

Lesson learned from the coerced application of e-learning in the management accounting course during COVID-19 pandemic

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Abstract: *The COVID-19 pandemic disabled the traditional classroom learning at Czech Universities in the summer semester of the academic year 2019/2020 and coerced the application of the e-learning approach. This paper reflects both teachers' and students' experience with this change in the management accounting course for undergraduate students at the Prague University of Economics and Business.*

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JEL codes: M41, I23

1 Introduction

The COVID-19 pandemic disabled the traditional classroom learning at Czech Universities in the summer semester of the academic year 2019/2020. Following the decision of the Ministry of Health of the Czech Republic (Ministry of Health, 2020), the students were banned from the presence in classrooms at universities since the 11th of March 2020. Simultaneously, it was decided not to suspend the educational activities. Both teachers and students were encouraged to shift from traditional learning style to e-learning as soon as possible without any substantial impact on learning outcomes and time schedule of the courses.

This paper concerns the lesson learned from this coerced application of e-learning in the management accounting course for undergraduate students. This 6-ECTS course is the first management accounting course which is obligatory for all students in study programmes on finance, accounting, banking, taxation and business management.

First, the paper describes the applied changes in teaching methods. Second, it summarizes teachers' and students' feedback. And finally, it compares the students' course performance in the particular semester with the previous ones.

The paper contributes to the debate about the efficiency of learning approaches comparing "traditional" classroom approach and e-learning approach. Moreover, it supports the teachers' readiness for unexpected or coerced changes in the learning style.

2 Methodology and Data

Facing the unprecedented situation in middle of March 2020, teachers and students were forced to change their habits and applied procedures within a couple of weeks (Kamarianos, 2020). In particular, seven teachers and around 400 students were involved in the management accounting course in this semester. Thanks to good availability of online platforms and enormous effort of teachers, e-learning could start in less than two weeks. Lectures and seminars were organized in MS Teams regularly. Information system of the University was used to share documents and the Slido platform helped to increase students' engagement via Q&A and short questionnaires. Teachers' coordination was ensured by regular virtual meetings and e-mail communication between course guarantor and other teachers. The evaluation of students' learning involvement was ensured by weekly mini-tests. These mini-tests substituted the assessment of activity in seminars, as the active contribution of students to the course of seminars decreased substantially.

Further, the need for social distancing influenced the procedure of course evaluation. General recommendation for students' evaluation was published by Ministry of Education of the Czech Republic (Ministry of Education, 2020). In the management accounting course, the written test was realized on-line using the information system of the University. To prevent copying answers, the principal aim was to individualize the test questions. The oral exam was also realized on-line requiring both, camera and microphone to guarantee the objectivity of the exam.

The results presented below are based on data obtained from the interviews with all (seven) teachers of the course and from the questionnaire distributed to all students of the course. 143 of 392 students participated in the on-line questionnaire survey, so the response rate is 36,5 percent. We also used the data on students' course performance as recorded in the information system of the university.

3 Results and Discussion

The interviews with teachers revealed following observations:

- participation rate of students in virtual classes was the same or even higher compared to traditional classes. It could be caused by various reasons. First, working, social and leisure activities of students were limited due to the quarantine. Second, students were worried about the potential changes in course tasks and obligations. Third, students could participate in the class no matter where they were; technical issues and problems on both, teacher's as well as student's side had just minor impact on the organization of virtual classes;
- teachers spent much more time on preparation for the classes. The more detailed handouts which had to be prepared for students and the need of "fine-tuned" structure of a virtual class were the key reasons for a higher time demand. In the first weeks after the shift to e-learning, the workload was also increased because of "familiarization" of teachers with on-line platforms used in e-learning, however, this workload was reduced after the start-up face;
- in case of lectures, the teacher considered the efficiency of virtual class to be even higher than in case of the traditional class. He stated that there was no waste of time caused by problems with the class equipment (data projector, microphone etc.), noise in the class etc. Further, the lecturer had a feeling that both, he and students could concentrate more on the course of the lecture;
- in case of seminars, the teachers considered the efficiency of virtual class lower compared to the traditional class. The principal reason was the substantial loss of interactivity which was crucial for an active involvement of students in the course of the seminar.

The questionnaire survey among students shows that:

- in case of lectures, 62 percent of students give priority to virtual lesson rather than traditional on-site lecture; in case of seminars, 77 percent of students prefer traditional on-site seminar in the classroom (Table 1).
- in case of lectures, 97 percent of students would appreciate if the lecture had been recorded and they could listen it again whenever they needed; in case of seminars, 84 percent of students would appreciate recording;
- 60 percent of students prefer regular mini-tests as the assessment procedure of their involvement in learning process during the semester instead of subjective teachers' assessment. At the beginning of the semester (before the quarantine) students' involvement in classes was evaluated by the subjective assessment of teachers at the end of each seminar; in the quarantine period this was substituted by weekly mini-tests prepared by the course guarantor. The results presented in Table 2 follow the question "At the beginning of the semester, the activity on seminars was evaluated according to preparation for seminar and active involvement in its course; after the shift to on-line learning it was evaluated by mini-tests. Which procedure was more convenient for you?".

