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G SUITE FOR EDUCATION – THE CHALLENGE THAT HAS BECOME A REALITY IN A BULGARIAN SCHOOL

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Abstract. The article presents a study of the interest and desire to implement e-learning for education at "Hristo Botev" Secondary School in the village of Chepintsi, Bulgaria through G Suite For Education. We analyzed the results of the surveys conducted with teachers and students, studying the motivation, communication, the degree of success of students in long-term use of the electronic environment. The working hypothesis is confirmed that there is no decline in the interest and desire of students to e-learning and the way it was conducted in the conditions of COVID-19 for the past 2019/2020 school year in that particular school.

Keywords: information communication technologies; Google ClassRoom; education; innovative school

Introduction

In the last few years, the educational methodology and content intended for pre-school and school education have been linked to the concepts of "innovation", "innovative school", and have even been defined in the Preschool and School Education Law. Innovative schools have emerged, aimed at creating a model of the modern school, where students should improve their results and way of thinking through innovative educational processes, teaching methods, school leadership and curricula (Garov, Koleva & Todorova, 2020; Spirova, Terzieva & Rahnev, 2020; Tuparov, Stoyanova & Tuparova, 2020). The rest relied on traditional training until the pandemic happened. It made the entire educational system face a new challenge, namely, the widespread use of information and communication technologies (ICT) to continue the distance learning process and to achieve the educational goals. Suddenly, most of the declared innovative approaches became mandatory for every school. Delayed innovations due to lack of understanding, proficiency, motivation, school organization, curricula, syllabi and learning content found their application, especially those using ICT.

The subject of research in this article is the state of motivation, communication and the process of education in the conditions of e-learning from distance during a

pandemic situation through the use of the G Suite For Education platform at "Hristo Botev" Secondary School in Chepintsi, Bulgaria.

The complex pandemic situation in 2020 forced upon its use in all subjects taught in the school (Shopova, Dimitrov & Garov, 2020). The following questions arose: Is the school succeeding in making a successful transition to the used virtual environment?; What is the motivation level of teachers and students in its long-term use?; Is the communication between the participants in the learning process good enough? Are the learning goals achieved by the imposed distance learning?

Organizing and controlling the learning process in G Suite for Education

The transition to work with the platform was made without serious difficulties due to the fact that for more than two school years there has been a process of introducing e-learning, in parallel with the traditional one. The school was registered in August 2018 in G Suite. In the same period, two trainings were conducted in the form of in-school qualification of the entire pedagogical staff to work with G Suite For Education (Mollov, 2019).

Teachers were trained in two areas: "New technologies in education" and "Emotional intelligence of the new generation". The results of direct observations during the implementation process show that teachers are active and motivated to use the proposed virtual platform. They participate in the training responsibly and are highly motivated to introduce the technology in their educational work. Evidence of this could be found in both – the results of a survey and their activity in the system (Mollov, 2019).

On the other hand, during the implementation process, students used this cloud platform to study mainly subjects like Maths and Information Technology. They were also found to be active, motivated, using the system to learn. They used materials, self-control tests and its ability to communicate with teachers and classmates (Mollov, 2019).

Current research

This research aims at establishing the level of interest and desire for e-learning, the motivation of teachers and students, the quality of communication between participants in the learning process and the degree of achievement of learning objectives in continuous online learning. Surveys for teachers and students were used. They also include questions related to the technical and software support for conducting online training, as well as the degree of competence to use G Suite For Education in the form of self-assessment.

