

Synchronous and Asynchronous in Online Teaching and Learning during the Covid-19 Pandemic: Students' Perspectives

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Abstract

Keywords:

synchronous and asynchronous online education; students' opinions.

One of the main changes that occurred after the coronavirus outbreak and that represents one of the main measures taken in order to limit the virus spread refers to the conversion of the educational activities conducted conventionally into activities implemented by means of online platforms. The transition was sudden, unexpected and it still can be indefinitely prolonged. The main approaches encountered in the context of online education are asynchronous and synchronous ones. Our paper contains the results of an interpretive analysis of the opinions expressed by a group of 37 undergraduate students on asynchronous and synchronous online educational activities. We considered their opinions relevant due to the fact that since they started their studies at the university in October 2020, they conducted exclusively online activities. We explored students' preferences and limitations of the both approaches, but also their wishes for the next period. Students expressed their interest in keeping online asynchronous and synchronous activities for the future academic years, at least for part of their subjects.

Zusammenfassung

Schlüsselworte:

synchrone und asynchrone Online-Bildung; Studenten Meinungen.

Eine der wichtigsten Änderungen nach dem Ausbruch des Coronavirus und eine der wichtigsten Maßnahmen zur Begrenzung der Virusausbreitung bezieht sich auf die Umwandlung der konventionell durchgeführten Bildungsaktivitäten in Aktivitäten, die über Online-Plattformen durchgeführt werden. Im Kontext der Online-Bildung werden hauptsächlich asynchrone und synchrone Ansätze angetroffen. Unser Beitrag enthält die Ergebnisse einer interpretativen Analyse der Meinungen einer Gruppe von 37 Studenten zu asynchronen und synchronen Online-Bildungsaktivitäten. Wir hielten ihre Meinungen für relevant, da sie seit Beginn ihres Studiums an der Universität im Oktober 2020 ausschließlich Online-Aktivitäten durchgeführt haben. Wir haben die Präferenzen und Schwierigkeiten der Studenten zu den beiden Ansätzen untersucht, aber auch zu ihren Wünschen für die nächste Periode. Die Studierenden haben ihr Interesse bekundet, für die kommenden Studienjahre zumindest für einen Teil ihrer Fächer asynchrone und synchrone Online-Aktivitäten aufrechtzuerhalten.

1. Introduction

The pandemic caused by the coronavirus, and declared by the World Health Organization in March 2020, determined the appearance of a series of particularities in the way that education took place from that date further. The onsite educational activities were suspended and replaced by activities carried out at distance, by means of technology. The importance granted in this context to the online conducted activities represents a new dimension of the current curriculum design.

The scholars described this transition as an 'emergency remote teaching' (Hodges et. al., 2020), referring to the fact that the transition was conducted in a very short time, without any preparation of the online teaching and learning activities and this quick-fix led to a great amount of improvisation, very

different from the planned online teaching. It was found that the simple change from one setting to another was not enough to facilitate students' learning. Previously conducted studies show the relevance of considering students' learning when reflecting about their active attendance to online conducted activities (Fabriz, Mendzheritskaya & Stehle, 2021).

Thus, starting from the potential use of online education, the transition from emergency online education to a high quality one should also consider students' needs and opinions. Within the current paper we explore insights of a small group of undergraduate Romanian students regarding their experience acquired during one academic year in both synchronous and asynchronous online settings, exclusively online. Their opinions express many

changes in roles, competencies, teaching-learning-assessing strategies and teaching staff development, which should be taken into account in the future post-Covid educational context.

2. Theoretical foundation

The latest main changes in the educational system, driven by the attempt to adjust specifics of the current society have been mainly driven by the 2019 pandemic. The single solution to continue the educational activity after the suspension of onsite activities was represented by the transition towards digital education. Until now, many universities continue to conduct this kind of activities in order to protect their staff and students. This approach allows also furthering following the skills required in a knowledge society: communication skills, the ability to learn independently, ethics and responsibility, teamwork and flexibility, thinking and digital skills and knowledge management (Bates, 2019).

The virtual educational delivery involves two main approaches: synchronous and asynchronous. The synchronous one involves real time online communication with the help of media such as videoconferencing or chat and contributes to the development of learning communities. The main feature of the synchronous activities refers to the replication of the classroom experience of information exchange and social interactions (Shahabadi & Uplane, 2015). On the other side, during asynchronous e-learning participants are not online at the same time. The asynchronous activities are supported by media like e-mail or discussion boards and are thus characterized by a great amount of flexibility: "Asynchronous learning refers to instruction that is not constrained by geography or time" (Khan, 2005). Regarding the dimension of learning stimulated by each approach, it is considered that synchronous activities stimulate the personal participation, while the asynchronous one the cognitive involvement, so the two approaches are complementary. The combination of the two settings supports best the students' learning and communication with teachers and colleagues (Hrastinski, 2008) and also takes advantage of the immersion in and facility with digital technology of the current generations of students (Bates, 2019).

