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The functional value of active learning as assessed by business and economics students

Abstract

Research background and purpose: This article discusses the issue of improving the quality of educational services at universities. It presents the opinion of business and economics students on the functional value of different learning methods. The aim of this study was to identify how, in the students' opinion, selected active and passive forms of conducting classes affect the increase in theoretical knowledge and practical skills during the course.

Design/methodology/approach: The study was conducted at the university in Poland. It involved 149 students who were taking part in one of the management courses. Survey data were collected using a paper questionnaire. Descriptive statistics were calculated in the analysis. Hypotheses tested using the Student's t-test, the F Anova test and Dunn-Bonferroni post-hoc tests.

Findings: The difference between the average ratings of active and passive forms of classes in the context of acquiring theoretical knowledge is not statistically significant. However, the research confirmed that in the students' opinion, active learning adds more functional value in shaping practical skills than passive participation in classes. During the implementation of the analysed course, the highest rated learning methods were group workshops and solving tasks in groups.

Value added and limitations: The article presents how students assess the value of different forms of teaching in a lean management course. This study can provide guidance to researchers and teachers on how to improve courses in management studies in the context of shaping students' theoretical knowledge and practical skills. The article also indicates the possibility of using a method of measuring course quality that uses the concept of functional value. This study is limited to a case study of one course that included only selected learning methods.

Keywords: *active learning, functional value measurement, effective learning methods, course improvement, higher education*

JEL Classification: I21; I23

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1. Introduction

The dynamics of changes in socio-economic life observed in recent years mean that universities must learn to quickly adapt educational services to the constantly changing needs and expectations of students and the labour market. Currently, employers expect future employees to have not only theoretical knowledge, but also the ability to use it in practice at work. This problem is particularly important, among others, in the case of studies related to economics and business, where the practical use of knowledge and skills required during studies can have a significant impact on the development of a professional career. For this reason, the quality of the educational offer should be improved not only in the context of the aesthetics of lecture halls, the availability of equipment or literature on the library. Teaching services, in addition to intellectual development, should ensure the implementation of specific goals aimed at the needs of the labour market. Therefore, the process of designing and continuous improvement of the course plays an important role in ensuring the quality of education.

According to the idea of constructive alignment (CA) formulated by Biggs (1996), when designing a course, the first step is to determine the results that we want to achieve in the teaching process, and then adapt teaching and assessment to these results (Loughlin et al., 2020). Therefore, the teaching system should define what to teach, how to teach and how to assess results. Hence, there must be precise teaching objectives with teaching methods that effectively support students in achieving these objectives (Deibl et al., 2018). This is also important because matching teaching methods to students' needs and preferred learning style affects students' academic achievements (Zeeb, 2004) and their success in the labour market. Especially since, as indicated by (Gawrysiak et al., 2024) currently one of the problems and challenges of Polish universities is adapting curricula to the labour market.

For teachers, when designing a course, choosing the right teaching methods that will increase student engagement in work and improve their academic performance is often difficult. The literature indicates that students can show both positive and negative reactions to active learning (Shekhar et al., 2020; Nguyen et al., 2021). For example, Hood et al. (2021) prove that the various active learning methods they analyse differ in the degree to which they cause anxiety in students, which can negatively affect their engagement in work. Therefore, although the problem of choosing teaching methods, especially in the context of active and passive learning methods, is widely described in the literature, there is still a need to analyse this topic in the context of student perception. This issue is described in more detail in the "theoretical framework" section. Continuing considerations in this area may also be justified by the changing needs and expectations of students, who are currently largely people classified as "Generation Z". The topic is relevant because this generation is the newest generation to enter the business workforce

today (Kyrousi et al., 2022). Gen Z exhibits unique learning characteristics that are different from previous generations (Alruthaya et al., 2021).

This article focuses on the element of course design that concerns the proper selection of teaching methods that are consistent with the current needs and expectations of students. The question therefore arises: what teaching and learning methods, in the students' opinion, are most effective in increasing theoretical knowledge and shaping practical skills of students in economics and business studies? To answer this question, the goal was formulated, which is to identify how, in the students' opinion, selected active and passive forms of conducting classes affect the increase of theoretical knowledge and practical skills during the course. To achieve this goal, a course on the concept of lean management was selected, which is conducted at the university in Poland, in fields related to economics and business. The study used the customer value creation framework (Smith & Colgate, 2007) and students were asked, after completing the course, how they assessed the functional value of different forms of teaching.

