

## **THE IMPACT OF ONLINE EDUCATION OVER THE UNIVERSITY OF PETROSANI STUDENTS DURING THE 2020 -2021 YEARS**

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**ABSTRACT:** *Education was probably one of the most affect system by the COVID-19 crisis, but also one that react very quickly. The author questions themselves if this response was also a beneficial one for the University of Petrosani students. The author has made a huge investigation amongst the university students, to measure the result of online education over the University of Petrosani students after one year of online education. The survey was applied for 551 of the students from the Science and Mining Faculties, representing 26% of the whole students. The results are relevant and could influence the future development of this university in the next decade.*

**KEY WORDS:** *online education, teaching method, meeting method, quizzes, COVID-19.*

**JEL CLASSIFICATIONS:** *A220, A230, I210, I230.*

### **1. INTRODUCTION**

The COVID-19 pandemic has changed education forever. The COVID-19 has resulted in schools shut all across the world. Globally, over 1.2 billion children are out of the classroom. As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms. Research suggests that online learning has been shown to increase retention of information, and take less time, meaning the changes coronavirus have caused might be here to stay. While countries are at different points in their COVID-19 infection rates, worldwide there are currently more than 1.2 billion children in 186 countries affected by school closures due to the pandemic. With this sudden shift away from the classroom in many parts of the globe, some are wondering whether the adoption of online learning will continue to persist post-pandemic, and how such a shift would impact the worldwide education market.

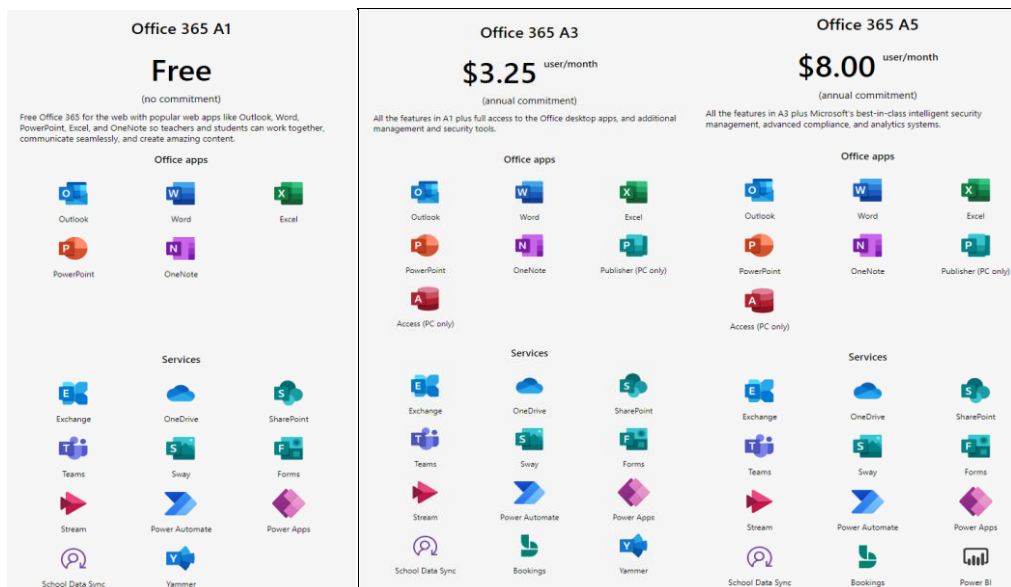
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## 2. THEORETICAL FRAMEWORK

As schools around the world respond to COVID-19, the need for remote learning tools has never been more urgent. To make the transition to distance learning easier, Microsoft has created resources, training and “how-to guides” that will help schools, educators, students, and their families as they navigate their “new normal.” Microsoft Teams is a digital hub that brings conversations, content, assignments, and apps together in one place, letting teachers create vibrant learning environments. Build collaborative classrooms, connect in professional learning communities, and connect with colleagues—all from a single experience, and free to educators and students. Free for schools and universities, Teams brings together virtual face-to-face connections, assignments, files and conversations into a single place accessible on any device (<https://www.microsoft.com/en-us/education/remote-learning>).

