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MAKING E-LEARNING EFFICIENT PROPOSALS FOR UNIVERSITY GEOGRAPHY

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Abstract

Our understanding of the world is enhanced through learning Geography. But what is the specificity of learning geography during online classes at the university level? What materials are most successful and make learning more efficient when adapted for e-learning? How can one boost motivation, be efficient and enjoy learning Geography, and all this during a fast process of adaptation forced by a world pandemic? This research aims to analyse how e-learning takes place at university level, during the ongoing COVID-19 pandemic. In order to collect information on the subject, we asked various categories of students from the Faculty of Geography in Babeş-Bolyai University, Cluj-Napoca, Romania, to take a survey. Through the items of this tool, we collected data about the students' views on: the influence of university class content (lectures) in e-teaching on their motivation, interest and comprehension; the existing and desired characteristics of the support materials provided during online activities in order to boost learning efficiency; learning specificity during e-teaching. At the end of our research, based on students' views and the existing bibliography, several proposals are put forward to improve students' learning.

Keywords: COVID-19, E-communication, e-teaching, online classes, students' perceptions

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1. Introduction

The COVID-19 pandemic challenged the university education system, and this had to enhance its support for e-learning, considering a variety of factors that influence it (Almaiah et al., 2020), and fighting to become resilient during a crisis, which many perceived also as an opportunity for educational development (Alvarez de Barrios, 2020; Anderi et al., 2020; Trombly, 2020). Research focused on the features of the virtual environment within a technology-led process of transforming learning, which could enable students to learn independently, and professors to increase interactivity and decrease the cognitive load for this purpose (Mukhtar et al., 2020).

E-learning means e-communication, e-training and e-assessment (Ana et al., 2020), and it implies both distance and connectivity (Mulla et al., 2020). Some researchers argue that much of the success of e-learning depends on technology (Ebner et al., 2020), while others underline that discussions and interaction are reduced and thus affect students' capabilities (Alturise, 2020). However, Scull et al. (2020) argue that high levels of interaction are possible in e-learning if innovations are encouraged, such as the introduction of a mixture of synchronous and asynchronous activities. In addition, e-learning can support experiential learning through simulations if needed (Peisachovich et al., 2020; Roskvist et al., 2020). Others point out that e-learning has the advantage of student-centred learning (Mulla et al., 2020; Mukhtar et al., 2020), influencing students in a positive manner: they become more organised (self-organised and self-disciplined), and they are practising self-directed learning, a skill necessary for lifelong learning (Mukhtar et al., 2020).

Nuere and de Miguel (2020) underline the many changes needed for successful online university learning, among which the key ones are the following: professors should act as enablers, not instructors, because the focus is on the learning process, not on teaching.

Almaiah et al. (2020) list several factors that influence e-learning: trust of Internet security, the quality of the e-learning system, ICT culture and users' increase of awareness through training programmes. In the case of Romania, Edelhauser and Lupu-Dima (2020) assert that e-learning expertise is at a low level and therefore the pandemic has triggered digitalisation, which could be seen as progress in the field of education.

In this context, research on online university education in geography identified some of the challenges and solutions for successful learning and the first step consisted of adapting e-teaching (Dulamă & Ilovan, 2020; Dulamă et al., 2021; Ilovan, 2020). It also showed that, to ensure the success of geographical online university education, similar to training faculty members in e-teaching, training students in e-learning is also compulsory for university education (Ilovan, 2020). Our present research continues this effort of improving e-learning in geographical higher education.

2. Problem Statement

Direct contact with students made us notice a greater class attendance compared to the situation where these classes were held in actual classrooms, students having the possibility to attend lectures on Microsoft Teams. For geographers, the platform has many advantages for teaching: Internet connection, easy usage of visual means, some outside-the-box sources (text and images), posting support materials

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and assignment results, etc. Some state that professors are not prepared for online education and that students had worse results after online teaching, compared to the results after face-to-face interaction. These results are a consequence of how students act, of the cognitive strategies students employ in various contexts. The starting point of this research is the existence of several characteristics of e-teaching, which influence learning based on online education.

3. Research Questions

The questions raised by this research are as follows: What do students think about the importance of some aspects of online classes during and after e-teaching? What is the students' actual behaviour during and after e-teaching?

4. Purpose of the Study

The aim of the article is to investigate the views of geography students on online class-based learning, during and after such activities, as well as to analyse the frequency of their behaviours regarding education in such contexts.

5. Research Methods

Data collecting and processing. We gathered data on online learning through the inquiry method, by using a specially devised questionnaire. We used 17 items and a Likert scale to focus on student opinion on the importance of several aspects of online learning. We also employed 28 items with a Likert scale to focus on their behaviour during and after online teaching. We calculated the weighted average (*m*) for each item and developed several hierarchies.

