Students' perception regarding digital education amid the COVID-19 pandemic

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Abstract

The World Health Organization (WHO) declared Covid-19 as a global public health emergency of international concern on 30th January 2020. Covid-19 pandemic has affected higher education all over the world, including Hungarian colleges and universities. These institutions instantly had to move from traditional face-to-face education to remote education.

The primary purpose of present study is to determine the perceptions of students towards online learning during the lockdown due to Covid-19.

The main objectives include (1) evaluating the quality of online teaching, (2) measuring the quality of student learning, (3) measuring the quality of facilities used in online teaching, (4) evaluating the quality of instructors, and (5) developing some recommendations based on the study findings.

Keywords: Covid-19, students' perception, online teaching, quality, recommendations

Introduction

The World Health Organization (WHO) declared Covid-19 as a global public health emergency of international concern on 30th January 2020 as well as a pandemic on 11th March 2020, Covid-19 being a severe acute respiratory syndrome. At present, the world is already experiencing the second wave of this pandemic.

Like many other aspects of everyday life, Covid-19 has had a serious impact on students, instructors, and educational organistions around the globe (Mailizar, 2020). The pandemic caused schools, colleges, and universities across the globe to shut down their campuses so that students and teachers could follow social distancing measures (Toquero, 2020). However, moving smoothly from an environment of conventional education to distance and online learning could not happen overnight. This rapid

transformation was linked to various obstacles and challenges (Crawford, 2020). But because nobody knows when this pandemic will disappear completely, educational institutions across the globe decided to use the already available technical resources to create an online learning material for students of all academic fields (Kaur, 2020).

Covid-19 pandemic has affected the field of higher education in Hungary as well. Hungarian colleges and universities have also moved from traditional face-to-face education to remote education.

Digital education

Digital education in the highly developed countries is not a current phenomenon. The advancement of technology has enabled many innovations in the educational environment that led to introducing new technologies into the classroom to enhance the learning experience as well as to enrich the educational content in classes (Palloff and Pratt 2007).

More and more academic institutes started to offer online courses in the past years (Van Rooij & Zirkle, 2016; Shelton & Pedersen, 2017; Allen, Seaman, Poulin, & Straut, 2016).

However, the current circumstances are unique; unlike normal digital learning situations, it is more accurately crisis learning (Pace, Pettit, & Barker, 2020). Therefore, there is a stronger need for academic organisations to improve their curriculum and the usage of new instructional methods and strategies should be of utmost significance (Toquero, 2020).

Requirements for online courses and classes

Based on previous experiences, Ilsley (2009) recommended that a rich content of collaborative methodologies is to be considered when designing an online course to enable more engagement of learners. Apart from the use of appropriate methods, supportive online learning environment is also required when designing such courses to encourage collaboration, engagement and to seek satisfaction of students (Lucero, 2006; Rovai, 2002). Moreover, motivation and participation of students are key factors to keep them actively engaged in the learning process (Bloom, 1956), which is not an easy task to maintain during online education.

It has been found out that student satisfaction and learning correlates to the perceptions of students towards the overall usability of the course. In

other words, the student level of satisfaction is significantly affected by the logical layout of the course (Eom et al., 2006). Students satisfaction is a cornerstone and plays a crucial role in the success of online programmes (Kuo et al., 2014).

Therefore, understanding the point of view of students and how they would evaluate online courses is crucial. It will assist the administration of academic institutions in making pedagogical decisions when designing, delivering, and assessing their online content, which will lead to attaining good outcomes with respect to learning objectives.

Online courses in Hungary

Despite the wide use of online learning worldwide, it was hardly ever considered as a part of formal education in Hungary by the majority of institutions until the recent spread of Covid-19. Considering the relatively recent advent of this teaching methodology in Hungary, both teachers and students are still in the process of getting acquainted with the new system.

At this point in time, it is important to find out students' opinions and viewpoints regarding this virtual approach to teaching and learning. We should know whether the learners are attuned to the new methodology, would prefer any modifications, or rather would want to go back to conventional learning altogether; this is an interesting point to explore.

