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... ☺

"WE" THINKING
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TEAMWORK.



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AND PROJECT MANAGEMENT

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**CHAPTERS FROM THE ACADEMIC ASPECT OF
PROJECT MANAGEMENT - RESEARCH AND
TEACHING METHODOLOGIES
VOLUME IV**

Chapters from the Academic Aspect of Project Management - Research and Teaching Methodologies

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PREFERRED PROJECT MANAGEMENT TEACHING METHODS: A COMPARISON BETWEEN 2019 AND 2020

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Abstract: Developing learning materials and teaching methods is a continuous challenge. Several factors are influencing the successful project in the field. Our research focuses on the students' acceptance of the teaching methods. An online survey was launched first in 2018 among business higher education students for exploring the opinions. The goal of our research is to explore the learning habits and students' preferences about the project management teaching methods in order to contribute to harmonic cooperation between the teachers and students in developing effective new methods. The COVID-19 pandemic has changed the playground. Distance learning, online discussion, web-based exams, and others are technically known ways, but the mass of application could show relevant shortcomings in the short term.

Our study compares learning habits and the opinion about project management teaching methods between 100 students who answered the question before the pandemic (during 2019) and 100 students who are affected by the changes during the pandemic (April and May 2020). The results show that the schedule spent on studying is changed: instead of the evening or night, more people study in the morning. There is a slight rearrangement of the preferences in the teaching methods. Practice-oriented problem solving remained the most popular method, and the relative position of lectures is lower in 2020 than in 2019.

Keywords: project management teaching, teaching methods, pairwise comparison, Guilford method, COVID-19

1. Introduction

There is continuous pressure on higher education to develop their programs and teaching methods. The Bologna Process covers the changes by defining education levels and areas (Wächter, 2014). Competency-based rethinking of course contents and exams (Varga et al., 2017) gives evidence to a new approach. A competency-based approach to teaching allows the social usefulness of the career, and it is ready to adopt the changing labor market expectations (Berényi & Deutsch, 2018). Moreover, the recasting of national legislation related to vocational, higher, and adult education in Hungary (see, e.g., Derényi, 2020) foreshadows a new education system. The expected knowledge of project managers, personal characteristics of project managers, and leadership styles of project managers as key elements of a project manager's competency (Blaskovics, 2017), and through this, it has a relevant impact on the project success (Blaskovics, 2015). According to Nicholls (2002), effective teaching requires:

- transforming knowledge of the subject into suitable tasks, which lead to learning,
- a learning experience that matches the needs of the students (learners),
- balancing between the students' chances of success against the difficulty required to challenge them,
- understanding the way students learn and interrelations of other influencing factors.

Recent publications of the authors are dealing with effective management teaching methods. The research assumed that the acceptance of teaching methods plays a key role in the successful application.

The topicality of the present analyzes is given by the COVID-19 pandemic and the educational changes related to it (Osváth & Papp, 2020). Distance learning was ordered; the personal meeting became forbidden between teachers and students (1102/2020 Korm.hat.). Furthermore, the forecasts point to another pandemic wave, and many managers count on the benefits of working from home. However, several challenges have arisen according to establishing the right working conditions (Kermit et al., 2020). It goes beyond the scope of the present discussion on how distance learning or working was (mis)understood and managed.

E-solutions of teaching and learning are appreciated. Google Classroom, Microsoft Teams, Zoom, and other software has entered the public consciousness in a few weeks and usually in a mixed form. Campbell and Norton (2006) compared the characteristics

of face-to-face discussion and asynchronous e-forum discussion, but nowadays, a mixed solution is available. The modern ICT tools allow inter-personal, group-level, or asynchronous discussions on the same platform, i.e., the technology can adapt flexibly and quickly to different needs.

It is to note that the availability of the tools is quite good; the level of utilization (competencies to use) and the mass of use led to uncomfortable situations.

The goal of the study is to contribute to a better understanding of the digital change of education boosted by the pandemic by exploring the changes in preferred project management teaching methods of the students.

2. Research design

2.1. Research goals

This study is a continuation and extension of the research of Berényi and Deutsch (2018). It was found that the respondents are eager to learn from books, but they do not prefer lectures, homework essays, and discussing the learning materials with others. Lectures are not the most preferred teaching method for project management by the students. Case studies are in the first place, followed by simulations. Lectures and presentations were the least preferred method in most sub-samples.

