

# Analysis of Students Attitudes About E - Learning

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**Abstract:** Nowadays, information is spreading rapidly. Across the Internet and easy to access, students have the opportunity to learn in different ways. E-learning is represented everywhere. Professors have the opportunity to provide students with study scripts, electronic textbooks, and other literature needed to deliver classes online. The necessity is to know the attitude of the students about e-learning. It is, also, investigated whether online learning is more effective if they still consult with the professor and which platform they use for teaching.

**Keywords:** Internet, on – line learning, tradicional, students, profesor, e – learning, lecture, attitudes.

## I. INTRODUCTION

E-learning involves the application of different forms of information and communication technologies in the education component in order to improve the quality of learning [2].

„The term so-called "distance learning" is nowadays linked to the concept of learning through the Internet, ie. e-learning. New information is being created every day, and more general development continuously requires new knowledge and skills. A Fast and timely education is needed that will be widely available and open at the same time. Thanks to the internet, learning is no longer enclosed in four walls of the classroom and it is accessible to anyone anywhere at any given time [1].“

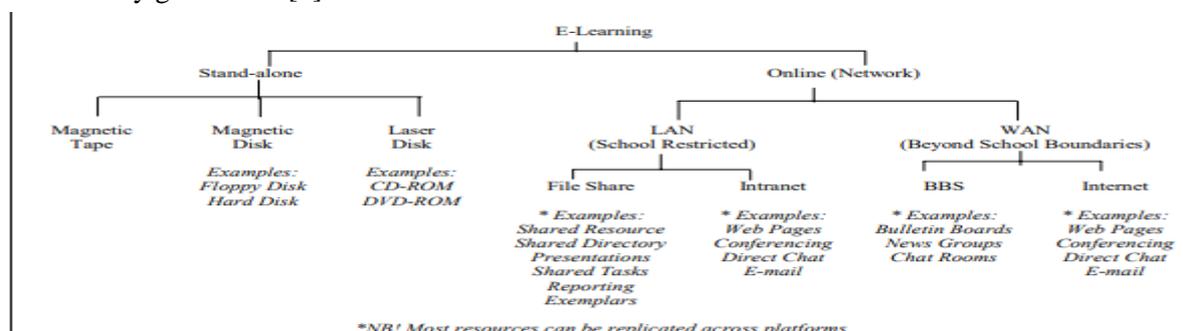
The main motive of this research is directed to the question of whether the students of professional studies share a positive attitude according to e-learning and whether it is easier for students if they still have a consultation with the professor and which platform students use. All of these benefits of e-learning can result in higher completion rates and better quality.

This paper's structure consists of several sections. The Research methodology section explains the research problem, research goal, research questions, hypothesis, place and method of research and sample. The next section is “about e – learning”. The results of research are presented in next section. The Final sections are discussion and conclusions.

## II. THEORETICAL BACKGROUND

The term "e-learning" is one of the most widely used syntax processes today in modern education around the world. Various definitions of e-learning are used. E-learning is a methodology by which "teaching content or learning activities are delivered using electronic technologies". [3]

E-learning covers a broad area within ICT Education and comes in many media formats as seen in Picture 1.



Picture 1. Media Formats of E-Learning [8]

E-learning is facilitated and enhanced by the use of information and communication technology. Such devices at this technological moment include the computer with additional devices, digital

television, laptops and pocket computers, and mobile phones. [3]

Communication enables the use of the Internet, email, discussion groups, and collaborative learning systems. E-learning also involves learning from a distance, through network, and can be considered as a component of flexible learning. When learning takes place exclusively online, it is called online learning. When learning is distributed by mobile devices such as mobile phones, laptops, and pocket computers, it is then called m - learning. [3] [7].

“Classroom learning ensures student and teacher contact. In practice, each type of learning often combines with classroom learning and this is then called flexible blended learning [7].”

“The term e-learning was created in 2000. E-learning has many advantages in relation to classical learning. The benefits are most reflected in the reduction of school costs and trips as well as opportunities to learn when the individual has time and at the pace that suits him or her. This learning method achieves the ability to respect and support different learning styles with each individual individually. Content can be accessed at any time and from any place that has an internet connection [4].

