September 2018 on Studies (The Regulation, 2018). This regulation lays down a number of requirements concerning a curriculum and defines technical and organizational conditions to ensure proper quality of education. For practical studies, the university must provide sufficient conditions for students to perform empirical activities. Therefore, distance learning techniques can, for example, be used only complementarily (The Regulation, 2018, Par.12.2). Legal regulations regarding higher education impose also requirements on the competence and experience of academic teachers (The Law of HE&S, Art.73.1). For general – academic programmes, at least 75% of class hours are taught by academic teachers employed at this university as their primary place of work. For practical programmes, there is only 50% class hour requirement to be taught by this category of teachers. It is assumed that practical skills instruction can be also provided by people who have gained their competences and professional experience outside higher education (Eurydice, 2018). The HEI may also conduct studies in cooperation with an entity other than HEI (The Law of HE&S, Art.61). In particular, degree programmes of a practical profile may be provided by HEI in cooperation with commercial

[5] wyższa szkoła zawodowa (pl)

enterprises. Such programme may have the status of *dual studies* (The Law of HE&S, Art.62). Then, the organization of courses is specified in a written agreement concluded between a HEI and a commercial enterprise specifying:

- the option for courses, particularly of a practical nature, to be taught by employees of commercial enterprises;
- the participation of commercial enterprises in the development of curricula;
- the manner in which funding for programmes is to be provided by commercial enterprises;
- learning outcomes of such programmes; and
- the manner of execution of practical placements and internships.

Mandatory internships are widely recognized as positively correlated with employment ratios. Promoting internships is a successful strategy to bridge theoretical knowledge and practice resulting in enhanced graduate employability (Silva et al., 2015). According to Polish regulations, internships are mandatory for practical programmes. The novelty of the law on higher education extended the length of the internship to 6 months for the first-cycle studies and to 3 months for the second-cycle studies (The Law of HE&S, Art.67). Also, the diploma thesis can be recognised as an important supplement to practical training. Writing a diploma thesis and passing a final exam based on it is a prerequisite for completing studies and obtaining a diploma of graduation in the case of second-cycle studies and uniform master's studies (The Law of HE&S, Art.62). As for the first-cycle studies, writing a diploma thesis and passing a final exam becomes compulsory only if it is required by the study programme. The diploma thesis is considered to be a means of presenting an independent development of the students who can demonstrate their general knowledge and skills in a given subject, field, level and profile of studies. In the case of practical studies, it may be of an applicative nature, prepared and implemented in consultation with the business partner. The concept of the thesis can be established during the student's internship.

Conclusion

Growing contribution of practical education seems to be a reasonable response to the intensifying social phenomena of financial illiteracy and financial exclusion. Undoubtedly, a strong incentive to promote the idea of empirical education is its economic usefulness. The pervasive commercialization of various aspects of human life demands that the evaluation of the efficiency of education is based on the criterion of its utility and practicality in everyday life. Krzyk (2015) states: "My criticism of the education system comes from the fact that it has uncritically accepted the language of economics. Knowledge has become a commodity, a student has become a client, and each of us is a *human capital*". The usefulness of education is perceived mainly as a guarantee of being able to quickly find a well-paid job. Only very few students are interested in knowing for the sake of cognition. As a result, pursuing quick answers to our practical questions, we are losing a wider perspective of the problem.

> "If our ideas seem smaller nowadays, it's not because we are dumber than our forebears but because we just don't care as much about ideas as they did. In effect, we are living in an increasingly post-idea world - a world in which big, thought-provoking ideas that cannot instantly be monetized are of so little intrinsic value that fewer people are generating them and fewer outlets are disseminating them" (Gabler, 2011, para. 4).

By shaping the path of practical education in our academic programmes, we must therefore constantly ask ourselves about the purpose of undertaken actions. Otherwise, we can remove some problems, but instead create the new ones.

> "There is the retreat in universities from the real world, and an encouragement of and reward for the narrowest specialization rather than for daring - for tending potted plants rather than planting forests" (Gabler, 2011, para. 6).

Good education should ensure that in the future a man will be capable of not only answering the question of how to profitably invest their money but also what is the objective of their life and why the wellbeing is so important to us. Practical education can help us but it can also turn us back from a right path. It is up to us to choose which way to go.

References

Aristotle. (2018). *Metaphysics*, Global Grey, translated by D. Ross (1924). Kindle eBooks.

Atkinson, A., & Messy, F. (2012). *Measuring Financial Literacy: Results of the OECD / INFE Pilot Study*, OECD, Working Papers on Finance, Insurance and Private Pensions, No. 15. Paris: OECD Publishing, pp. 446-448.

Atkinson, A., McKay, S., Collard, S., & Kempson, E. (2007) *Levels of Financial Capability in the UK*, "Public Money & Management", *27*(1), 29–36.

Berggren, J., & Gonzalez, R. (2010). *Gender difference in financial decision making - A quantitative study of risk aversion and overconfidence between the genders*, Umeå University, 44. Bachelor Thesis. Retrieved from: http://www.diva-portal.org/smash/get/diva2:324378/FULLTEXT01.pdf

Cantoni, C. J. (2009). A Brief History of Ponzi Schemes. *Journal of American Physicians and Surgeons*, *14*(1), 24-25.

Chen, H. & Volpe, R.P. (1998). An Analysis of Personal Financial Literacy among College Students. *Financial Services Review, 7*(2), 107-128.

Demirguc-Kunt, A., Klapper, L., Singer, D., & Oudheusden, P. (2015). *The Global Findex Database* 2014, Findex Notes No. 2014-2. Washington, DC.

Diacon, P.E., & Maha, L.G. (2015). The Relationship between Income, Consumption and GDP: A Time Series, Cross-Country Analysis. *Procedia Economics and Finance*, 23, 1535-1543.

Eurydice (2018). *The System of Education in Poland.* Retrieved from http://czytelnia.frse.org.pl/media/The-system-of-education-in-poland-2018-calosc.pdf

Frączek, B. (2012). *Analiza czynników wpływających na oszczędzanie i inwestowanie gospodarstw domowych*, „Studia Ekonomiczne / Uniwersytet Ekonomiczny w Katowicach", *122*, 87-98.

Frączek, B. (2017). *Edukacja finansowa jako determinanta wzrostu włączenia finansowego. Podejście zintegrowane*, [*Financial education as a determinant of the increase in financial inclusion. Integrated approach*]. Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach [Publishing House of the University of Economics in Katowice], 266.

Fromm, E. (2013). *To have or to Be?* Bloomsbury Academic.

Gabler, N. (2011). *The Elusive Big Idea*. The New York Times, August 13.

Gammage, S., Kes, A., Winograd, L., Sultana, N., Hiller, S., & Bourgault, S. (2017). *Gender and digital financial inclusion: What do we know and what do we need to know?* International Center for Research on Women. Retrieved from https://www.icrw.org/wp-content/uploads/2017/11/Gender-and-digital-financial-inclusion.pdf.

García-Herrero, A., & Turégano, D.M. (2015). *Financial Inclusion, Rather than Size, Is the Key to Tackling Income Inequality*, Working Paper No. 15/05. Madrid: BBVA Bank.

Johnson, S. (2004). Gender Norms in Financial Markets: Evidence from Kenya. *World Development*, *32*(8), 1355-1374.

Kordos, I. (2013). *Doradcy finansowi niezależni tylko pozornie.* Retrieved from http://www.bankier.pl/.

Kozup, J., & Hogarth, J.M. (2008). Financial Literacy, Public Policy, and Consumers' Self-Protection—More Questions, Fewer Answers. *Journal of Consumer Affairs*, *42*(2), 127-136.

Krzyk, J. (2015). *Profesor Tadeusz Sławek: Nasz świat znowu ulega rozstrojowi*, Gazeta Wyborcza, 13 października.

Makusiewicz, P. (2014). *Piramidy finansowe*, „Zarządzanie i Finanse", no. 4.

Mandell, L., & Klein, L.S. (2007). Motivation and financial literacy. *Financial Services Review,16*(2), 105-116.

Monticone, C. (2018). *Financial literacy in CIS and at the Global Level*. OECD-Russia Global Symposium "Advancing financial literacy globally: implementation and innovation", 4-5 Oct 2018, Moscow, 11. Retrieved from https://www.oecd.org/daf/fin/financial-education/Russia-FinEdu-2018-Session2.pdf

OECD/INFE. (2012). *High Level Principles on National Strategies for Financial Education*, OECD/INFE, 1-20.

OECD/INFE. (2013). *Financial literacy and inclusion. Results of OECD/INFE survey across countries and by gender*, 14.

Park, C. & Mercado, R. (2015). *Financial Inclusion, Poverty, and Income Inequality in Developing Asia*, ADB Economics Working Paper Series, No. 426. Manila: Asian Development Bank (ADB).

Potocki, M. (2012). *Piramidy Finansowe. Sprawdź, jak skończyli ich twórcy*. „Dziennik Gazeta Prawna" z 7 sierpnia 2012 r., dodatek „Biznes"

Radziwinowicz, W. (2012). *Rosyjski arcyoszust Mawrodi, twórca finansowych piramid, włączył się do walki z opozycją*, „Gazeta Wyborcza" z 23 października 2012 r.

Rutkowska, E. (2006). Konsument w stosunkach umownych z bankiem. *KBKE e-biuletyn*, No. 4. Retrieved from http://www.bibliotekacyfrowa.pl/.

Sarma, M., & Pais, J. (2011). Financial Inclusion and Development. *Journal of International Development*, *23*(5), 613-628.

Schiller, J. (2015). *Avoid Financial Fraud*. Charleston SC: CreateSpace.

Silva, P., Lopes, B, Costa, M., Seabra, D., Melo, A., Brito, E., & Dias, G. (2015). Stairway to employment? Internships in higher education. *Higher Education*, *72*, 703-721.