2. Theoretical framework

2.1. Active and passive forms of teaching in the context of improving the quality of education

As Ang et al. (2021) note, formal learning today must take into account the connections between theory and practice and support student engagement with teachers and peers. In the literature, different approaches to learning and teaching are distinguished (Popil, 2011; Pawlak & Kudelska, 2012; Sivarajah et al., 2019; Pech et al., 2021). One can distinguish between individual and social learning of students. In addition, students have different learning styles and approaches to knowledge. For this reason, the process of education at higher education is supported by different teaching methods, which are difficult to classify unambiguously.

Many publications divide teaching methods into two groups: traditional methods, also called passive methods, and innovative methods, which are also referred to as active methods (Smith et al., 2006; Samwel Mwasalwiba, 2010; Chi & Wylie, 2014; Riley & Ward, 2017). Passive teaching methods are often associated with traditional lectures, during which professors present students with a large amount of material in a relatively short time (Miner et al., 1984), and students passively absorb the information presented to them. Active learning, on the other hand, can be understood as "teaching activities that engage students in doing things and thinking about what they are doing" (Bonwell & Eison, 1991). This definition of active learning is very broad and can encompass a variety of activities. For example, a lecturer interrupting a lecture and asking students to present their point of view, students solving complex problems, or analysing case studies together.

Thus, active learning focuses more on developing students' skills than on giving them information (Brame, 2016). In addition, active learning is often associated with other approaches such as reverse learning, collaborative learning, inquiry-based learning, problem-based learning, and technology-enhanced learning (Williams et al., 2022).

In turn, Ganyaupfu (2013) divided teaching methods into three categories: teacher-centred methods (This is a theoretical and memorizing approach. Students obtain information from the teacher without building their level of involvement in the subject being taught. In this approach, the lecturer maximizes the amount of information provided while minimizing time and effort), student-centred method (It is based on increasing students' activity to encourage them to learn real-world problems based on applied knowledge. This approach aims to increase students' interest, analytical research, critical thinking and joy among students), interactive teacher-student method (This method uses strategies used in both the teacher-centred approach and the student-centred approach. It encourages students to seek relevant knowledge and proposes moving away from the monopoly of lecturers giving information to the students).

In relation to active learning, the higher education literature also distinguishes three curricula: (a) formal, which defines what students are expected to learn in prescribed courses (e.g. lectures and seminars), (b) implicit, which includes hidden behaviours, beliefs, and attitudes (i.e. social and cultural rules, including disciplined behaviour and adherence to deadlines, that students unconsciously learn from lecturers and peers), and (c) informal, which refers to the personal and unstructured transmission of information from lecturers to students before or after classes (e.g. during everyday conversations). It includes, for example, student projects, group activities, voluntary courses and other extracurricular activities (Decius et al., 2024).

There is ample evidence in the literature that the use of active teaching methods translates into greater student engagement in learning and, consequently, improves student achievement (Armbruster et al., 2009; Freeman et al., 2014; Hacisalihoglu et al., 2018; Oliván Blázquez et al., 2019; Kovarik et al., 2022). For example, research conducted by Hailikari et al. (2022) indicates that the use of active forms of teaching and learning promotes deep student engagement in learning. The authors point out that traditionally organized courses with lectures and final exams and no engaging activities encourage students to adopt an unreflective or mixed approach to learning. They argue that teaching that does not require active engagement on the part of students encourages them to disengage.

Research shows that despite the benefits of active learning, many higher education institutions still employ traditional, teacher-centred instruction (Børte et al., 2023). Miller and Metz (2014) indicate that barriers to the adoption of active learning by faculty may include a lack of necessary class time, a high level of comfort with traditional lectures, and insufficient time to prepare materials. In addition, some researchers indicate that the resistance of students to engage in such lessons may be a problem

with the use of active learning (Shekhar et al., 2015). Some research findings also suggest that active learning approaches are no better than passive learning approaches in terms of broad learning goals, even though active learning approaches can improve student learning outcomes in terms of narrowly defined learning goals (Michel et al., 2009). It is also important to note that despite the abundance of literature on the benefits of active learning and specific active learning strategies, there is little research on students' perceptions of the value, costs and self-efficacy of participating in active learning (Cooper et al., 2017).