There are two types of e-learning - synchronous, asynchronous and blended e-learning. Synchronous e-learning involves the presence of a teacher who manages the learning process, a virtual classroom, and real-time content delivery, teacher and student meet for a limited time in virtual classrooms and are able to share information simultaneously and communicate directly with others students, examples of this are: virtual classrooms, audio/video teleconferences, the Internet forums... Asynchronous learning is more flexible in which it does not require the simultaneous participation of all students and teachers. Asynchronous learning allows students to learn at any given time and from anywhere. This form of learning involves teaching in which students receive a purposeful knowledge that enables them to perform the necessary tasks. An example of asynchronous e Learning is attending online classes through the internet where participants adopt certain thematic units, including recorded lectures, presentations via the internet, etc [5] [9].

“E - learning includes: technologies, teaching materials and content and teaching strategies. [6]” Knowledge can be defined as an understanding of a term and the potential ability to apply and use it for some purpose. It involves complex cognitive processes such as perception, learning, communication, and inference. Attitudes are through learning and upbringing acquired habits and tendencies to react to a particular way to someone or something [3].

All the benefits of e – learning can result in an increased completion rate [2]. Advantages are:

- Time and space flexibility,
- Computer interaction between students and professors,
- Questions are asked more freely,
- Communication and work in groups on joint projects between students,
- Using interactive content and different media ,
- Learning content can be adapted to individual students [6] [10]...

Disadvantages are:

- Motivate the student to enroll in an online course or program
- Many e-learning programs fail. The dropout rate is up to 60%
- Hire teachers or tutors who will pay special attention to student motivation and follow up their progression
- May experience loneliness and isolation due to lack of live contact
- It takes too long to create e-learning content for education
- The design and creation of interactive and multimedia content should be given particular attention
- Dependencies of courses on technology [6] [10]...

### III. RELATED WORK

In the research, which was conducted at the Polytechnic of Hrvatsko Zagorje Krapina, in 2015, on a sample of 132 respondents, the majority chose the combined principle of learning where it is much more represented than the traditional principle, while in this study only a slightly higher number of students said that the combined principle is more represented than the traditional [2].

### IV. RESEARCH METHODOLOGY

Research is conducted upon the methodology presented as follows:

1. Research goal - The goal is to determine students' attitudes about the quality of online teaching, comparing it with traditional teaching methods, and whether

online learning is more effective if the student consults with the professor, and also to identify which educational software students use. It is necessary to know how students will gain the best knowledge.

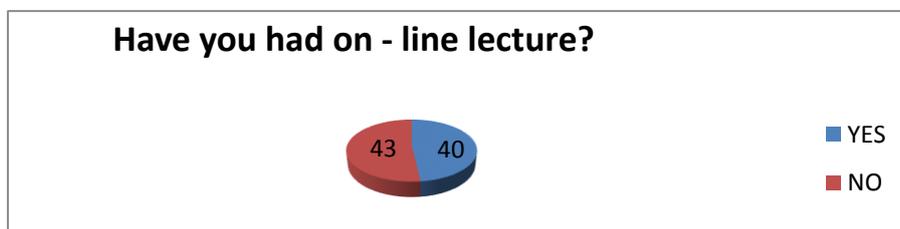
2. Research questions:  
 RQ1: Is online lecture and traditional lecture equally represented?  
 RQ2: Is online learning more effective if consulted regularly with a professor through the Internet?
3. Hypothesis:  
 -Respondents believe online lectures and traditional lectures are equally represented.  
 -Online learning is more effective with consultations with a professor.
4. Place and method of research – The research was conducted at the Technical Faculty at Zrenjanin by dividing the survey through social networks.
5. Sample – The survey was conducted in the period from 20.04.2020 to 26.04.2020

where the respondents were 83 students from the Technical Faculty in Zrenjanin.

