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Academic environment: differences by age categories and gender in therms of online learning difficulties

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Abstract

This study aims to highlight the difficulties that students encounter in online education depending on their gender and age group. 143 students participated in the study, 68 male and 75 female, aged between 18 and 50, with M = 37.4 and SD = 4.5 from the urban environment, humanistic profile. The study aims to test three research hypotheses, which aim to identify differences between attendance at classes and gender and age category, between difficulties, participant gender and age category.

Keywords: age categories, academic environment, gender, online.

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Introduction

Since the 1990s, the world has seen significant changes in the landscape of education as a result of the ever-expanding influence of technology. One such development is the adoption of online learning across different learning contexts, whether formal or informal, academic and non-academic, and residential or remotely. We began to witness schools, teachers, and students increasingly adopt e-learning technologies that allow teachers to deliver instruction interactively, share resources seamlessly, and facilitate student collaboration and interaction (Elaish et al., 2019; Garcia et al., 2018). Although the efficacy of online learning has long been acknowledged by the education community (Lincă, 2016; Kebritchi et al., 2017; Lincă, 2018; Matei& Lincă, 2019; Lincă, 2019; Barrot et al., 2021; Lincă et al., 2022).

The Covid-19 pandemic caused the closure of educational units, the didactic process taking place in an online format, the period during which teaching took place mandatorily online for two years, from March 2020, when the pandemic began, until March 2022. After the pandemic period, the didactic process continued to take place online only at the level of universities that approve this, depending on the situations that require courses to be held in such a format. The process of carrying out the didactic activity took place either synchronously, which allows teachers and students to interact directly, using Google Meet, Microsoft Teams, Zoom applications, or asynchronously, thus teachers launch topics and tasks to be solved on the platform. specially designed such as Moodle, Google Classroom (Matei, 2022). Carrying out the didactic process in online format led to the formation and development of digital skills. Thus, the use of technology in an educational context has flourished (Miulescu, Matei, 2021). The use of technology in education can increase its quality if institutions provide support in this regard to the educational process by providing all the necessary resources: material, human, time (Anghel, Neculau, 2022, Anghel, 2017).

Recently, the education system has faced an unprecedented health crisis (i.e., the COVID-19 pandemic) that has shaken up its foundation. Thus, various governments across the globe have launched a crisis response to mitigate the adverse impact of the pandemic on education, which includes curriculum revisions, provision for technological resources and infrastructure, shifts in the academic calendar, and policies on instructional delivery and assessment. Inevitably, these developments forced educational institutions to migrate to full online learning until face-to-face instruction is allowed. This strategy had advantages, but also many disadvantages (Barrot et al., 2021).

Given today's uncertainties, it is vital to gain a nuanced understanding of students' online learning experience in times of the COVID-19 pandemic (Anghel, Dogaru, 2021). To date, many studies have investigated this area with a focus on home learning (Suryaman et al., 2020), students' mental health (Copeland et al., 2021), virtual learning environment (Hew et al., 2020), and students' overall learning experience (Day et al., 2021). In this study we ilustrated that the direct impact of the pandemic on the challenges that students experience in an online learning space.

Sample

143 students participated in the study, 68 male and 75 female, aged between 18 and 50, with M = 37.4 and SD = 4.5, from the urban environment, from University of Valahia and University of Bucharest, humanist profile. 52 participants are between the ages of 18 and 25, 30 of the students are between the ages of 26 and 35, 33 of the participants are between the ages of 36 and 45, and 28 of the participants are over the age of 45. 64 of the students are bachelors, 38 are masters and 41 are doctoral students. 22 of the students had 10-25% attendance at the course, 16 had 25-50% attendance, 2 students had attendance between 50 and 75% attendance, 9 participants had 50-75% attendance and 76 participants had attendance over 75% (Table 1).