2.2. Student value frameworks in the context of assessing the quality of education

Looking at universities and educational services in market categories, from a marketing perspective, is not new (Hemsley-Brown & Oplatka, 2006; Ng & Forbes, 2009). In this context, the activities of universities in the field of ensuring the quality of education are constantly being developed. The aim is for universities to measure, analyse and improve the educational processes in order to fully meet the needs and expectations of students, who can be treated as a special type of customers (Ludwiczak, 2023). It should be kept in mind that students cannot be identified with buyers because education is more than just a product in the form of knowledge that the student passively accepts (Franz, 1998). According to the concept of service dominance logic, the customer (and in this case the student) should not only be the entity evaluating the service, but also co-create its value (Vargo & Lusch, 2004; Vargo and Lusch, 2008). Therefore, designing or improving educational services without knowledge of how they are received by students at all stages of their implementation may reduce the value created in the process.

In the literature, customer value is interpreter in various ways. In general, it is "the customer's overall assessment of the utility of a product based on the perception of what is received and what is given" (Zeithaml, 1988, p. 14). In turn, within the exchange theory, Kotler (1972) defines this transaction as "an exchange of value between two parties. Valuable things do not have to be limited to goods, services and money; they include other resources such as time, energy and feelings". Taking this into account, it can therefore be stated that from the point of view of market orientation, the basis for the functioning of universities is their ability to provide students with value in the form of knowledge, skills and appropriate behaviours and attitudes that are acquired in the didactic process. This means that the effect of the didactic process should be the graduate's knowledge and socio-cultural adaptation. The value for the student is also a certain ratio of the benefits received (e.g. acquired professional competences) to the costs incurred and sacrifices that the educational process at the university requires.

There are many classifications of customer value in the literature (Park et al., 1986; Sheth et al., 1991; Ulaga, 2003; Holbrook, 2005; Payne et al., 2017). However, due to the specific nature of educational services, the typology of value proposed by Smith and Colgate (2007) seems to be justified. They identified sources of value creation, which include: products, information, interactions, environment, transfer of possession (ownership). Each of these sources generates value that can be classified into one of four types of value: functional (instrumental) value, experiential (hedonic) value, symbolic (expressive) value, cost (sacrifice) value. Functional (instrumental) value is the degree to which a product (good or service) possesses the features desired by the customer, is useful to them, or fulfils the desired function. This type of value is distinguished by three key aspects: the first is the correct, accurate, or appropriate features, functions, attributes, or characteristics (e.g. aesthetics, quality, customization, or creativity), the second is the appropriate outcomes (e.g. reliability, quality of workmanship, or service support outcomes), and the last is the appropriate outcomes or consequences (e.g. strategic value, effectiveness, operational benefits, and environmental benefits) (Smith & Colgate, 2007). Functional value therefore refers to the practical, objective benefits that a product or service provides to the user. It is about how well a product performs its basic functions and performs its intended tasks. Although the understanding of functional value proposed by these authors is not new, it coincides with how this type of value is currently understood (Lou & Xie, 2021; Aarikka-Stenroos et al., 2021; Hartini et al., 2022). In relation to teaching services at a university, functional value can be considered as the degree to which participation in the course increased the student's knowledge and skills, and indicate whether the characteristics of the service were appropriate (did the classes meet the expectations?), whether the quality of the service was appropriate (did the instructor meet the expectations?), and whether the results achieved thanks to the service provided are appropriate (whether the knowledge acquired is useful).

2.3. Students' perceptions regarding the value of active and passive learning methods

In order to identify the existing literature on the discussed topic, a narrative systematic literature review was conducted (Mishra & Mishra, 2023). The review process was designed based on the guidelines proposed by Snyder (2019) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology (Moher et al., 2010). For this purpose, the following research question was posed: Does the use of active learning methods lead to greater value in terms of acquiring theoretical knowledge or practical skills, in the opinion of management students? To answer this question, a dedicated literature search strategy was developed. The Web of Science database was selected for the study because it offers high-quality and influential scientific articles. The

following sequence of keywords was used in the search criteria: ("teaching methods" OR "learning methods" OR "active learning" OR "passive learning") AND ("student* perception" OR "student* assessment" OR "student* satisfaction measurement" OR "value measurement") AND (management OR business OR economics). The search included all publications except retracted materials and editorial content. The research was limited to the period 2013–2025, as Generation Z began entering universities around 2013. Publications were limited to those published in English. The subject area was restricted to the following categories: Education Educational Research, Education Scientific Disciplines, Management, Business, Business Finance, and Social Sciences Interdisciplinary.