The current paradigm that characterizes the education in universities places the student in the center of the didactic activity, which has to focus on the students' activation as a context for preparing them

for individual and autonomous study. So, the student possesses the means of his own development. The paradigm of competence centeredness is also present within this educational sector as an answer to the education centered on the student. The paradigm of student centeredness enables a good quality of the teaching and learning processes. Some of the concrete elements of the teaching that is being student centered are: establishing qualitative standards for teaching-learning-assessment; maintaining transparency during the instructional process; planning the didactic activity starting from the student's learning needs; using active and interactive teaching methods; encouraging autonomy in learning; formation of the lifelong learning habit; diversifying the evaluation methods; reconsidering the teachers' role by extending the social dimension of teaching (Bernat & Chis, 2003). These parameters need to be taken carefully into consideration in the online education as well and adjusted according to the specific character of this setting. One of the possible ways to maintain all these parameters at a balanced level in order to keep the student-centered paradigm in the online educational environment can be based on the identification of students' opinions, insights and learning needs.

Previous studies (Nurwahyuni, 2020; Armstrong-Mensah, Ramsey-White, Yankey & Self-Brown, 2020; Fabriz, Mendzheritskaya & Stehle, 2021) that explore students' opinions regarding synchronous and asynchronous settings in the academic education during the Covid-19 pandemic show that the engagement in online settings was challenging for both teachers and learners, but both categories have made many efforts to make the activities in this context more and more effective. Also, it has been stressed out that education in university should continue to be student-centered and should further promote active learning, especially within the online context. The interactions between the students and teachers, their colleagues and studied contents became key aspects and should be planned and promoted by teachers.

Facilitating students' learning within both synchronous and asynchronous settings is conditioned by the teachers' actions. It is demonstrated that digital teacher competence and teacher education opportunities to learn digital skills are essential for efficiently adapting to online teaching (König, Jäger-Biela & Glutsch, 2020).

3. Methodology

The current exploratory research aimed to gain relevant, meaningful information for conducting an interpretive analysis. In order to implement the exploratory research, the questionnaire-based survey was used. The questionnaire addressed to students was developed by us, included a reduced number of items, and was anonymous. From the total number of 8 questions, two questions required demographic information, while the other 6 referred to students' opinions regarding asynchronous and synchronous online educational activities. The students were invited, within 5 open-ended questions, to express the advantages and disadvantages of these activities, taking into consideration the experience they gained during their first year of university. The single close-ended question of the questionnaire aimed to find out the students' preference for these activity types. The reduced number of questions in the questionnaire meant to prevent the boredom of the respondents and considered the students' ability to provide synthetic answers regarding the approached subject.

The research questions followed in the present context were:

- What do students think about synchronous and asynchronous online educational activities?
 - Do they want to keep these activities in the future or do they want to return to exclusively onsite activities?

The investigation gathered opinions from a small group of students in their second year of university. Since they started their studies at the university, they conducted exclusively online courses and seminars, so their experience with synchronous and asynchronous online activities is relevant and enduring enough in order to provide worthy information on the research subject. Also, as Smart & Cappel (2006) show, few studies were conducted so far on the satisfaction of students with online education, so we considered this situation as an opportunity to try to cover this gap.

The questionnaire was developed and completed online. The participants (N=37, 36 females and 1 male) are students at the Babes-Bolyai University, Romania, studying at the undergraduate program at Targu-Mures extension and specializing in the domain of Preschool and Primary Pedagogy. The average age of these participants was 20,9 years old. The students haven't met their teachers and colleagues in person

and have not experienced onsite academic activities so far.

The data collected in October 2021 using the mentioned questionnaire focused on the following aspects:

- students' opinion regarding advantages and disadvantages of synchronous online educational activities
 - students' opinion regarding advantages and disadvantages of asynchronous online educational activities
 - students' wishes and expectations for the next academic years according to their preference for these activities.

The respondents were encouraged to think about their own experience and express their opinions. The option for open-ended questions was also sustained by the goal to give students the possibility to express themselves as they wished. The answers were qualitatively analyzed.

4. Results

The results were gathered around the main aspects aimed by the questionnaire and will be presented for each established topic.