A questionnaire-based research

Aims

The primary purpose of this research was to determine the perceptions of students towards digital learning during the lockdown due to Covid-19.
The main objectives were (1) evaluating the quality of online teaching, (2) measuring the quality of facilities used in online teaching, (3) evaluating the quality of instructors, and (4) developing some recommendations based on the study findings.
The summary of the factors used in this study is shown in the following figure (Figure 1).

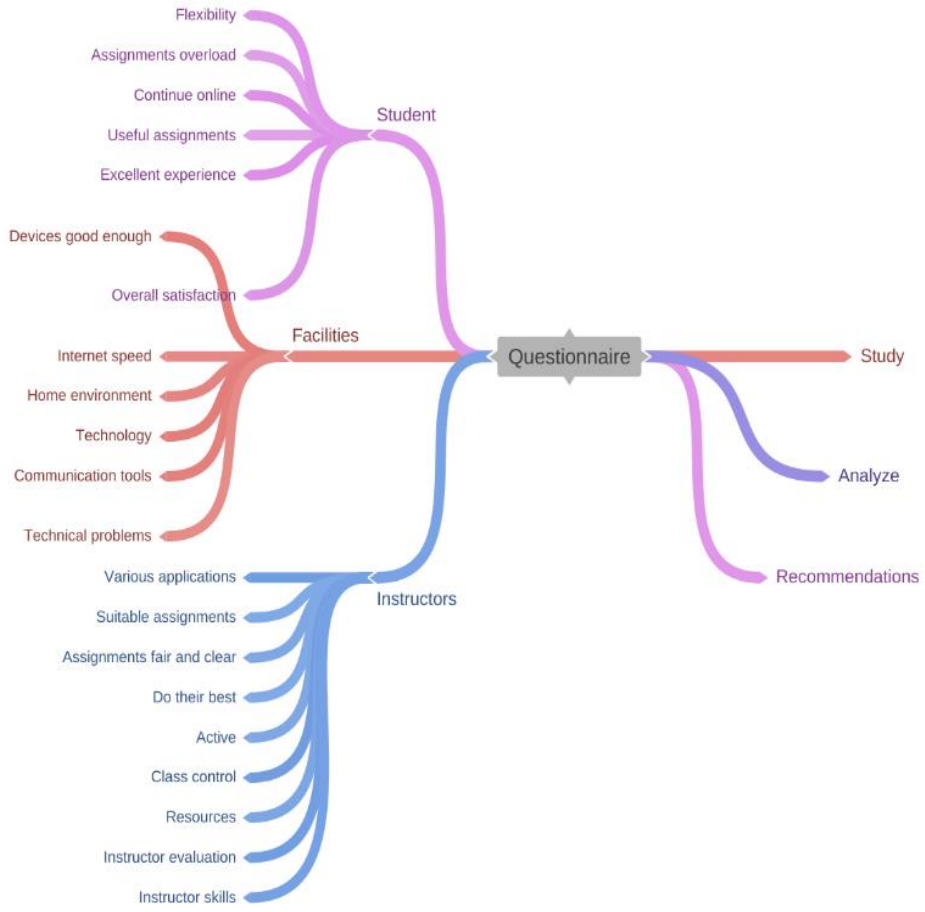

Figure 1 Study factors

Participants

The participants taking part in the study were N=163 Hungarian and international full-time students, N=61 Hungarian corresponding students studying at different Faculties of the University of Dunaújváros, altogether N=224 students. The participants included both males (N=152) and females (N=72), between the ages of 18 and 32 (an average of 20.5) for the full-time students and between the ages of 18 and 54 (an average of 34) for the corresponding students.

Students participating in the research rendered their opinions and experiences regarding digital education which started in March 2019. The questionnaire for this research was open for responses between 12th and 26th October.

Instruments

An online survey technique was used to gather data on the perceptions of students regarding digital education.
The study questions were designed to cover three main categories: (1) Students' satisfaction with online education in general, (2) Students' satisfaction with facilities and (3) Students' satisfaction with instructor performance in online teaching. The questionnaire was developed in both Hungarian and English languages (being identical both in content and structure) using the Google Forms tool.

