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The Impact of the COVID-19 Pandemic on the Use of Digital Technologies in Ensuring the Efficient e-Learning Process at the Technical University of Moldova

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Abstract

The Technical University of Moldova (TUM) is the only state-accredited technical higher education institution in the Republic of Moldova. In the face of the magnitude of the health crisis, TUM had to quickly adapt its mode of operation to ensure the continuity of its activities and to accompany its students in the study process in an efficient way. In this paper, we analyzed the impact of the COVID-19 pandemic on eLearning and on the use of Moodle and Microsoft 365 educational platforms, implemented at the Technical University of Moldova. The data were exported from M365 Usage Report in excel format for a period of 180 days (from 15.02.2020 to 15.08.2020) and from the Moodle database for a period of about 210 days (period 31.12.2019 - 31.07.2020). Those intervals include the pre-pandemic period, the lockdown period and the student holiday period. The aim of the research was to analyze the potential of the university to continue and ensure the online education process internally, to share the lived experience, the measures taken to anticipate the widening of the digital divide, but also for the identification of vulnerabilities and reasoned planning of exit strategies, in an appropriate frame of reference, depending on subsequent developments related to the COVID-19 pandemic. The Technical University of Moldova anticipated and undertook multiple measures that demonstrated the potential to ensure the continuity and good development of the teaching process during the pandemic by: reducing the digital divide; reducing the risks of inequalities in education for students from disadvantaged backgrounds; ensuring the social binder (im-

perative during this period). At the same time, it would be incorrect not to mention that eLearning, although it is an indisputable support in the teaching process, requires additional investments (financial, time etc.) from the university and from the teachers, but also from the students!

Keywords

Information Technologies, Higher Education, Microsoft 365 for Education, Applications, Services, e-Learning, COVID-19, Technical University of Moldova

1. Introduction

The use of information and communication technologies (ICT) in higher education has been and is considered a necessary condition for adaptation to the European Higher Education Area (García-Valcárcel & Tejedor, 2009). In recent years, there has been a dramatic increase in both the absorption of e-learning in higher education and research into its impact on institutions, teachers and students due to the possibility of expanding teaching and learning options using digital technologies (Rhona & Benfield, 2005). The expansive and ever-fertile frontier of online learning has become the educational learning solution designed to improve knowledge and performance. Many educational institutions, corporate enterprises and other entities use web-based learning methodologies to provide education, in part or in full online, using electronic platforms. It is interesting to note that e-learning encapsulates web-based courses and all other asynchronous and synchronous learning methods, as well as other capabilities to support learning experiences (Kim, 2017). E-Learning is considered relatively new and, in terms of learning in general, is insufficiently researched. It has attracted and still attracts significant educational investment, but the educational value is often challenged (Rhona & Benfield, 2005).

The COVID-19 pandemic caused a large number of casualties worldwide, with profound social and economic consequences. UNESCO noted that about one billion students have been forced to stay home due to the emergency, and the scale and speed with which schools and universities have been closed is an unprecedented challenge (Giancola & Piromalli, 2020).

Since its inception, universities around the world, like any other social institution, have had to deal with devastating epidemics that have affected their daily functioning. And they survived, and continued their mission even behind closed doors, because academic activities continue where there are spirits engaged in science and training and sometimes with surprising results (UNESCO, 2020). It has certainly been redundant to observe the repercussions of the global pandemic on education and training systems around the world, forcing them to rely, in spite of everything, exclusively on digital technologies and distance learning to ensure their sustainability in the immediate future appropriate (Di Palma & Belfiore, 2020). In order to face a daily life completely different from the one

that characterized our days until recently, the institutions had to face digital transformations, being challenged to select resources and platforms that could be used to support online education. Institutions have experienced and still experience "digital immersion" with some drowning risks, inevitable to the situation "I throw you into the sea, so you will learn to swim". At the same time, it is pleonastic to say that this situation would have been much more difficult to face/sustain, if the internet had not been an important component of our lives. Some universities were already particularly focused on online teaching.

In these cases of pre-existence towards an orientation towards online didactics, the emergent period was probably faced with more decision, due to the presence of already institutionalized organizational practices (Giancola & Piromalli, 2020). In many countries, various solutions have been implemented during the pandemic to continue the educational process. Online libraries, TV shows, guidelines, resources, video conferences, online channels have been introduced in at least 96 countries. During this difficult time, educational institutions were supported by large companies such as Microsoft, Google, Zoom and Slack, which offered many of the features of their products for free: Microsoft offered anyone the premium version of Microsoft Teams for free for six months and raised existing user limits. Google has announced that it is offering its corporate video conferencing features, for larger meetings (up to 250 people) and free G Suite and G Suite for Education registration functionality until July 1, 2020. Zoom has raised the time limit for video calls in China, Japan, Italy and the United States on demand (Mola, 2020).

1.1. Objectives

This study started as a necessity to evaluate the university potential in providing now, but also in the future, e-Learning, from the perspective of digital technologies implemented within the Technical University. The results will help us to take into account general variables involved in identifying organizational, procedural, infrastructural, pedagogical, social, but also administrative strategies for ensuring the university education process, regardless of the circumstances.

For the realization of this study the following objectives were proposed:

Assessing the impact of the pandemic on the use of Microsoft Office 365 services and applications and on the Moodle educational platform

Identifying the vulnerabilities, related to digital technologies, that the university has faced in order to ensure distance learning

Identifying possible solutions to solve or reduce the identified problems.

1.2. Importance of the Study

In the Republic of Moldova the pandemic is in a continuous linear evolution, registering an increase from 25113 cases (on 01.08.2020) to 37208 cases (on 01.09.2020) (Worldometer). The Extraordinary National Commission of Public Health of the Republic of Moldova announced the extension until September 15,

2020, on the entire territory of the country, the state of emergency in public health. The Ministry of Education, Culture and Research came up with the recommendation that universities, in the first 2 weeks, carry out their online study process. So, today we still have the present future in a computer always connected: lessons, teachers, exams, curriculum. The research focuses on the retrospective of the use of educational platforms implemented at the university and, respectively, the deduction of vulnerabilities in ensuring the educational process. At the same time, it emphasizes the importance of information technologies in the training process.