4.1. Students' opinions regarding synchronous online educational activities

The most appreciated aspect of the synchronous activities among students was the rapid, immediate feed-back, received right after offering an answer or solving a working task. Thus, they can benefit from the teachers' support and clarify what they don't understand.

Few students mentioned also that they have the impression that during the synchronous activities they can feel part of the atmosphere of the face-to-face, onsite activities, which they experienced before entering university.

The majority of the students perceived synchronous activities as an opportunity for exchanging ideas with their colleagues and teachers, for participating to free discussions, for active attendance to courses and for learning in real time. The transparency and dynamic atmosphere perceived by students during synchronous activities offered them also the possibility to develop new skills. Beyond developing their general knowledge according to the studied domain, students mentioned they developed

new technical and digital skills, but also social skills. They learned to use their devices in formative manners, for searching information and attending to meetings, but also to prepare and expose a presentation. Regarding their social skills, they learned to communicate with their teachers and colleagues (to express an opinion, to give feed-back, to ask questions). Even if they didn't meet their colleagues and teachers in person, students managed to know their colleagues taking other parameters into account, for example the answers offered by colleagues during meetings or the materials they conceive and present. The many tasks they received to solve in groups or teams helped them in knowing each other better as well.

Other aspects that students mentioned and appreciated by students, based on their experience within synchronous activities, were: the organized character of the meetings, the presentation of a structured content (so they know in the future on what to focus when they retake the same content in asynchronous contexts); the facile access to structured materials (taking into consideration that during the pandemic the access to materials in general was limited); the possibility to access the meetings from many different places in a comfortable manner; the possibility to present materials or projects and to clarify the requirements of certain working tasks.

The main challenges encountered by students within the synchronous activities relate to the following aspects: technical difficulties in accessing materials; difficulties in learning in the own pace; fatigue due to the long time spent before screens; the need to possess certain digital abilities in order to actively attend meetings; lack of technical resources; the lack of active attendance of certain students and the lack of direct eye contact with teachers and colleagues.

4.2. Students' opinion regarding asynchronous online educational activities

The students associated asynchronous online activities with the sense of independence in learning, comfort and flexibility, learning alone from home, individual study and self-discovery learning. Becoming more autonomous in learning and distancing the learning process from the teachers' person was the most mentioned advantage of this online setting. Students were of the opinion that they were very involved in the asynchronous online activities, although the teacher was not present at the

same time with them and they couldn't immediately communicate.

Although they experienced this type of activities rarely than the synchronous ones, they felt that asynchronous settings offer them the possibility to control many parameters involved in the learning process: they could learn in their own pace, establish their own learning program and choose between many learning strategies and experience them. They mentioned also that within the asynchronous activities they had the possibility to deepen the information covered in the synchronous meetings in order to understand it better, to check if they understood what they have read or listened to before and to spend more time for individual study or for exercising. They observed that by involving themselves in these activities they were more often able to find solutions on their own for different situations, since the feed-back from the teacher is usually delayed in this context.

The most frequent type of asynchronous activities that the participants experienced consisted in carrying out some work tasks after going through some materials sent previously by teachers and sending the solutions or solving plans back. This context offered students the possibility to observe some of the main conditions under which the asynchronous activities are efficient: tasks need to be understood by students before the activity, so the teachers have to find a way to ensure this aspect; the students need to have access to the materials or documentary sources they need during the asynchronous activities; the teacher has to anticipate if students are likely to lose sight of essential aspects of the studied topic without his direct support.

The main disadvantage of the asynchronous activities that students mentioned was the lack of rapid help or support in solving tasks and the uncertainty regarding the correctness of their work. The delayed feed-back within asynchronous activities was perceived both positively and negatively. It made students become more involved in searching clarifications, but other times it determined difficulties in the process of searching, selecting and understanding information.

Even if the asynchronous online setting is associated with flexibility, half of the investigated students mentioned that they encountered time management issues within this context (procrastination, insufficient and too long time allocated in relation to work tasks). So, there is a

significant need at the level of the investigated group for conceiving a conceptual framework for the effective time management regarding the educational domain (Muste, 2018).

The challenges mentioned by students towards asynchronous online activities can also lead to a decreased motivation of students. They mentioned that they appreciate a balanced number of asynchronous activities, since a higher frequency of this activities limited their social interactions and didn't gave them the opportunity to share thoughts, ideas or feelings with their colleagues and teachers.

4.3. Students' preferences towards synchronous/asynchronous online educational activities

The majority of the participants (27 students) expressed their preference for a mixed approach between synchronous and asynchronous activities. They feel that this approach facilitates the best their learning process, by offering them the possibility to interact with teachers and colleagues in online environment, but also to spend time for individual study. The complementary character of the two approaches was perceived by students.