Participants. All participants are students of the Faculty of Geography, in Babeş-Bolyai University, Cluj-Napoca, Romania, from all specialisations and years of study at the Bachelor's level (Table 1). Respondents make for one fifth of the total student number at the respective study level.

Table 1. Participant information

Specialisation	Year of study						Total	
	1		2		3			
	no.	%	no.	%	no.	%		
Territorial Planning	20	50	8	20	12	30	40	34.78
Geography of Tourism	6	19.35	13	41.94	12	38.71	31	26.96
Geography	12	48	6	24	7	28	25	21.74
Hydrology and Meteorology	3	27.27	6	54.55	2	18.18	11	9.57
Cartography	5	62.5	2	25	1	12.5	8	6.96
Total	46	40	35	30.43	34	29.57	115	100

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6. Findings

In this section, we present and discuss the students' opinions on the importance of several aspects of online learning and their practices in online education.

6.1. Student opinion on the importance of several aspects of online learning

The importance of student behaviours during online learning. Among the behaviour put forward to be assessed, the most important is watching/receiving the professor's online lecture (*m* – 3.84) (Table 2). Surprisingly, only 60% of the students found it important and very important to follow the professor and 26% stated an average importance. 66% of the students believe that it is important and very important to provide verbal answers to the professor's questions during online learning (*m* – 3.78) and 62% to solve the tasks given during online learning (*m* – 3.77). For the other activities, students gave different scores, which implies that, for some, the already mentioned activities are less important or have no importance whatsoever. In general, all the activities that could have been performed in tandem or at the same time with online classes had an average above 2.78: taking notes (*m* – 3.56), asking the professor questions (*m* – 3.41), giving chat answers (*m* – 3.18). The bottom of the hierarchy includes activities involving screen capture (*m* – 3.01), highlighting (*m* – 2.78), thus proving that such activities are seen by students as the least important during online learning.

Table 2. Student opinion on the importance of behaviours and activities during online classes

Behaviour during online classes	Number of students who gave scores					Weighted average (*m*)
	1	2	3	4	5	
I follow what the professor says during online classes	1	6	38	35	35	3.84
I provide verbal answers to questions asked during online classes	5	16	18	36	40	3.78
I solve tasks proposed during online classes	6	12	25	31	41	3.77
I take notes during online classes	12	18	16	32	37	3.56
I address questions during or after online classes	16	16	24	23	36	3.41
I answer in writing to chat questions, during online classes	17	22	26	23	27	3.18
I make screen captures during online classes	29	16	23	19	28	3.01
I highlight on the support material while the professor explains	27	28	25	13	22	2.78

The importance of student behaviours after online learning. Table 3 portrays how students consider that, in order to understand and learn, it is more crucial to have .doc or .pdf files containing all the information contained by the online lesson (*m* – 4.25) than to listen to the actual lecture (*m* – 3.84). 53% of the students believe it is important and very important to solve the tasks given to them after each online class (*m* – 3.80). The remaining activities after the lecture are seen as less important than the ones during the actual lecture: browsing the dictionary for certain words, reading the support material, extracting essential ideas from the support, highlighting on the support, searching for additional information to broaden the already given content, multiple reading of the support to achieve comprehension, memorisation, and learning.

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Table 3. Student opinion on the importance of behaviours and activities after online classes

Behaviour after online classes	Number of students who gave scores					Weighted average
	1	2	3	4	5	(*m*)
In order to understand and learn, I need the .doc or .pdf files containing all the information from the online lecture	1	9	14	27	64	4.25
After each online lecture, I solve the tasks given according to requirements	4	12	27	32	40	3.80
After each online lecture, I browse the dictionary or other sources for novel notions that I do not comprehend	18	23	36	18	20	2.99
After each online lecture, I read the support material once	27	23	23	24	18	2.85
After each online lecture, I extract the essential ideas from the downloaded support	25	20	36	19	15	2.82
After each online lecture, I highlight in the downloaded support	27	23	32	17	16	2.76
After each online lecture, I look for other sources on the Internet (or in other places) to deepen the content	29	26	27	21	12	2.66
After each online lecture, I read the support posted on the platform multiple times until I fully understand and memorise/learn it	29	33	29	9	15	2.55

6.2. Student practices in online education

Actual student behaviour during online lectures. During our research, we took into consideration the fact that these behaviours can be influenced by many factors: lecture characteristics (content, importance, etc.), professor's skill and student specificity (motivation, prior knowledge, digital skills, geography knowledge, cognitive skills, etc.). Table 4 shows that the most important motivational factor, the one which conditions students to listen to a lecture, is the interest for its content (*m* – 4.10). 40% however listen to it even though they do not have the slightest interest in that particular class. Next come situations where teaching and communication skills are the motivating factor: the professor talks slowly so that students may understand (*m* – 4.09), he or she employs user-friendly language (*m* – 3.96) and varies speech tonality and speed (*m* – 3.78). Low scores (below *m* – 3.03) were recorded for those situations where the professor is monotone in his/her presentation, uses too specialised a language and speaks rapidly. Students gave higher scores to those situations where they had a more passive role and lower scores (*m* – 3.70 - 2.57) where they had a more active role and must perform different tasks (verbally respond to questions, take notes, ask the professor questions, make screen captures, highlight), which indicates that such a behaviour has a lower frequency. 39% of the students regularly do other things during online lectures.