2. Materials and Methods

2.1. Pandemic in the Republic of Moldova

The state of emergency on the entire territory of the Republic of Moldova was declared on March 17, 2020, with a number of infected in a continuous linear evolution. On August 10, 2020, the Republic of Moldova registered 6802 cases per million population, the number of infections being higher than in Russia, but also compared to many European countries—Romania, Poland, Hungary, Czech Republic, Slovakia, Austria, Estonia, Latvia, Lithuania. In the face of the magnitude of the health crisis, Moldova was one of the 188 countries (Worldometer) worldwide that suspended the educational process. TUM, like many other educational institutions in the country, had to quickly adapt its mode of operation to ensure the continuity of its activities and to accompany its students in the study process in an efficient way. In the created situation, predictable or not, but the digital transformation, from opportunity and alternative has become, without much care, an imperative necessity.

2.2. Research Approach

This research includes an analysis of the university's potential for continuing and ensuring internally the online learning process, the availability of support and maintenance of IT services provided (Technical University of Moldova, 2020b). The impact of the Covid-19 pandemic on the services and applications of Microsoft 365 for Education implemented at the Technical University of Moldova was analyzed. The data was exported from the M365 Usage Report in excel format for a period of 180 days. The data was processed by secondary methods of quantitative research thanks to the wide range of data collection, but also the sincere and precise image, without discrepancies. The measurement number was taken as measurement criteria, as well as the volume of downloads/storage through the applications and services of educational platforms.

For a more efficient data screening, the 180 days were divided into weeks (25 - 26 weeks) (Technical University of Moldova, 2020b). For every 7 days the average value of the measurement criteria was calculated.

- The data analysis was performed, starting with 15.02.2020 and ending with 15.08.2020. That interval was divided into 3 stages:

- The first stage—15.02... 17.03.2020—about 4 weeks until the closure of educational institutions in the Republic of Moldova due to the pandemic;
- The second stage—17.03... 15.06.2020 the period from the initiation of the state of emergency in the Republic of Moldova until the end of the summer session of the students;
- The third stage—15.06... 15.08.2020 the period after the end of the session and the beginning of the students' vacation.
- Also, the data taken from the university's Moodle Platform were taken over and analyzed (the data included the pre-pandemic period and the data from the pandemic period).
- For each diagram, a type trendline was identified for selecting the model used to determine the overall trend of the numerical series. The research design is presented in Table 1.

3. Results

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation as well as the experimental conclusions that can be drawn. Currently, Microsoft Office 365 services benefit 19,052 from TUM members. Most users enjoy the services of Exchange (about 10,472 active users), Share Point and Teams (6730 and 6493 users, respectively). At the same time, very few users use Skype (175 active users) and practically, there is an extremely low use of Yammer services (48 users) (Figure 1, Figure 2).

3.1. Evolution of the Number of Users and Activities by Service

A comparative analysis of the evolution of Microsoft 365 services and applications involved in the teaching process in the pandemic period reports about a connection between them in the period up to the pandemic: the average values of the number of users varied around 550... 560 people per day.

From the start of the emergency period until the end of the summer session (about 13 weeks) there was a linear increase in the number of Office users by

Table 1. The platforms and the period of their use in the given study.

Platforms implemented within TUM	Report data		
Microsoft Office 365 service' users			
email activities	15.02-17.03.2020	17.03-15.06.2020	15.06-15.08.2020
files stored in the cloud (One Drive)			
users by platform	Week 1... 4 (until lockdown)	Week 5... 18 (from lockdown to summer session)	Week 19... 26 (student holiday period)
Microsoft Office apps users			
activities on M Teams			
users by type device (per MT)			
Moodle	From 31 December 2019 to 31 July 2020		
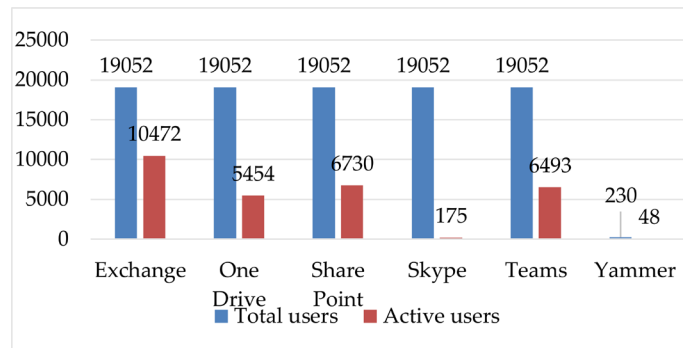
Figure 1. Microsoft Service users.
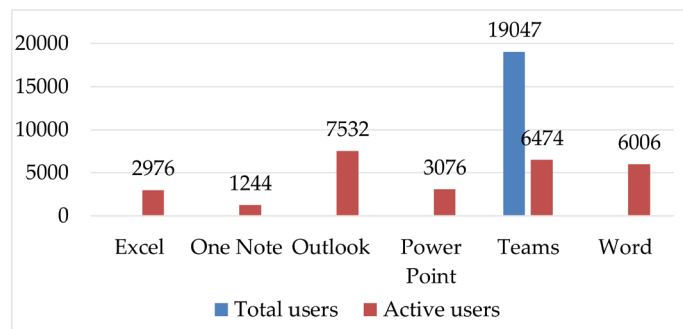
Figure 2. Microsoft Apps users.

553% and an increase by 400% in Exchange services. Not very significant, however, the number of One Drive users increased linearly and a polynomial increase in Share Point users was also observed (Figure 3). With the end of the students' summer session, there is a gradual regression in the use of MOffice 365 services. There was a polynomial reduction in the number of users of Office, Exchange and Teams services, and the number of Share Point users decreased exponentially. The growing popularity of MOffice 365 applications is evident from the download data. It is relevant to mention that until the outbreak of the pandemic, the Teams application was used to a relatively small extent by the TUM community, the average number of users per day being about 50 people. The number of Teams users increased from 54 people to 2855, which is 5187% (Figure 4).

However, the number of users is practically 2-3 times higher in that period, compared to the pre-pandemic period (Figure 5). And these results demonstrate, to a large extent, that the activity of teachers, management and the administrative body continued throughout the summer, in order to ensure, in the future, eLearning.