## V. EMPIRICAL RESEARCH RESULTS

This section presents the results of a survey conducted to understand students' views on e-learning, as well as to compare online and traditional learning and use of online platforms. Of the total number of respondents, 39 students are the first year, followed by 13 students with the second year, 12 with the third year, 7 students with the fourth, and finally with 12 students with the fifth year (master studies). The vast majority of respondents (79 students) are 19 to 25 years old, while only 4 of them are 26 to 30 years old. Most of the respondents are IT Engineers (26 students), followed by Oil and Gas (12 students), IT in education (9 students), Software Engineering (8 students), Clothing Engineering (7 students), Mechanical Engineering (6 students), Engineering Management (5 students), Environmental Protection (5 students), Information Technology Management (3 students) and IT in Business Systems (2 students).

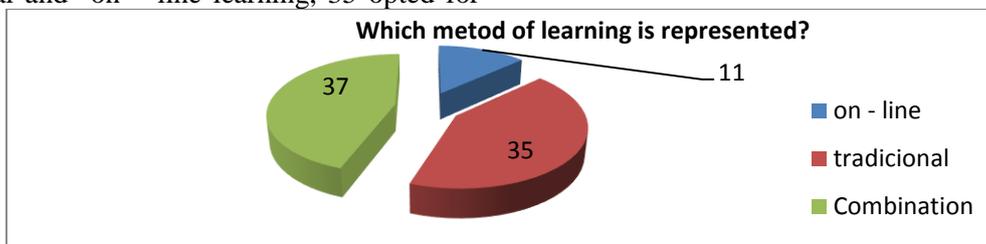
When asked "Did you have on - line lecture?", 43 students replied "NO", others 40 students replied "YES".



Picture 2. Chart showing students who had on - line lecture

When asked "Which learning method is represented?", 37 students voted for a combination of traditional and on - line learning, 35 opted for

traditional learning, while only 11 students voted for on - line learning.



Picture 3. Chart showing which method is most represented

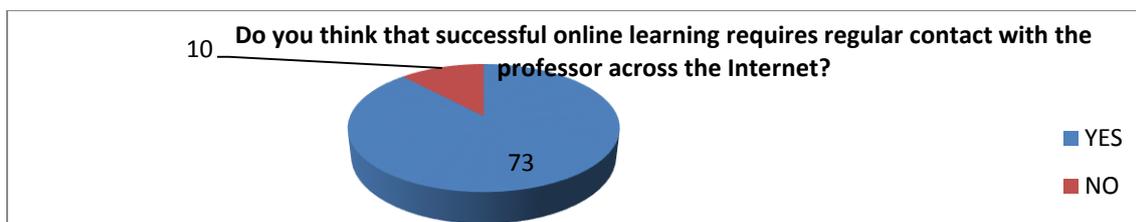
When asked "If you chose online learning, the reasons are:?", where multiple responses can be marked, 16 students marked communication and

group work on joint projects between students. In addition, 7 students marked time and space flexibility and the ability to tailor content to

individual students. 6 students marked the use of interactive content and various media, while only two indicated that questions were asked more freely. When asked "If you chose traditional learning, the reasons are:" where multiple answers can be marked, the majority of students have stated that online has not yet developed so much as to exceed traditional learning. 17 students indicated that nothing could replace the professors' live word, while five indicated that in their view it took too long to develop content for online learning. One student indicated that traditional learning provides much better interaction with professors. When asked "If you chose combination learning, the reasons

are:" where multiple answers can be marked, a slightly larger proportion of the students surveyed opted for the blended learning method. Twenty - nine students felt that the combination of traditional and online learning produced the best results, and nineteen students indicated that it was convenient to search the Internet for anything that was not clear in the classes.