Students observed that the balanced mix between synchronous and asynchronous online activities has determined an increase in their academic results and skills acquirement. Opre et. al. (2020) show that the adequate number of hours allocated to the synchronous and asynchronous activities for each subject can be established with the aid of the syllabus and curriculum, which present the exact number of hours allocated for each subject during each semester. Students mentioned also the need to organize a proper timetable, if these mixed approach will be implemented in the future.

4.4. Students wishes and expectations for the next academic years

Only a reduced number of participants (4 students) expressed their wish to give up online education altogether, because of the fatigue caused by the long time spent in front of screens, and to have the opportunity to experience the traditional, face-to-face, student life. They expressed their high need for social interaction with colleagues and their availability to respect as many security measures as necessary in order to get the chance to meet their teachers and colleagues in person.

The other students expressed their wish for a hybrid approach between online (both synchronous and asynchronous) and onsite education. They took into consideration the main advantages of the online settings, mentioned before, and wish to experience onsite activities only for part of the studied subjects. They think that for subjects that have allocated a reduced number of credits, the activities could go on online, but they also mentioned the need of direct interaction in the case of the specialized practice.

5. Discussions and conclusions

The obtained results show that students were objective enough to share both advantages and challenges they perceived in both synchronous and asynchronous formats. The students involved in the current study may not represent a significant group for the researched topic, but their opinions can be taken into consideration as a starting point in considering online education an alternative for the current context. In this case the training of teachers for becoming more competent in using technology support systems and delivering online courses becomes essential (Lin & Gao, 2020).

It is also clear that universities were not fully prepared for this sudden change regarding the transition to online activities and taking the answers we obtained from students into consideration we can observe that the process of adjusting to this new context evolved gradually (Chakraborty et. al., 2020). Students observed that teachers have constantly tried to improve their teaching strategies and also to facilitate students' learning in both synchronous and asynchronous contexts. So, this rapid transition determined teachers to professionally evolve and develop, fact that can be considered a main advantage of the current situation.

Compared to a similar study (Oltean, 2020), which focused on middle school students, the undergraduate students' wish to maintain the use of synchronous and asynchronous in the future for part of the subjects they go through represents a particular aspect. We must also take into consideration that the investigated group didn't have the opportunity to participate at onsite activities at the university. This experience could change their opinion in the future. So, the return of students to the university has to be carefully prepared, so that advantages perceived by them during the online courses and seminar can be further maintained. It is also noticeable that many students enroll in online

courses due to their asynchronous character (Hrastinski, 2008).

The only subject for which students mentioned the importance of direct, face-to-face, attendance was the specialized practice. Students expressed the difficulty in perceiving essential aspects related to this field when attending to online synchronous activities at this subject. So, both synchronous and asynchronous online activities need to be completed by the onsite ones in some particular situations.

We conclude that altogether the current study shows that distance learning, both in synchronous and asynchronous forms, had positive effects on students learning. Students were conscious that during this particular context this was the only manner in which they could continue their studies. Palvia et. al. (2018) anticipate that online education will become mainstream by 2025, so it should, from now on, be a

matter of interest for all educational actors and stakeholders, since it is very possible that distance learning will be offered more often in higher education (Lin & Gao, 2020).

The limitations of our study include aspects related to the dimension of the sample of involved students, their unique perspective, the reduced number of research methods, but also the validity of the results obtained within the qualitative research. In further studies students' opinions could be compared to the ones of teachers regarding the use and experience with synchronous and asynchronous online activities, but also to the ones of students, who had the possibility to take part in onsite activities at the university. Also, a larger sample of participants and research methods could be used.

Appendix A.

Questionnaire regarding students' opinions about online synchronous and asynchronous activities during Covid-19 Pandemic

Through this questionnaire we aim to find out your opinion regarding the experience you had with online synchronous and asynchronous activities during the Covid-19 Pandemic. The questionnaire is anonymous and will only be used within a pedagogical study. Feel free to share your thoughts, feelings and opinions, mention anything you find relevant regarding your experience during this special period.

1. Which are the main advantages you encountered within synchronous online educational activities?
2. Which are the main challenges you encountered within synchronous online educational activities?
3. Which are the main advantages you encountered within asynchronous online educational activities?
4. Which are the main challenges you encountered within asynchronous online educational activities?
5. Do you prefer:
 - a. exclusive synchronous activities
 - b. exclusive asynchronous activities
 - c. both approaches

Please explain your option!

6. What are your wishes for the current academic year and for the next ones?
7. Gender M F
8. Age

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