

# **LEVELS OF SATISFACTION IN VOCATIONAL AND GENERAL SECONDARY SCHOOL STUDENTS WITH ONLINE LEARNING DURING THE COVID-19 PANDEMIC: A CASE STUDY FROM NORTH MACEDONIA**

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**Abstract.** The COVID-19 pandemic transferred the entire education system across the world from the physical presence of learning to online learning. Nobody was spared from this, starting from children in primary and secondary schools, as well as university students at faculties. Especially for the primary and secondary education sector, where physical presence is more important due to the young age of school children, this rapid transition to online learning posed challenges to both teachers as well as school students. The aim of this study is to obtain a snapshot of the level of satisfaction by school students with online learning in general education (gymnasium) and vocational schools as well as explore some of the associated challenges they occurred when learning online from home. This research was conducted in the Republic of North Macedonia, specifically in the city of Kumanovo and the neighbouring settlement of Lipkovo. The methodology of the research is quantitative, whereby 301 respondents took part in this research, of which 141 from two gymnasiums, and

161 from two vocational secondary schools. Based on the data that was collected, it can be concluded that most of the students from gymnasiums and vocational schools are not satisfied with online learning and prefer learning with physical attendance.

*Keywords:* online, learning, vocational, general, secondary schools, satisfaction

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## **Introduction**

It is especially important to research the level of satisfaction among students in vocational secondary schools and general ones to see if the teachers are achieving the objectives with their students. The difficulties faced by students which are in developing countries as in this case Northern Macedonia differ from those of the developed countries. Regarding the level of satisfaction for online learning in vocational and regular schools, there is a lack of research in this field, especially for the level of satisfaction and particularly in the Republic of North Macedonia.

The first case of COVID-19 in North Macedonia was report on 26 February 2020, in Skopje, the country's capital city.<sup>1)</sup> As more case began to be registered, authorities took steps to monitor incoming airport passengers and travel restrictions for high risk areas came into place. The country's President announced a state of emergency on 18 March 2020<sup>2)</sup>, with first curfews being implemented from 21 March 2020.<sup>3)</sup> Subsequent curfews were implemented throughout the country to varying degrees depending on the number of infections in different regions.

On 10 March 2020 the authorities took the decision to close all schools and continue with education through nation-wide online platform, called Eduino.<sup>4)</sup> This move is generally perceived as a sudden action without appropriate technical preparation having taken place by state institutions, with significant negative impact on educators and school students.<sup>5)</sup> In fact, this online

learning platform for North Macedonia had already been under preparation through the United Nations International Children's Emergency Fund (UNICEF), due to be launched in late 2020. However, the COVID-19 pandemic brought this online product forward at fast speed, with the *Eduino* platform launching on 24 March 2020.<sup>6)</sup> Because of the assumption that online learning was poorly planned and implemented and that vocational schooling requires live practical learning. Even by early 2021, secondary school education had still not returned to face-to-face teaching and online learning is still continuing.

As per the educational framework from the Ministry of Education of the Republic of North Macedonia, the secondary school system in the country is a mixed-sex education system, composed of teenagers aged 14 to 18 years of age. The schools covering this age group are separated into general academically oriented gymnasium secondary schools on the one side, and vocational secondary schools on the other side that focus on preparing school students for certain professional fields (e.g., nursing, IT, agriculture, and similar fields).

According to figures from 2017, a total of 5,541 school students studied at all types of secondary schools in Kumanovo Municipality<sup>7)</sup> and 448 school students in Lipkovo Municipality.<sup>8)</sup> This combined total of 5,989 school students in this part of the Kumanovo Region meant that 301 respondents comprised approximately 5% of the combined total secondary school student numbers for the area surveyed.

Since 2008 in the Republic of North Macedonia secondary school is compulsory. This segment of compulsory education is of particular interest because this age group is at the critical stage in the education system where they are preparing for their future careers in life. Therefore, the purpose of this type of study to determine secondary school students' satisfaction levels of online education for both gymnasium secondary schools and vocational secondary schools as well as explore some of the challenges the student encountered with their online learning experience.

Different researchers and this research has identified numerous critical

challenges which affect learning within an online environment. Multiple approaches define and assess student satisfaction. In the extended research on the Community of Inquiry (Garrison et al., 2000), it was showed that social, cognitive, and teaching with physical presence as being essential to the student learning experience and, thus, student satisfaction. They determined that learning management system (LMS) features greatly impact perceptions of community according to the inquiry framework. In a related study, Mahmood et al. (2012) argued that teaching with physical presence plays the most critical role in how students evaluate online learning.