Spataro, L., & Corsini, L. (2013). *Endogenous financial literacy, saving and stock market participation*, MPRA, Paper No. 44342.

The Law of 20 July 2018 on Higher Education and Science (Journal of Laws of 2018 item 1668).

The Regulation of the Minister of Science and Higher Education of 26 September 2016 on the conditions for the provision of degree programmes.

The Regulation of the Minister of Science and Higher Education of 27 September 2018 on studies (Journal of Laws 2018 item 1861).

World Bank. (2019). *Financial inclusion*. Retrieved from http://www.worldbank.org/en/topic/financialinclusion/ overview#.

Wiśniewski, M. (2012). *Wartość wykupu polis życiowych z Ubezpieczeniowym Funduszem Kapitałowym*, „Wiadomości Ubezpieczeniowe", *2*.

World Bank. (2012). *The Little Data Book on Financial Inclusion*. Washington, DC: The World Bank Group.

World Bank. (2015). *The Little Data Book on Financial Inclusion*. Washington, DC: The World Bank Group.

World Bank. (2018). *2018 The Little Data Book on Financial Inclusion*. Washington, DC: The World Bank Group.

World Bank, World Bank Development Research Group & GFLEC. (2015). *S&P Global FinLit Survey*. Washington: The World Bank Group.

TRANSFORMING TRANSPORT AND MOBILITY – THE ROLE OF TEACHING-RESEARCH NEXUS IN THE FIELD OF TRANSPORT ECONOMICS

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Abstract Economic and social challenges of the modern world force the implementation of innovative solutions in all sectors of the economy. The relationship between knowledge, innovation and economic development is increasingly obvious and measurable. The European transport sector is currently facing new challenges, mostly regarding the negative externalities of transport activity. Sustainable transport policy goals call for a greater involvement of research activities and broadly understood innovations in various segments of the transport market. It means that new challenges induce the need for innovative solutions, comprising not only new technologies but also organisational improvements. The paper aims at identifying the main areas for the implementation of the results of transport economics research in the process of technological and organisational change of transport system as well as at discussing the role of research in university teaching in the field of transport economics.

Keywords: innovation, transport, teaching, research, mobility.

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Introduction

Transport is the foundation of a well-functioning economy. The transport sector plays a significant role in the economic development of the European Union (EU). Overall, the entities related to transport sector (in services, manufacturing, maintenance and construction) account for more than 9% of EU gross value added and employ more than 9% of total EU workforce. Despite the fact that transport is a key enabler of economic and social activity, it is also a source of environmental concerns and generates negative effects (accidents, air pollution, noise, greenhouse gas emissions, etc.). The external transport costs are valued at the equivalent of approximately 4% of EU GDP (European Commission, 2017a).

The upcoming decades are the time of intense changes in the transport sector, which will be forced by the decreasing oil resources in the world, the accelerating climate changes and the increasing problems resulting from the deteriorating quality of life in the cities. The challenges faced by the transport sector force a higher involvement of research activity and implementation of broadly understood innovations in various transport market sectors.

The paper aims at identifying the main potential areas for the implementation of the results of transport economics research required in the process of technological and organisational change of transport systems that has to be faced. Moreover, the aim of the paper in this context is to discuss the role of scientific research in the process of teaching and training staff for the transport sector.

Transport and mobility – potential areas for innovative solutions

Striving for a competitive and resource-efficient system

The main strategic challenges in the field of transport and mobility that the EU Member States have to face during the next decade contribute to the objectives set in *White Paper on transport. Roadmap to a Single European Transport Area – Towards a competitive and resource-efficient transport system*. The White Paper of 2011 sets out an ambitious strategy for transport development in the EU community by 2050, giving priority to sustainable transport development. This document formulates 10 goals towards the establishment of a competitive and resource-efficient transport system,

thanks to which it will be possible to reduce greenhouse gas emission by 60% (European Commission, 2011):

I. *Goals related to the development and use of alternative fuels and propulsions*
   1. Reduce the number of conventionally-fuelled vehicles (combustion engines) by half in urban transport by 2030, and consequently eliminate them from the cities by 2050. Achieve CO_2-free logistics in major urban centres by 2030.
   2. Achieve the level of 40% of low-carbon fuels in aviation and reduce by 40% emissions from maritime bunker fuels by 2050.

II. *Goals related to optimising the operation of multimodal logistic chains*
   3. Shift 30% of road freight transport over 300 km to energy efficient modes of transport, i.e. rail or water transport by 2030 (over 50% by 2050).
   4. Triple the length of the existing high-speed rail network in the EU by 2030 and complete its construction by 2050. Shift a significant part of medium distance passenger transport to rail transport by 2050.
   5. Create a fully functional European multimodal network TEN-T by 2050.
   6. Connect all core network airports to the rail network, preferably with the high-speed rail network, as well as connect seaports with the rail network and, if possible, with the inland waterway system by 2050.

III. *Goals related to increasing the efficient use of transport and infrastructure thanks to information and communication technologies (ICT) and market incentives*
   7. Implement modernised air traffic management infrastructure (SESAR) in the EU, complete work on the European Common Aviation Area and implement intelligent systems for management of other modes of transport (e.g. ERTMS in rail transport) by 2020.
   8. Establish the framework for the European information, management and payment system with respect to multimodal transport by 2020.
   9. Reduce by half the number of road accident victims by 2020 and reach the near-zero number of road transport fatalities by 2050.
   10. Fully apply the rules 'user pays' and 'polluter pays', as well as involve the private sector in order to eliminate market distortions and ensure the funding of future transport investments.

The vision of competitive and resource-efficient transport system outlined in the White Paper on transport of 2011 is mainly a response to the need to reduce external transport costs. The dynamic growth of road transport, including especially passenger car traffic in the European Union, is one of the main sources of natural environment and noise pollution as well as one of the main reasons for the consumption of non-renewable resources. In urban areas, the problems connected with congestion and the deteriorating quality of life for cities inhabitants are increasing. Another major issue is accidents.

Research in transport economics – the essential element of technological change

The implementation of this vision and the achievement of the outlined objectives not only require the development of new technologies but also organisational innovations. Within the framework of Strategic Transport Research and Innovation Agenda (STRIA), which is a part of the 'Europe on the Move' policy package, European Commission has specified 7 main transport research and innovation (R&I) areas and priorities, which can be characterised as follows (European Commission 2017b; Grosso et al., 2018; SINTRAS Consortium, 2017):

1. *Cooperative, connected and automated transport* – focus areas for R&I include, for example, parallel existence of automated and non-automated systems, user needs, social acceptance of new solutions, as well as the impact of these technologies on behaviours. The area related to connected driving and automation of transport will not only require the development of new technologies but also regulatory and legal changes. There is a lack of research results concerning the impact of these technologies on the existing infrastructure, economy, society and environment. The economic, legal and ethical issues related to the automated vehicles technology still remain unresolved.
2. *Transport electrification* – research area connected with decarbonisation of transport (all modes) as well as the application of new materials, production systems, ICT technologies and innovative energy storage systems.
3. *Vehicle design and manufacturing* – research area on technologies that allow the minimisation of the lifecycle impact on the environment and energy use while

simultaneously maintaining or raising standards related to safety, comfort and affordability.

4. *Low-emission alternative energy for transport* – the area of innovative solutions with respect to technology, production, processes and organisational innovations, mainly in the field of alternative fuels, such as advanced biofuels or hydrogen, including fuel cells and new highly efficient and low-pollution combustion engines. The production costs of alternative fuels are still very high, while the level of social acceptance of these solutions is low. In this field, a particularly important role is played by the long-term strategy coherent for all Member States which is based on the incentive systems, smart regulations and targeting of R&I funding.
5. *Network and traffic management systems* – the main focus area is digitisation, which will allow for better traffic management (in real-time) and the optimisation of transport network (Intelligent Transport Systems, ITS).
6. *Smart mobility and services* – Mobility as a Service (MaaS), Multi-Modal Information and Ticketing Systems, Smart City Logistics, synchromodality and e-freight. Smart mobility services are based on the exchange and analysis of big data. Currently, the main issue to be resolved in this respect is the systems enabling data exchange, a lack of proper cooperation models between various entities as well as proper quality, data standard and data availability. The main goal of implementing solutions in this field is the improvement of the quality of life in the cities resulting from, for example, the reduction of congestion as well as increase of attractiveness and competitiveness of more sustainable modes of transports.
7. *Infrastructure* – investments in infrastructure are capital-intensive and time-consuming. Infrastructural investments are mainly financed with public funds; therefore, new infrastructural technologies are implemented slowly and do not keep up with the changes in other areas. For this reason, there is a high demand for organisational innovations in this area, especially in the field of innovative cooperation models, innovations in governance, charging, interoperability and better targeting of R&D funding.

Despite the fact that technological research and innovations are at the forefront of the identified areas, the research conducted by SINTRAS consortium shows that the biggest needs regarding innovative solutions currently do not concern technology. Technology is no longer an issue in itself. The barriers for the implementation of

new technologies, which mainly comprise economic, political and social factors (SINTRAS Consortium, 2017) are a much more significant problem. This is due to factors such as conflicting interests of stakeholders, including political entities. Therefore, the key role is played by research in social sciences, including transport economics, which focuses on the economic and organisational aspects of transport processes.

According to SINTRAS Consortium, pricing is one of the main areas where the conducted research needs to be intensified. It is necessary to develop new models of charging for new services enabled by new technology, which will be attractive for the users while ensuring the appropriate level of profits for the investors at the same time. Moreover, the effective implementation of new technologies in many cases depends on a good understanding of passenger travel patterns and preferences.