The present study aims to explore whether there is a difference in the opinions before and during the COVID-19 pandemic.

2.2. Research methods

The research uses an online survey managed by the EvaSys Survey Automation Software. Data processing was supported by IBM SPSS Statistics Version 12 and Microsoft Excel 2016. The survey asks the respondents about the time of day when studying (early morning, forenoon, afternoon, evening, night). Evaluation is performed on a 5-point scale (1: not typical at all, 5: at this time typically). The mean values of the evaluations represent the preferences. The difference between the 2019 and 2020 samples is tested by ANOVA.

A specified list is prepared for checking the preference orders of teaching methods by pairwise comparison. The list is limited to 5 methods for reasons of answerability:

- lectures: listening to lectures,
- problem-solving: samples, numerical calculations solved during seminars,
- presentation: individual presentation or mini-lecture of a given topic,
- case study: solving a case study,
- simulation: solving simulation tasks or presentations with role-playing.

The survey is prepared for pairwise comparison (10 pairs of questions), ordered by the guidance of Ross (1934). Preference analysis is conducted by the Guilford method (Kindler & Papp, 1978). The sample allows calculating:

- The personal level of consistency (K) in the order of the factors ($0 \leq K \leq 1$, where 0 is the complete absence of consistency, 1 is a complete consistency, the latter means the responder has a clear list of preferences),

- The group-level preference orders on interval-scale (a limitation of the method is that quantified results between groups are not comparable!) between 0 and 100 (the analysis is limited to cases where $K = 0.8$ or 1),
- Group level of consensus by a corrected value of Kendal's coefficient of concordance ($v(\text{corr.})$). Since the minimum value of the coefficient is not fixed, a corrected indicator is calculated, which presents the results expressed as percentages (between 0% and 100%)

2.3. Research sample and limitations

The research sample consists of the responses of 200 business students from various Hungarian higher education institutions. 100 students are selected from the data collection period between 2019 February and November (mentioned as 2019 sample) and another 100 students who answered the survey in 2020 April of May (mentioned as 2020 sample). The sample includes female and male respondents from full-time and part-time programs as well, but these are not grouping factors of the present study.

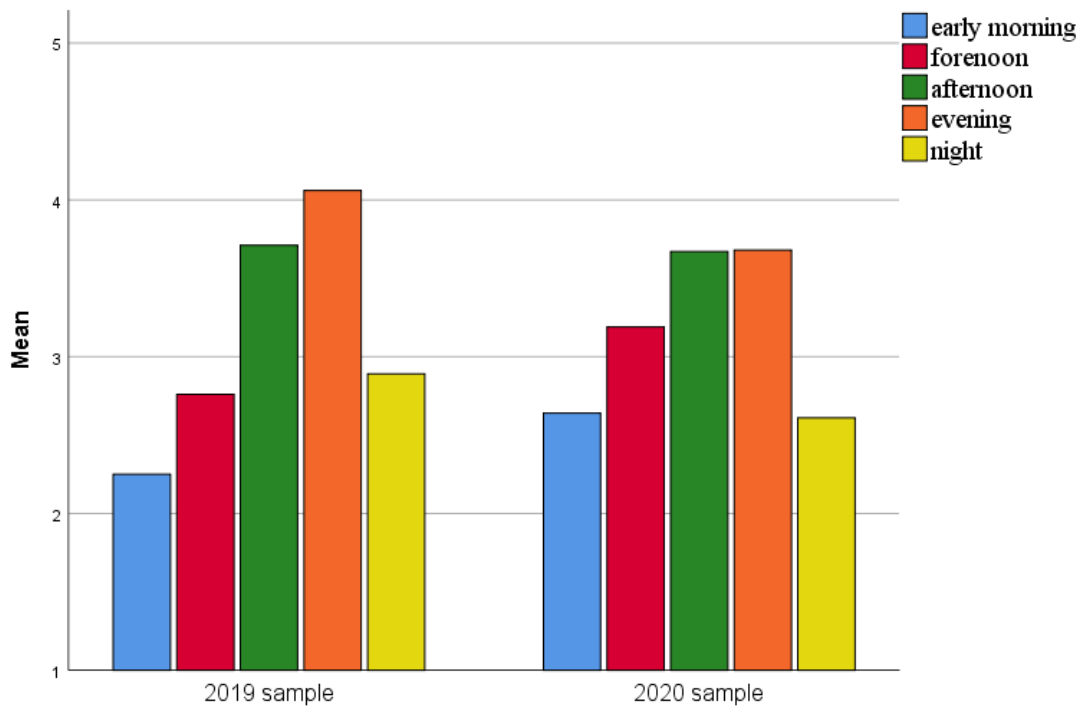
The sample items are selected randomly, but the representativeness of the sample is not assured. The interpretation of the results is limited to the sample due to the convenient sampling method and the relatively short period for collecting experience in the pandemic situation. The research can be considered as exploratory pilot research.

