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Improving Access and Quality of Inclusive Higher Education
One Student at a Time

STUDENTS AND LECTURERS PERCEPTION OF PRACTICES AND POLICIES APPLIED TO DISTANCE LEARNING: A CASE STUDY



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KEY FINDINGS

- In Romania, technological higher education (engineering) is a field mainly accessed by students feeling comfortable with their computer use skills; this is backed up by a mandatory examination regarding “Digital competencies” that all high school graduates must pass;
- Although there are structural initiatives that provide support to special needs students, there is no widespread division between „regular” vs „special needs” that is perceived at the teacher level when it comes to online teaching-learning and online interaction or equity access;
- In terms of accessibility, online learning is perceived to have an initial cost of owning proper hardware and an internet connection rather than anything else; however, teachers assessed that there are initiatives that address the issue and had little knowledge of students that in the end could not attend online sessions; it is worth mentioning however that the study took place in the context of technical university, where access to computers is required for being able to perform a lot of the regular assignments and most of the subjects refer to the use of some dedicated software programs characteristic to their field (e.g. simulation software, modeling software, etc.);
- Teachers consider that online education, in general, greatly improves the quality and availability of the resources that the students may use; such, there it is acknowledged that using an online platform encourages the use of a tighter structure of the subject addressed and this makes the „student journey” straight forward;
- In terms of the perceived student-teacher relationship, both students and teachers recognized the fact that online platforms provide an inherent context of communication linked to the topic, that is available 24/7 and that is more direct as compared to scheduled meetings or other „classical” approaches (open door timeslot, e-mail, etc.)
- Most teachers feel that online teaching cannot be addressed with the same pedagogical approach as the face-to-face scenario and that simply adapting the content to the technology is not enough as the mediated (online) interaction requires different student-teacher engagement mechanisms; it is in this context that both teacher and student refer to the loss of self-confidence in the role they have and the lack of self-motivation because the feedback loops they were used to from face-to-face interaction changed; such, there is a constant reference to the loss of empathy and human-to-human interaction especially in the case of people that are seen as great paraverbal communicators;
- Teachers and students alike recognize the benefits that online education and the use of a technological underlying support brings to the table and, if the choice presents itself, would adopt a hybrid scenario where keeping track of the activities, accessing resources and some form of evaluation would be online/on the computer but would also prefer to meet face-to-face for some group work and activities.

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- The most challenging aspect the teachers mentioned was the mastering of the underlying technology used for online education and the need for continuous education programs for teachers with this respect. For this matter, it is considered that a great component of the teacher self-confidence and motivation comes from her/his confidence in the use of the tools required for being online and „the fear of not doing it right and losing the dominant stance in front of the student”.
- Teachers also recognized the fact that online education is the last barrier overcome by our society that digitized most of the educational content and that the role of the teacher is under a major reconsideration: from the „walking encyclopedia person” to a „micro community moderator / or content curator”. And in the same time the students develop a rather different competence set, with the transition from the „take all in and synthesize” to „give me only what I need now”.

INTRODUCTION

Romania, being one of the latest countries accepted into the EU together with Bulgaria, still struggles to reach the level of the higher education system present in the rest of the Union. Most of the challenges stem from the structural and economical differences that are still present in the country. However, the curriculum and the learning outcomes have already been synchronized and support effective student mobility and internationalization. In the report, The Technical University of Cluj Napoca (ranking one of the top technical institutions of the country) will present a locally conducted research regarding students and lecturers' perception to equity access and democratization under the introduction of the online education alternative. The research took place on the background of the measures taken in the context of the SARS-COVID pandemic which “forced” the widespread adoption of online systems for education.

METHODOLOGY

In order to increase the relevance of the research outcomes, both teachers and students with a special interest in developing education, equity and democratization were included. Such, a questionnaire was implemented, and answers were collected online in a structural manner. Two different approaches were used, one dedicated to teachers and one dedicated to students.

The choice in the sampled population from the University's staff (teachers) was that of the people who also opted to participate in a course dedicated to the “Educational Technologies and IT&C Instruments for supporting Higher Education” course (approximately 10% of the whole teacher staff) and had already experienced a spring semester (2020) of online activities. The teachers participated to 6 online meetings with presentations and demos where various aspects regarding the tech and IT&C instruments that proved relevant in the online context were shown. Then, they were interviewed in groups and asked to answer to the questions in the questionnaire (free form answer). The approach allowed to both frame the research to the context but also create a comfortable environment where answers would bear significance. In total 60 teachers filled in the

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form, with background from different faculties of the University (so different technical fields: electrical engineering, civil engineering, etc.), different experience with students (first year bachelor to masters), and different topics (more theoretical (like math, physics, etc.) or applied (optoelectronics, beam structure, etc.) or complementary (like foreign languages)).