The full use of the potential resulting from the exchange and analysis of big data does not only depend on technological factors, e.g. in the form of coherent standards or interoperable data exchange systems, but it will mainly require an increase in the cooperation between the science sector and researchers on the one hand and business practice, in particular transport authorities in the cities, on the other. In the past, the main problem for the analyses of mobility and transport behaviours was how to obtain data. Nowadays, due to a huge amount and variety of received data, the problem is how to categorise and analyse them in order to make them useful in the decision-making process. As a consequence, one may suppose that it will also force certain organisational changes as well as changes in the operating model of many private and public entities (Urbanek, 2019).

Moreover, new big data sharing models require significant caution with respect to privacy protection and personal data security. Therefore, one of the biggest challenges faced by policy makers, the science sector and private sector is to effectively create and implement not only the harmonisation of rules for the collected data, but mostly to set up common platforms for their exchange so that they could be freely used by various entities, not only locally or regionally, but also on the international level (Steenberghen et al., 2013; Urbanek, 2019).

The role of research in university teaching in the field of transport economics

The classic 19th century concept of university created by Wilhelm von Humboldt assumes the full 'unity of research and teaching', as well as 'unity of professors and students'. According to this vision of higher education, which was innovative at that time, truth is discovered through joint participation of academic teachers and students in the research process by getting to new knowledge together (Kwiek, 2006). Nowadays, the relation between scientific research and education is a subject of numerous discussions and empirical research (Tight, 2016). There are also various concepts for integrating research and teaching activities (Kowalczuk-Walędziak, 2017). The integration of scientific research and education can be understood as the incorporation of scientific research results into student learning programmes, the involvement of students in the research conducted by academic staff, the research conducted by academic teachers and sharing research results with the students (Trowler & Warehan, 2007).

Previous studies among academic teachers and students have indicated that academic teachers who are active researchers (Marsh & Hattie, 2002):

- use the results of their research to enrich, clarify and update the material taught to students, which makes classes more interesting and students more motivated to gain knowledge and participate in classes;
- are more effective in developing the understanding rather than passive acceptance of complex facts in students; and
- are more authentic with respect to the content taught.

Moreover, the source literature also highlights the positive effect of teaching on the teacher's research activity. Sharing own research results with students may help researchers understand certain issues and clarify their research. Students' suggestions, questions or criticism may confirm the adopted research assumptions or may be a source of inspiration for new research directions or further, in-depth research (Marsh & Hattie, 2002). According to Marsh and Hattie (2002), teachers who are involved in research are more aware of international perspectives in their field and are more likely to be leaders in their discipline.

The incorporation of scientific research results in education process is particularly significant in transport economics. The essence of knowledge created within the framework of transport economics is the theory of efficient, effective and environmentally friendly distance covered by passengers and goods. Therefore, the issues raised by researchers in this respect are frequently interdisciplinary and are also the subject of research for other fields of science such as engineering, natural sciences or computer and information science. Therefore, a researcher/academic teacher is required to constantly update their knowledge with new scientific research results, to be able to have a broad view of the economic phenomena as well as to monitor changes in modern technologies that may be significant for the transport sector on an ongoing basis. Another important fact is that research in the field of transport economics, apart from its theoretical values, can frequently be applied. Research results are not only important for various levels of transport policy stakeholders but also for the companies providing transport services. In this respect, academic teachers are an important source of knowledge about current trends and potential areas of innovation, whereas, on the other hand, they may gain knowledge from students and be inspired by them. The role of students in this aspect is special because they are passengers and users of transport services in everyday life. It is precisely their needs that are the source of innovative solutions in the transport sector.

The incorporation of scientific research results in the teaching process is also of particular significance in the process of teaching staff for the development of knowledge society and knowledge-based economy. Knowledge-based economies are founded on a direct application of knowledge and information for the purpose of more effective functioning and improvement of the quality of life (OECD, 1996). The last 10-15 years in the development of global information society have shown that apart from the classic resources, i.e. soil, labour and capital, knowledge has become the basic and strategic resource of every organisation as well as one of the fundamental economic categories. Knowledge is the driving force behind the development of knowledge-based economies; it is a condition for the implementation of innovations as well as a source of competitive advantage. Therefore, the importance of research and development (R&D) in modern economies has been constantly increasing (Table 1), which has been proven by the increasing expenditure on R&D on the level of whole economies (GERD) as well as the one made by individual companies (BERD).

Table 1: Indicators of R&D expenditure in EU28 and selected countries around the world in 2000 and 2017

Indicators	**Country/Group**	**2000 [%]**	**2017 [%]**	**Change 2017/2000 [p.p.]**
GERD Gross domestic expenditure on R&D (as % of GDP)	EU 28	1.67	1.96	0.29
	USA	2.63	2.79	0.16
	Japan	2.91	3.20	0.29
	South Korea	2.18	4.55	2.37
BERD Business enterprise expenditure on R&D (as a % of GDP)	EU 28	1.06	1.29	0.23
	USA	1.95	2.04	0.09
	Japan	2.06	2.52	0.46
	South Korea	1.61	3.62	2.01
Total R&D personnel per thousand total employment	EU 28	9.37	12.91	3.54
	USA	n/a	n/a	n/a
	Japan	13.67	13.19	-0.48
	South Korea	6.53	17.75	11.22

Note: n/a – not available, p.p. – percentage points
Source: Own study based on OECD Statistics Database (2019)

Involving students in scientific research conducted by university researchers and sharing research results teaches a methodical approach to problem solving and reasoning based on reliable analyses and sources. Such approach also teaches the use of scientific output and allows for the popularisation of certain good practices that provide an opportunity for future effective cooperation between the business and science sectors. Such cooperation is of great importance in terms of the challenges in the field of transport and mobility.

The challenges regarding transport and mobility that are currently faced by the European Union require the training of staff that will understand the significance of scientific research for the transport sector. This is due to the fact that the graduates include:

- future employees of the transport and logistics sector whose knowledge and skills will be crucial for the innovativeness and competitiveness of companies operating in this sector, or
- public sector employees, including various levels of transport policy stakeholders who will affect the transport policy of cities, regions or states.

Moreover, in the times of information noise and the increasing use of manipulation and misinformation tools, it is also important to train staff to have the methodological background for gaining knowledge and for conducting research.

Conclusions

The economic, social and environmental challenges faced by the contemporary world force us to implement innovative solutions in all economic sectors, including the transport sector. The main strategic challenges in the field of transport and mobility that the EU Member States will have to face during the upcoming decades mainly result from the need to develop a sustainable transport system. The achievement of the goals of transport policy set by the European Union not only requires the development of new technologies but also broadly understood organisational innovations, the source of which could be research in transport economics.

The necessity to build knowledge-based economy and society requires an increasing incorporation of scientific research in university teaching. Although combining research and teaching activities is currently the subject of numerous discussions, it is the Humboldt vision of the unity in higher education that seems to gain increasing significance from the perspective of the requirements of contemporary economies and the rate of changes in the transport sector. Sharing scientific research results with students and involving them in the research process may be a source of many advantages not only for the students, but also for the research staff at the universities and for the whole society.

References

European Commission (2011). *White Paper - Roadmap to a Single European Transport Area – Towards a competitive resource efficient transport system*. COM (2011) 144 final. Brussels 28.3.2011. Retrieved

from https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0144:FIN:en:PDF

European Commission (2017a). *Delivering TEN-T. Facts and figures*. September 2017. DG MOVE. Retrieved from http://www.connectingeu.eu/documents/Delivering_TEN_T.pdf

European Commission (2017b). *Towards clean, competitive and connected mobility: the contribution of Transport Research and Innovation to the Mobility package*. Commission Staff Working Document. Retrieved from https://ec.europa.eu/transport/sites/ transport/files/swd20170223-transportresearchandinnovationtomobilitypackage.pdf.

Grosso, M., van Balen, M., Tsakalidis, A., Ortega Hortelano, A., Haq, G., Gkoumas, K., & Pekar, F. (2018). *Assessing innovation capacity in the European transport sector – A methodological framework for a macro-level financial and socio-economic analysis*, EUR 29415 EN. Luxembourg: Publications Office of the European Union.

Kowalczuk-Walędziak, M. (2017). Kilka uwag o (roz)łączności działalności badawczej i dydaktycznej nauczyciela akademickiego. *Parezja 2*(8), 21-33. DOI: 10.15290/parezja.2017.08.03.

Kwiek, M. (2006). *The Classical German Idea of the University Revisited, or on the Nationalization of the Modern Institution*. CPPS Working Papers Series, Vol. 1. Retrieved from http://cpp.amu.edu.pl/pdf/CPP_RPS_vol.1_Kwiek.pdf

Marsh, H. W. & Hattie, J. (2002). The relation between research productivity and teaching effectiveness: complementary, antagonistic, or independent constructs? *The Journal of Higher Education*, *73*(5), 603–641. DOI: 10.1080/00221546.2002.11777170

OECD. (1996). *The knowledge-based economy*. Paris: OECD. Retrieved from https://www.oecd.org/sti/sci-tech/1913021.pdf.

OECD Statistics Database. (2019). Retrieved from https://stats.oecd.org/.

SINTRAS Consortium. (2017). *Towards a Single and Innovative European Transport System SINTRAS. Barriers Analysis and Action Plans. Final Report*. Retrieved from https://ec.europa.eu/transport/sites/transport/files/2017-04-sintras.pdf

Steenberghen, T., Pourbaix, J., Moulin, A., Bamps, C., & Keijers, S. (2013). *Study on Harmonised Collection of European Data and Statistics in the Field of Urban Mobility*. MOVE/B4/196-2/2010, Final report 24/05/2013. SADL KU Leuven and UITP. Retrieved from https://ec.europa.eu/transport/sites/transport/files/themes/urban/studies/doc/2013-05-harmonised-collection-data-and-statistics-urban-transport.pdf

Tight, M. (2016). Examining the research/teaching nexus. *European Journal of Higher Education, 6*(4), 293–311. DOI: 10.1080/21568235.2016.1224674

Trowler, P., & Wareham, T. (2007). *Tribes, territories, research and teaching. Enhancing the 'teaching-research' nexus*. Retrieved from https://www.researchgate.net/publication/251594982_Re-conceptualising_the_'teaching-research_nexus.