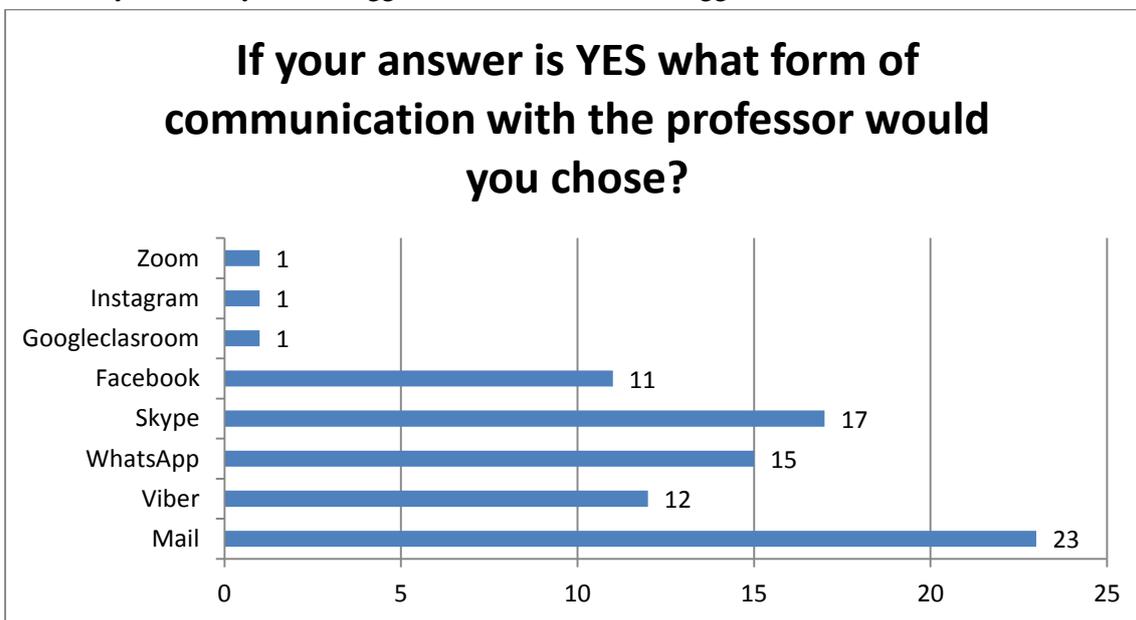
When asked "Do you think successful online learning requires regular contact with the professor across the Internet?" 73 students replied that consultation with professors was essential, while 10 replied that consultation with professors did not play an essential role in successful online learning.



Picture 4. Chart showing student opinion on whether consultation with the subject teacher is important for more successful online learning

Asked "If your answer is Yes what form of communication with the professor would you choose?" where it is possible to mark multiple replies, as many as twenty-three flagged the email,

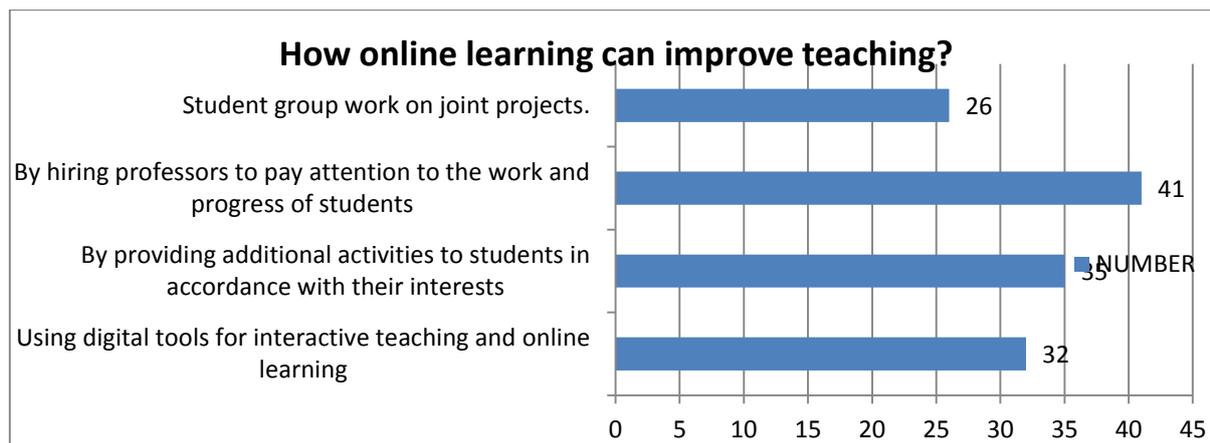
Skype flagged seventeen, then fifteen tagged WhatsApp, Viber tagged twelve, Facebook eleven tagged and finally Instagram, Google classroom, Zoom tagged one each the student.