Table 4. Actual student bahaviour during online lectures

Behaviour during online classes	Number of students who gave scores					Weighted average
	1	2	3	4	5	(*m*)
I listen to the online presentation when interested in its content	1	9	20	32	53	4.10
I listen to the online presentation when the professor speaks slowly	4	9	19	24	59	4.09
I listen to the online presentation when the professor employs user-friendly language	7	4	23	34	47	3.96
I listen to the online presentation when the professor varies speech in speed and tonality	4	9	33	31	38	3.78
I solve the proposed tasks during online lectures	7	16	19	36	37	3.70

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I answer verbally questions during online lectures	7	17	27	30	34	3.58
I answer in writing to chat questions during online lectures	13	19	22	30	31	3.41
I take notes during online lectures	11	22	30	24	28	3.31
I listen to the online presentation even though not interested in its content	7	22	40	25	21	3.27
I do other activities during online lectures	5	29	36	22	23	3.25
I ask the professor questions during or after lectures	16	30	26	22	21	3.02
I listen to the online presentation even though it is uninteresting	21	16	42	12	24	3.02
I make screen captures during online lectures	23	23	25	17	27	3.02
I listen to the online presentation when the professor uses inaccessible language	18	29	27	17	24	3.00
I listen to the online presentation when the professor speaks rapidly, even though I do not understand the content	21	27	27	17	21	2.93
I highlight on the support material while the professor is explaining	37	19	31	12	16	2.57

Actual student behaviour after online lectures. Table 5 emphasises that most students (74%) frequently examine the files downloaded from the online platform during the examination season (*m* – 4.16). 60% state that they frequently solve the tasks near the deadline (*m* – 3.77), while 62% state that they solve the tasks after each online class, according to professor requirements. These answers indicate that students solve some tasks that must not be presented for evaluation or differ their behaviour from discipline to discipline, depending on its characteristics. When they did not attend the online lecture, 61% stated that they frequently studied the material from the online platform (*m* – 3.71).

The result analysis reveals that, after each online class, 44-61% of the students never or rarely do the following based on the files downloaded from the platform: browse dictionaries or other sources for unknown words, extract essential ideas from the support, search the web and other places for more information, underline or make graphs/doodles/schemes of the content, read the support, underline, read the support multiple time to ensure a full information comprehension. All these actions got lower scores in terms of importance given by students, and performing such actions received even lower scores.

Table 5. Actual student bahaviour during online lectures

Behaviour during online classes	**Number of students who gave scores**					**Weighted average**
	1	2	3	4	5	**(*m*)**
I study the downloaded files during the examination season	2	13	14	22	64	4.16
I solve the tasks given close to the deadline	6	16	23	24	46	3.77
After each online lecture, I solve given tasks according to requirements	8	13	22	28	44	3.76
I study the downloaded support when not attending online lectures	7	17	20	29	42	3.71
After each online lecture, I browse dictionaries or other sources for unknown words	20	31	30	18	16	2.82
After each online lecture, I extract essential ideas from the downloaded support	28	27	28	17	15	2.69
After each online lecture, I search the web for further information (or other places)	29	28	30	14	14	2.62
After each online lecture, I underline or make a sketch of the downloaded content	31	28	25	17	14	2.61
After each online lecture, I read the support posted on the platform	28	33	25	16	13	2.59
After each online lecture, I underline on the downloaded support	38	27	24	15	11	2.43
After each online lecture, I read the support multiple times until I fully comprehend it	35	36	22	10	12	2.37

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7. Conclusion

Attending a lecture is heavily influenced by the interest displayed by students for the content and degree of understanding, enabled by the use of an expressive, accessible language, varied in tone and speed. During online lectures, the most important and most frequent activities are those short term, initiated by the professor (answering verbal and written questions, tasks done on the spot, providing questions, taking notes). After online lectures, the results indicate a higher frequency of studying the class content in the examination season and solving tasks close to the submission deadline. The lowest frequency was found in weekly activities which help the processing, comprehension, clarification and restructuring of the information logically linked to prior student knowledge, activities that lead to a better and robust education.

Several activities might improve students' e-learning process: more written assessment during the semester; more frequent use of dual and multiple-choice tests, which are easier for professors to correct, but also aim to engage students' thinking and motivate them to learn constantly; use of one-two small tasks for students to solve at home, after each lecture, resulting in a semester portfolio; asking students to realise a glossary of new terms; other exercises that engage students in a constant activity of restructuring new information and thus enable them to learn on a weekly basis.

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