Urbanek, A. (2019). Data-Driven Transport Policy in Cities: A Literature Review and Implications for Future Developments. In G. Sierpiński (Ed.), *Integration as Solution for Advanced Smart Urban Transport Systems*. TSTP 2018. Advances in Intelligent Systems and Computing, 844, pp. 61-74. Cham: Springer. DOI: 10.1007/978-3-319-99477-2_6.

Teaching Spanish as a Foreign Language for Students of Economics and Business

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Abstract The intercultural dimension in teaching students of economics and business is strongly supported by promoting foreign languages learning. Mastering a foreign language enables users to communicate and to better understand the culture of business partners or customers on the increasingly globalised markets. In this paper, we therefore focus on the needs of the students at the University of Economics in Bratislava – the largest university in Slovakia providing education in economics and business – with respect to teaching Spanish as a foreign language. Based on a questionnaire survey among students, we assessed the relevance of mastering Spanish for the overall study as well as with regard to their expected careers after completing their studies, the relevance of specific topics in the syllabus, the desired learning outcomes and competencies as well as the evaluation of the acquired knowledge and competencies with the aim to improve the teaching process in Spanish lessons. We conclude that teaching Spanish should focus more on oral communication and intercultural competencies.

Keywords: teaching, spanish, syllabus, competencies, survey.

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Introduction

The University of Economics in Bratislava (UE) is the only state university of Economics and Management in Slovakia and foreign languages are an important part of the study programme from its start. The study of foreign languages is a significant part in university education for economists. The importance of foreign language teaching is pointed out in work by a number of authors, e.g. by Stein-Smith (2016), Mercier (1942) or Li (2011). According to the European Commission (2005), language skills are "important in achieving European policy goals, particularly against a background of increasing global competition" (p. 14). While foreign language skills can be a considerable career asset in a broad spectrum of careers, they are notably important for careers in the export sector and in foreign-owned companies (Stein-Smith, 2016). The importance of foreign languages in international business has long been recognized and accepted. Marschan, Welch and Welch (1997, p. 591) argue that language needs to be considered as an important element in managing multinationals because it "permeates virtually every aspect of their business activities". Language is an important component of a psychic distance that influences companies' internationalization patterns (Wiedersheim-Paul, 1972).

The study of foreign languages not only provides students of UE with the irreplaceable professional preparedness, but also improves the intellectual and, in broader terms, cultural dimension of their personality. The importance of intercultural factors in the process of teaching a foreign language was pointed out by Morar (2009, p. 81) who states that "intercultural competence has become a key competence for the majority of people". At the time when UE was established, the emphasis was laid on foreign language teaching. This is evidenced by the fact that as early as in the academic year 1940/41, up to 7 foreign languages (German, Russian, English, French, Spanish, Italian, Hungarian) were taught at the High School of Trade (UE's forerunner) and in the period 1947-1952, there were up to 11 languages taught, including Romanian, Polish, Serbo-Croatian and Swedish (Sivák et al., 2013). Currently, seven languages are taught, i.e. English, German, Spanish, French, Italian, Russian and Slovak as a foreign language for foreign students. Language teaching is provided by the Faculty of Applied Languages (FAL), which was established in 2010 from the Institute of Foreign Languages at the UE in Bratislava.

FAL offers the subject Foreign Languages and Intercultural Communication in combination with English, German, Spanish or French. The aim of FAL is to offer a high-level education that includes an advanced level of communication and intercultural competence in two foreign languages as well as the basic knowledge of economics, law and social sciences. In addition, FAL provides all 7 languages at other faculties of UE (i.e. the Faculty of Commerce, the Faculty of National Economy, the Faculty of Business Management, the Faculty of Economic Informatics and the Faculty of International Relations). In 2005, a credit education system was introduced and its core is the Common European Framework of Reference (CEFR) that divides language knowledge into three levels: A (A1, A2), B (B1, B2) and C (C1, C2). FAL has introduced compulsory studies of at least two foreign languages and three foreign languages at the Faculty of International Relations (FIR), the principle behind the foreign language choice and the sequence of teaching. Foreign language teaching according to this system is divided into (Sivák et al., 2010):

1. *A common basis with the condition of completing the first stage of study in which languages are taught at six levels:*

- A1, A2 – foreign language for beginners;
- B1 – general language for pre-intermediate students;
- B2 – general language for intermediate students and professional foreign language for pre-intermediate students;
- C1 – advanced foreign language;
- C2 – professional foreign language for advanced topics (national economy; economic informatics; business economy; business; corporate management; culture, civilization and intercultural communication; negotiations); and

2. *Optional and compulsory elective courses throughout the study:*

- language courses A1 - C2.

In the first year of study, students of all faculties enrol into the 1st foreign language course starting at B2-C1 level and ending in two or three semesters (depending on the faculty) at C2 level. In their second year, they enrol in a second foreign language course lasting two or three semesters (depending on the faculty) starting at B1level (continuation of the foreign language study they had at their secondary school) and ending at level B2-C1. FIR students have an extended language course that lasts longer. The first foreign language course lasts 6 semesters and the second foreign language course lasts 8 semesters. In addition to the language, they also study the culture, the intercultural topics and the area studies. Both languages (the first and the second language) end at C2 level with a final state exam.

In addition, students at FIR have a third foreign language starting at level 0 and reaching B2-C1 in the first year of the second level of study. In addition to the study of professional economics-related language and area studies, UE in Bratislava places an emphasis on intercultural communication and negotiations (especially at FAL and FIR). These subjects prepare graduates not only from a linguistic point of view but also from the point of view of getting to learn both general and profession/business-related culture, customs and traditions of other cultures.

Teaching is provided by the teaching staff, lecturers and associate professors specializing in philology, culture, history and area studies of the relevant language. English, German, French and Spanish subjects also are provided by native speakers as teachers as well. Intercultural communication is becoming increasingly important in business negotiations and in dealing with foreign partners. Therefore, intercultural communication is part of FAL's study of Foreign Languages and Intercultural Communication subject; at FIR, it is taught in foreign language subjects and culture and foreign language communication. FAL is the only faculty in Slovakia offering the subject Intercultural Communication and Business Negotiations in Foreign Language.

Spanish is the mother tongue of almost 500 million people; it is the second most used language in the world (after English) and the third most used language on the Internet (Spišiaková, 2016). Two thirds of the American continent population communicates in Spanish – precisely the countries with emerging economies where a huge market and many business partners are opening up to the European Union. Not only the EU experts but also students are aware of this fact as the interest in

studying Spanish is growing rapidly and it is the second most requested language at the University of Economics after English. Currently, almost 500 students are studying Spanish at the University of Economics. Teaching Spanish is provided by the Department of Romance and Slavic Languages. The Department employs one associate professor, five assistant professors and two lecturers who are native speakers (from Colombia and Nicaragua). The Department also offers subjects such as Spanish, Business Spanish, Culture and Civilization, Spanish Culture, Communication and Communication in the International Context, Intercultural Communication, etc.

In this paper, we pay close attention to the needs of the students at the University of Economics in Bratislava with respect to teaching Spanish as a foreign language. Based on a questionnaire survey among students, we assessed the relevance of mastering Spanish for the overall study as well as with regard to expected careers after completing studies, the relevance of specific topics included in the syllabus, the desired learning outcomes and competencies as well as the evaluation of the acquired knowledge and competencies. The questionnaire survey was conducted in order to determine our students' views on the contents as well as the way of teaching Spanish.

Characteristics and structure of the survey sample

Our survey was conducted from September 2018 to December 2018. The core research group consisted of students of the University of Economics in Bratislava enrolled in the academic year 2018/2019 in their first, second or third year of study. Together, 112 students participated in the research. The sample consisted of 74% women and 26% men. Students of three faculties were represented in the survey, namely the Faculty of International Relations (FIR), the Faculty of National Economy (FNE) and the Faculty of Applied Languages (FAL).

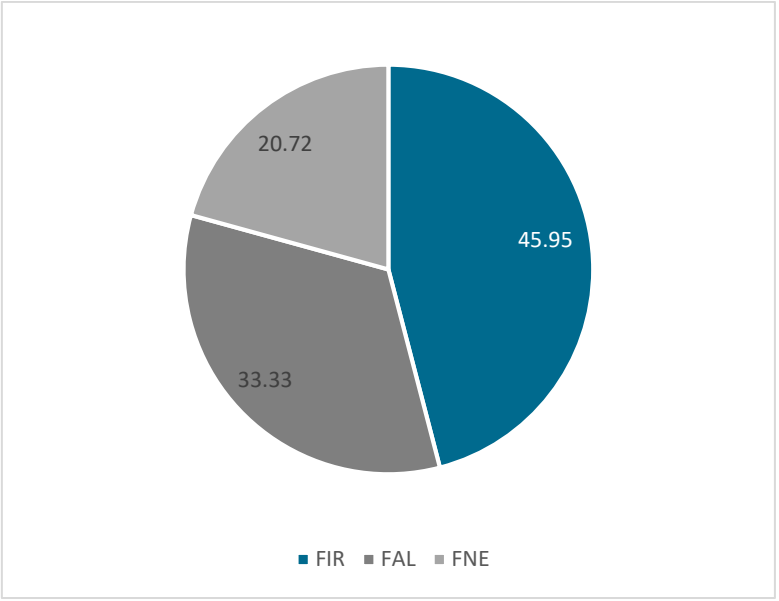

Figure 1: Structure of the sample

Survey results

The questionnaire focused on the content of the Spanish course. We examined the relevance of mastering Spanish in terms of the overall study as well as in terms of the expected career of graduates after completing their studies. The detection of the relevance rate of the topics for their inclusion in the content of Spanish course represented an important part of the survey. At the same time, respondents identified the desired learning outcomes, competencies and skills that should be improved in the teaching process. Finally, they evaluated their knowledge and competencies acquired during the course.