Table 1 Students' preference of virtual and on-site classes

	Lectures		Seminars	
	N	%	N	%
On-line	39	27	11	8
Rather on-line	50	35	22	15
Rather on-site	28	20	42	29
On-site	26	18	68	48

Source: own computations

Table 2 Students' preference of class activity assessment procedure

	N	%
Preparation and involvement (subjectively)	31	21
Rather preparation and involvement (subj.)	27	19
Rather mini-tests	48	34
Mini-tests	37	26

Source: own computations

The above results lead us to following considerations about learning and assessment approaches and methods:

- Students prefer blended-learning or hybrid approach rather than "pure" e-learning or "pure" traditional learning approach. On one hand, they call for flexibility in terms of their pace to acquire general knowledge. On the other hand, they appreciate the classroom meetings to evolve conceptual thinking and social skills, but also to deal with analytical tasks with the support of teacher. The last one contrasts with the statement of some teachers who suppose that students shall acquire analytical study individually using textbooks and course handouts.
- Students' questionnaire survey showed that students fully appreciate the recording of lectures. We also asked them to take their attitude on two options – first, lectures are recorded in advance and available on university website at any time and students can contact a lecturer for face-to-face consultation individually; second, lectures are performed for students in real time and life recording of lectures is then published on university website. Surprisingly, 87 percent of students chose the latter alternative.
- The preference of mini-tests over course activity assessment realized by teacher subjectively can be explained by the emphasis of students on perceived fairness of performance evaluation. It indicates that by students, the adequacy of "my performance" evaluation in relation to evaluation of "my classmates' performance" is considered as highly important issue.

We also tested the students' course performance. The first question was whether the students' performance in summer semester 2020 (SS2020) had changed in comparison with performance in previous two semesters, i.e. winter semester 2019 (WS2019) and summer semester 2019 (SS2019). In the course, the assessment consists of three parts which have different weight on total students' evaluation, namely course activity assessment/weekly mini-tests (10%), written test (40%) and oral exam (50%). We analysed the mean values for each part of assessment separately comparing all three "couples" (SS2020 and WS2019, SS2020 and SS2019, WS2019 and SS2019). We used independent samples t-test in this regard. The findings are as follows:

- for course activity assessment/weekly mini-tests, we can reject the hypothesis that there is no difference between means for all three "couples". It shows that the assessment score in SS2020, in which mini-tests were used, differs from the score in previous semesters, in which subjective course assessment was applied.

However, there are also differences in means for WS2019 and SS2019, in which the same assessment procedure was applied. We can speculate that this may be due to the fact that the weight of this part of the assessment in the overall course assessment is considered too low to require calibration of the assessment among teachers;

- for results in written test, we cannot reject the hypothesis that there is no difference between means for all three "couples". It shows that the SS2020 assessment score follows the approach in previous semesters. We can notice that an ex-post calibration of performance score was applied in WS2019 and SS2019 to achieve targeted pass rate in the course. In SS2020, the calibration was not applied;
- for results in oral exam, we cannot reject the hypothesis that there is no difference between means for all three "couples".

The second question was whether the relationships among individual parts of course assessment had changed in SS2020 compared to WS2019 and SS2019. We quantified correlation coefficients in each semester and considered the differences from semester to semester. The results are presented in Table 3.

Table 3 Correlation among parts of course assessment

Panel A: SS2020			
	Activity	Written test	Oral exam
Activity	1		
Written test	0,325**	1	
Oral exam	0,242**	0,279**	1
Panel B: WS2019			
	Activity	Written test	Oral exam
Activity	1		
Written test	0,161**	1	
Oral exam	0,240**	0,073	1
Panel C: SS2019			
	Activity	Written test	Oral exam
Activity	1		
Written test	0,236**	1	
Oral exam	0,202**	0,180**	1

Source: own computations; ** means p value < 0,01

In general, we can state that correlation among parts of course assessment is weak although significant (except of test and exam in WS2019). Over a long period, the lowest correlation goes for written test and oral exam. In our opinion, the reasons can be twofold. First, the written test concentrates on analytical skills of students while the oral exam accents the conceptual thinking, and therefore the performance depends on strengths of particular students. An alternative explanation is rooted in the idea that students target optimal rather than maximal performance in the course. Thus, if their performance in written test (which comes sooner) is high, they spent much less effort to achieve a high score in the oral exam (which comes later) and vice versa.

In all three pair relationships (activity and test, activity and exam, test and exam), the correlation coefficients are higher in SS2020 compared to results in WS2019 and SS2019. We can speculate that this may be due to the fact that students were more concentrated on learning process during the whole semester in SS2020. It corresponds to teachers' observation on higher participation rate in virtual classes as described in the previous text.

Conclusions

Our paper shows that the application of e-learning in the management accounting course didn't undermine the principal learning goals and outcomes of the course although the change was unintended, rapid and unprecedented. It is also nice to realize that the technical and procedural advances mean that these issues are not limiting.

The situation brought a great opportunity for teachers not only to face new challenges but also to compare the traditional approach and the e-learning approach. Our study shows that neither teachers nor students prefer e-learning approach although they are ready to use it (for example in case of re-establishment of quarantine measures). Some type of hybrid learning (blended learning) seems to be an efficient solution. The further discussion is needed about the blended learning model.

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