

ASSESSMENT OF STUDENT ACHIEVEMENTS DURING THE COVID PANDEMIC

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Abstract

To prevent the spread of COVID-19, the Republic of North Macedonia, like most countries globally, decided to close educational institutions of all levels temporarily. In addition to training teachers to use a unified platform, the BDE drafted a *Guide for teachers on how to assess students*.

The attempt to manage the new reality brought to the world by the shock *de facto* modified the approach to assessing achievements. This finding will gain meaning during the elaboration and analysis of data collected from teachers' attitudes in the following paper. The research elaborates on implementing practices referred to by the guide, respectively oriented to disclose the teachers' experience.

The research in question will be guided by the attitudes of 101 teachers collected from the online questionnaire designed to answer questions that clarify the method of assessment, the willingness of teachers to create different assessment instruments and their competencies for implementation of the same in real-time, eventual difficulties during the realization of knowledge control, teachers' attitude about the objectivity and measurability of online assessments, as well as the application of formative assessment during the creation of the summative grade.

The results from the research reflect the situation where all teachers have conducted the assessment, from which there is evidence of the application of synchronous and asynchronous assessment. While about 90% of teachers state that they did not find help in the guide prepared by the BED, 78.2% deny the help from the MoE training. Statistically significant data result in the question of the reliability of the tests, the value of which elaborated with H^2 with test significance 0.058, less than the 0.05 limit. According to Pearson's correlation which represents a significant correlation with ($0.036 < 0.05$), we find that teachers plan to conduct assessments online. Statistically processed data on the probability of the impact of students' prior knowledge on the creation of the summative grade show results that reflect the significant relationship 0.004 and test value 0.006 (< 0.05).

Keywords: achievement assessment, distance learning, online assessment

INTRODUCTION

March 2020 shook the conformity of many sectors, including education, at all levels. The sudden shock by Covid 19 imposed a new reality on the world, the response to which was the temporary closure of educational institutions. According to UNESCO, at the end of April 2020, this suspension of the process directly affected 186 countries, respectively 74% of students, which took place differently in different countries. While some countries such as Denmark, Germany, France, Greece reopened the education system progressively in April and May, countries such as Ireland, Portugal, including neighbouring countries, and the Republic of North Macedonia, announced that the educational process official would not reopen this academic year.

The transition to distance learning challenged all stakeholders of all levels of the educational process. The dictated and unexpected situation revealed a marked inadequacy of teachers in terms of technical skills and competencies. This moment also put tremendous pressure on parents to create conditions for them to join these rapid demands. Consolidating distance learning posed a challenge to policymakers as well. They were initially forced to provide alternative forms of compensating for the loss of learning of the most vulnerable groups by

providing opportunities and equipment. The MES, in cooperation with UNICEF, strengthened an asynchronous form of learning through the EDUINO platform for primary school students, such as and through the broadcast of lectures from the educational program called TV Classroom on national television. Since assessment is an inevitable process, at the same time, very complex academic by the BDE prepared guidelines for the assessment of students in the period of distance learning, respectively to formulate the summative grade with which we would complete the respective academic year.

As the epidemiological picture in September, respectively in the new school year, did not provide safe teaching with a physical presence, the educational process continued to take place in two forms with a month delay. While the first scenario was one with a physical presence for primary school students and those schools with a small number of students, the other group of students already proceeded with an organized approach with a unified platform for all primary and secondary school students with distance learning.

In addition to training teachers on how to conduct online learning through the National Platform, spatial conditions were created in classrooms with internet and equipment to avoid the impossibility of connecting a group of teachers. In addition to guides for teachers, students, and parents to use the learning platform, was prepared also an assessment guide, which would also be implemented remotely. The guide prepared by the BDE is designed to include details about the procedure, methods, manner, and forms of assessment, including the formative and summative of student achievement following the tools provided by the platform itself.

LITERATURE REVIEW

Notion "Assessment"

As one of the most complex and delicate education activities, *assessment* is presented as a unique pedagogical, doctrinal discipline. The definitions of this scientific branch have always aroused various discussions and debates. Despite the various inconsistencies, the perception of contemporary pedagogy supports the view that assessment does not represent the final "judgment." Still, it is reflected by monitoring, continuous monitoring, and evaluation of the student's overall performance.