Inclusion criteria comprised quantitative, qualitative, or mixed-method empirical studies on students' perceptions of the value of active and passive learning methods in management courses implemented within business or economics-related programs. Exclusion criteria included studies on teaching and learning methods that did not address students' assessment of the value of different course methods, as well as studies focusing on non-management courses. Figure 1 presents a flowchart illustrating the study selection process.

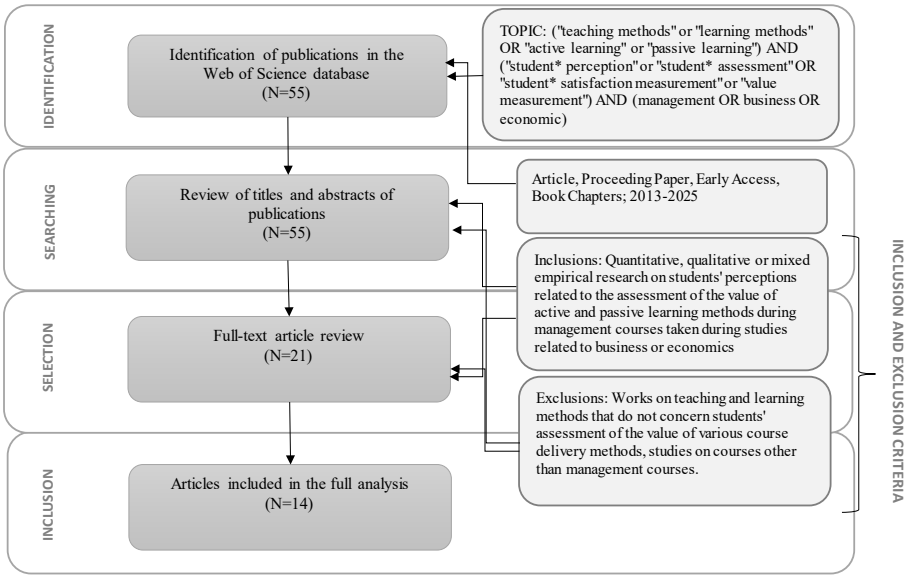

Figure 1. **Flowchart presenting the research selection process**

Source: own study

The literature analysis has shown that, in the opinion of management and economics students, the use of active learning methods, compared to passive learning methods, contributes to greater value, both in terms of acquiring theoretical knowledge and developing practical skills. In several studies (Maheshwari & Seth, 2019; Souad, 2016; de la Puente Pacheco et al., 2021), students indicated that methods such as the flipped classroom, project-based learning, or case studies facilitated a better understanding of theory through its practical application. Additionally, the combination of lectures with active material processing techniques (e.g., discussions, simulations, project tasks) resulted in deeper knowledge acquisition compared to traditional lecture-based teaching. Some of the analyzed studies (Ainsworth, 2021; Sierra & Suárez-Collado, 2022; Holmes et al., 2022) showed that active methods, such as simulations, service-learning, and team-based learning, significantly develop practical skills (cooperation, negotiation, problem-solving, communication). Students rated these methods as more useful and engaging than passive learning. Researchers also pointed out that active learning increases student motivation, engagement, and overall satisfaction. Conversely, passive methods (mainly lectures) were perceived as less effective, particularly in the development of soft and professional skills (Perez-Perez et al., 2017; Iahad et al., 2013; Koivisto, 2014). Maheshwari and Seth (2019) further noted that active methods demand greater independence from students and may pose a challenge for those who are less motivated. Nevertheless, even considering these limitations, students appreciated the higher added value of active methods compared to passive learning.

Although the issue of students' perceptions of active and passive learning methods in management courses is discussed in the literature, this review has identified notable research gaps. First, there is a paucity of comparative research on the use of active learning methods across various management courses. Second, most studies focus on individual course cases (e.g., accounting courses), raising the question of whether students' assessments of active methods differ depending on the specific course. Third, most studies originate from India, Colombia, Tunisia, or Anglo-Saxon countries, highlighting a lack of research on the evaluation of active learning methods in Central and Eastern European countries, including Poland. Referring to the findings of the literature analysis, it can be concluded that the empirical research presented in this article contributes to expanding the scope of courses in which this issue is studied. It provides evidence regarding the perceptions of students from Central and Eastern Europe and compares various active and passive learning methods implemented within a single course.

3. Methods

The general intention of the research project was to identify the value delivered to students during the lean management course, in the context of achieving the course objective, which is "Acquiring knowledge in the field of lean management by students and developing skills in practical application of this concept in production and service organizations". In connection with this, the research question was posed: What teaching and learning methods are most effective in increasing theoretical knowledge and developing practical skills of students in economics and business studies? In order to answer them, the objective of the empirical study was formulated, which is to identify how, in the students' opinion, selected active and passive forms of conducting classes influence the increase of theoretical knowledge and practical skills during the course.