3.1.1. Email Activities

The number of actions for sending and receiving emails in the selected time period was 1.9 M, of which 517,117 emails sent, 1,375,434 emails received and 1 152,751 read. Even from the first week after the outbreak of the pandemic, the average number of emails sent per day increased sharply by 233%, the maximum
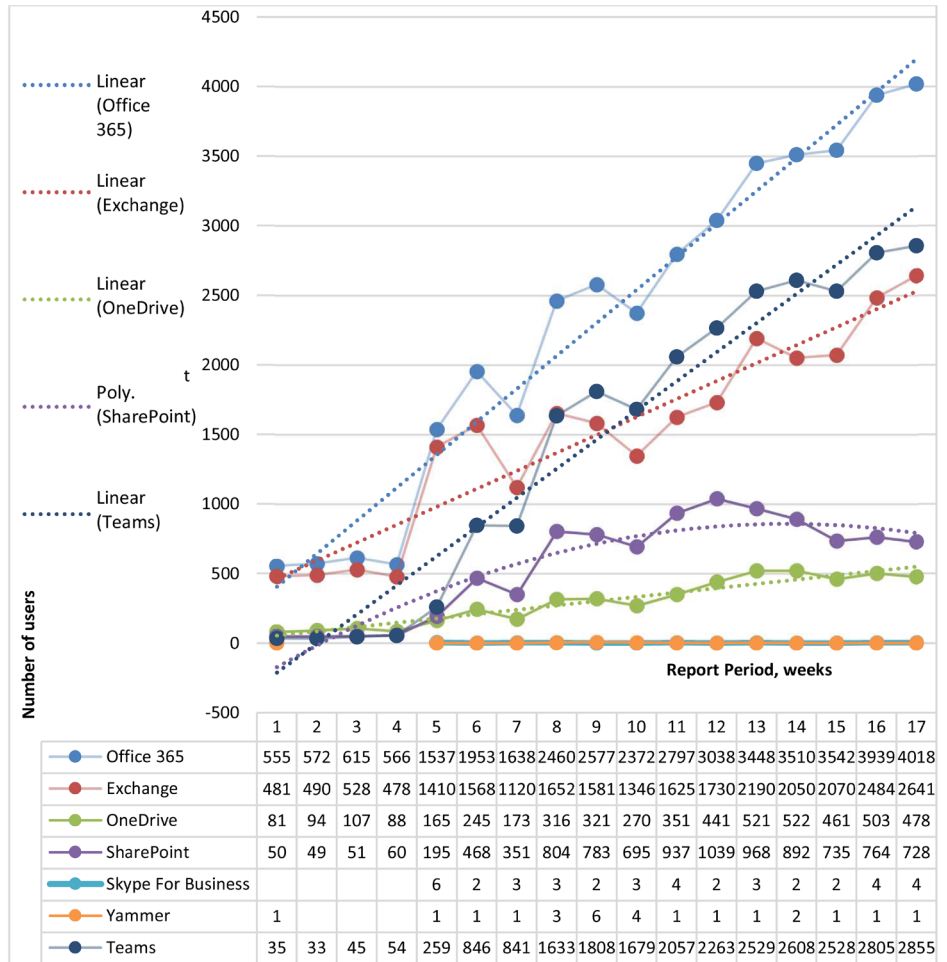
Figure 3. Number of Microsoft 365 service users (until the student session).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Office 365	555	572	615	566	1537	1953	1638	2460	2577	2372	2797	3038	3448	3510	3542	3939	4018
Exchange	481	490	528	478	1410	1568	1120	1652	1581	1346	1625	1730	2190	2050	2070	2484	2641
OneDrive	81	94	107	88	165	245	173	316	321	270	351	441	521	522	461	503	478
SharePoint	50	49	51	60	195	468	351	804	783	695	937	1039	968	892	735	764	728
Skype For Business					6	2	3	3	2	3	4	2	3	2	2	4	4
Yammer	1				1	1	1	3	6	4	1	1	1	2	1	1	1
Teams	35	33	45	54	259	846	841	1633	1808	1679	2057	2263	2529	2608	2528	2805	2855

Figure 4. Number of Microsoft 365 service users (after student session).

	1	2	3	4	5	6	7	8	9
Office 365	3684	2783	2554	1752	1215	958	881	943	1313
Exchange	2368	1543	1270	804	574	407	371	432	797
OneDrive	453	262	260	135	92	72	58	56	72
SharePoint	595	561	777	406	112	71	67	72	76
Skype For Business	3	2	2	2	1			1	
Yammer	1	1	1	1			2	1	1
Teams	2539	1668	1497	994	743	595	538	558	647

Report period, weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
■ Meeting Interacted	8	4	4	2	24	84	103	203	126	229	163	224	169	176	168	187	169	122	103	63	19	7	8	5	7
■ Meeting Created	2	3	3		10	27	54	74	46	71	49	72	65	59	68	70	78	55	54	34	10	4	4	2	4
■ Read	1977	2346	2227	2270	8972	7738	6338	8811	5972	7491	7813	9105	1221	1073	1079	1133	1190	8116	5998	5058	2909	2684	2432	2607	3046
■ Receive	2912	3270	3082	3504	1048	9927	7857	1075	8182	1168	1042	1574	1491	1180	1090	1075	1134	8775	7844	5240	3165	3669	2124	2489	3514
■ Send	761	1005	874	974	3247	2080	1582	2911	2182	2659	3730	7303	5635	4433	4576	4387	4874	3831	2389	2400	1493	4625	1057	1736	1735

Figure 5. Email activities. Number of actions by type.

value being reached in the 12th week (7303 emails per day), which is an increase of about 650% compared to the period until the pandemic. From the 18th week there is a reduction in the number of activities which, however, exceeds the number of activities until the pandemic. If until the pandemic the number of meetings created was on average 2 - 3 per day, and the number of interactive meetings from 4 to 8 per day, then during the pandemic their number increased to 70 - 78 meetings created and up to 230 interactive meetings, respectively (**Figure 6**).