Relevance of mastering Spanish for the overall study as well as with regard to expected careers after completing studies

The relevance rate of mastering Spanish for the overall study as well as with regard to the expected careers after completing the studies was evaluated on a scale from 0

= 'completely irrelevant' to 5 = 'very relevant'. The frequency and percentage of each evaluation are captured in Table 1.

Table 1: The evaluation frequency and its share on total

Evalua-tion	0 = completely irrelevant	1 = slightly relevant	2 = less relevant	3 = medium relevant	4 = more relevant	5 = very relevant
	Relevance of mastering Spanish with regard to the overall study					
Num-ber	0	4	6	26	41	31
Share	0 %	3.7 %	5.6 %	24.1 %	38 %	28.7 %
	Relevance of mastering Spanish with regard to expected career					
Num-ber	0	8	16	29	36	16
Share	0 %	7.6 %	15.2 %	27.6 %	34.3 %	15.2 %

Source: Authors' research.

The average rate of relevance regarding the overall study reached 3.82 (i.e. more relevant) and the average mark of relevance regarding the estimated professional career after graduation amounted to 3.34 (i.e. medium relevant). Due to the comparable results of average relevancy rate for men and women, it can be concluded that there is no difference in the perception of this indicator based on gender. However, there are differences in the perception of the degree of relevance depending on the field of study. Students of the Faculty of Applied Languages consider Spanish to be more relevant in terms of both the overall study and the estimated career after graduation than students of other faculties (average rates of relevance were 3.91 and 3.41).

Respondents had the possibility to specify at least four reasons to study Spanish. As indicated by Figure 2, the most frequently stated reason was the significance of Spanish as one of the most used global languages, followed by an interest in Spanish language and culture. More than 36% of respondents study Spanish because of the planned future career.

Figure 2: Reasons for studying Spanish

Further, respondents were asked to specify how they want to use Spanish after completing their studies. The results are shown in Figure 3. In total, 76% of respondents indicated their intention to use Spanish in their work after graduation. Moreover, 12% of respondents expressed their wish to work in Spanish-speaking countries. For 10% of respondents, the study of Spanish was needed as they wanted to work in international companies. 4% of respondents expected using Spanish in communication with customers or business partners. Respondents not foreseeing the use of Spanish in their work after graduation still wanted to use it for travelling or everyday communication.

Figure 3: Using Spanish after completing studies

Relevance of specific topics and competencies included in the syllabus

In order to determine which topics and competencies are the most and, respectively, the least relevant, respondents evaluated the relevance rate of the 9 topics and competencies on a scale from 0 (= 'completely irrelevant') to 5 (= 'very relevant'). The survey results are shown in Table 2 where the topics and competencies are listed according to the average value of the relevance from the most relevant to the least relevant. The average relevance value of all topics amounted to 3.47 (i.e. medium relevant to more relevant).

Table 2: Relevance of the topics and competencies in terms of their inclusion in the Spanish course content

Rank	Topic or competence	Average value
1	Basic vocabulary	4.39
2	Oral communication	4.24
3	Written communication	3.66
4	Intercultural knowledge	3.37
5	Professional vocabulary (business, international relations, banking, administration, etc.)	3.37
6	History, culture, social and political process in Spain	3.32
7	Translating competencies	3.04
8	History, culture, social and political process in Latin America	2.91
9	Interpreting competencies	2.84

Source: Authors' research

Respondents were further asked to specify which knowledge and competencies they consider to be the most useful for their future career. Figure 4 shows that the most useful competence is the ability to speak and communicate in Spanish. Basic and professional vocabulary was considered useful by almost equal percentage of respondents.

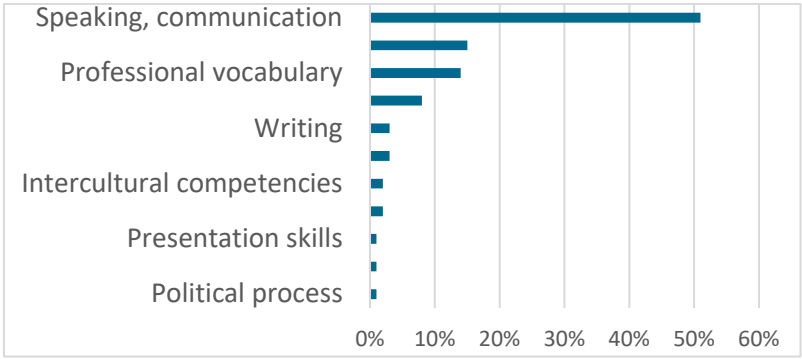

Figure 4: Knowledge and competencies the most useful for future career

Contrary to that, Figure 5 presents which knowledge or competencies were perceived as the least useful for future careers of respondents. Here, the knowledge of literature and history clearly prevails. According to 20% of respondents, each knowledge or competence acquired may be professionally useful. 13% of responds (grouped under caption 'other' in Figure 5) represented various knowledge or competencies, where each of them was named just by one respondent. These included, for example, lexicology, interpreting, translating, reading, orthography, listening, and geography or Spanish songs.

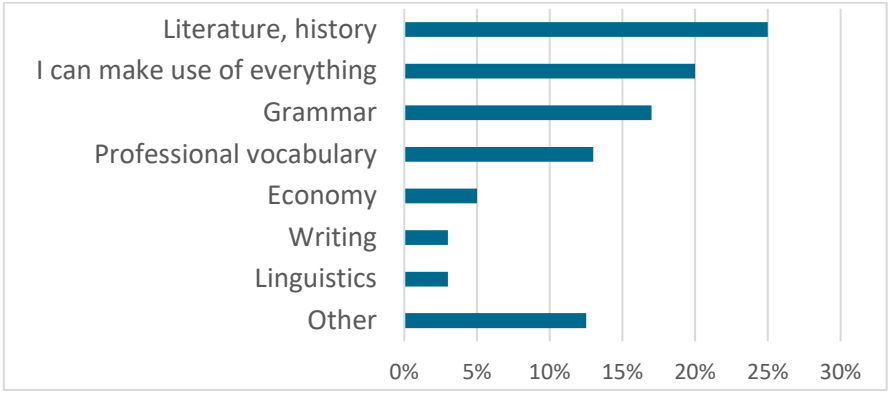

Figure 5. Knowledge and competence the least useful for future career

Evaluation of acquired knowledge and competencies

Respondents evaluated the level of difficulty to master the Spanish course on a scale from 0 (= 'completely undemanding') to 5 (= 'very difficult'). The average value was 3.26 (= medium demanding). Respondents further evaluated (according to their personal views) the degree of how they managed to deal with the tasks received at Spanish lessons. Evaluation was carried out in scale from 1 (= 'excellent') to (5 = 'insufficient'). The average mark was 3 (= 'good'). This assessment is independent from the teachers' grading of how students managed the task in the examination, as it was done before the examination. Table 3 summarizes the extent of improvement in specific knowledge and competencies on a scale from 0 (= 'no improvement') to 5 (= 'very significant improvement') as evaluated by respondents. The best improvement was achieved in basic vocabulary followed by understanding spoken language and the ability to translate. Contrary to that, the knowledge on Latin America improved the least.

Table 3: Improvement in specific knowledge and competencies

Competence	Average mark
Basic vocabulary	**3.24**
Understanding oral communication	**2.99**
Translating competencies	**2.92**
Understanding written communication	**2.84**
Written communication	**2.82**
Oral communication	**2.65**
History, culture, social and political process in Spain	**2.65**
Intercultural competencies	**2.56**
Professional vocabulary	**2.45**
History, culture, social and political process in Latin America	**2.30**

Source: Authors' research

Students were asked to evaluate which competencies they feel most and least confident in. The leading of three competencies in both aspects are presented in Table 4.

Table 4: The leading three competencies with the most positive or negative evaluation

The most confident – competencies	Share of responses	The least confident – competencies	Share of responses
Writing	28%	Grammar	35%
Understanding	25%	Speaking	33%
Speaking	25%	Understanding	7%

Source: Authors' research

Desired learning outcomes, competencies and recommendations

The rate of satisfaction with Spanish lessons was evaluated by respondents on the scale from 0 (= 'totally unsatisfied') to 5 (= 'very satisfied'). The average value amounted to 3.48 (= 'medium to more satisfied'). This shows that there is enough space for improving Spanish lessons. Respondents were asked to make suggestions in order to improve the classes of Spanish. The most frequent suggestion was to include more conversation in Spanish. Students would also welcome more discussion and creative tasks, permanent teaching staff, more listening and translating as well as current topics to be included into Spanish lessons. Some more recommendations are listed in Figure 6.