Table 1. *Demographic data*

	Frequency	Percent	Valid Percent	Cumulative Percent
Boy	68	47.552	47.552	47.552
Girl	75	52.448	52.448	100.000
18-25 years	52	36.364	36.364	36.364
26-35 years	30	20.979	20.979	57.343
36-45 years	33	23.077	23.077	80.420
over 45 years	28	19.580	19.580	100.000
licence	64	44.755	44.755	44.755
masters	38	26.573	26.573	71.329
PhD	41	28.671	28.671	100.000
10-25%	22	15.385	15.385	15.385
25-50%	16	11.189	11.189	26.573
50-75%	29	20.280	20.280	46.853
over 75%	76	53.147	53.147	100.000
Missing	0	0.000		

Objectives

This study aims to highlight the difficulties students encounter in online education depending on their gender and age category.

Hypotheses

Hypothesis 1. It is assumed that there are statistically significant differences between students in the percentage of attendance at online courses in terms of their gender and age category.

Hypothesis 2. It is assumed that there are statistically significant differences between students in terms of difficulties encountered in online education deppending on their gender.

Hypothesis 3. There are statistically significant differences between students regarding the difficulties encountered in online education deppending on their age category.

Results

The scientific approach being complex, we went through several stages. Thus, we verified the first hypothesis and in Table 2 we observe that most boys, 36 have attendance below 50% in online courses, while most girls, 73 have registered attendance in online courses above 50%. Regarding the age categories, we can see in Table 2 that all age categories have over 75% attendance, with the exception of the category between 26 and 35 years old. Most of those in this category have class attendance between 50 and 75%.

Table 2. *Contingency Tables - the relationship between the presence of students in online education, gender and age category*

	present.of.the.course				
Gender	**10-25%**	**25-50%**	**50-75%**	**over 75%**	**Total**
m	22	14	15	17	68
w	0	2	14	59	75
18-25 years	0	2	8	42	52
26-35 years	2	7	13	8	30
36-45 years	10	7	6	10	33
over 45 years	10	0	2	16	28

In the table below we can see that there are statistically significant differences between students in terms of the percentage of attendance at online courses according to their gender and age category (X^2 gender=54,032, X^2 age category=60,013, $p < .001$).

Table 3. *Chi-Squared Tests - the relationship between the presence of students in online education, gender and age category*

	Value	**df**	**p**
X^2 gender	54.032	3	< .001
X^2 age category	60.013	9	< .001

Secondly, we also tested hypothesis 2. Thus, in Table 4 we see that girls more than boys (28) have: insufficiently developed digital skills (28), a less performing computer (49), disorganization in their own schedule (52), interests in other activities during courses (30), interests in other courses outside the faculty (30). In addition, specific to the boys in the sample are the following difficulties: low motivation and interest (59) and service (15).

Table 4. *Contingency Tables - the relationship between students' difficulties in online education and gender*

	gender		
insufficiently.developed.digital.skills	**m**	**w**	**Total**
1	7	31	38
2	33	24	57
3	21	15	36
4	7	1	8
5	0	4	4
lack.of.a.powerful.computer			
1	8	38	46
2	11	19	30
3	14	9	23
4	35	2	37
5	0	7	7
low.motivation.and.interest			
1	1	0	1
2	0	2	2
3	9	0	9
4	0	21	21
5	59	51	110

service			
1	38	40	78
2	6	14	20
3	19	6	25
4	0	10	10
5	5	5	10
disorganization.in.your.own.schedule			
1	0	5	5
2	17	18	35
4	23	12	35
5	28	40	68
interest.in.other.activities.during.classes			
1	22	38	60
2	16	27	43
3	11	5	16
4	19	3	22
5	0	2	2
participation.in.other.courses.outside.the.faculty			
1	32	57	89
2	14	10	24
3	14	7	21
4	8	1	9

Therefore, there are statistically significant differences between female students and male students according to the difficulties encountered in online courses (X^2insufficiently developed digital skills=25,798, X^2lack of a powerful computer=59,017, X^2low

motivation and interest= 16,256, X^2 service = 19,716, X^2disorganization in your own schedule = 10,285, X^2interest in other activities during classes = 22,679, X^2participation in other courses outside the faculty=15,161, $p < 0.05$).