Questions from 1 to 7 were used to cover category 1, questions from 8 to 14 were used to cover category 2, and the rest of the questions were used to cover the third category.

Student responses were based on a 5-point Likert Scale (except for one question, Item 8) ranging from strongly agree to strongly disagree. To have a better understanding of student's responses, "strongly agree" and "agree" responses were merged to "agreed", "strongly disagree" and "disagree" were merged to "disagreed".

Results

All of the questions are interpreted as included in the following table to find the total number of "agree", "disagree", and "neutral" responses but the focus in this study is made on the "agree" and "disagree" responses. To see the number of responses for each category and to analyse the feedback from students, the following table was created (Figure 2).
A distinction between full-time students and corresponding students was made considering their average age difference.

Item	Full-time students			Corresponding students		
	Agreed	Neutral	Disagreed	Agreed	Neutral	Disagreed
1	52	43	68	24	16	21
2	81	53	29	43	10	8

3	71	48	44	16	24	21
4	48	42	73	35	13	13
5	59	61	43	27	23	11
6	60	35	68	24	22	15
7	85	54	24	44	12	5
8	I am using the following device(s) for the online education.					
9	144	15	4	54	5	2
10	96	44	23	48	5	8
11	119	34	10	43	13	5
12	120	31	12	47	10	4
13	111	39	13	42	14	5
14	65	49	49	47	5	9
15	81	51	31	44	8	9
16	93	53	17	41	17	3
17	75	68	20	40	19	2
18	114	40	9	48	10	3
19	106	41	16	45	10	6
20	64	43	56	27	17	17
21	62	57	44	29	21	11
22	49	58	56	22	26	13
23	86	53	24	36	16	9
24	105	42	16	49	8	4

Table 1 Total responses for each category

The mean value was also calculated to decide on the items to be considered for analysing the students' satisfaction. Items were selected if their values were more than the mean value. The following table (Table 2) shows the items selected both for the corresponding (c.) and the full-time (f.) students.

Agreed (c.)	Neutral (c.)	Disagreed (c.)	Agreed (c.)	Neutral (c.)	Disagreed (c.)
Item 2 Item 3 Item 5 Item 6 Item 7	~~Item 5~~ ~~Item 17~~ ~~Item 21~~ ~~Item 22~~	Item 1 Item 4 Item 6 ~~Item 20~~ ~~Item 22~~	Item 1 Item 2 Item 4 Item 5 Item 6	~~Item 3~~ ~~Item 5~~ ~~Item 6~~ ~~Item 21~~ ~~Item 22~~	~~Item 1~~ ~~Item 3~~

Item 9 Item 10 Item 11 Item 12 Item 13 Item 14 Item 15 Item 16 Item 17 Item 18 Item 19 Item 20 Item 21 Item 23 Item 24			Item 7 Item 9 Item 10 Item 11 Item 12 Item 13 Item 14 Item 15 Item 16 Item 17 Item 18 Item 19 Item 20 Item 21 Item 22 Item 23 Item 24		

Table 2 Items selected for analysis based on rules introduced

To get an even more accurate analysis and to have the focus on the ”agreed” and ”disagreed” responses exclusively, some further rules were introduced. If the values in the ”neutral” and ”disagreed” categories were equal or close to each other, the ”disagreed” items were neglected. Also, if the ”disagreed” item value was more than the mean value and less than the ”agreed” value, this item was ignored. In that way, the analysis could primarily focus on the ”agree” and ”disagree” responses. As a result of these rules, the items excluded from the analysis are crossed out in Table 2.

Figure 2 shows the “agreed” responses to the first set of questions regarding students’ satisfaction with online education in general. The highest values (70%) are linked to Item 2 (70%), which is ”flexibility provided by the online classes is more suitable for me” and Item 7, which is ”Overall, I am satisfied with the quality and efficiency of online education” (72%). Not suprisingly, these values are not as high for the full-time students as for the corresponding students since adult learners need more flexibility because in most of the cases they have a job and less time is available for them to learn. The second highest value (57%) is provided by Item 4, which is ”After the situation of COVID-19 finishes, I look forward to having some more online

classes". These results might reflect that for adult learners this form of education is somewhat more suitable because of its flexibility.