In relation to the above-mentioned objective, two research hypotheses were formulated:

H1: Active learning, in students' assessment, adds more functional value to the acquisition of theoretical knowledge than passive participation in classes.
H2: Active learning, in students' assessment, adds more functional value to the acquisition of practical skills than passive participation in classes.

3.1. Context and participants

The study concerns the evaluation by students of a lean management course, which in all the above-mentioned forms and for the entire group of students studied was conducted by one lecturer and was implemented according to the same curriculum. The course curriculum included both formal and informal learning methods. Active and passive learning methods were used during the course, which are described in Table 1.

Table 1. **Characteristics of classes conducted as part of the lean management course**

Type of classes	Characteristics	Group of teaching methods		Curriculum	
		Active	Passive	Formal	Informal
Lecture	Traditional lecture, during which the lecturer conveys information to a large group of listeners using a multimedia presentation. The lecture ends with a written exam assessing theoretical knowledge.		x	x	

Instructional videos	During the classes, students watch short (approx. 10 minute long) videos showing how the discussed solutions are used in enterprises.		x	x	
Workshops	Students in teams (5-6 people) design a workstation in accordance with the 5S technique using specially prepared visual objects, then together with the instructor and other teams, the designed workstations are tested, discussed and jointly assessed.	x		x	
Solving tasks	Students in groups (3-4 people) solve a task together, which consists of drawing a value stream map (VSM) using data provided by the instructor.	x		x	
Group project	Students in teams (2-3 people) throughout the course, outside of class, prepare projects in the form of a case study, consisting of analysing the process in an organization of their choice and designing improvement solutions.	x			x
Presentations of projects made by other students	During classes, students look at projects and participate in discussions on ideas for improving other teams in the class.	x		x	
Individual consultations with the instructor	During the course, students, apart from formal activities in class, have the opportunity to individually discuss their problems or doubts related to the implementation of projects.	x			x
Presentation of one's own project	Students present their projects during classes, which are discussed with all students and the instructor and assessed.	x		x	

Source: own study

The course was conducted in first-cycle studies. In the case of full-time studies in economics and management, the course was conducted for 30 hours (15 hours of lectures and 15 hours of exercises), in part-time studies for 18 hours (9 hours of lectures and 9 hours of exercises) and 2 ECTS points could be obtained, while in the case of logistics, the course was conducted in full-time studies for 45 hours (15 hours of lectures and 30 hours of exercises), in part-time studies for 27 hours (9 hours of lectures and 18 hours of exercises) and 3 ECTS points could be obtained. The methods of conducting classes were the same in all fields of study. The difference was that the scope of the material was extended in the logistics field of study.

The study was conducted at the university in Poland. It involved students from the Faculty of Economics and Management. All 198 students who participated in the lean management course were invited to participate in the study. The study involved 149 students, which constitutes 75.25% of course participants. The detailed structure of the study group is presented in Table 2.

Table 2. **Respondent's profile (N = 149)**

Age	**Up to 25 years**	**26-35 years**	**36-45 years**	**46-55 years**
Number of students	134 (89,93%)	9 (6,04%)	4 (2,69%)	2 (1,34%)
Gender	Female	Male	Other	
Number of students	89 (59,73%)	59 (39,60%)	1 (0,67%)	
Type of studies	Full-time	Part-time		
Number of students	95 (63,76%)	54 (36,24%)		
Field of study	Logistics	Economy	Management	
Number of students	38 (25,50%)	62 (41,61%)	49 32,89%)	

Source: own study

3.2. Materials

Immediately after completing the course, students were asked to voluntary participate in the study and fill out a paper questionnaire. The study was conducted in 2023 in a lecture hall. The method of conducting the study guaranteed students full anonymity. Before the study, the purpose and basic issues related to the study were explained to the participants in detail so that students would not have problems filling out the questionnaire. The questionnaire was based on the typology of customer value proposed by Smith and Colgate (2007).

Respondents were asked how the individual forms of classes influenced the development of lean management competencies in terms of (a) increasing theoretical knowledge of lean management, (b) increasing practical skills in using lean management. A five-point rating scale was used for the measurement, where: 1 – does not add value (is not useful), 2 – adds little value, 3 – adds moderate value, 4 – adds significant value , 5 – is crucial in increasing value (is necessary to achieve the goal of the classes).