3. Results and discussion

3.1. Time of day spent studying

The students prefer the afternoon and the evening for learning in both sub-samples (Table 1), but the distribution of the mean values shows a decline, especially in the case of the evening period. Learning in the morning has become more typical (Figure 1).

Figure 1: Mean values of preferred time of day spent studying (5-point scale)



Source: own compilation

Table 1: Mean value, preferred time of day spent studying (5-point scale)

sample		early morning	forenoon	afternoon	evening	night
2019 sample	Mean	2.25	2.76	3.71	4.06	2.89
	N	100	100	100	100	100
	Std. Dev.	1.452	1.364	1.233	1.099	1.651
2020 sample	Mean	2.64	3.19	3.67	3.68	2.61
	N	100	100	100	100	100
	Std. Dev.	1.573	1.447	1.173	1.392	1.614

Source: own compilation

The ANOVA test confirms the significant differences in the cases of forenoon and evening (Table 2). The distribution of the responses in the case of forenoon learning show a scattered picture in both situations (Figure 2), the proportion of typical learners in this

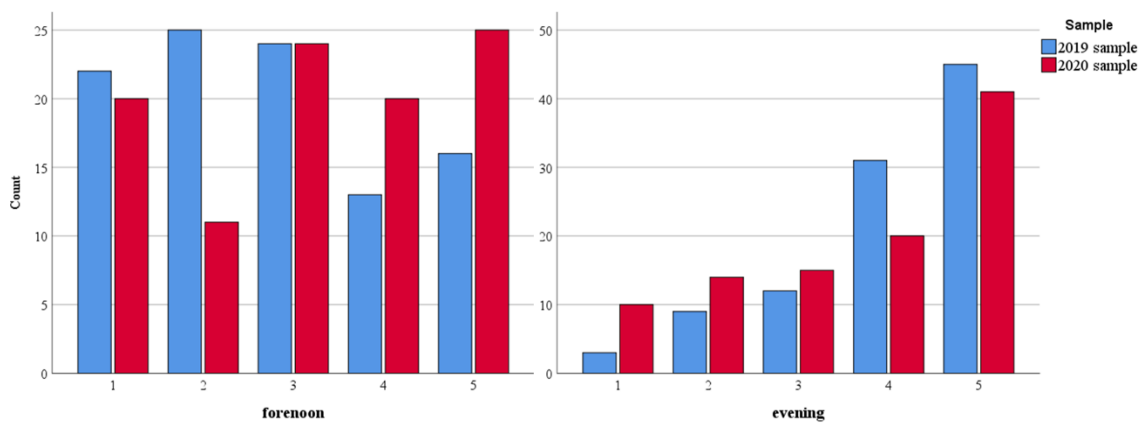
period shows a remarkable increase while the proportion of students who usually do not learn in this period is decreased. The proportion of evening learners is declined between the periods considered. However, the afternoon and night remained the main periods for learning. It may be due to the employed or internship status of the students.

Table 2: ANOVA test for the preferred time of day spent studying

		Sum of Squares	df	Mean Square	F	Sig.
early morning	Between groups	7.605	1	7.605	3.318	.070
	Within groups	453.790	198	2.292		
	Total	461.395	199			
forenoon	Between groups	9.245	1	9.245	4.674	.032*
	Within groups	391.630	198	1.978		
	Total	400.875	199			
afternoon	Between groups	.080	1	.080	.055	.814
	Within groups	286.700	198	1.448		
	Total	286.780	199			
evening	Between groups	7.220	1	7.220	4.591	.033*
	Within groups	311.400	198	1.573		
	Total	318.620	199			
night	Between groups	3.920	1	3.920	1.471	.227
	Within groups	527.580	198	2.665		
	Total	531.500	199			