The interaction plays an important role in both face-to-face and online learning modalities (Kuo et al., 2013). In fact, many studies have found that both quantity and quality of student interactions are highly correlated with student satisfaction in almost any learning environment. However, investigators have noted that demographic and cultural considerations also impact the design of appropriate interaction techniques in online learning (González-Gómez et al., 2012).

Ke & Kwak (2013) identified five elements of student satisfaction regarding learning: learner relevance, active learning, authentic learning, learner autonomy, and technology competence. Kuo et al. (2013) determined that learner-instructor interaction and learner-content interaction combined with technology efficacy are valid indicators of students' positive perceptions. However, Battalio (2007), using a criterion approach, argued that a positive course rating requires effective learner-instructor interaction. Interaction of the instructor is important on the way of organizing teaching.

Keengwe et al. (2012) argued that students' expectations influence the instructor's design of effective technology tools in online courses and are the key to understanding the satisfaction construct. The authors concluded that satisfaction was most impacted by learning convenience combined with the effectiveness of e-learning tools.

Dziuban et al. (2007) found six key elements that contribute to students'

satisfaction: an enriched learning environment, well-defined rules of engagements, instructor commitment, reduced ambiguity, an engaging environment, and reduced ambivalence about the value of the course.

Distance education has been investigated for decades, particularly starting 1990s, when technology-mediated learning platforms started to emerge in education. As online education has increased, so has research (Arnesen et al. 2019). Although many studies exist for adult online university education, which is a well-developed sector, but in the past years many studies have been done to study the satisfaction of online learning by secondary school students during the COVID-19 period. Typically, most secondary school teaching is done face-to-face, and it has never been done on this large scale on any national level, let alone around the world.

#### *Research purpose*

The purpose of this study is to determine secondary school students' satisfaction levels with online education for both gymnasium secondary schools and vocational secondary schools as well as explore some of the challenges the student encountered with their online learning experience.

#### *Research questions*

This research tries to find answer to the following questions: (1) are the secondary school students satisfied with online classes; (2) is there greater dissatisfaction amongst secondary school students of vocational schools where applied practical than the dissatisfaction of gymnasiums students.

#### **Methodology**

Regarding the practical part of the study, the way or approach of obtaining data will be done through the quantitative method. It will be done through a questionnaire which will contain closed questions.

### *Sample*

With a total of 301 Albanian secondary school students responded to the survey, of which 141 were from two general education secondary schools (one gymnasium from Lipkovo Municipality “Ismet Jashari”, and the other gymnasium from Kumanovo Municipality “Sami Frasher”, and 161 students from two vocational secondary schools (all in Kumanovo Municipality “Nace Bugjoni” (Vocational), “Pero Nakov” (Vocational)). The authors of this research deliberately attempted to achieve an almost equal representation of respondent numbers from each of the two types of secondary school types in order to have more balanced answers in the research.

### *Data collection*

A total of 301 secondary school students responded between the dates of 24 December 2020 (01:00hrs) to 29 December 2020 (01:00hrs). The data below is presented as an overall picture of the responses from both the gymnasium and the vocational secondary schools.

The survey was shared online to the students of the secondary schools via google form.

### *Instrument*

The authors of this research decided on using an online survey tool as this was more time efficient and as per the relevant health authority guidelines for social distancing, considering that secondary school students also continue to conduct their education via the national online platform.

The survey was created using Google Forms, consisting of 14 questions, in the Albanian language. In the questionnaire, beside the questions that were related to the research questions, also there was a question that is related to the demographic and living standards. The survey was distributed to Albanian school children via their respective class teachers, targeting selected schools in the Kumanovo Region. All the respondent school students were of Albanian

ethnicity, and who were receiving their education in the Albanian language.

### *Data analyses*

Data that was collected on google forms have been analysed in Microsoft Excel.

## **Results**

### *Overall perceptions of secondary school students*

The percentages of responses of all survey participants are presented as per the respective questions in Table 1.