3.3. Analysis

Descriptive statistics (mean, standard deviation, 95% confidence interval for the mean) were calculated in the analysis. Hypotheses concerning two means were tested using the Student's t-test. Hypotheses comparing more than two means were verified using the F Anova test (due to the unevenness of the groups, a nonparametric test was used) and Dunn-Bonferroni post-hoc tests to determine which pairs of means had statistically significant differences. The significance level of $p<0.05$ was adopted, and for hypotheses in which the direction of dependence was formulated, a one-sided p value was given.

4. Results

4.1. H1. Active learning, in students' assessment, adds more functional value to the acquisition of theoretical knowledge than passive participation in classes

First, the types of classes described in Table 1 were analysed in two groups: active methods of conducting classes (including: workshops, solving tasks, group project, presentations of projects made by other students, individual consultations with the instructor, presentation of one's own project) and passive methods of conducting classes (including: lecture, instructional videos) in the context of acquiring theoretical knowledge.

As shown in Table 3, the result of the Student's t-test was $t(148) = 0.516$, $p = 0.303$, indicating that the difference between the average grades of active and passive forms of classes is not statistically significant for acquiring theoretical knowledge. This means that the research hypothesis H1, which assumes that active learning adds more value to gaining theoretical knowledge, was not confirmed. Therefore, there is not enough evidence to state that active learning is superior to passive participation in lectures in the students' assessment in terms of gaining theoretical knowledge.

Table 3. **Student's t-test results for variables active and passive learning in acquiring theoretical knowledge**

Groups of learning methods	Average rating				T test result*
	M	SD	-95% CI	+ 95% CI	
Active learning	4.09	0.70	3.97	4.20	t=0.516 p=0.303
Passive learning	4.06	0.87	3.92	4.20	

* Student's t-test for dependent groups, statistical significance value p one-sided

Source: own study

4.2. H2. Active learning, in students' assessment, adds more functional value to the acquisition of practical skills than passive participation in classes.

The results of the analysis of the types of classes divided into two groups: active methods of conducting classes (including: workshops, solving tasks, group project, presentations of projects made by other students, individual consultations with the instructor, presentation of one's own project) and passive methods of conducting classes (including: lecture, instructional videos) conform hypothesis H2.

As shown in Table 4, the average assessment of active forms of classes in terms of acquiring practical skills is statistically significantly higher than the average assessment of passive classes. The result of the Student's t-test was t(148)=2.492, p=0.007. This means that active learning, in the students' assessment, adds more value to acquiring practical skills than passive participation in classes.

Table 4. **Student's t-test results for the variables active and passive learning in acquiring practical skills**

Groups of learning methods	Average rating				T test result*
	M	SD	-95% CI	+ 95% CI	
Active learning	4,02	0,71	3,91	4,14	t=2,492 p=0,007
Passive learning	3,84	0,94	3,69	3,99	

* Student's t-test for dependent groups, statistical significance value p one-sided.

Source: own study

The greater value of active learning in relation to passive learning is shown in Table 5, where the distribution of average assessments of the usefulness of classes in acquiring practical skills for individual groups of learning methods is visible. According to 2.7% of students, passive learning does not bring any value to the acquisition of practical skills, and none of the students assessed active forms of learning in this way. At the same time, the group of students who assessed active forms of learning as bringing significant value or necessary to the acquisition of practical skills was larger than the group of students who assessed passive forms of learning in the same way.

Table 5. **A summary presenting the distribution of average assessments of the usefulness of classes in acquiring practical skills for individual groups of learning methods**

Average* assessment of the usefulness of classes in acquiring practical skills (% - response percentages)					
Groups of learning methods	1,00-1,49**	1,50-2,49	2,50-3,29	3,50-4,49	4,50-5,00
Active learning	0,0%	2,7%	18,1%	51,7%	27,5%
Passive learning	2,7%	2,0%	17,4%	44,3%	33,6%

* The arithmetic mean of the grades given to particular groups of learning methods.
** Grading scale: 1,00 -1,49 – does not add value (is not useful), 1-50 - 2,49 – adds little value, 2,50 – 3,49 – adds moderate value, 3,50 – 4,49 – adds significant value , 4,50-5,00 – is crucial in increasing value (is necessary to achieve the goal of the classes).

Source: own study

A detailed analysis of all eight types of classes described in Table 1, in the context of their usefulness in acquiring practical skills, showed that the percentage distribution of students' grades is similar to the one in the case of acquiring theoretical knowledge.