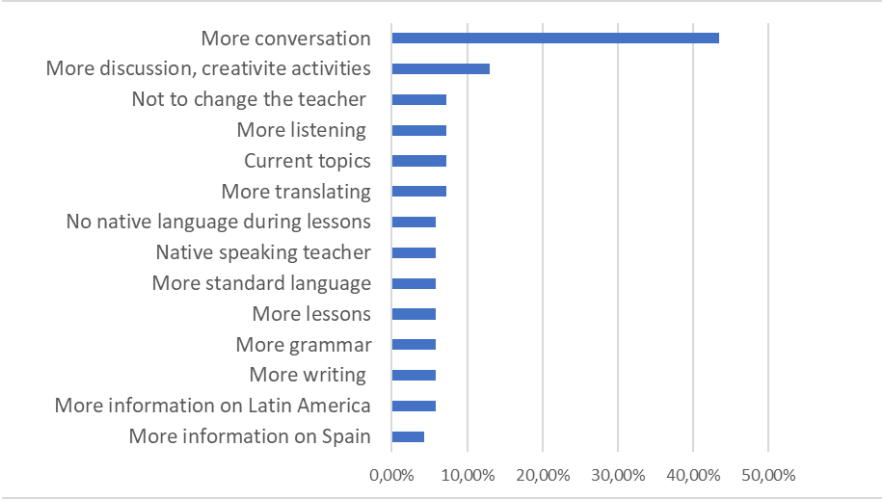

Figure 6: Recommendations made by respondents to improve Spanish lessons

Respondents were asked to specify topics that should be, according to their opinion, more dealt with during Spanish lessons. Approximately 25% of respondents would like to learn about culture, 21% about everyday topics and about 18% of respondents would prefer to deal more with topics related to the economy. Respondents further suggested the areas of professional language they would like to pay more attention to during Spanish lessons. The results are presented in Figure 7.

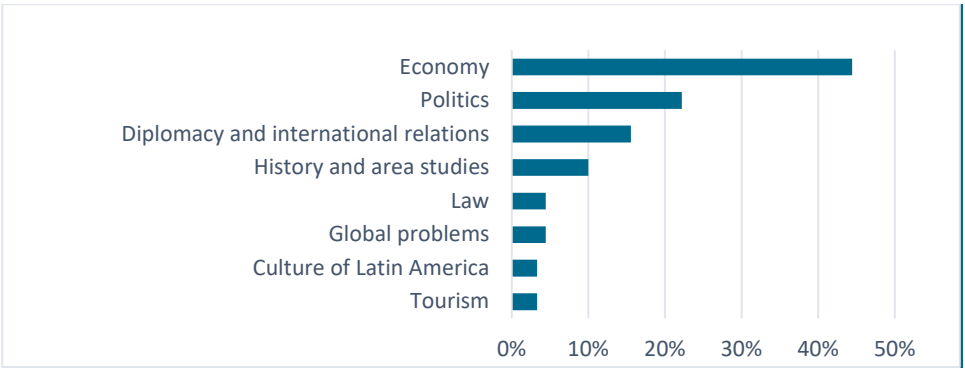

Figure 7: Suggested areas of professional language

Again, the most preferred area of professional language is economy followed by politics and international relations. Apart from the areas of professional language listed in Figure 7, some more areas were mentioned, i.e. marketing, environmental studies, geography, medicine, sociology, business negotiations, banking or psychology. Each of these areas have, however, reached less than 2% share of all answers. Preferences on professional vocabulary depend strongly on the field of study. For example, the students of the Faculty of International Relations prefer vocabulary concerning politics or international relations whereas the students of the Faculty of Applied Languages would expect to learn vocabulary from diverse areas of professional language.

Conclusion

Due to geographical, historical as well as economic reasons, Spanish does not belong to the most widespread foreign languages in Slovakia, in comparison to English, German or Russian (Grafton Slovakia, 2017). Therefore, we studied the relevance of mastering of Spanish for the students of economics and business in Slovakia. We

found that Spanish is more than average relevant primarily on the grounds of being one of the most used global languages. More than 75% of the students taking part in the survey intend to use Spanish in their future job. They either want to work in a Spanish-speaking country or for a multinational corporation where communication in Spanish is expected. Good examples of such corporations are Shared Service & Business Process Outsourcing Centres. They offer international support services for their parent companies and other subsidiaries. They also execute specific outsourced business processes for third-parties from abroad. With more than 30,000 people, they are important employers in Slovakia (Slovak Investment and Trade Development Agency, 2018). Spanish may be useful also in communication with foreign customers and business partners. Multinational corporations in Slovakia such as Henkel, Lenovo, Johnson Controls, Dell, Accenture, AT&T or Amazon employ Spanish and Latin Americans employees because they are not able to find as many Slovaks as they need who master both English and Spanish at a good or even a professional level. English is required mostly as a language of internal communication while Spanish is important for communication with clients in the Spanish-speaking countries.

For all purposes mentioned above, the most useful competence in Spanish is the knowledge of basic vocabulary, the ability to speak and write as well as intercultural competence. Opposite to that, the knowledge on Spanish or Latin American literature and history is perceived as not relevant by students of economics and business.

If looked at the evaluation of improvement in specific competencies, the results of our survey show that the best improvement was achieved in basic vocabulary and in understanding spoken language. On the other hand, oral communication and the intercultural competencies were among those competencies that improved the least.

The conclusion of our survey is that teaching Spanish should reasonably reflect students' preferences and their practical hints in preparing the syllabus and practical exercises. More attention should be paid to competencies that are the most useful for the students of economics and business. At the same time, intercultural competencies and oral communication were assessed as the competencies where the lowest improvement was achieved. This is in line with suggestions made by respondents concerning the improvement of Spanish classes. By far, the most

frequent suggestion was to include more conversation and discussion into Spanish lessons. As far as professional language and related vocabulary are concerned, lessons should be adjusted to the needs of the specific field of study.

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References

European Commission. (2005). *A New Framework Strategy for Multilingualism*. Retrieved from https://ec.europa.eu/assets/eac/languages/policy/strategic-framework/documents/elan_en.pdf

Grafton Slovakia. (2017). *Takmer polovica uchádzačov o prácu ovláda angličtinu na úrovni začiatočníka [Almost the half of the job applicants masters the English language as Beginner]*. Retrieved from https://www.grafton.sk/blog/2018/03/takmer-polovica-uchadzacov-o-pracu-ovlada-anglictinu-na-urovni-zaciatocnika

Li, W. (2011). Importance of developing intercultural communication competence in college foreign language teaching. *Education and Education Management*, *2*, 354-356.

Marschan, R., Welch, D., Welch L. (1997). Language: The forgotten factor in multinational management, *European Management Journal*, *15*(5), 591-598, Retrieved from https://www.researchgate.net/publication/222262679_Language_The_forgotten_factor_in_multinational_management

Mercier, L. J. A. (1942). The new importance of foreign language teaching. *Education*, *62*(6), 323-325.

Morar, D. (2009). *La rilevanza del fattore interculturale nell'insegnamento della lingua straniera [The importance of the intercultural factor in foreign language teaching]*. Lingua B. Cultură şi Civilizaţie [Lingua B. Culture and Civilization], VIII, 81-86.

Sivák, R., Daňo, F., Lenghardtová, J., Čaplánová, A., Mikócziová, J., Strieška, Ľ., … Boledovičová, M. (2013). *20 rokov Ekonomickej univerzity v Bratislave [20 years of the University of Economics in Bratislava]*. Bratislava: Sprint 2.

Sivák, R., Daňo, F., Lenghardtová, J., Lesáková, D., Strieška, Ľ., Hanuláková, E., ... Boledovičová, M. (2010). *Pamätnica Ekonomickej univerzity v Bratislave [Memory book of the University of Economics in Bratislava]*. Bratislava: Vydavateľstvo EKONÓM.

Slovak Investment and Trade Development Agency. (2018, September). *Shared Service & Business Process Outsourcing Centers in Slovakia*. Retrieved from https://www.sario.sk/sites/default/files/content/files/sario-ssc-bpo-centers-in-slovakia-2018-09-20.pdf

Spišiaková, M. (2016). *El español actual. La unidad y la variedad*. Nümbrecht: Kirsch-Verlag.

Stein-Smith K. (2016). *The Career Connection - Foreign Languages as a Career Asset: The Importance of Foreign Language Knowledge and Intercultural Competence*. In: The U.S. Foreign Language Deficit. Cham: Palgrave Macmillan, pp. 23-32.

Weidersheim-Paul, F. (1972). *Uncertainty and economic distance: Studies in international business*. Stockholm: Almqvist & Wiksell.

E-Learning in Hungarian Higher Education: Experience at University of Sopron

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Abstract The study focuses primarily on the extent to which the spread of e-learning systems, their importance in development strategies, and the constructivist pedagogy, which has become more prominent in literature on pedagogy, have transformed the methodology of education. In answering this question, the authors, in addition to reading the literature, focused primarily on their own e-learning experiences gained in recent years through various development projects and the operation of their university e-learning portal. The results are mixed. While showing smaller results, a major transformation has not yet occurred. For the time being, e-learning does not provide a general solution to anomalies in the education system by any methodology. The result can be traced back to institutional, regulatory, pedagogical and financial reasons. Of course, the authors' conclusions can only be generalized to a limited extent, but the literature suggests that they may be more widely applicable.

Keywords: e-learning, higher education Moodle pedagogical approaches, teaching methodology.

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Introduction

It seems like a cliché, but technology really permeates all aspects of life. Higher education is also part of this phenomenon. Technology not only provides a background, but also transforms traditional processes. Knowledge sharing system through university lectures and seminars is complemented by an electronic platform that can be customized in a small group or per student instead of uniformity. Virtual Learning Environment (VLE) allows the renewal of educational materials and methods.

Educational strategies in many countries identify the orientation towards the contact hours of instructors as a typical problem of methodological practice in higher education (Kavitha, 2019). The main problem is that the relatively high number of instructor hours induces low number of independent student work, and it leads to learning-effectivity problems (Breakah, 2019).

This methodological 'scantiness' is a real problem, because of the following (Erdős & Koloszár, 2016):

- The student stagnates in the 'knows/remembers' and 'understands/interprets' knowledge levels of Bloom's taxonomy (Krathwohl, 2002; Huitt, 2011), while the 'apply/use' knowledge level provides knowledge recognized by the labour market, which can be acquired by learning by doing.
- The knowledge behind the marks earned by last-minute learning is not related to other knowledge or is rapidly devalued. 'Analysis', 'evaluation', and 'creation' levels in Bloom's taxonomy, which would link the long-term internalisation of knowledge and the actor with other blocks of knowledge, are missing or not sufficiently emphasized.
- Students' learning process is hectic and requires high levels of energy.