As a didactic component, the assessment takes place at all stages of the development of learning activities. In addition to "systematic collection, analysis and interpretation of information to determine the extent to which the student has mastered the instructional objectives" (Zylfiu, N., 2005), the assessment serves to determine the effectiveness of applying knowledge, skills, and abilities of acquired. "These forms of the evaluation engage students in learning and require the development of reflective skills, and thus they are consistent with theories of cognitive learning and motivation" (James, M., 2011). According to Mickoska, the assessment is an act by which the teacher will identify and evaluate the child's current progress as it provides and shapes the image of the student's progress and achievement for the learning process (how the child learns) and the learning product (what he/she has mastered) (Mickoska. G., 2008).

Osmani defines the assessment as an act that sets out a complete and comprehensive portrayal of individuals in the teaching situation by integrating various applications (Osmani, F., 2010). The relevant activity, designed with an adequate pedagogical and docimological structure, provides permanent analytical monitoring, control, and assessment of students' achievements continuously, and at the same time guarantees the vital function of further student development and that of other lesson planning.

Assessment of achievements during distance learning

From the consequences of the sudden attack of COVID-19, the transition from traditional to virtual learning also attacked the student assessment process. Due to its complex characteristics, this activity is more difficult to reform and modify for application in virtual conditions. Modifying students' inevitable attitude towards learning and managing their time makes it difficult to ensure transparency, objectivity, impartiality, validity, and reliability during the assessment process, which in this period can often be perceived and interpreted as wrong and based on initial impressions.

Assessment is an integral part of the education system that provides students with a clear and accurate picture of their achievements. Provided that the assessment is declared qualitative, it means using formative assessment of student progress and summative assessment of student achievement (BDE, 2020). During the monitoring of students' progress, is evidenced the progress of students in the learning process. When diagnosing eventual learning difficulties, they receive instructions and perform complementary activities that students can perform online or in small groups of students in the classroom by adhering to the conditions and respecting the protocol for protection against infection.

For the successful functioning of the formative assessment, which precedes the summative assessment, teachers must use different methods and techniques, synchronous and asynchronous, provided by digital networks and platforms. Such approaches can be: various multimedia presentations, the realization of various presentations in individual or group form, various debates and discussions in real-time, interviews, scientific research, creation of projects within the curriculum, the realization of permanent engagements homework, different control exercises, and tasks, quizzes, and various knowledge competitions, as well as knowledge tests. Such aggregated materials present sufficient evidence which can be collected in the so-called e-portfolio.

Since formative assessment acts as a catalyst with motivating features, as well as providing the opportunity for interaction between students and teachers, giving a clear picture of the achievement of educational goals, among other things, the summing up of accumulated evidence allows the evaluation of complex cognitive processes, i.e., the creation of the summative mark.

Assessment of student achievement at a distance in order to initiate student collaboration

To maintain the routine and create an interactive environment, distance assessment includes various methods realized during the complete online way of learning or hybrid learning.

In this sense, successful doctrinal practices include evaluations during synchronous (real-time) meetings, but at the same time, do not exclude asynchronous ones. Realization of real-time assessments in the virtual meeting can be based on video conferencing platforms such as Teams, Zoom or Google Meet, etc., auditory, visual engagements, whether written, etc., planned on learning platforms such as Google Classroom, Moodle, etc. as well as the use of applications that provide interactive activities, such as Kahoot, QuizWhizzer, Socrative, etc.

Such assessment opportunities during the challenge posed during social distancing resulting from the COVID-19 pandemic provide answers to various dilemmas regarding the effectiveness of educational performance in general during distance learning. In exceptional situations, "assessment should be supportive of good teaching and should have a corrective effect on bad teaching" as well. (Hughes, A., 1989). According to Black and Harrison, assessment should be designed to include the formative, summative, proactive, and retroactive, psychological and social, and administrative functions. (Black et al. 2004).

A serious challenge for teachers during this complex process is undoubtedly providing summative evaluation that would have academic integrity, would be valid, objective, and impartial.

According to the BDE guide for this purpose, the assessment would be valid if it controls the expected results from distance learning (BDE 2020). Regarding the degree of reliability of the grade, “distance assessment can be provided if authentic tasks are given that make it difficult to find ready-made answers in teaching materials or other sources of information” (ibid). If the assessment criteria are planned, transparent to students, including parents, and find the teachers' consistent application, then objectivity in online assessment is also guaranteed.

When we talk about the fairness/impartiality of distance assessment, we should be more careful as not all students have the same conditions for fulfilling the teacher's requirements, which affects the quality. The impartiality of distance assessment should undoubtedly ensure that it will not be affected by the previous impression, as "in distance learning, it may happen that some students, unlike previous years, due to their digital skills and knowledge become very active and independent, and thus become positive role models and motivate other students, and this should be appreciated" (ibid).