3.1.2. Email Activity Storage Usage

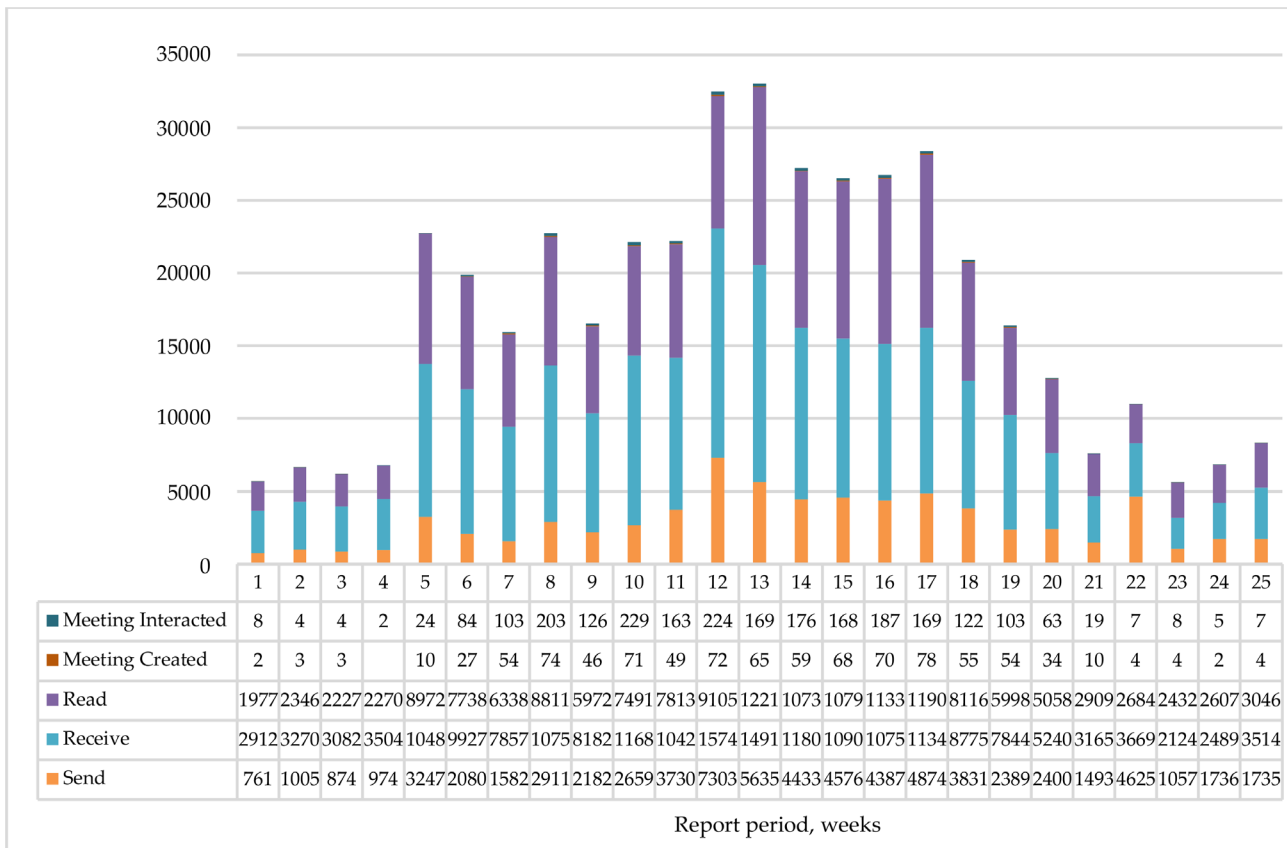It seems that the pandemic has only brought to the fore the acute need for cloud-based solutions. Microsoft OneDrive offers 15 GB of free storage + another 8 GB in bonuses, 1 TB via Office 365 account (Mihai & Mihai, 2015). During the time reported in the paper, the academic community enjoyed more than ever the freedom to access, edit and share files on devices, regardless of location. The number of files stored in the cloud increased in a linear progression from 8.2 TB to 12.0 TB (**Figure 7**). The total number of files stored on the Cloud for 180 was 3.0 M. It is important to note that the majority of these stored files belong to video conferencing.

3.1.3. Microsoft 365 Apps Usage. Number of Daily Unique Users by Platform

The total use of communication devices was calculated based on the total num-

ber of connections of students, teachers and non-teachers (**Figure 7**).