The acquisition of practical skills through task-oriented and project-centred learning offers a greater learning experience while it also approaches the expectations of labour market. However, this also requires a review of 'subject-oriented' and 'course-centred' education management.

As far as teaching methodology and teaching technology are concerned, explosive development has taken place in the world over the past two decades and especially in the past few years. Location has become less important in the process of learning. This does not relate to expanding digital or online content only. Online training forms and courses (MOOCs) are becoming more widespread; they enable the acquisition of knowledge blocks or specialized knowledge and skills. Virtual collaborative platforms are also replacing the local nature of training and research, where online practice and research can be done by sharing virtual space and real infrastructure.

Integrated developments are needed for higher education to have a credible and leading role in the new type of social knowledge sharing. Training structures, educational methods and content need to be modernized. In addition, providing skill and practice orientation, considering economic needs and developing digital skills are also important development goals.

Hierarchical offline knowledge sharing is complemented by electronic platforms. These e-learning (more accurately blended learning) solutions can be customized in smaller groups or per student instead of being uniform for all students. The tools that create a virtual learning environment include not only the renewal of educational materials but also the possibility of renewing teaching methodology. Therefore, the need for pedagogical and technological renewal cannot be separated. This also means that the introduction of e-learning solutions in higher education is a complex economic issue. One needs to invest not only in software but also in human resources and related organizational development for real success.

Our objective is to give a brief summary of the related literature and of our experiences.

The article focuses primarily on whether the changes in the learning environment and the pedagogical theory have led to changes in pedagogical practice. Of course, our conclusions are not necessarily general as they are based mainly on our own practical experience which is determined by many local factors. However, the problems raised by the literature are confirmed in practice.

Based on the learning environment and the studied literature, one might think that pedagogical transformation is almost inevitable. However, due to the contradictory experience in the literature and due to various institutional, regulatory, pedagogical and funding factors, this is questionable. These issues are briefly discussed among other dichotomies later in paper, in the section 'Experiment'.

Background

We first need to clarify the meaning of e-learning. There are several overlapping concepts that have emerged in time and space. Virtual Learning Environment (VLE) is mainly used in Europe and Asia, whereas the Learning Content Management System (LCMS) is mainly used in North America. The concept of Learning Management System (LMS) has also been distinguished in the past, but today these limits are mostly blurred. A unified system provides the framework, the user-friendly management and the development of content and personal learning environment (Personal Learning Environment – PLE). Instead of formerly existing delicate differences, these concepts can now be treated as synonyms. Managed Learning Environment (MLE), Managed Virtual Learning Environment (MVLE), Electronic Educational Technology and Learning Platform (LP) are roughly the same. Tóth & Bessenyei (2008) give a concise historical summary of the development of virtual learning environment.

The concept of e-learning used in the study refers to the form of the education and learning process assisted by info-communication tools, which is methodologically and structurally renewed and does not lack but transforms traditional classroom work. Therefore, we do not focus on resolving geographical and temporal constraints. In addition to distance learning, the blended learning form that can be used in daytime and correspondence type training is also part of e-learning; here, we focus mainly on the need for blended learning device, content and methodological development. The term 'e-learning' used in the title of the study was more pronounced because of its embeddedness.

According to their year of appearance, Learning Content Management Systems (LCMS) in higher education are the following: Blackboard (1997), Ilias (1998), OLAT (1999), Itslearning (1999), Claroline (2000), Moodle (2002), D2L (2004), Sakai (2005), eFront (2005), Canvas (2011), Uzity (2016), etc.

Online training forms are becoming increasingly widespread, which allows the acquisition of different knowledge blocks or special knowledge and skills. Massive Open Online Courses (MOOCs) provide open and massive access to knowledge blocks with short videos and interactive forums (Veress, 2016). The technology background is well suited for e-learning trainings. However, 'open' and 'bulk' as buzzwords work only partially. Indeed, the owner of knowledge material loses its primacy with open disclosure, which is contrary to the above principles.

At the same time, modern educational materials of a similar nature have a market. If higher education institutions are not at the forefront of the process, the business sector will take these steps. The involvement of teachers in higher education institutions is possible and this process has already started.

Moodle

One of the most common educational frameworks is the open source platform Moodle (i.e. Modular Object-Oriented Dynamic Learning Environment). Moodle runs approximately 109,000 registered portals in over 230 countries with over 18 million courses; it had around 156 million users and 1,615 million test questions on 1st May 2019 (Moodle, 2019).

There are several philosophical and rational arguments behind the widespread use of open source systems. The argument is often based on a cost-centred economic approach that focuses only on the costs that appear as expenditure. Such an approach does not consider other costs that are difficult to quantify (e.g. employee efforts that could otherwise be spent on other activities). Considering the constraints, free-access systems have a significant cost advantage, but their use can only be successful in a smaller circle due to the lack of wide support and a less user-friendly nature. There are always exceptions, and based on the impressive data, it seems that Moodle is truly exceptional.

Moodle as a learning (or primarily course) management system was elaborated to help teachers manage online courses and curricula with opportunities for rich interaction. Its open source and free software license and modular construction facilitate the development of additional functionality. The development of new plug-ins, modules, themes, etc., is undertaken by a globally diffused network of

commercial users as well as enthusiastic, non-commercial users. Instead of a knit system, the goal was to create a modular, communication-based system that could be used flexibly and creatively along different educational goals (Dougiamas & Taylor, 2003).

The declared philosophy of Moodle embraces a constructivist, social constructivist/constructionist approach to education. It underlines that learners and teachers can contribute to the educational experience in many ways. The essence of this method is that the job of a 'teacher' can transform from being the source of knowledge to being an influencer, connecting with participants in a more individual way which addresses their own learning needs. Also, the teacher can moderate debates and work in a way which collectively leads a group of learners towards its learning goals. Despite these aims, numerous social, pedagogical, organizational, technical, etc., factors related to knowledge management issues impede the predominance of social constructionist pedagogy. Moodle excellently works by conforming to traditional pedagogical principles and does not force the social constructionist style of learning and teaching, but it is the best at supporting and further improving it. Because of the ascending crisis of the 'traditional' style of teaching, social constructionist design becomes more and more exciting by seeking alternatives.

Pedagogical background

New educational-technological opportunities can lead to significant progress only with didactic and methodological renewal (Ollé, 2012). Pedagogical changes can be the basis for e-learning systems to become real e-learning platforms from mere 'curriculum repository' of traditional teaching materials (e.g. notes, books, lessons). Thus, e-learning systems can become platforms based on communicative fundaments, supporting individual and group work, forming a creative community, and supporting new teacher roles.

Many pedagogical methods can be used in the process.

Constructivist pedagogy has already been mentioned. According to constructivist pedagogy, learning is an internal construction process, so the student has a key role in the design, and activities based on existing knowledge can give the learning process a success (Richardson, 2003). The essence of a *flipped classroom* learning solution is that students learn the theory of the curriculum before the class, outside the classroom; they look at additional materials and videos, do smaller tasks, and focus on understanding and solving complex problems in the classroom (in line with the higher levels of Bloom's taxonomy) (Tóth, 2014). After the release of web 2.0, the research on *connectivism and network learning* has gained momentum (Bessenyei, 2007; Tóth & Bessenyei, 2008).

Creating *virtual classrooms* helps to teach you by creating surfaces that are independent of time and location (Frank-Voutsas, 2012). This can be done with well-known popular social networks (e.g. Facebook) (Kárpáti, Szálas, & Kuttner, 2012). Thus, it is not necessary to become acquainted with a new system, and the existing positive attitude to the system can also underpin the success of the learning process. Technological developments have also made it possible to develop *personal information manager*s (PIMs). Well-known *gamification* (Sandusky, 2015), which has become popular in recent years, is a good way to build education on the game play which makes hated learning fun. The online environment provides several tools for designing and managing it. *Learning by teaching* and *learning by doing* is aimed at developing higher levels cognition in accordance with Bloom's taxonomy, which can help develop *critical thinking* and *entrepreneurship*. E-learning frameworks can provide broader support for *project work* (Hülber, 2012) and *teamwork*, which is also highly desirable on the labour market. A computer background supports the execution, solving and mentoring of *simulation tasks* and *case studies* (Felder, Woods, Stice, & Rugarcia, 2000).

The changed characteristics of the age group to be taught should also be considered. 'Digital native' students are already getting information from multimedia sources, and they are happy to work with image, audio and video information. They like multitasking, networking, interactions, jumping randomly, using hyperlinks between information crumbs, and demanding instant confirmation, rewards, and content entertainment. This also means a significant cultural difference for mostly 'digital immigrant' teachers (Bessenyei, 2007).

Does social constructivism really work?

Moodle is designed on constructivist, social constructivist, social constructionist learning theories, but most courses created by Moodle are based on 'traditional' learning and pedagogical methods (Finnegan & Ginty, 2019). What is the reason for it? Is it comfort, laziness, conservatism, incomprehension, socialization patterns, institutional barriers, or maybe the insufficiencies of these theories? It is hard to answer this question in short.

Successful adaptation of learning methods with the assistance of Moodle in some institutions shows that social constructivist learning with Moodle is more than a fancy – it is a real alternative. However, it would be a mistake to avoid theoretical critics and to suggest that problems are attributable exclusively to the enumerated subjective factors. Constructivism is criticized on various grounds (Alanazi, 2016):

- Constructivism and other reformist educational theories have been most successful among children from privileged social backgrounds who have excellent teachers, committed parents, and wealthy home environments. The disadvantaged children, i.e. those lacking such backgrounds, benefit more from more explicit, more traditional instruction.
- Collaborative aspects of constructivist courses tend to produce autocracy of the majority, in which a few students' voices or interpretations dominate the group's conclusions, and dissenting students are forced to conform to the consensus.
- There are few hard evidences that constructivist methods really work. Constructivists, by rejecting the evaluation by testing and other external criteria, have made themselves unaccountable for their students' progress. Critics also say that studies of various kinds of instruction have found that students in constructivist classrooms have less basic skills than students in more traditional classrooms.