RESEARCH QUESTIONS

The primary purpose of this research is to determine the manner and modalities of distance assessment of student achievement during COVID-19 period.

The real examination of the problem in question will be elaborated by answering the questions posed which are oriented to give an overview of the issues as follows:

1. The manner of assessment students' achievements;
2. Size of distance assessment application;
3. Distance evaluation modalities;
4. Attitude and experience of teachers during the implementation of online assessment
5. Eventual difficulties during the realization of the assessment, and
6. Teachers' opinions about the characteristics of the assessment they have applied.

METHODOLOGY

To clarify this pedagogical activity, the elaboration of the issues is oriented according to the relevant data collected from the teachers' anonymous questionnaires involved in the process. The survey included 101 teachers whose views were obtained through an anonymous online questionnaire. To verify the assumptions, the collected data are accessed using the statistical methods presented below.

Table 1
Demographic data of the sample

	Experience	Frequency	Percent	Cumulative%
Valid	<10 yrs	37	36,6	36,6
	10-30 yrs	63	62,4	99,0
	>31 yrs	1	1,0	100,0
	Total	101	100,0	

Table 2
Demographic data of the sample

	Age	Frequency	Percent	Cumulative%
Valid	18-30	4	4,0	4,0
	31-40	30	29,7	33,7
	41-50	47	46,5	80,2
	51-60	20	19,8	100,0
	Total	101	100,0	

Table 3
Demographic data of the sample

Table 4
Demographic data of the sample

	Gender	Frequency	Percent	Cumulative%		Workplace	Frequency	Percent	Cumulative%
Valid	Female	77	76,2	76,2	Valid	Town	54	53,5	53,5
	Male	24	23,8	100,0		Village	47	46,5	100,0
	Total	101	100,0			Total	101	100,0	

RESULTS

Question(s): *How did they accomplish the learning process? *What assessment did they implement?*

Figure 1

The manner of realizing the teaching process

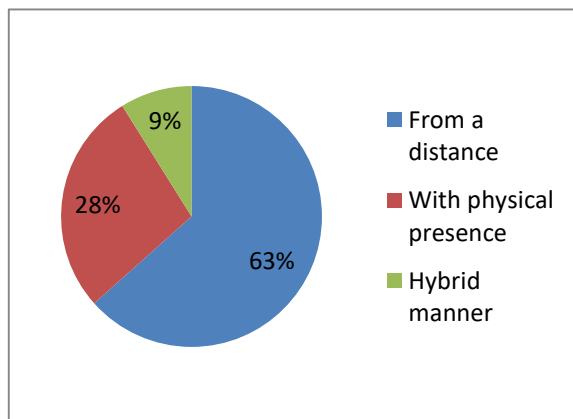
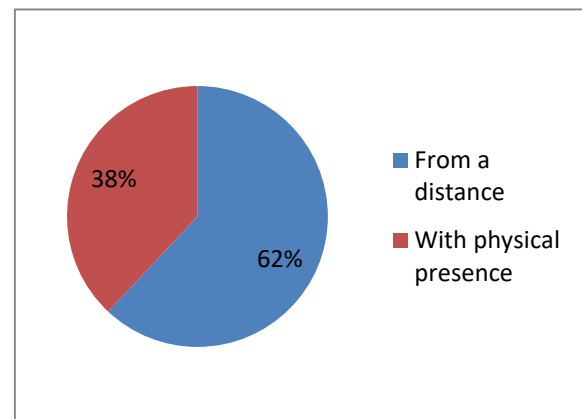