Until the pandemic, the average number of users per day on the Web was about 385… 432 people and 300… 337 on Mobile. A sudden increase was observed from the 6th week, and the maximum values were reached in weeks 14… 18 with values: web—2072 users per day (an increase compared to the period until the pandemic of about 418%), mobile—2120 users per day (+597%). The
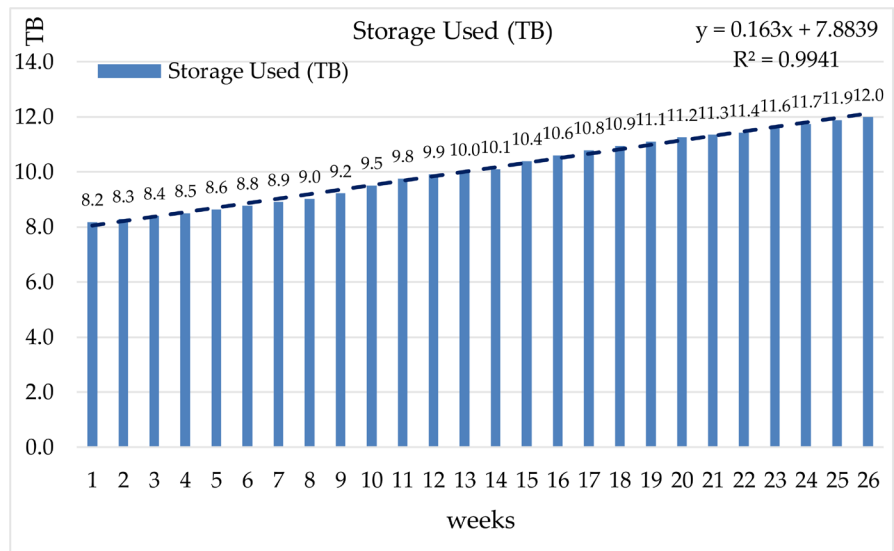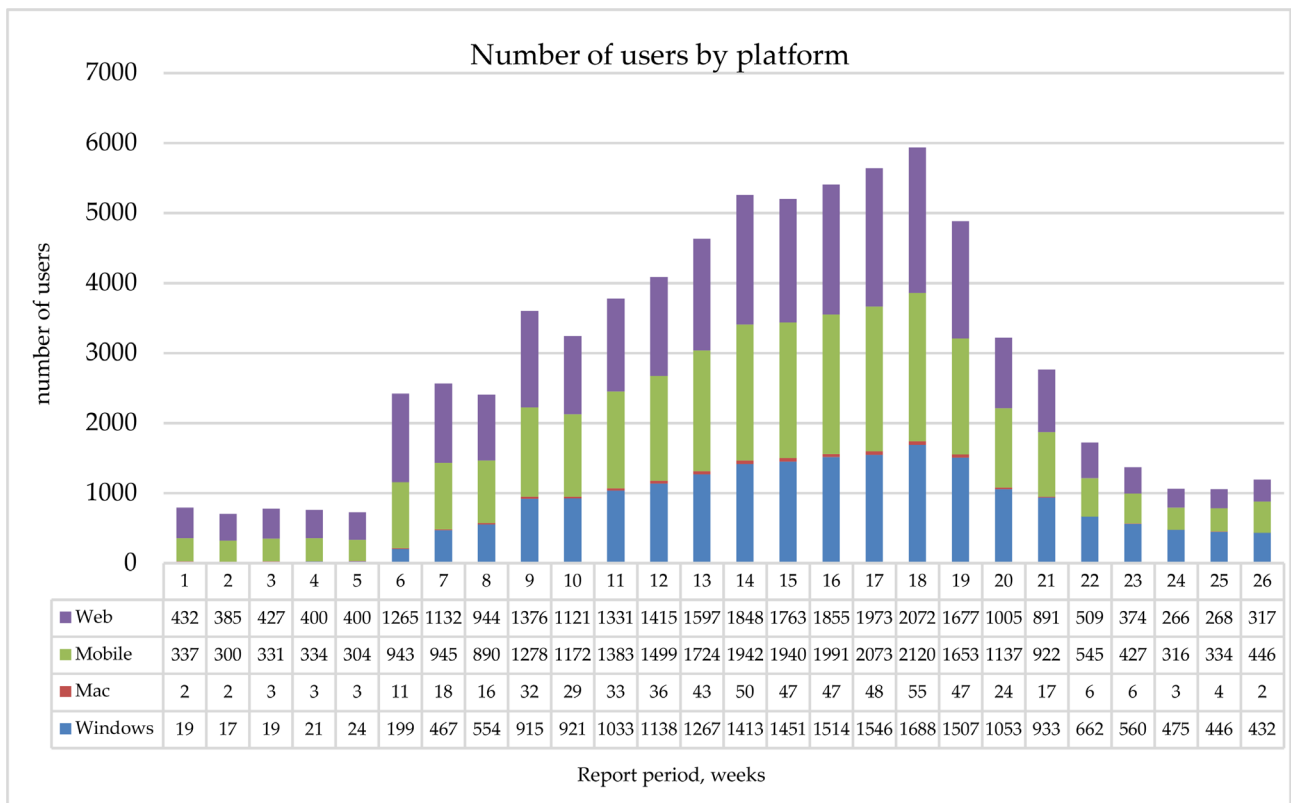

Figure 6. Storage used (OneDrive).

Figure 7. Number of users by platforms.

number of users per day on Mac and windows increased to a maximum of 55 and 1688, respectively. As in the case of other analyzed services, after the end of the students' session the number of users on the platforms decreased, but it remained higher anyway compared to the daily average values up to the state of emergency.

3.2. Evolution of the Number of Users by Application

In the pre-pandemic period, Outlook and Word were the most used applications, averaging around 496... 538 users per day and 205... 262 users, respectively. Excel used an average of 70 users per day, and OneNote and Teams were used quite rarely, compared to the rest of the applications in the suite. The initiation of the lockdown contributed to a linear increase in the number of users of Outlook and Teams, and from the 9th week the Teams application began to be used more than Outlook, reaching maximum values in the 17th week: de 2864 users. The result is due to the increased number of sessions and video lessons organized on this application (**Figure 8**). With the end of the summer session of students there is a polynomial reduction in the number of users of Outlook, Excel, Word and Teams applications (**Figure 9**).

3.2.1. User Activity of Microsoft Teams
From the 4th week of the research period, the use of Microsoft Teams became noticeable. In particular, the average number of connections per Private Chat

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Outlook	518	496	538	516	982	1661	1336	1419	1666	1309	1613	1609	1968	2112	1985	2339	2586
Word	211	233	262	229	205	480	386	467	582	413	592	651	830	951	810	857	886
Excel	72	73	74	71	69	137	159	158	265	188	321	250	303	302	261	220	222
PowerPoint	27	28	31	30	26	59	47	68	95	62	98	115	138	143	118	105	104
OneNote	2	3	4	3	7	45	48	44	54	27	31	39	32	29	22	19	27
Teams	36	33	37	57	67	613	922	1267	1820	1599	2036	2107	2416	2571	2559	2650	2864

Figure 8. Number of Microsoft 365 Apps users (until the student session).
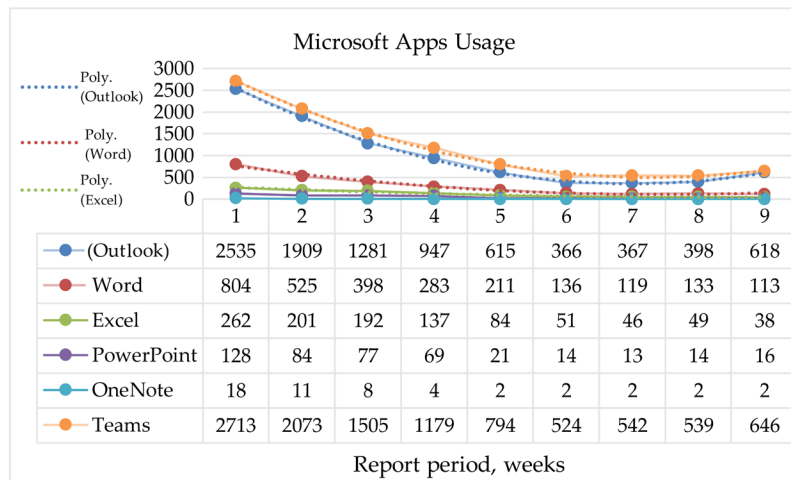
Figure 9. Number of Microsoft 365 Apps users (after student session).