Processing and analysis of the results of students' surveys

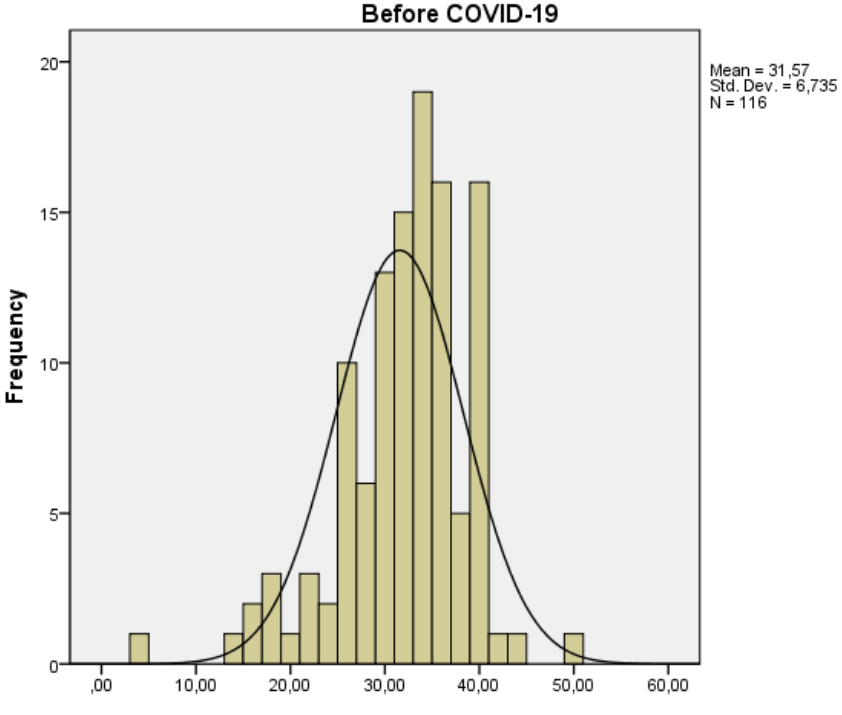
166 students were interviewed – 83% of the total number. The results show good technical support – computers, smartphones and internet connectivity. From

the answers of teachers and students it can be concluded that students have a high level of proficiency in G Suite for Education. Motivation is at a good level, that includes the pursuit of self-improvement, lifelong learning, a perceived need for a high level of competence.

For most students, inner motivation is also important – they feel significant and satisfied with the ability to use G Suite For Education. They like to learn new technologies. They respect the success (timely adaptation) of teachers using new technologies. Communication has been improved and facilitated. Preferences are focused on synchronous learning. They are interested in electronic content.

We examined the interest and desire of the students for e-learning in their course of study in the mentioned school after a continuous use of the e-environment during the pandemic situation. Our working hypothesis assumes that there is no decline in students' interest and desire for e-learning and the way it was conducted in the conditions of COVID-19 for the past 2019/2020 school year in that particular school.

The frequency distribution of the results of the conducted survey is shown in the following diagrams.



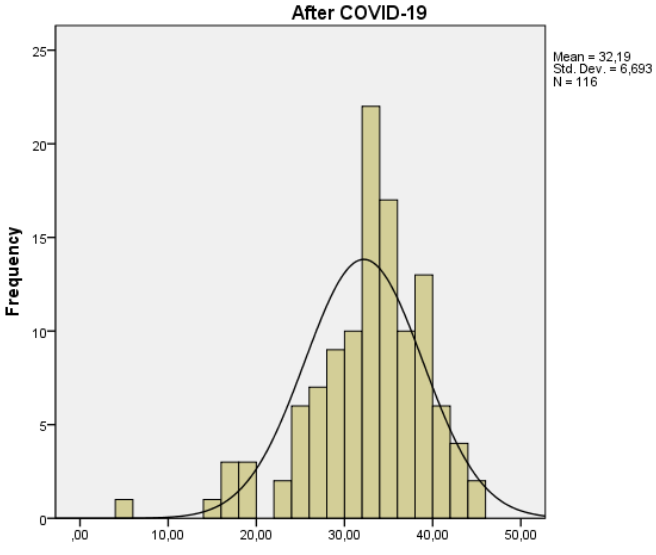


Figure 1. Histograms of the different types of surveys

The performed variation analysis generates the following Table 1, where we can see that there is a difference in the average scores of the two variants (Before, After) of the conducted surveys – **After(Mean)-Before(Mean)=0.6207**, which is in favour of the last survey. This should confirm the working hypothesis.