The distribution of ratings presented in Table 6 shows that in the opinion of students, the greatest value in acquiring practical skills is given to active classes in the form of workshops (It is necessary to achieve the purpose of the classes for 60% of the respondents and it brings significant value to 32% of the respondents) and joint solving of tasks in groups (It is necessary to achieve the purposes of the classes for 49% of the respondents and it brings significant value to 34.9% of the respondents). In turn, they get the least value from getting to know the projects of other teams combined with discussion of these projects and passive participation in lectures.

Table 6. **A summary presenting the distribution of assessments of usefulness of classes in acquiring practical skills for individual types of classes**

Groups of learning methods	Assessment of the usefulness of classes in acquiring practical skills (% - Response percentages)					
		1*	2	3	4	5
Active learning	W**	0,0	4,0	4,0	32,0	60,0
	S	0,0	5,4	10,7	34,9	49,0
	GP	2,0	7,4	14,1	36,9	39,6
	PO	2,8	11,8	25,7	34,7	25,0
	IC	0,7	2,7	14,3	34,7	47,6
	P	2,0	4,9	16,7	36,1	40,3
Passive learning	L	2,7	10,1	20,1	36,2	30,9
	V	3,4	6,7	25,5	29,5	34,9

* Grading scale: 1 – does not add value (is not useful), 2 – adds little value, 3 – adds moderate value, 4 – adds significant value , 5 – is crucial in increasing value (is necessary to achieve the goal of the classes).
** W – Workshops; S – Solving tasks; GP – Group project; PO- Presentations of projects made by other students; IC - Individual consultations with the instructor; P – Presentation of one's own project; L – Lecture, V – Instructional videos.

Source: own study

The ranking of the usefulness of classes in acquiring practical skills, presented in Table 7, calculated on the basis of the average assessment of individual types of classes, indicates that the highest rated learning methods in the context of acquiring practical skills are group workshops (M=4.44) and solving tasks in a group (M=4.34). The following have slightly lower value in the opinion of students: independent work on a project (M=4.07), presentation of one's own project (M=4.07) and the possibility of individually discussing one's problems related to the preparation of the project with the instructor (M=4.05). The least useful in shaping practical skills in the opinion of students are instructional videos (M=3.86), lectures (M=3.83) and familiarizing yourself with projects of other teams combined with discussion of these projects (M=3.63).

Table 7. **Ranking of assessments of individual forms of classes – usefulness of classes in acquiring practical skills**

Ranking place	Type of classes*	Mean (M)
1	W	4,44
2	S	4,34
3	GP	4,07
4	P	4,07
5	IC	4,05
6	V	3,86
7	L	3,83
8	PO	3,63

* W – Workshops; S – Solving tasks; GP – Group project; PO- Presentations of projects made by other students; IC - Individual consultations with the instructor; P – Presentation of one's own project; L – Lecture, V – Instructional videos.

Source: own study

4.3. Differences in the assessment of different forms of classes – paired test (nonparametric ANOVA Kruskal-Wallis test and Dunn-Bonferroni post-hoc test)

The analysis using the Kruskal-Wallis nonparametric ANOVA test, which compared the mean ratings of individual types of classes in terms of value delivery, showed that for practical skills the mean ratings of individual types of classes differed in a statistically significant way: the test result was $H(7)= 47.005$, $p<0.001$ (Table 8).

Table 8. **Differences in the assessment of the usefulness of various forms of classes for raising the level of practical skills (post-hoc Dunn-Bonferroni test)**

	L	V	W	S	GP	PO	IC	P
L				xxx				
V				xx				
W						xx		

S	xxx	xx				xxx		
GP						x		
PO			xx	xxx	x		x	x
IC						x		
P						x		

* W – Workshops; S – Solving tasks; GP – Group project; PO- Presentations of projects made by other students; IC - Individual consultations with the instructor; P – Presentation of one's own project; L – Lecture, V – Instructional videos.
x- statistically significant difference at the level of $p<0.05$
xx- statistically significant difference at the level of $p<0.01$
xxx- statistically significant difference at the level of $p<0.001$
empty field – no statistically significant relationship between variables

Source: own study

Analysing the differences in pairs of assessments of individual forms of classes, the greatest differences occur in the assessments of classes: presentations of other students' projects (5 differences) and learning to map (3 differences). Presentations of projects by other students are rated the lowest (average rating M=3.63) and differ statistically significantly from all other active forms of learning. The form of solving problems in groups – learning to map is assessed at a similar level as passive forms of classes – lecture (there are no significant differences between them). It can therefore be stated that students give the same importance to other students' presentations as to the instructor's lectures and assess the contribution of both of these forms to the acquisition of practical skills at a similar low level. Learning to map came second in terms of the average assessment of its importance for acquiring practical skills, which is significantly higher than the assessments of passive forms (lecture, film) and presentations by other students. Mapping does not differ significantly from other forms of active classes.