Messages increased to 290 per day in the first week of the pandemic, and subsequently increased to a maximum of 4203 connections per day in the 12th week, which is an increase of about 1350% compared to the first week of the pandemic. The situation is similar with Team Chat Messages connections: from 220 (on average per day) in the first week of the pandemic to an average of 1084 connections per day in the 11th week. Although much of the eLearning activity up to the pandemic took place on the Moodle platform, an ascending number of meetings were recorded on Microsoft Teams. Even in the first week, the average number of video sessions per day organized was 29, and on some days, it reached 234 meetings (**Figure 10**).

3.2.2. Device Usage

In a mobile and frantic period, we want quick and handy answers, using the closest device to make a decision, to learn something new or to get something. The accessibility of a fast connection and the opportunities offered by different devices connect people to devices more than ever. The image of how TUM users have used different devices for 180 days (from the pre-pandemic period to the present) shows that 1824 of them use Windows computers every day and 1991 Android operating systems. Only 380 of the users—web, 315—iOS and 45—Mac (**Figure 11**).

3.3. Moodle Usage

Prior to the pandemic, eLearning activities were supported, for the most part, on the Moodle platform, where there were already over 70% of the total number of courses. The statistical extraction of Moodle databases reports an increase in the total number of accesses, starting with February of this year: from 39,882 to 261,833 accesses in April, after which there is a slight reduction in the number of connections, in June they reached the value of 20,760. The number of user authentications reached a maximum of 12,234 at the end of March (**Figure 12**).

3.4. Graduate Questionnaire Results

At the end of the study year, undergraduate students responded to a traditional survey, which included additional questions related to eLearning. Of the 1252 respondents, the majority, during their years of study, had the opportunity to access online courses on educational platforms, and the quality of use of educational tools considers it high and satisfactory. Regarding the usefulness of the implementation in the educational process of the online study modalities, 944 respondents consider it useful and very useful, and 185 people are undecided to appreciate it (**Figure 13**).
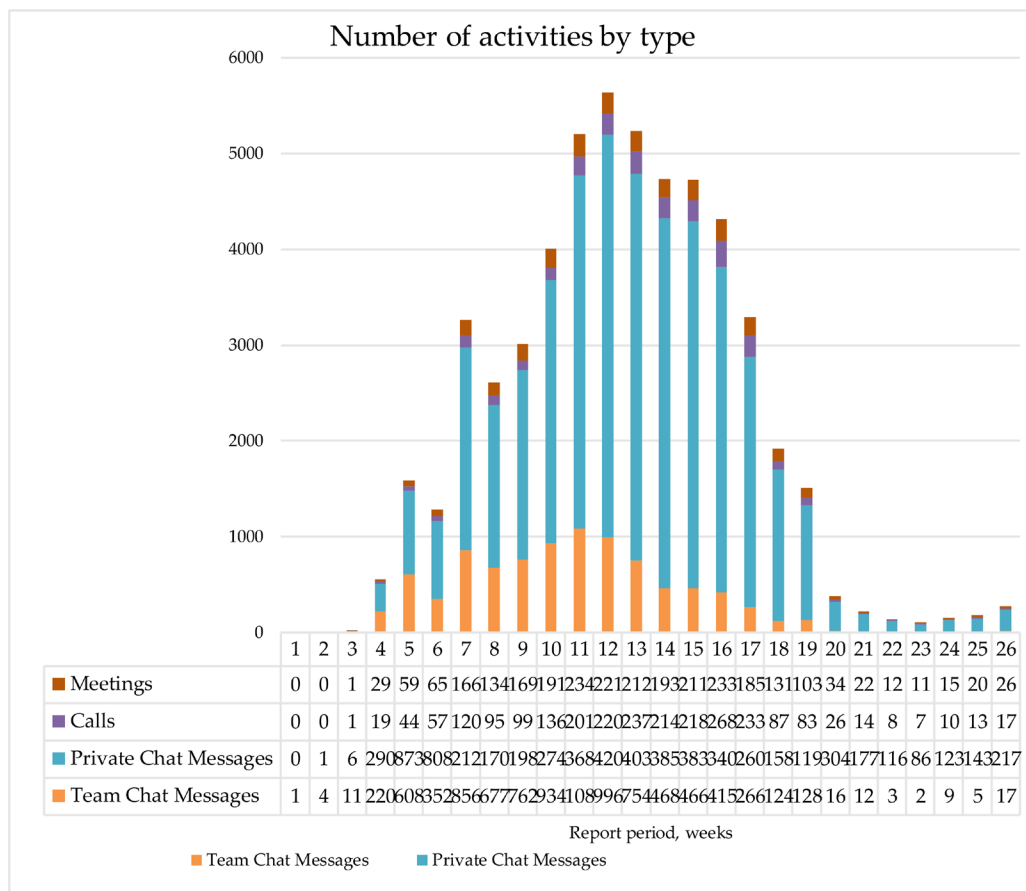

Number of activities by type

Report period, weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Meetings	0	0	1	29	59	65	166	134	169	191	234	221	212	193	211	233	185	131	103	34	22	12	11	15	20	26
Calls	0	0	1	19	44	57	120	95	99	136	201	220	237	214	218	268	233	87	83	26	14	8	7	10	13	17
Private Chat Messages	0	1	6	290	873	808	2121	701	982	743	6842	0403	3853	3340	2601	581	1930	4177	116	86	123	143	217
Team Chat Messages	1	4	11	220	608	352	856	677	629	341	0899	6754	4684	6641	5266	1241	28	16	12	3	2	9	5	17

Report period, weeks

■ Team Chat Messages ■ Private Chat Messages

Figure 10. Number of activities by type (per MT).