Table 1

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Before	116	4,00	49,00	3662,00	31,5690	6,73501
After	116	5,00	45,00	3734,00	32,1897	6,69317
Valid N (listwise)	116					

It remains to verify whether this difference is not a random result due to the examined sample, and whether it can be summarized for the general population. For this purpose, we need to check the normal distribution of the empirical data of the two variants (Before, After), which will determine the choice of a method for comparison. The histograms of the results are shown in Figure 1. The Kolmogorov-Smirnov and Shapiro-Wilk tests (Table 2) return a value for *Sig*. (significance level) below 0.05, which is a sufficient condition to reject the null hypothesis for a normally distributed sample in favour of the alternative hypothesis for the non-normal distribution of the processed results.

Table 2. Test for normal distribution

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Before	,115	116	,001	,944	116	,000
After	,127	116	,000	,947	116	,000
a. Lilliefors Significance Correction						

The need to use a non-parametric method for comparison of dependent samples comes from the conclusions, made for the distribution of the results. The comparison of the pair After-Before was made with the Wilcoxon Signed Ranks Test (T-test), where for Asymp.Sig. (2-tailed) (degree of significance) the value of ,000 is obtained (Table 3).

Table 3. Wilcoxon's T-test

Ranks				
		N	Mean Rank	Sum of Ranks
After - Before	Negative Ranks	18[a]	47,50	855,00
	Positive Ranks	68[b]	42,44	2886,00
	Ties	30[c]		
	Total	116		

a. After < Before
b. After > Before
c. After = Before

Test Statistics[b]	
	After - Before
Z	-4,509[a]
Asymp. Sig. (2-tailed)	,000

a. Based on negative ranks.
b. Wilcoxon Signed Ranks Test

Based on this result (degree of significance <0.05), it can be concluded that the difference After-Before is not due to chance, but it is a result of increased interest and desire to work with the platform G Suite For Education. In other words, the working hypothesis is confirmed that there is no decrease in the interest and desire of students to e-learning and the way it was conducted in the conditions of COVID-19 for the past 2019/2020 school year in the particular school.

Processing and analysis of the results of the teachers' surveys

32 pedagogical specialists were interviewed, representing 100% of the staff. Teachers are highly motivated to improve their level of digital competence, all working freely with the platform. Inner motivation shows a desire for self-im-

provement. High self-discipline and self-esteem make them upgrade their skills and level of competence to be more useful to students. Communication with colleagues, students and parents is at a high level. Many teachers value their desire to create digital content. Teachers say that they achieve learning objectives at a high level. They highly value the suitability of the platform G Suite for Education.

Conclusion

From the analysis of the results of the conducted surveys with teachers and students, the following conclusions can be drawn:

1. A pedagogical study was conducted with a representative sample of a total of 166 students and 32 pedagogical specialists from "Hristo Botev" Secondary School in the village of Chepintsi, Bulgaria in order to establish the level of interest and desire to implement e-learning, motivation, communication, the degree of success of students in the long-term use of electronic environment for education in the conditions of COVID-19 for the past 2019/2020 school year.
2. Tools from G Suite For Education and the capabilities of IBM's SPSS software were used to summarize and analyze the results.
3. On the basis of the above actions and the obtained results, the following conclusions can be drawn:
   3. 1.The students are motivated, with improved and facilitated communication, with a good degree of mastering the study material in the long-term use of electronic environment. The working hypothesis is confirmed that there is no decline in the interest and desire of students to e-learning and the way it was conducted in the conditions of COVID-19 for the past 2019/2020 school year in that particular school.
   3.2. Teachers are highly motivated to improve their level of digital competence. Communication with colleagues, students and parents is at a high level. They achieve the learning objectives and highly appreciate the suitability of the platform G Suite For Education.

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