Figure 2

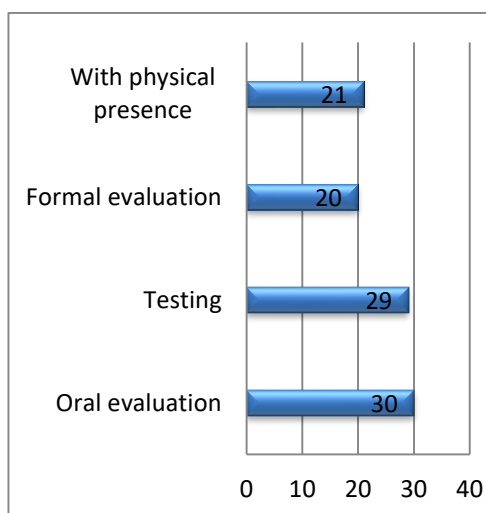
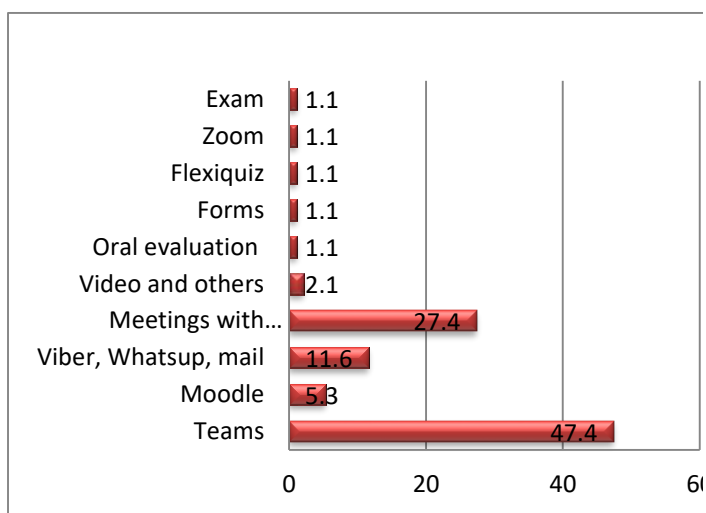
Type of used assessment



Based on the collected results, 28% of the teachers have realized the teaching process with a physical presence, only 9% of them realized the hybrid teaching, while the majority of the teachers, respectively 63% of them realized distance learning. From the 100% of teachers who have evaluated students, almost the same percentage, 62% have applied online assessment, the same way the teaching process was conducted.

30% of teachers, who evaluated with a physical presence, have respected the protocol for action in schools. 23.8% of the same have called students in small groups of two students, while 31% of them have divided students into groups of 10 students at a time..

Question(s): *How did they conduct the assessment? * What platform (application) did they apply during the assessment?*

Table 3*Manner of assessment***Table 4***Platform used during assessment*

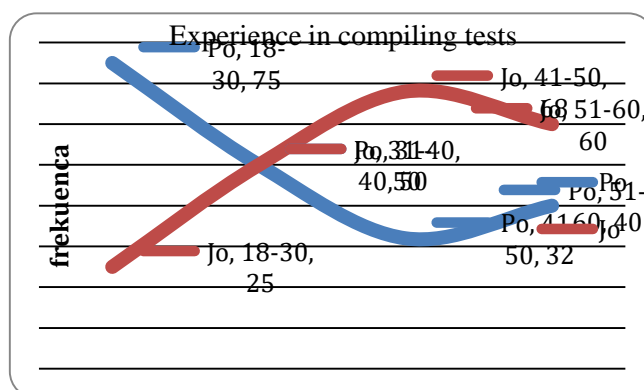
Regarding the question of how they conducted the assessment online, except for 21% of whom evaluated during physical presence meetings, 30% of teachers applied oral assessment, 20% evaluated through tests.

According to the graph.4 we can see that the vast majority, 47.4% of teachers use Teams, 27.4% of them do not include information technology in their assessment, 11.6% of teachers state that they use asynchronous learning applications, respectively Viber, WhatsApp or mail, and a smaller percentage of them have launched various platforms and applications.

Question: *Have you had experience in compiling online tests?*

Table 5*Have you had experience in compiling online test?*

		Have you had experience in compiling online tests		
		Yes	No	Total
Age	18-30	3	1	4
	31-40	15	15	30
	41-50	15	32	47
	51-60	8	12	20
Total		41	60	101

Figure 4*Experience in compiling tests*

According to the analysis of the teachers' statements, we find that most of the teachers did not have experience in compiling online assessment modalities, in addition to 40.6% stated that they had experienced. If we analyze the age factor, we can see that the most frequented age of teachers which is the age of 41-50 years appears as an age that has less experience in compiling online assessments.

According to the visual presentation in the graph, there is a negative trend according to the age where employees aged 18-30 up to 75% of them claim experience with online assessment, an experience which with age decreases the experience, respectively decreases to 40% of them.

Question(s): *How much did the guide prepared by the BDE help you with the assessment? How much training from the MoE provided competencies for compiling and leading distance assessment?*

Figure 5

How much did the BDE assessment guide help?