**Table 1.** School names: Kumanovo Municipality: “Sami Frasher” (Gymnasium), “Nace Bugjoni” (Vocational), “Pero Nakov” (Vocational); Lipkovo Municipality: “Ismet Jashari” (Gymnasium)

Gender	Male		Female	
	39%		61%	
Ages	aged 14 to 15 years		aged 16 to 18 years	
	30%		70%	
School types	general secondary schools (gymnasiums)		vocational secondary schools	
	47%		53%	
Family living standards	below average	about average	above average	
	19%	71%	10%	
Online class attendance	Attended		never attended	
	93%		7%	
Electronic learning devices used	smartphones	Laptops	desktop computers	tablets
	73%	17%	5%	4%
Experienced Internet problems	with problems		without problems	
	94%		6%	
Sharing e-learning devices with family	with sharing		without sharing	
	56%		44%	
Sharing e-learning devices caused problems	with problems		without problems	
	56%		44%	
Special own study area	with own study area		without own study area	
	60%		40%	
Experience learning difficulties by sharing study area	with difficulties		without difficulties	
	69%		31%	

Difficulties understanding online learning materials	with difficulties		without difficulties	
	90%		10%	
Received learning help from family	received help		never received help	
	51%		49%	
Satisfaction levels with online learning platform	Dissatisfied	neutral	satisfied	
	49%	32%	19%	
Satisfaction levels with online learning experience	Dissatisfied	neutral	satisfied	
	54%	24%	22%	
Demand for future education formats	physical attendance	combined	online	
	81%	12%	5%	

The survey had more female student responses (61%) than males due to many of the respondents studying nursing, a predominantly female student sector in North Macedonia, and those girls perhaps tend to be more responsive in extra activities such as surveys than boys. As for age groups, most were aged 16-18 (70%), which is a result of distribution of surveys by teacher depending on age ranges they were responsible for. 19% of respondents had a below average standard, 71 had an average level, and ten percent had an above average standard.

The findings present a picture of the vast majority of secondary school students being able to attend online classes (93%), however a remaining 7% could not attend, which is of concern. The survey did not provide participants to provide a reason for non-attendance, but this is likely due to lack of available means for online education due to internet costs. It is important to note that 19% of respondents claimed to have family living standards below the average of North Macedonia.

The majority of students used smartphones for accessing their online learning (73%), which is a result of quite extensive penetration of the mobile telephone market in the country. However, smartphones do not allow for effective interactions and typing of exercises as do laptops or regular computers due



to their small screens sizes and touchscreen keyboards. This should be of concern to educators for any future online learning actions, meaning more opportunities are needed for students to have access to regular computers or laptops for easier e-learning.

An additional challenge faced by students was that 94% of them faced internet quality issues to a greater or lesser extent, and 24% with significant interruptions. This goes to show that internet infrastructure will need further improvements to cope with extra demand for online services when such widespread e-learning occurs.

Students also faced challenges in online learning as it meant most were sharing their e-learning devices with other family members (56%) which caused problems with their own learning, according to 54% of respondents. Furthermore, although 60% of students had their own study area, for those that shared study space with other, this hampered their learning in 69% of cases.

The vast majority of students also had challenges in comprehending the online learning materials, which caused some form of difficulties for 90% of cases. In fact, only 51% were able to obtain any form of help from other family members to aid in better understanding the online learning materials that they had found difficult.

As for the student's satisfaction with online learning almost half of them (49%) of them were dissatisfied with the online learning platform, while 74% were dissatisfied with the overall online learning experience. This level of dissatisfaction is also highlighted by most of the students desiring to have future education in physical (i.e., face-to-face) format, rather than online.

## **Discussion**

A recent study with adult medical university-level, clearly a vocational field, showed an 88% satisfaction rate with online classes during the COVID-10 pandemic (Fatani, 2020). This proves that online education even in vocational fields can be very successful, but in that case with extensive audio-visual

technology and with superior learning access than that which exists for secondary school students in North Macedonia. More pertinently, such comparison are also difficult to make, not only because the two subjects are adult university and school children, but also because for university level there is also a great number of studies available, and also the adults have the choice of attending online courses, whereas for the children it is compulsory.

**Table 2.** Key perceptions from gymnasium secondary school students

Difficulties understanding online learning materials	with difficulties	without difficulties		
	91%	9%		
Satisfaction levels with online learning platform	dissatisfied	satisfied		Neutral
	43%	27%		30%
Satisfaction levels with online learning experience	dissatisfied	satisfied		Neutral
	46%	28%		25%
Demand for future education formats	physical attendance	combined	online	No planes
	80%	14%	5%	1%

It is important to remember that satisfaction levels of students with online courses, and this is directly related to the personal character of the participants, which also influences their success. Indeed, some students do not thrive well in an online setting, which impacts negatively on their satisfaction levels. (Gray & Diloreto, 2016). It is also worth remembering that the COVID-19 pandemic has created anxiety amongst any people (Lee, et al., 2020), including students. Anxiety levels are also likely to negatively impact on learning success and satisfaction levels.