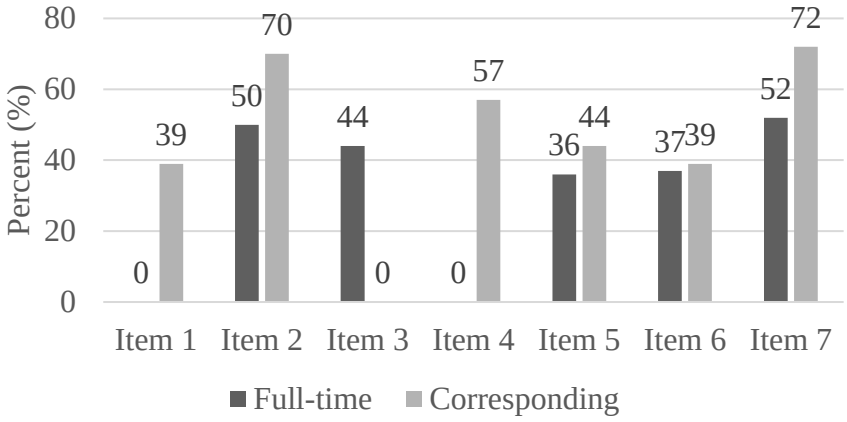

Figure 2 Agreed responses for category 1

Figure 3 shows the "agreed" responses to the second set of questions regarding students' satisfaction with the technological background. The highest value (88%) here is connected to Item 9, which is "My device(s) is/are good enough to use for online education". The satisfaction value is exactly the same for both corresponding and full-time students, so we may see that the majority of our students are in the posession of the technological devices inevitable for digital education.

The lowest value (40%) is linked to Item 14 given by full-time students, which is "Technical problems do not discourage me from taking part in online classes". On the other hand, 77% of corresponding students reported that technical problems discourage them from participating in online classes. At this point, corresponding students seem to be less flexible and tolerant with technical problems occurring in online classes.

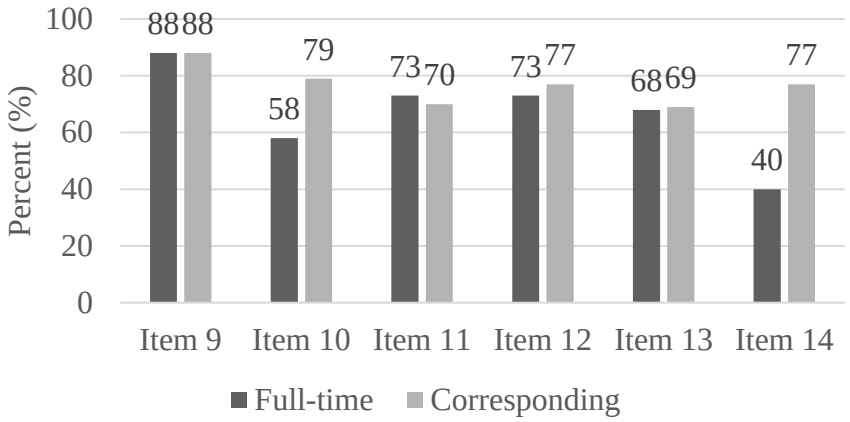

Figure 3 Agreed responses for category 2

Figure 4 shows the ”agreed” responses to the third set of questions regarding students’ satisfaction with instructor’s performance in online teaching.

The two highest satisfaction values are linked to Item 18 (80%) and Item 24 (74%). Item 18 refers to whether ”Instructors do their best to deliver the necessary information/knowledge using online teaching”, and Item 24 was intended to obtain data on the general opinions of students on teachers’ performance in online teaching (”Overall, I am satisfied with the instructors' performance in online teaching.”). Both of these values were produced by corresponding students.

The lowest value in this set of questions is linked to Item 22 (36%), which is ”I am planning to give my instructors a higher course evaluation in the online classes as compared to the traditional ones.” It means that only about one third of the corresponding students would give a higher course evaluation regarding online classes. This shows a rather contradictory result if we consider that more than two thirds of the participants reported to be satisfied with the instructors' performance in online teaching.