Source: own compilation

Figure 2: Distribution of the responses in the significant cases (5-point scale, number of respondents)



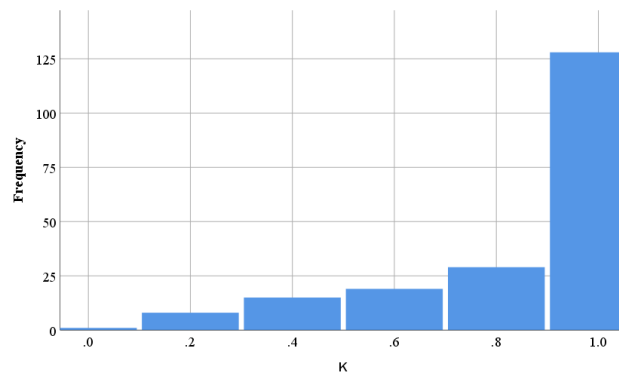
Source: own compilation

3.2 Preference orders

The ratio of respondents with a clear preference order ($K=1$) is 64%, and another 29 respondents are at $K=0.8$ level (Figure 3). These students (78 from the 2019 sample and 79 from the 2020 sample) are considered in the analysis of preference orders.

Tables 3 and 4 summarize the group level preference evaluations with the rank sums, the ratio of cases when the item is preferred to any others (% of available), and the rank orders. According to the results, problem-solving remained the most preferred method and presentation as the least preferred one. The order of case studies and simulations are changed, and lectures retained its penultimate position, but the number of markings is declined from 47.8% to 38.3%. The group level of consensus of the 2020 sample ($v(\text{corr.})=20.4\%$) is higher than the 2019 sample ($v(\text{corr.})=18.6\%$).

Figure 3: Distribution of preference orders (number of respondents)



Source: own compilation

Table 3: Group level preference matrix, 2019 sample

	lectures	problem-solving	presentation	case study	simulation	sum	% of available	order
lectures	-	26	60	25	38	149	47.8	4.
problem solving	52	-	63	42	48	205	65.7	1.
presentation	18	15	-	14	12	59	18.9	5.
case study	53	36	64	-	42	195	62.5	2.
simulation	40	30	66	36	-	172	55.1	3.

Source: own compilation

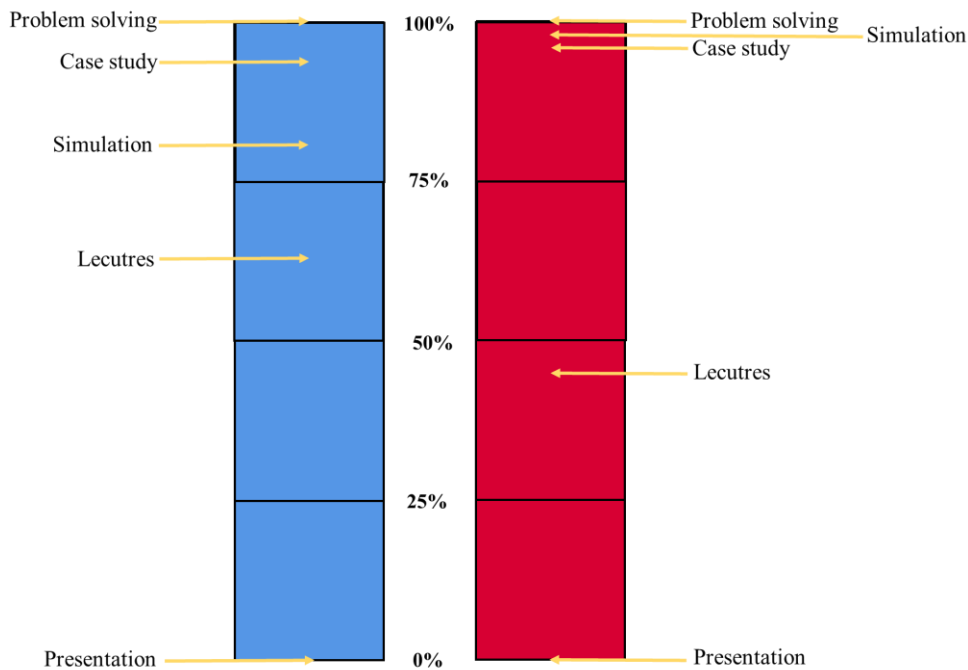
Table 4: Group level preference matrix, 2020 sample

	lectures	problem-solving	presentation	case study	simulation	sum	% of available	order
lectures	-	21	53	21	26	121	38.3	4.
problem solving	58	-	66	39	42	205	64.9	1.
presentation	26	13	-	14	12	65	20.6	5.
case study	58	40	65	-	35	198	62.7	3.
simulation	53	37	67	44	-	201	63.6	2.