Table 5. *Chi-Squared Tests - the relationship between students' difficulties in online education and gender*

	Value	**df**	**p**
X^2insufficiently.developed.digital.skills	25.798	4	< .001
X^2lack.of.a.powerful.computer	59.017	4	< .001
X^2low.motivation.and.interest	16.256	5	0.006
X^2 service	19.716	4	< .001
X^2disorganization.in.your.own.schedule	10.285	3	0.016
X^2interest.in.other.activities.during.classes	22.679	4	< .001
X^2participation.in.other.courses.outside.the.faculty	15.161	3	0.002

In the table below we can see that students in the 18-25 years category are characterized by: insufficiently developed digital skills (49), low motivation and interest (47) and disorganization in their own schedule (38). For the categories 26-35 years and 36-45 years, the following are characteristic: the existence of a less performing computer (respectively 18 and 20 students), the service (respectively 15 and 7 students), interest in other activities during the courses (respectively 15 and 13 students). For the over 45 age category, the difficulties were: low motivation and interest (28), disorganization in own schedule (28), insufficiently developed digital skills (22). Service and participation in other courses outside of faculty are present in our sample, but to a lesser extent.

Table 6. *Contingency Tables - the relationship between students' difficulties in online education and age category*

	age.category				
insufficiently.developed.digital.skills	**18-25 years**	**26-35 years**	**36-45 years**	**over 45 years**	**Total**
1	3	4	3	6	16
2	0	1	1	0	2
3	11	9	14	1	35
4	17	7	4	1	29
5	21	9	11	20	61
lack.of.a.powerful.computer					
1	24	9	8	5	46
2	16	3	5	6	30
3	5	5	9	4	23
4	1	12	11	13	37
5	6	1	0	0	7
low.motivation.and.interest					
1	1	0	0	0	1
2	2	0	0	0	2
3	9	0	0	0	9
4	9	4	5	3	21
5	29	26	27	25	110
Service					
1	3	7	2	1	78

	2		0	9	
2	5	8	6	1	20
3	5	12	4	4	25
4	5	2	2	1	10
5	5	1	1	3	10
disorganization.in.your.own.schedule					
1	6	0	5	0	5
2	9	8	14	4	35
4	14	12	5	4	35
5	24	10	14	20	68
interest.in.other.activities.during.classes					
1	23	9	12	16	60
2	20	6	8	9	43
3	5	5	3	3	16
4	2	10	10	0	22
5	2	0	0	0	2
participation.in.other.courses.outside.the .faculty					
1	39	15	16	19	89
2	4	7	6	7	24
3	7	8	4	2	21
4	2	0	7	0	9

There are statistically significant differences between students in terms of their age category deppending on the difficulties encountered in online courses (X^2insufficiently developed digital skills=37,098, X^2lack of a powerful computer=41,201, X^2low motivation and interest= 27,781, X^2 service = 28.357, X^2disorganization in your own schedule = 25.709, X^2interest in other activities during classes = 29.932, X^2participation in other courses outside the faculty=27.753, $p< 0.05$).

Table 7. Chi-Squared Tests - the relationship between students' difficulties in online education and age category

	Value	**df**	**p**
X^2insufficiently.developed.digital.skills	37.098	12	< .001
X^2lack.of.a.powerful.computer	41.201	12	< .001
X^2low.motivation.and.interest	27.781	15	0.023
X^2 service	28.357	12	0.005
X^2disorganization.in.your.own.schedule	25.709	9	0.002
X^2interest.in.other.activities.during.classes	29.932	12	0.003
X^2participation.in.other.courses.outside.the.faculty	27.753	9	0.001

Conclusions

This study aimed to highlight the difficulties students encounter in online education depending on their gender and age category. We demonstrated that students in the 18-25 years category are characterized by: insufficiently developed digital skills, low motivation and interest and disorganization in their own schedule. For the categories 26-35 years and 36-45 years, the following are characteristic: the existence of a less performing computer, the service, interest in other activities during the courses. For the over 45 age category, the difficulties were: low motivation and interest, disorganization in own schedule, insufficiently developed digital

skills. Service and participation in other courses outside of faculty are present in our sample, but to a lesser extent.
On the other hand we demonstrated that girls more than boys have: insufficiently developed digital skills, a less performing computer, disorganization in their own schedule, interests in other activities during courses, interests in other courses outside the faculty. In addition, specific to the boys in the sample are the following difficulties: low motivation and interest and service.
In the future, we propose to expand the sample to more fields.

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