Device usage

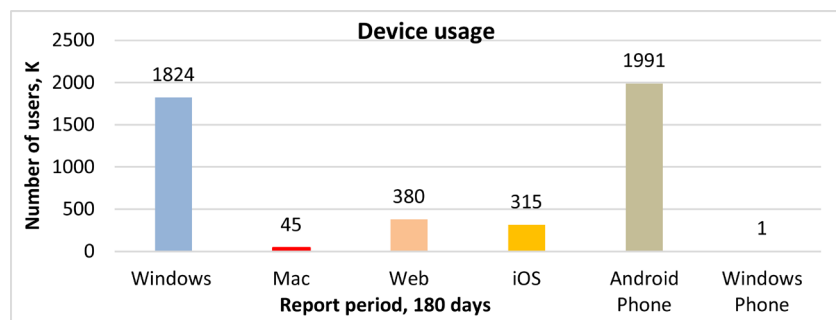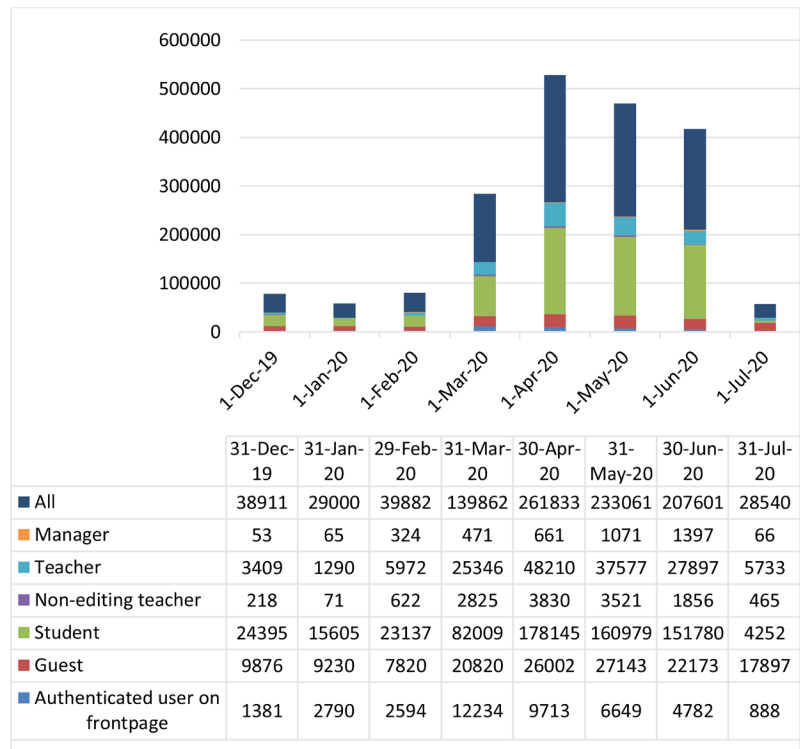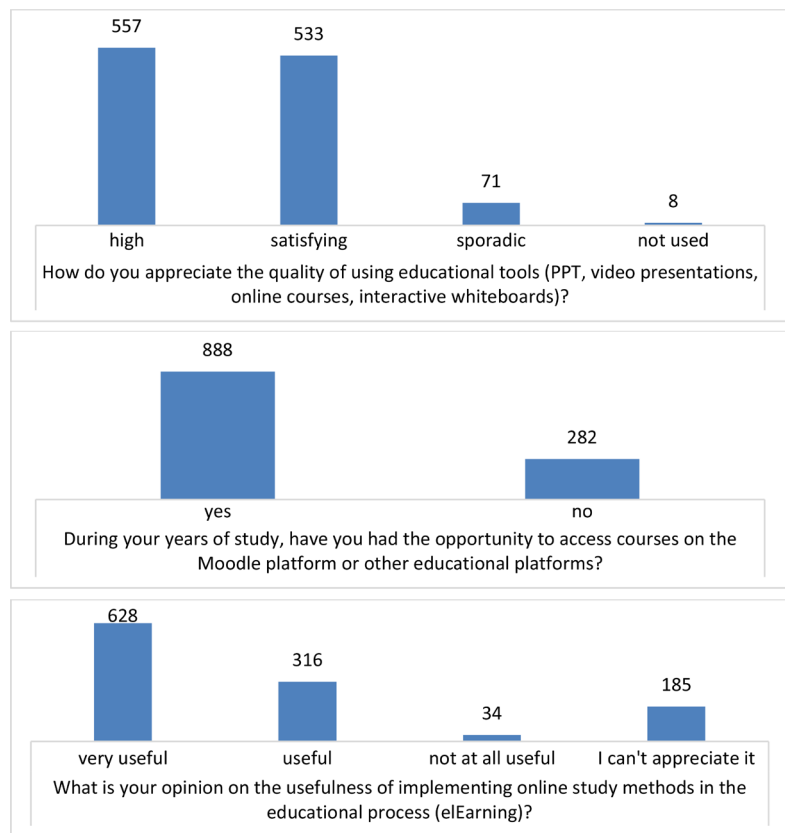| Device	Number of users, K
Windows	1824
Mac	45
Web	380
iOS	315
Android Phone	1991
Windows Phone	1

Report period, 180 days

Figure 11. Number of users by device type over the selected time period.

Figure 12. Number of accessions on the Moodle platform during december 31, 2019 until july 31, 2020.

	31-Dec-19	31-Jan-20	29-Feb-20	31-Mar-20	30-Apr-20	31-May-20	30-Jun-20	31-Jul-20
■ All	38911	29000	39882	139862	261833	233061	207601	28540
■ Manager	53	65	324	471	661	1071	1397	66
■ Teacher	3409	1290	5972	25346	48210	37577	27897	5733
■ Non-editing teacher	218	71	622	2825	3830	3521	1856	465
■ Student	24395	15605	23137	82009	178145	160979	151780	4252
■ Guest	9876	9230	7820	20820	26002	27143	22173	17897
■ Authenticated user on frontpage	1381	2790	2594	12234	9713	6649	4782	888

Figure 13. Questionnaire of 2020 graduates (1252 graduates, ISCED 6).