### 2.1. Innovation in Online Education in the Microsoft Vision

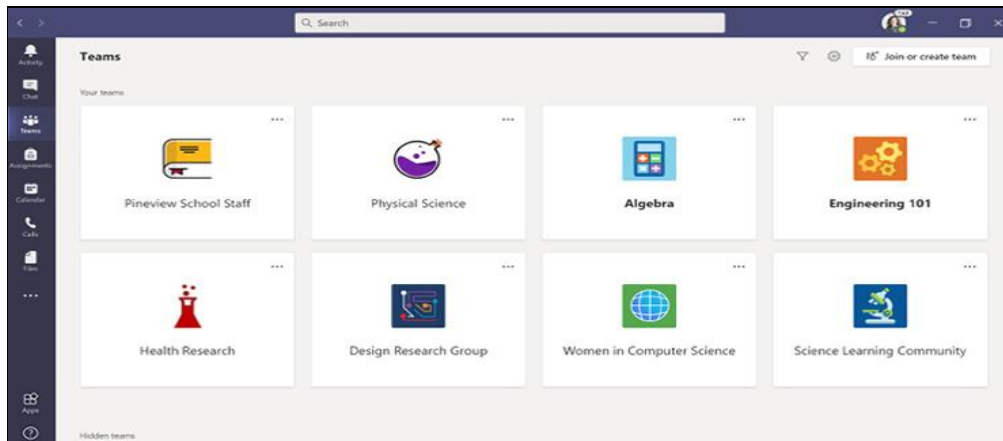


Source: <https://www.microsoft.com/en-us/microsoft-365/academic/compare-office-365-education-plans?activetab=tab:primaryr2>

**Figure 1. Versions of free Office 365 for the entire school**

There are a number of cloud-based applications in Office365 Education that are great for remote learners. One of the most valuable collaboration tools that Microsoft offer for classrooms is Microsoft Teams. In Microsoft Teams, teachers can connect with one another in online PLCs (professional learning communities) and they can connect with students—distributing and grading assignments, chatting with students to offer support as needed, and conducting video calls to ensure students still have valuable face time with their peers and instructors while out of the classroom. OneNote is also a great

tool for remote learning, offering students the ability to record work in an online notebook, even when they are offline. And in Flipgrid, students can have conversations about curriculum and share their voice via short videos online (Adusumilli, 2020), (Potter, 2020).



Source: <https://www.microsoft.com/en-gb/education/products/teams>

**Figure 2. Setting up an institution for remote and hybrid learning**

## **2.2. Microsoft Teams at the University of Petrosani**

The author has presented the Microsoft solution for online learning, because the author has used in the 2019/2020 and in the 2020/2021 academic year this solution for teaching, communicate and testing the students. In antithesis the academic staff did not set neither for the 2019/2020 and neither for the 2020/2021 academic year, a unique solution for teaching, communicate and testing in the online system (Edelhauser, 2011), (Edelhauser, 2012).

## **3. METHODOLOGY**

### **3.1. Instruments & Investigation Tools**

The 2021 student investigation was based on a questionnaire composed of 15 questions, 6 dedicated to the online education methods used, and 5 to the impact over the students, and the author receive 551 answers out of 2,153 selected respondents, who answered in a standard time of 9 minutes per interview, and the investigation took place during 29<sup>th</sup> of January 2021 and 2<sup>th</sup> of February 2021.