Picture 5. Chart showing which forms of communication with the professors that students would choose

When asked "How on – line learning can improve teaching?", forty-one respondents replied that they could improve by hiring professors to pay attention to student work and progress, thirty-five replied that they could improve by providing additional activities to students in accordance with

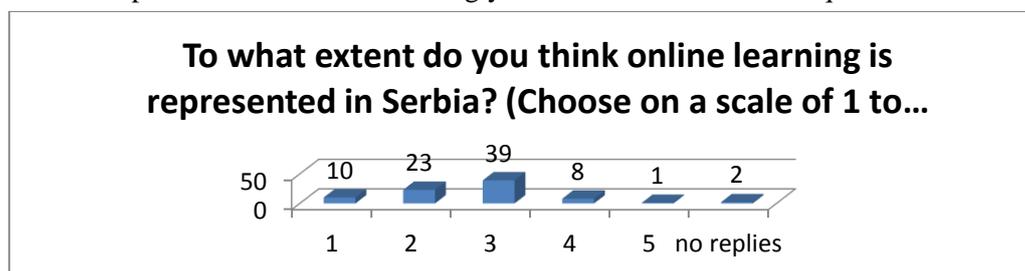
students' interests, thirty of them and two replied that she could enhance teaching by using digital resources for interactive teaching and online learning and twenty-six students replied that she could advance by doing student group work on joint projects.



Picture 6. Chart showing students' opinions on how online learning could be improved

When asked "Which educational platforms do you use or have used?", where multiple responses could be marked, more than half of the respondents, as many as forty-three indicated the Google classroom, seven indicated Moodle, while one student indicated Skill share, Udemy, Kahoot, Zoom, Vedamo. As many as thirty-five students indicated that they were not using any. When asked "How much do you think online learning is represented in Serbia? (Choose on a scale of 1 to 5, where 1 is not represented and 5 is strongly

represented). " The majority of the surveyed students, 39 of them, share the opinion that online is mediocly represented in the Republic of Serbia (on a scale of grade 3), 23 students think that it is very little represented (on a scale of grade 2), 10 that it is not represented at all. on the scale of grades 1), 8 respondents think that they are more represented (on the scale of grades 4), while only one student thinks that online learning is strongly represented in Serbia (on the scale of grades 5). Two students left the field blank for this question.



Picture 7. Chart showing students' opinions on the prevalence of online learning in the Republic of Serbia

## VI. DISCUSSION AND CONCLUSION

Most respondents were in the first year of study. Students are mostly from 19 to 25 years of age, mostly from the fields of information technology, while there were also from all other fields at the technical faculty. Slightly more than half of the students met at an online lecture. The combined principle of learning, something a little more than the traditional is mostly represented. Out of the total number of respondents, 48 of them were from the fields related to the field of information technology, which are: IT engineer, IT in education, Management of Information Technology, Software Engineering, IT in business systems. Respondents from these fields voted equally for the traditional principle and for the combined, while from the direction of Oil and Gas they mostly voted for the combined, in Clothing Engineering they voted the most for the traditional, in Mechanical Engineering

they voted equally for the traditional and combined principle, in Engineering Management mostly voted for the combined principle, while in Environmental Protection they voted the most with online learning. They mostly opted for the combined principle of learning because the combination of traditional and online principles leads to the best results, and also because the student can search the Internet for what was not clear to him in class. Most students stated that when learning online, they need to consult with the professor, mostly by e-mail. E-learning can improve teaching the most so that professors can be engaged to pay attention to the work and progress of students and give additional activities in accordance with their interests. The educational platform most used is the Google classroom, Moodle is used only by a few students. The opinion of the authors is that the Google classroom was the most represented due to the availability and simplicity of the interface.

Google Classroom has met all the requirements for quality online teaching, has a simple interface, and a well-organized reporting system for both teachers and students. In each year of study, there are respondents who do not use any platform, which is about 42%, of which more than half of them chose the traditional principle, who mostly use mail, Viber, WhatsApp, Skype, Facebook to consult with the professor, while a couple consider that there is no need to consult a professor. The largest number of students believe that online learning is moderately represented in the Republic of Serbia. With this research, it can be concluded that combination learning is most represented in technical faculty in Zrenjanin because a combination of both methods produces the best results. Also, online learning is more effective if student consults with a professor through email and the most commonly used platform is Google classroom.

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