Source: own compilation

The weighting of the Guilford method allows a visual representation of the relative preferences. However, the numerical results of the sub-samples are not directly comparable since the results are measured on the interval-scale; the displacement of the internal relations is a useful information source (Figure 4). The relative difference between problem-solving, simulation and case study methods is lower in the 2020 sample than before, but the lag of lectures is grown.

Figure 4: Representation of weight on Guilford-scale



Source: own compilation

4. Conclusion

A main limitation of the research is given from the period of the investigation. The rapid spread of the COVID-19 pandemic required urgent and drastic actions with social and economic consequences. However, the evaluation of the impacts will need more data and experience. Far-reaching conclusions about the teaching methods are to avoid, but the onset of the change is well usable as lessons learned.

Based on the research sample, the learning schedule of the students has been changed. The 'free time' released from attending school is devoted to learning daytime and evening load is decreased.

There is a rearrangement between the preferred teaching methods between the 2019 (before pandemic) and 2020 (during pandemic) samples. Problem-solving – i.e., tasks, exercises, calculations – remained the most preferred methods for teaching project management. Lectures seem to be depreciated based on the relative weights, but rank sums do not support this. The need for stimulation is increased in the meanwhile, but it is questionable how to manage it efficiently through distance education.

A general impression of the research is that the two-month learning period did not lead to fundamental changes in the students' preferences about the project management teaching methods. Conversely, the question is whether the utilization of the possibilities can force a change in preferences. Answering this challenge requires further investigation. Based on the authors' experience, the digital competencies of teachers and students, as well as adherence to the status quo, slow down the exploitation of the opportunities.

5. References

1. 1102/2020. (III. 14.) Korm. határozat a koronavírus miatt a köznevelési és szakképzési intézményekben új munkarend bevezetéséről.
2. Berényi, L., & Deutsch, N. (2018): Effective teaching methods in business higher education: a students' perspective. *International Journal of Education and Information Technologies*, 12, 37-45.
3. Blaskovics, B. (2015): A projektvezető vezetési stílusának hatása a projektsikere – egy hazai vállalat példája alapján. *Vezetéstudomány*, 46(8), 14–23.
4. Blaskovics, B. (2017): *Required Competencies of Project Management in the XXIst Century*. In: Deutsch, N. (ed.): *Diversity of Business Development: Volume I. Directions, Trajectories and Strategies*. Saarbrücken: Lambert Academic Publishing, 43-55.
5. Derényi, A. (2020): Az intézményi működési keretek átalakítási kísérletei a magyar felsőoktatásban. *Educatio*, 29(1), 64–77.
6. Kermit, G. D., Kotowski, S. E., Daniel, D., Gerding, T., Naylor, J., & Syck, M. (2020): The Home Office: Ergonomic Lessons From the 'New Normal'. *Ergonomics in Design: The Quarterly of Human Factors Applications*. In press. 7. p. Available at: <https://journals.sagepub.com/doi/full/10.1177/1064804620937907>
7. Kindler, J., & Papp, O. (1978): *Komplex rendszerek vizsgálata: Összemérési módszerek*. Budapest: Műszaki Könyvkiadó.
8. Nicholls, G. (2002): *Developing Teaching and Learning in Higher Education*. New York: Routledge-Falmer.
9. Osváth, A., & Papp, Z. (2020): Digitális fordulat az oktatásban? A digitális távoktatás tapasztalatai, lehetséges következményei. *Szellem és Tudomány*, 11(2), pp.179–187.
10. Varga, E., Szira, Z., Boda, H., & Hajós, L. (2017): A munkaerőpiacon elvárt kompetenciák relevanciájának összehasonlító elemzése a munkáltatók és a felsőoktatásban végzős fiatal munkavállalók aspektusából. *Studia Mundi – Economica*, 4(1), 82–93.
11. Wätcher, B. (2004): The Bologna Process: developments and a prospect. *European Journal of Education*, 39(3), 265–273.