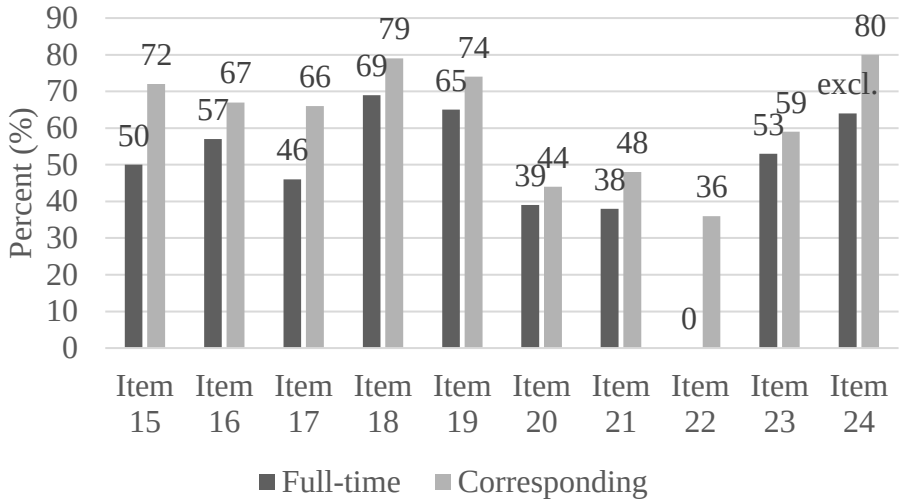

Figure 4 Agreed responses for category 3

Finally, Figure 5 shows the ”disagreed” responses selected from all questions. The items shown here have produced very similar results. More than a half of the students (58%) reported that their attendance rate in online classes was higher than it had been in traditional classes (Item 1), 55% of them reported that after the situation of COVID-19 finishes, they look forward to having some more online classes (Item 4), and 58% said that online classes during the COVID-19 outbreak were an excellent experience for them (Item 6).

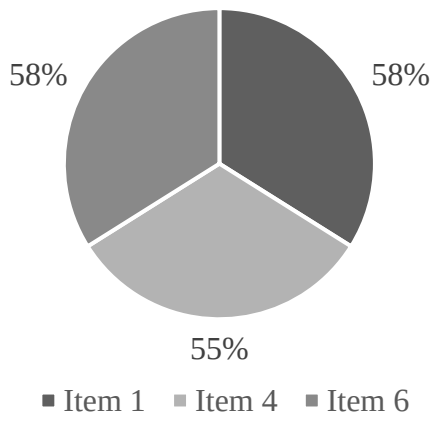

Figure 5 Disagreed responses

Summary

Most of the students believe that they are satisfied with the devices employed in online teaching, they also have highly appreciated the work of instructors, and they are satisfied with the instructor's performance. In the students' opinion, the existing devices such as laptops and other devices are enough to tackle online teaching, also the instructors are well prepared, and they have enough skills to deliver online lectures. On the other hand, a lot of students seem to be dissatisfied and intolerant with the technical issues that occur during online classes.

Some recommendations on instructional strategies in online teaching

Higher interactivity in online course will enhance the overall online class success rate. Sources report that more student and teacher discussion can result in higher interactivity.

Teachers should devise learning material, which is more creative. In other words, students should be offered more innovative and practical work.

A big class lecture should be divided into smaller modules or debate groups to ensure concentration. Teachers should prepare online class materials of less than 30 minutes. This can be done by splitting a big single task into multiple small tasks. This will help students to remain attentive and focused during online classes.

In traditional class teaching, body language such as eye contact, and physical gestures are significant teaching tools. However, in online teaching, teachers should focus more on their voice and vocal functions. Practicing vocal functions like pauses and volume variations are essential in online teaching.

In online teaching, teachers should put greater emphasis on the visuals appurtenant to their teaching materials and use various applications because such educational setting provides an environment that is poor in stimuli.

Conventional classroom socialisation is another major issue in online learning. Students only communicate with their fellows digitally and never see them in person, and this may cause psychological distress and frustration at various levels.

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