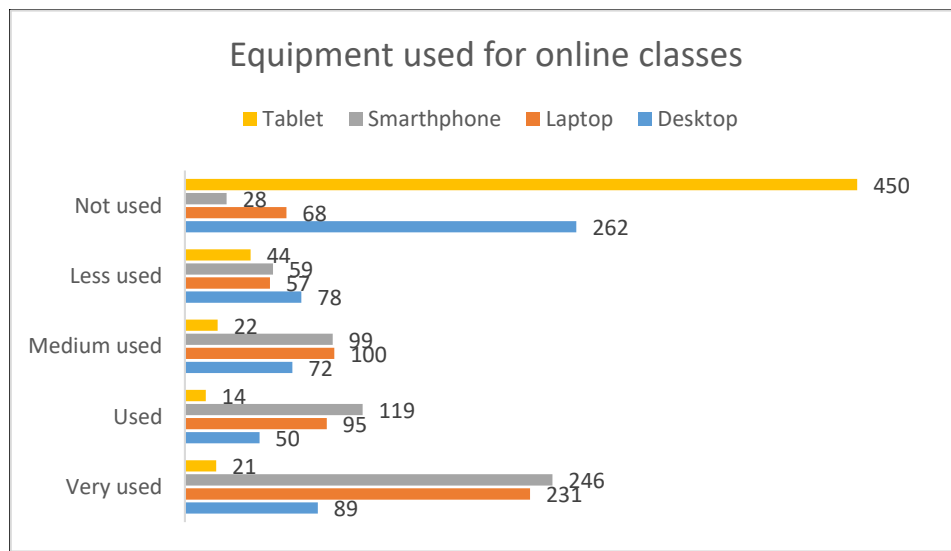
### **3.2. Population and Sample**

This study was dedicated to the students of two faculties of the University of Petrosani, the Science and the Mining Faculties. In the 2021 year, the selected respondents 2,153 are in fact the whole students of this two faculties, and it is important

to mention that University of Petroșani has only 3 faculties, and the author selected the Science and Mining Faculties because the teaching activities involve students only from this two faculties, so the students could be easily contacted and their responses were in an excellent number. The 551 answers represent 26% of the total number of the students, so the study is also clearly representative. The 283 students study engineering in the Faculty of Mining, and other 246 students study economics and social science in the Faculty of Science.

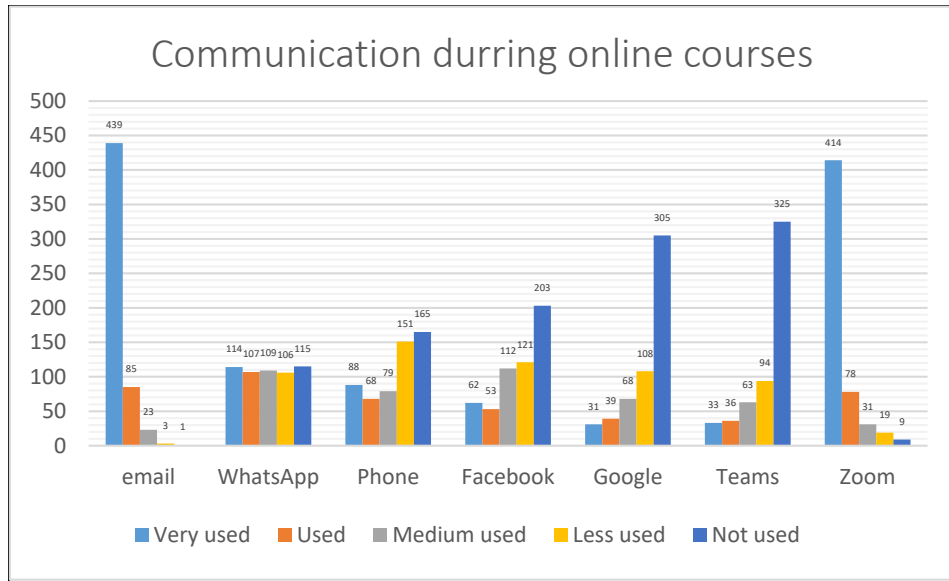
#### 4. RESULTS

The result of the investigation conducted in 2021 year, with the 551 respondents is summarized in graphical six results, four of them used for the main features of a standard online or classical eLearning solution – teaching, meeting, communication and testing, and other two for methods of communication and devices used for online education.



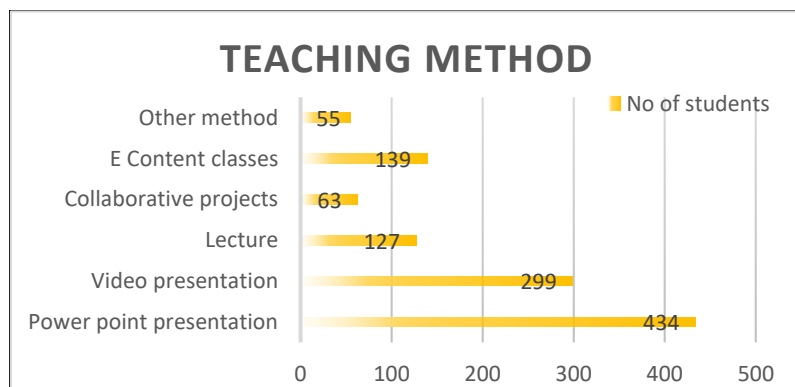
**Figure 3. Hardware equipment used by students to run online courses**  
(Answers obtained by choosing the degree of use for each option) (Q5)

Most used hardware equipment for online courses are for the University of Petroșani students obviously the smartphones but the laptops as well, 87% of them preferring this two equipment. This trend is correlated with the greatest sale increase of the last 10 years with 28 % of the laptops during the COVID-19 pandemic, and the sale decrease with 26% of the desktops in the same period. Smartphone are the favourite equipment for the students, in fact it is suitable for attending classes online, but not for teaching online classes. In this context it is also relevant that students have difficulties when the authors forced them to present a paper via share screen from a smartphone.