Although the current impacts of the crisis on higher education are easy to document, it remains debatable which of them will leave their mark on the various actors in the medium and long term. The lack of references to similar crises in the past makes it difficult to predict what may happen in the immediate future (UNESCO, 2020).

4. Discussion

It is clear that the temporary global cessation of face-to-face activities has been a huge disruption to the functions of higher education institutions. The impact of these disruptions is highly variable. During the lockdown period, not without difficulties, but online teaching worked. Today we have the future in a computer always connected: lessons, teachers, exams, curricula. How it will affect the educational process in the future depends on the ability of educational institutions to remain active in its academic activities and on their financial sustainability.

In the context of the EU's call for additional information exchanges, good practices (UNESCO, 2020), we set out to share our experience on the impact of the pandemic on the use of the Microsoft Office 365 and Moodle educational platforms involved in the teaching process within TUM. We also share the measures taken to prevent the widening of the digital divide, but also to reduce the real risks of inequalities in education for students from disadvantaged backgrounds, etc.

At the same time, the research serves as a tool for identifying vulnerabilities and for reasoned planning of exit strategies, in an appropriate frame of reference, depending on subsequent developments related to the COVID-19 pandemic (European Council, Council of the European Union, 2020). What is certain is that, being "immersed in digital" during the lockdown period, we did not drown and we already have a semester of online studies behind us.

Among the problems that TUM encountered during the cessation of the traditional study process we could highlight:

Lack of home computers for teachers.

Tackling: Anticipating the pandemic, in order to stimulate and capitalize on the activity of teachers who excel in scientific, didactic and extra curriculum, 150 staff came into personal possession of laptops. This was the first stage of a long-term program, through which TUM aims to emphasize and stimulate the quality, professionalism, enthusiasm and involvement of teachers in the daily evolution of the academic community of TUM (Technical University of Moldova, 2020d). However, during the lockdown, when the need to be connected to a device was amplified, in order to ensure online teaching in the new year of study, stage II of digitization and additional IT tools was started at TUM, through a public tender and, as a result, another 200 laptops will be sent to teachers.

Lack of Internet services for the study process.

Tackling: based on the strategic partnership with the mobile operator in the country, in April 2020, 30 teachers, who lacked Internet services at home, were

allocated 50 GB of free mobile Internet traffic per month until the end academic year 2019/2020, for online classes, which led to the realization of eLearning by these teachers.

Increased need for Internet traffic, call minutes etc.

Tackling: Based on the negotiations with one of the local mobile telephony operators, from April 1, 2020, voice subscriptions and reduced tariffs were offered to TUM corporate subscriptions. And all the packages used by UTM employees received significant improvements and reductions in price or Internet traffic included additionally, or quantity of minutes and SMS, and/or reduced price.

Lack of a unique network in student dormitories and study blocks.

Tackling: The Technical University of Moldova has 12 study blocks, which do not have a single wireless network, which makes it difficult to access the Internet in the university laboratories. Within a cross-border project (HARD) with "Gheorghe Asachi" Technical University of Iasi, Romania, the creation and modernization (where the network exists) of the unique corporate wireless network is expected, which would allow access based on the UTM corporate username to the public Internet network. Students who do not have the technical possibility (computer and/or Internet access) will be offered accommodation in the UTM dormitories where computer rooms will be created, to which they would connect to online training. Also, for some of the students, the possibility is discussed for them to use the TUM laboratories to connect to the online classes according to the schedule.

The epidemiological situation in the Republic of Moldova, at the moment, does not allow the beginning of the 2020/2021 study year in the traditional format. At the initiative of the Ministry of Education, Culture and Research, in the first two weeks, starting with September 1, will be organized online studies (TUM (2020)). And then, it will opt for a hybrid system (online lectures, and practical and laboratory activities, in groups small, with physical presence at university).

TUM, as a partner of the "Educatieonline" project (Technical University of Moldova, 2020a), ensures, through its technological classrooms, the filming of the curriculum for grades 1 - 12 for the 2020-2021 study year. The project is a digital library, which contains, in the first stage, about 2500 video lessons for students in grades 1... 12 and is expected in the second stage to reach about 4500 lessons. Benefiting from a unique experience in this project, TUM decided to create its own digital library with video lessons, lectures and practical activities for about 18 disciplines in various fields: mathematics, programming, physics, chemistry, technical drawing, mechanics. From 01.09. 2020, the library will become accessible and will contain over 1000 video teaching hours (Technical University of Moldova, 2020a). Thanks to this joint effort, especially valuable, in the new year of studies the Technical University of Moldova will provide video support for study subjects for first year students (Technical University of Mol-

dova, 2020c).

In order to ensure the right to higher education for all, in a framework of equal opportunities and non-discrimination, as a first priority (UNESCO, 2020) the TUM administration is currently holding talks with representatives of the business environment dealing with the marketing of IT products. The shops are being asked to offer the possibility to TUM students to buy in installments computers or other IT equipment (tablets, notebooks, etc.), at a competitive price (for students) with 0% interest. Efforts to continue teaching courses in virtual mode have been notable and, given the lack of experience with similar situations in the past, the transfer has not been easy. Even in the best—case scenario, amplifying the measures to the desired level without the necessary technical support is impossible.

5. Conclusion

The Technical University of Moldova anticipated and undertook multiple measures that demonstrated the potential to ensure the continuity and good development of the teaching process during the pandemic by:

- reducing the digital divide;
- reducing the risks of inequalities in education for students from disadvantaged backgrounds;
- ensuring the social binder (imperative during this period).

At the same time, it would be incorrect not to mention that eLearning, although it is an indisputable support in the teaching process, requires additional investments (financial, time, etc.) from the university and from the teachers, but also from the students!

Of course, there are still many organizational, procedural, infrastructural, pedagogical, social, but also administrative and management issues that come into play. It is our duty, of the academic community, to analyze the possible future scenarios and to look, seriously and reflexively, for strategies that can be followed, regardless of the circumstances (Giancola & Piromalli, 2020).

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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