The assertions above are refuted by many theoretical and practical examinations, and there are numerous arguments on both sides.

Moodle tools

Following the methodological renewal described above, a typical development path for using Moodle devices can be as follows:

1. In the first step, the instructor provides online access to the traditional curriculum. The page functions as a 'learning repository'.
2. Second, he/she sets up a *forum* or *chat*, which is a passive role in its own, but it can induce student communication.
3. External activities, e.g. related videos, games, etc., are installed next.
4. *Tests* and *tasks* will be posted to provide self-control and to monitor progress.
5. Interactivity appears – *wiki*, *glossary*, and *database* tools can provide students with a knowledge base and a structured implementation of common tasks.
6. The instructor starts a special *forum* within the course, asks questions, his/her facilitator role is strengthened.
7. *Questionnaires* and *choices* increase interactivity, so students can provide feedback on developing curriculum and tasks.
8. The teacher analyses in-system predefined *surveys* and *feedbacks* to explore the composition of the group and refine the applied methods based on the results.
9. Using the *Workshop*, the instructor gives students the opportunity to evaluate each other's work (peer-review).

The experiment

According to our survey, Moodle is the number one e-learning framework for at least 15 Hungarian universities, but it is used at almost every Hungarian higher education institution.

Our Faculty started developing its e-learning system in 2002. Our system was built on Moodle already in the first, experimental phase. It was the first university-based Moodle-based system in Hungary. Since then, Moodle has become very popular around the world. For us, it was important that Moodle also offers a variety of pedagogical approaches. In recent years, we have studied a reform of pedagogical approaches in e-learning literature and the possibilities of their general introduction

in many international projects. We have never experienced the success of experimental constructivist methods. This has been mostly due to institutional and regulatory problems, but teacher resistance has also been felt.

Based on our experience, we have found that, for example, the introduction of education based on constructivist or connectivist pedagogy is not realistic and may not be appropriate. Therefore, we have encouraged the development of blended learning courses that complement and support traditional frontal education. After the pilot phase, the e-learning portal, which provides support for our entire training structure, has been in place since 2007. We nominated faculty and institute administrators and then we organized internal trainings in several waves. The collaborative e-learning portal has been operating as a framework ever since. The course instructors decide on the pedagogical method they follow, the curriculum they fill, the extent to which the communication and administrative modules are used, along with the expectations of the different levels. In case of problems, the administrators of the institute will be the first to help with solving the problems; the administrators of the faculty will follow in the second round. Based on our experience so far, the system facilitates the delivery of study materials to students and the communication within courses.

There is a serious theoretical debate about the need for a renewal of higher education pedagogy, unfortunately with little practical results. Of course, pedagogical reform has not been abandoned, but there are several obstacles to higher education. We run the e-learning portal from our own resources without any regular extra funding. Our resources are necessarily scarce, but we strive to keep the framework up to date, to maintain it, and to solve the problems that arise.

The system is currently (as of April 2019) used by 3,362 registered users (instructors, active and former students). It has 150 courses and the average of 1200-1800 daily user activities (LKK e-learning, 2019).

We have not achieved radical changes in pedagogical practice with Moodle. We do not see a clear relationship between the extent of system usage, the introduction of new pedagogical methods and the age of teachers as younger teachers do not use these tools to significantly higher degree. The 'significant cultural difference'

between young teachers and digital immigrant teachers as mentioned earlier was not experienced.

Interestingly, the pedagogical renewal has diverged from the usage of the system many times. Colleagues have introduced a number of cooperative student work activities in their courses in recent years, but the content of the classwork has been renewed in such a way that it has not generated work outside the contact lesson time for the instructors (and frequently not enough for the students, too). The pedagogically renewed usage of e-learning generates tasks not only in the development of course materials but also in the follow-up, feedback, and continuous evaluation of students' exercises related to lessons. Meanwhile, the salary of a postdoctoral assistant professor, for example, is lower than that of a cashier today. That is why some teachers choose the least time-consuming methods for the compulsory tasks and take a second job for a better livelihood. However, the disadvantage of this solution is that the problem mentioned at the beginning of the study, i.e. the higher number of instructor hours induces lower independent student work, is not solved.

However, to a limited extent, we have improved the efficiency of education. In addition, we have avoided frustration due to excessive expectations, and we (and the created structure) have allowed our colleagues to develop at their own pace. Participating in development – just uploading a pdf file – improves the colleagues' self-confidence and reduces their resistance to technology. The latter has also been supported with e-mail newsletters, some presentations with teachers' examples of good practice. Based on their feedback, students are also satisfied with the system.

Summary

Pedagogical transformation cannot take place without the transformation of the wider environment. In our experience, the transformation of learning environments' technical capabilities and the transformation of pedagogical theory do not break other barriers. This is especially the case when there is a great deal of uncertainty and contradiction in the means and purposes of pedagogical renewal.

The microenvironmental experience may be less specific from a scientific point of view. However, we feel that theoretical findings may be overshadowed by 'field' experiences.

References

Alanazi, A. (2016). A critical review of constructivist theory and the emergence of constructionism. *American Research Journal of Humanities and Social Sciences, 2,* 1-8. Retrieved from https://www.arjonline.org/papers/arjhss/v2-i1/18.pdf

Bessenyei, I. (2007). Tanulás és tanítás az információs társadalomban: Az E-learning 2.0 és a konnektivizmus [Learning and teaching in the information society: E-learning 2.0 and connectivism]. In Pintér R. (Ed.), *Az információs társadalom* [Information Society] (pp. 201-211). Budapest: Gondolat - Új Mandátum.

Breakah, T. (2019). Difference in Student Performance When Changing Course Duration. *Integrated STEM Education Conference (ISEC), IEEE*. pp. 199- 203.

Dougiamas, M., & Taylor, P. C. (2003). *Moodle: Using Learning Communities to Create an Open Source Course Management System*. EdMedia. Retrieved from http://research.moodle.net/id/eprint/33

Erdős, F., & Koloszár, L. (2016). E-learning a hazai felsőoktatásban: gazdaságossági megközelítés [E-learning in Hungarian higher education: An economical approach]. *Gazdaság és Társadalom*, *2,* 105-121.

Felder, R. M., Woods, D. R., Stice, J. E., & Rugarcia, A. (2000). The future of engineering education II. Teaching methods that work. *Chemical Engineering Education, 34*(1), 26–39.

Finnegan, M., & Ginty, C. (2019). Moodle and social constructivism: Is Moodle being used as constructed? A case study analysis of Moodle use in teaching and learning in an Irish higher educational institute. *All Ireland Journal of Higher Education, 1*(11). Retrieved from https://ojs.aishe.org/index.php/aishe-j/article/view/361

Huitt, W. (2011). Bloom et al.'s taxonomy of the cognitive domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved from http://www.edpsycinteractive.org/topics/cognition/bloom.html

Hülber, L. (2012). Az online projektmunka és megvalósításának eszközei: Az oktatási célú közösségi hálózatok használatának praktikus kérdései [Tools for online project work and implementation: Practical questions about using social networking for educational purposes]. *Információs társadalom, 12(3),* 78-91.

Kárpáti, A., Szálas, T., & Kuttner, Á. (2012). Közösségi média az oktatásban: Facebook-esettanulmányok [Social media in education: Facebook case studies]. *Iskolakultúra*, *10*, 11-42.

Kavitha, R. K. (2019). Sentiment research on student feedback to improve experiences in blended learning environments. *International Journal of Innovative Technology and Exploring Engineering*, *11*(8), 159-163.

Krathwohl, D. R. (2002). A Revision of Bloom's taxonomy: An overview. *Theory Into Practice*. *41*(4), 212-218. doi: https://doi.org/10.1207/s15430421tip4104_2

LKK e-learning (2019). Portal LKK e-learning. Retrieved from https://bismarck.nyme.hu/ktk_elearning/

Moodle (2019). *Moodle Statistics.* Retrieved from https://moodle.net/stats/

Ollé, J. (2012). A tudás alapú társadalom iskolája: A társadalom iskolája [A school of knowledge-based society: School of Society]. *Információs társadalom, 12*(3), 7-14.

Richardson, V. (2003). Constructivist pedagogy. *Teachers College Record, 105*(9), 1623-1640. doi: http://dx.doi.org/10.1046/j.1467-9620.2003.00303.x

Sandusky, S. (2015). *Gamification in education*. Tucson, AZ: University of Arizona. Retrieved from http://hdl.handle.net/10150/556222

Tóth, R. (2014). Tükrözött osztályterem, az Információs társadalom pedagógusának egyik innovatív tanulásszervezési módszere [Flipped classroom as one of the innovative ways for teachers to organize information society courses]. *Fluentum, 1*(3), 1-14. Retrieved from http://www.fluentum.hu/fluentum_I_3_tothrenata.pdf

Tóth, Zs., & Bessenyei, I. (2008). A konstruktivista oktatás környezete és a Moodle [Moodle and social constructivism]. *Információs társadalom*, *8*(3), 41-50.

Veress, J. L. (2016). Az E-learning és az internetes távoktatásban rejlő lehetőségek: Fókuszban a fejlesztések sikerességi tényezői [E-learning and online distance learning opportunities: Focus on success factors]. *E-conom, 5*(1), 51-64. doi: 10.17836/ec.2016.1.051

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