5. Discussion and conclusion

This article presents the opinions of first-cycle business and economics students on the functional value of different learning methods in acquiring theoretical knowledge and practical skills during a lean management course. As previously indicated, active learning methods were assessed as more valuable than passive participation in classes of in terms developing the ability to use this concept in practice. Therefore, although the H1 hypothesis could not be confirmed, it can be concluded that these studies therefore confirm the general view that students prefer and rate active learning methods higher than passive ones (Gilboy et al., 2015; Riley & Ward, 2017; Cooper et

al., 2017). When designing courses in economics and business, it is therefore worth considering active learning methods, not only because of the better acquisition of theoretical knowledge by students, but also because of the need to shape their practical skills, which are very much needed on the labour market. When deciding to choose active teaching methods, it should be taken into account that students may be reluctant to participate in active learning (Shekhar et al., 2020; Nguyen et al., 2021). Some teaching methods may limit students' engagement and satisfaction, for example due to fear of public speaking or answering the teacher's questions in front of a group of peers (Hood et al. 2021).

Analysis of individual methods of conducting classes indicated that the most valuable learning methods are those in which students in the class, in small groups (on average 3-5 people), actively solve problems or tasks and can benefit from the teacher's support during these classes. Students' high ratings for classes conducted in the form of workshops or group work confirm Hood's et all. (2021) conclusions that students prefer learning methods that do not generate anxiety. Despite the fact that preparing this type of didactic classes requires a lot of effort from teachers, when designing a course it is also worth taking into account such learning methods as workshops or solving problems in groups. They are valuable for students, they can increase their involvement in the course and improve satisfaction.

On the other hand, students consider passive classes in the form of lectures and presentations of their peers' projects, combined with discussions on these projects, to be the least valuable. The low evaluation of this learning method may result from the number of projects presented. In a group of students in a class of about 25-30 people, a dozen or so projects are presented during the classes. Therefore, after listening to several presentations by their peers, students may perceive the subsequent ones as less valuable, repetitive information. The solution in this case could be to increase the project groups to teams of 4-5 people. However, there is a risk of the phenomenon of "free-riding in group projects" (Benning, 2024). In turn, abandoning this learning method limits the correct verification and assessment of the skills acquired by the student during the course. Therefore, this method cannot be rejected solely because of the low student evaluation. It is also difficult to disagree with Hodges's (2020) opinion that effective active learning strategies that affect the level of cognitive engagement of students depend on many factors, including the design of questions and activities, the lecturer's instructions, incentives for students to participation and group dynamics. The appropriate selection of teaching methods when designing a course is therefore a very complex process, requiring the analysis of many different aspects and perspectives, both of students and teachers and indirectly of other stakeholders, such as future employers.

This study is limited to a case study of one course that included only selected learning methods. The conclusions from this study are preliminary because they refer to pilot

studies covering one case of evaluating a lean management course at a Polish university. The results of the assessment of the functional value of active and passive learning may therefore be different when using different sets of learning methods and in different courses. For these reasons, the conclusions from this study cannot be generalized. However, it is important to remember the problem pointed out by Cater III and Varela (2009) that there is no common definition of active learning. Researchers and teachers are free to use a wide variety of activities that qualify as active learning, making it difficult to compare studies. In summary, the aim of the empirical research was achieved and the research question was answered. Teaching methods were indicated which, in the opinion of students, add the most value in developing practical skills necessary on the labour market. This research contributes to the broader discussion on active learning and improving teaching courses in higher education. They help understand students' perspectives on using different learning methods in the context of the functional value these methods bring to acquiring both theoretical knowledge and the ability to use this knowledge in practice. Therefore, this study can provide guidance to researchers and teachers on how to improve management courses in the context of developing students' theoretical knowledge and practical skills. The article also indicates the possibility of using a course quality measurement method that uses the concept of functional value. Future research could include other courses and teaching methods. It is also worth extending the analysis by using in-depth qualitative research results to better understand why some teaching methods may be more valuable to students than others.

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