The students that participated to the research were selected from the student population that opted to participate also to the "Intelligent Educational Technologies" online summer school. It was considered that the interest in educational technologies of the participants made them more aware and knowledgeable about what and online educational experience is and how this affects the student population compared to a "classical" face-to-face scenario. Such, they had both an individual experience to "going full online" in the spring semester due to the anti SARS-COVID measures but also that of a "micro-course"/learning experience in the form of an online summer school addressing the educational technologies topic. In total 41 students answered the questionnaire.

ANALYSIS AND RESULTS

TEACHERS' PERCEPTION

The teacher collected answers aimed at collecting their feedback on the challenges of online learning and their attitude towards the integration of technology (namely online education) towards equity access and democratization of technical higher education. All responders already undertook an online spring semester due to the SARS-Covid pandemic. Some of them had some experience before that in the use of technology in the classroom, whereas some were confronted with the issue for the first time. Also, some teachers had already been included in projects and remedial activities for special needs but mostly underprivileged students. All of them manifested an interest in further use of technology and IT&C instruments in the "classroom" and actively got involved in such activities organized institutionally.

Overall, teachers consider that online education, in general, greatly improves the quality and availability of the resources that the students may use; such, it is acknowledged that using an online platform encourages the use of a tighter structure of the subject addressed and this makes the „student journey" straight forward. From this perspective, generically planning a learning path for a given subject, fill it in with educational resources and implement "milestones" and (self)evaluation is direct and there are plenty of platforms helping with this. Having all this digitized and such "browsable" and "searchable" in the same way as any other online experience is seen as one of the major advantages of online education.

In terms of the perceived student-teacher relationship, teachers recognized the fact that online platforms provide an inherent context of communication linked to the topic, that is available 24/7 and that is more direct as compared to scheduled meetings or other „classical" approaches (open door timeslot, e-mail, etc.). Depending on the online/instruments used, communication on the topic and within the context of taught subject is greatly improved. However, most complain of the fact that empathy and emotional feedback and support that accompany face-to-face student-teacher and student-student interaction suffers greatly and that "human bonds"

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that are created online bear a certain “coldness”. Also, the problem of lack of “emotional link” with the students is always mentioned in the context of the lecture component of the subject when this is online.

This leads to the fact that most teachers feel that online teaching cannot be addressed with the same pedagogical approach as the face-to-face scenario and that simply adapting the content to the technology is not enough as the mediated (online) interaction requires different student-teacher engagement mechanisms; it is in this context that both teacher and student refer to the loss of self-confidence in the role they have and the lack of self-motivation because the feedback loops they were used to from face-to-face interaction changed. Such the cases that provide positive feedback regarding the online experience almost all the time bear the underlying idea that the “classical” lecture presentation (teacher one-person show characterized by a presentation of the theory or concepts involved) with a large student cohort in an amphitheater followed by group/semigroup seminary / laboratory or project practical activities in smaller in sized rooms has been altered in some way: by changing the time allocation, by changing the relationships amongst participants (e.g. flipped classroom, etc.), etc.. More than once the problem of defining an active vs a passive student online came into play into the answers that were provided with a concern that the correlation between online activity/passivity and engagement is different from the on-premise, face-to-face scenario where this was synonym with the students understanding and interest in the taught subject and later in the evaluation results.

The most challenging aspect the teachers mentioned when approaching online teaching was the mastering of the underlying technology used and the need for continuous education programs for teachers with this respect. For this matter, it is considered that a great component of the teacher self-confidence and motivation comes from her/his confidence in the use of the tools required for being online and „the fear of not doing it right and losing the dominant stance in front of the student”. It is also speculated in some of the answers that while mastering technology is perceived by the students as an effort from the teacher to “come closer” it also makes the online world less of a “land of freedom of expression”.

Teachers also recognized the fact that online education is the last barrier overcome by our society that digitized most of the educational content and that the role of the teacher is under a major reconsideration: from the „walking encyclopedia person” to a „micro community moderator / or content curator”. And in the same time there is a general feel of “uneasiness” towards what are the overall competences that the students develop with the transition from the „take all in and synthesize” as the main goal of a highly “educated” person to a kind of an “educated” customer that is able to articulate „give me only what I need now” in the particular context carried by the subject.