**Table 3.** Key perceptions from vocational secondary school students

Difficulties understanding online learning materials	with difficulties	without difficulties		
	89%	11%		
Satisfaction levels with online learning platform	dissatisfied	satisfied		Neutral
	55%	12%		33%
Satisfaction levels with online learning experience	dissatisfied	satisfied		Neutral
	61%	18%		21%
Demand for future education formats	physical attendance	combined	online	No planes
	83%	10%	5%	2%

Distance learning should be based on a common strategy of the school to which everyone is committed. Teachers also needed Furthermore, the challenges to teachers' IT skills are well known (Artacho et al., 2020). The pandemic showed that there were differences in teachers' skills and readiness to teach online. According to Trust & Whalen (2020), most of the teachers they interviewed had never taught online before. Hence, teachers had many challenges concerning technology, pedagogical changes, governmental guidelines, and students' individual needs. The teachers felt themselves unprepared and needed a lot of support. However, teachers who frequently used technology were better able to transition to distance learning. (Trust & Whalen, 2020).

When comparing the responses from gymnasium students and vocational students, there were similarities in understanding the online teaching materials. Of the gymnasium students, 91% reported having difficulties in understanding class materials, whereas 89% of the vocational students reported similar difficulties.

As for satisfaction levels, the vocational students were somewhat more dissatisfied (55%) with the national online learning platform than gymnasium

students (46%). As for the overall online learning experience, again the vocational students showed much higher dissatisfaction levels (61%) than their gymnasium counterparts (46%). These higher dissatisfaction levels among vocational students may well be explained due to the fact that their learning is more practically work based, than the studies of gymnasium students. Naturally, practical work is not very feasible in online learning.

As regarding which form they would like to continue with their education in the future, both types of school students had similar desires. The 83% of the vocational students desired to continue with their education in a physical (i.e., face-to-face) format, which was only slightly higher than the same desire expressed by 80% of gymnasium students.

In terms of future education demand, general secondary school students prefer combined education 14 %, whereas vocational secondary school students prefer it just 10% of the time. Physical education is also preferred by only 80% of general secondary school students, compared to 83 percent of vocational school students.

### **Conclusions**

This study corroborates the claim that secondary school students were largely dissatisfied with online classes (74%), that the majority had difficulties understanding the learning material because it was in an online format (90%), that about half did not receive learning assistance from family members (49%), and the vast majority preferred to have future learning in a physical setting (81%). However, besides the actual learning materials and methods of online delivery, additional factors such as not being able to socialise with friends at school as well as various curfews and lockdown measures may also be a large contributing factors to elevating the students' dissatisfaction levels.

Indeed, this study showed higher levels of dissatisfaction with online learners of vocational schools than gymnasiums. The vocational students were

more dissatisfied with the online education platform than the gymnasium students (55% versus 43%), as well as with the overall online learning experience (61% versus 46%), and the A likely major factor in this is that vocational schooling focus on developing practical skills, for example for nursing. Without practical exercise, this type of learning is much more difficult in an online setting.

Some of the main challenges for secondary school students which may well have contributed to high levels of dissatisfaction were challenges of internet connection, lack of availability of computers for studying (73% used smartphones), internet connection problems (94%), sharing their learning devices (56%) and learning space other family members (40%). Only 51% of those surveyed were able to obtain any help from other family members in understanding the online learning materials. More concurringly, 7% of respondents could not attend classes at all, possibly impacted by 19% of students' family living below average national standards.

### **Recommendations**

In future, more studies should be undertaken to identify such key issues facing school children attending online education, through no choice of their own. Once key issues are identified, possible solutions can be offered. One possibility is to open small classes at school for those with learning difficulties or those living in vulnerable situations, which may be a quicker and cost-effective solution than mass-purchasing of laptops. No doubt, in the upcoming months more studies will become available that will likely present a lot of similar situations in medium-income level countries around the globe, such as those that prevail in North Macedonia.

### **NOTES**

1. <https://www.reuters.com/article/china-health-north-macedonia/north-macedonia-confirms-first-case-of-coronavirus-idUSL8N2AP02K>
2. <https://nezavisen.mk/pendarovski-proglasi-vonredna-sostojba>

3. <https://english.republika.mk/news/macedonia/macedonian-interior-ministry-as-of-tomorrow-curfew-starts-from-9-p-m-to-6-a-m>
4. <http://eduino.gov.mk>
5. <https://balkaninsight.com/2020/10/01/schools-out-how-pandemic-de-railed-north-macedonias-education>
6. <https://www.unicef.org/northmacedonia/press-releases/new-digital-learning-platform-launched-support-distance-learning-children>
7. <https://kumanovo.gov.mk/documents>
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