**Figure 4. Method of communication used by teachers to keep in touch with students during the COVID 19 pandemic**  
(Answers obtained by choosing the degree of use for each option) (Q6)

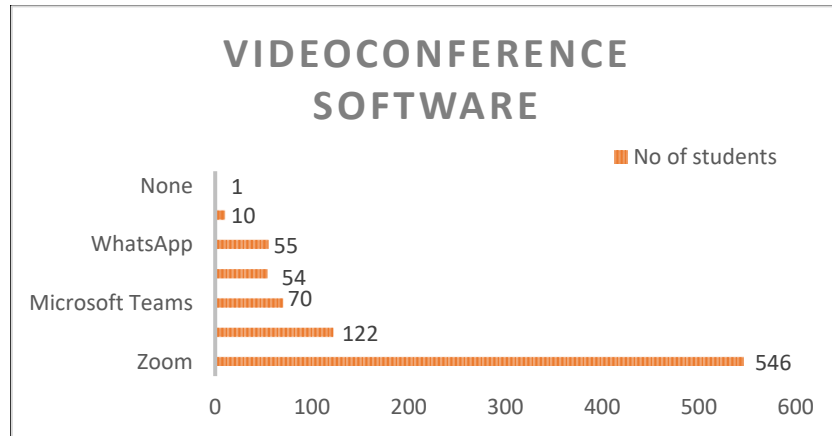
In the academic field despite the primary and secondary education the email is a very used and efficient tool for communication online. In fact, only the favourite meeting tool for the University of Petroșani members, Zoom, has a similar reliance for students. It is also relevant that Facebook groups or other social media tools, used mostly by students and teachers before pandemic for communication, has dramatically drop down in their preference.



**Figure 5. Teaching method used during the COVID 19 online classes (Q8)**

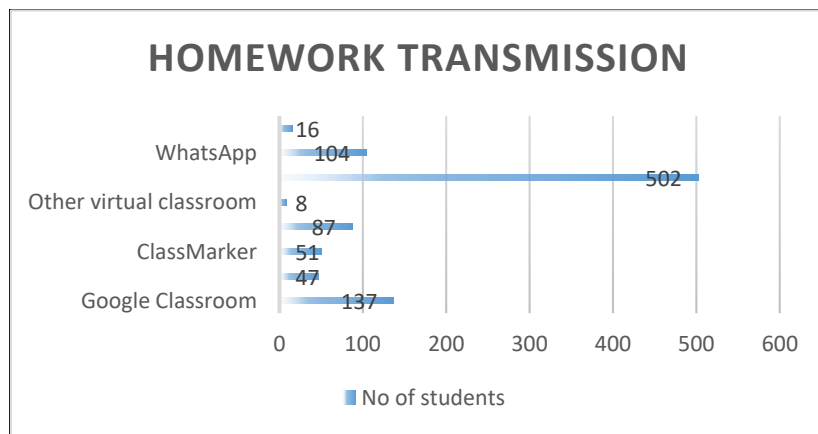
In COVID-19 Age University of Petroșani students receive courses from their teachers in the classical methods of teaching, especially power point presentations that could very easily shared to the students via the share screen option of the meeting

software used. In a very small percent - 18% - for an academic institution collaborative projects and eContent methods were also used from the student perspective, even if teachers declare these methods to be used in a moderate level - 24% - from the professor perspective.



**Figure 6. Video conferencing software used for teaching during COVID 19 online classes (Q7)**

Even if an online semester has already passed, the University of Petroșani management board did not select a unique software for meeting conferences, so students were forced to use different meeting solution for online classes and this affected them in an unpleasant way. Even if more than 64% of them attend to online classes conducted by Zoom meeting solution, the other meeting solution were also used.