Overall, the teachers recognize the benefits that online education and the use of a technological underlying support brings to the table and, if the choice presents itself, would adopt a hybrid scenario where keeping track of the activities, accessing resources and some form of evaluation would be online/on the computer but would also prefer to meet face-to-face for some group work and activities. This is consistent with the perception that education becomes more accessible in terms of time and place, providing the necessary flexibility to attend. There were mentions of increased online audience to lecture presentations attributed to the fact that the students perceived it to be much easier to multitask during such a scenario and not being forced to make a hard choice between a certain obligation (e.g. working) and school.

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Also, the fact that online education bears an initial cost for the students of owning proper hardware and an internet connection rather than anything else was assessed by teachers in terms of relying on the initiatives that address the issue and had little knowledge of participants that in the end could not attend online sessions; it is worth mentioning however that the study took place in the context of technical university, where access to computers is required for being able to perform a lot of the regular assignments and most of the subjects refer to the use of some dedicated software programs characteristic to their field (e.g. simulation software, modeling software, etc.);

STUDENTS' PERCEPTION

The questionnaire for the students focused on measuring their perception about online learning. The answers came from a selected population that had experienced both an online regular school semester (due to the SARS-COVID pandemic) and online summer school especially dedicated to intelligent educational technology enthusiast.

The demographic of the responders are presented in the figure.

2. Profile gender

[More Details](#)

● Female	24
● Male	17



3. Age category

[More Details](#)

● Less than 30	40
● 30 - 39	0
● 40 - 49	1
● 50 - 59	0
● >=60	0



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Neither of the participants reported any cognitive disabilities or other disabilities. In general, religious beliefs is not seen as a segregation issues in the Romanian society especially at students already attending university. As there is no mention of Jewish ultra-orthodox community that is worth mentioning in Romania or at the University for that matter, answers in the category "ultraorthodox" may be considered as pertaining rather more to the Christian orthodox religion (the vast majority of the country).

The perceived advantages of more direct communication channels were the most clearly expressed opinions of the participants.

It was possible to ask questions and get timely answers from the instructor

It was possible to interact with peers about the learning materials



Students also consider that online education, in general, improves the quality and availability of the resources that they may use; such, there it is acknowledged that using an online platform encourages the use of a tighter structure of the subject addressed and this makes the adapting to the learning pace easier.

The online lesson was interesting

The online lesson allowed me to adapt the learning pace to my needs

The material taught in the lesson was well organized



Regarding a pure online experience, students recognize the benefits that online education and the use of a technological underlying support brings to the table and, if the choice presents itself, would adopt a hybrid scenario where keeping track of the activities, accessing resources and some form of evaluation would be online/on the computer but would also prefer to meet face-to-face for some group work and activities. Such, depending on the context of the online educational activity, options were mixed.

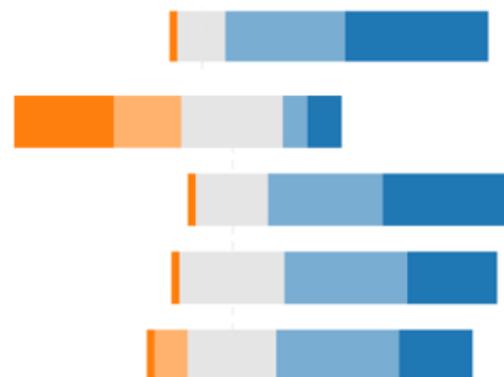
The online lesson was interesting

I prefer an online lesson to a face-to-face lesson

The e-learning environment was easy to use

I am satisfied with the e-learning environment

I am satisfied with the online lesson



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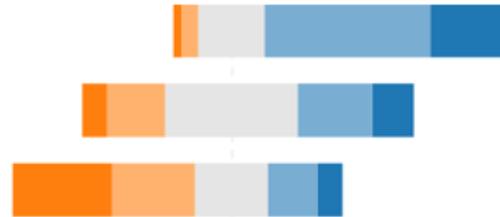
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Students also refer to the loss of self-confidence and satisfaction in online learning and mention the lack of human interaction and empathy among the causes. This is also consistent with their expressed confidence in the use of technology.

I am a highly skilled computer user

Online learning makes me feel pleased/satisfied

Online learning makes me feel uneasy/frustrated



As a concluding remark, the use of technology and IT&C instruments in the context of experiencing online education for both teachers and students at the Technical University of Cluj Napoca is seen as something that brings positive things forward and solves some of the issues associated to previous barriers in front of access equity and democratizations. However, it poses challenges in terms of the roles that the “student” and “teacher” should play in the future how the link between them will transform. It is also clear that teachers need to bridge the gap in what the use of technology is concerned and within this context there is a clear need for lifelong continuous education for teachers as well. It is also clear from the answers provided by the teachers that “going online” requires more than just “digitizing” content and face-to-face scenarios.