**Figure 7. Homework or projects transmission method used during COVID 19 pandemic (Q9)**

For the fall semester of 2020/2021 academic year, University of Petroșani implemented a poor developed eLearning platform called Academis, developed without

a meeting solution, with a rudimentary Quizzes module and without a self-recording presence module, so students were constrained for homework or projects transmission to use mainly the email, in a 53%. The new implemented platform was used only by 9% of the university students, and even WhatsApp represent a usual solution for them.

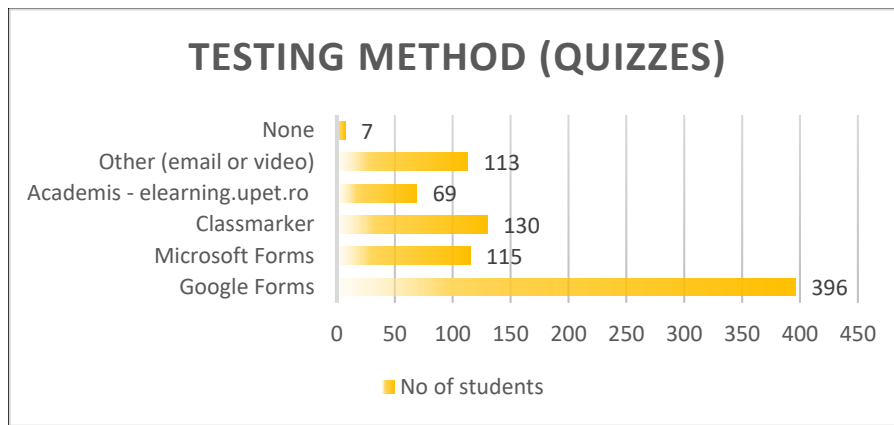


Figure 8. Testing or examination method used during COVID 19 pandemic (Q10)

Quizzes were used as a testing method for 86% of the students perceived it as the most widely used method of examination, with different forms test such as Google, Classmarker or Microsoft, but even so 14% of the students mention as an evaluation method the homework or project transmission via email.

Question 11 and 12 of the survey, correlated can conducted to an unexpected result. So Q11 *What was the number of hours per day dedicated to your online courses during the COVID 19 pandemic?* and Q12 *What was the number of hours per day dedicated to conducting classical courses by you in the period before the COVID 19 pandemic?* demonstrate that University of Petroșani is not prepared for online and even if the classes are not compulsory in the Romanian academic system, the participation to classes drop with 8% in one year of online education. From the point of view of some of the teachers the number of students had raised to the classes, but the student responses demonstrate that their participation was lower. This could be caused by the lack of implication of professor in online education or by IT lower skills from the both parts. Even if only in the bachelor engineering classes there is a raise of participation, the medium participation for the bachelor programs during online system is equal with the previous one from the classical system. On the other hand, in the master program activities the students feel a lack of inters from the professors or from this teaching method during pandemic crisis

## 5. CONCLUSIONS

Major world events are often an inflection point for rapid innovation and a clear example is the rise of e-commerce post-SARS. While we have yet to see whether this will apply to e-learning post-COVID-19, it is one of the few sectors where investment

has not dried up. What has been made clear through this pandemic is the importance of disseminating knowledge across borders, companies, and all parts of society. If online learning technology can play a role here, it is incumbent upon all of us to explore its full potential.

Looking at the collaboration platforms used in Romania, it is obvious that Google G Suite for Education was almost 20 times more used than Microsoft Office 365 Academic or any other collaboration platform in the Romanian Primary and Secondary Education System. Google G Suite prevailed in Romanian pre-university education, but in the academic education Microsoft Office A3 was predominant. The two collaborative software build virtual classes through Google Classroom and Microsoft Teams or OneNote, respectively, and allow testing through Google Forms and Microsoft Forms.

As a result of COVID 19 impact over the education of students at the University of Petrosani, the author has concluded that only 12% to 16% of the number of professors consider that online education conducted to a decrease from both point of view, teachers and students, result that is in the of 18% un participation limit declared by the ministry officials, that can conduct to the conclusion that study is valid for the academic level of education.

In conclusion, I can affirm that today, after more than a year of online learning, thanks to the personal teacher effort, the teaching process can be considered as acceptable. The author propose is to implement at the University of Petrosani a collaborative platform for the probably future hybrid education system, and the author proposed the Microsoft solution being the safest solution and also the most used solution in the Romanian academic system.

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