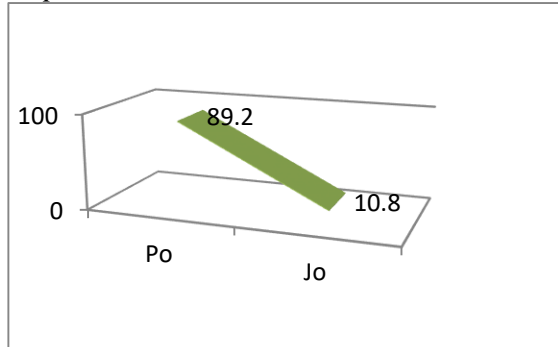
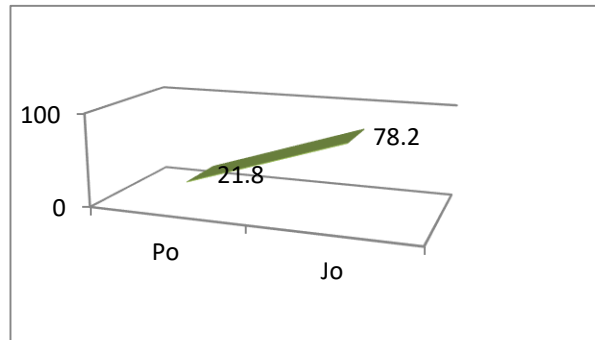


Figure 6

How much training from MoE provided competencies for compiling and leading online evaluation?



To clarify how much the guide prepared by the BDE had helped with instructions for distance evaluation, 89.2% of them denied the assistance, while on the question how much the training from MoE provided competencies for compiling and leading distance assessment, 78.2 % denied it.

Question(s): *Do you think the tests are metric, economical, and objective enough for student achievement * Do you plan to apply in the future?*

Table 6

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,700 ^a	2	,058
Likelihood Ratio	5,846	2	,054
Linear-by-Linear Association	5,500	1	,019
N of Valid Cases	101		

Note: a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 2,40.

To assess the relationship between test perceptions of whether they are metric, economic, and objective enough for student achievement and how they plan to conduct an assessment in the future, was performed the non-parametric Chi-Square test. The Chi-Square test value is 5.700, while the test's significance is 0.058, which is less than 0.05. According to the analysis, we can conclude that the relationship between these two variables is statistically significant. The frequency distribution in the intersection table shows that those who have perceived the tests as insufficiently metric in the plan to apply assessments in physical presence and not online.

Question(s): *Do you think these tests allow cheating (during testing there is the possibility of copying or help)? * Do you plan to apply in the future?*

Table 7

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,001a	2	,0368
Likelihood Ratio	1,957	2	,376
Linear-by-Linear Association	1,115	1	,291
N of Valid Cases	101		

Note: a. 3 cells (50,0%) have an expected count of less than 5. The minimum expected count is 1,09.

It was used Pearson correlation to establish the link between perceptions of whether online tests allow fraud, opportunities for copying or assistance, and what form of testing they plan to use in the future. The Pearson test value is 2.001, with a statistical significance of 0.036, which is less than 0.05, so the relationship between these two variables is statistically significant. The relationship between these variables shows that the largest number of respondents said that the online test allows fraud. They prefer to perform testing with a physical presence in the future.

Question(s): *Have you known the students you have assessment online before* Has the previous impression influenced the formation of the summative mark?*

Table 8

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8,468 ^a	1	,004		
Continuity Correction ^b	6,862	1	,009		
Likelihood Ratio	7,709	1	,005		
Fisher's Exact Test				,007	,006
Linear-by-Linear Association	8,384	1	,004		
N of Valid Cases	101				

Note: a. 1 cells (25,0%) have an expected count less than 5. The minimum expected count is 4,99.

Regarding the fundamental research question "Have you ever known the students you have assessment online so far and has the previous impression influenced" the formation of the summative mark, we approached with the statistical method Chi-Square which reflects the relationship between the two variables.

The Chi-Square test, which looks at whether there is a link between students 'prior knowledge and the formation of those students' summative assessment, shows that with a Chi-Square value

of 8.468, the same frequencies are likely to be obtained at random 0.004, and with a test value of 0.006 (<0.05), it can be concluded that there is a relationship between these two variables.

DISCUSSION

The random sample research revealed the actual situation of the assessment during the pandemic, i.e., during distance learning. Data processed by statistical methods emphasized that most of the teaching was realized at a distance, which was not under teachers' free will.

When elaborating the answers to the questions on which the research itself is based, we point out that 100% of teachers who have evaluated student achievement, 62% apply online assessment as well as the way the lesson is conducted. Of the teachers who applied distance assessment, 30% of them applied oral assessment, 20% swam through tests, while 21% of them evaluated during meetings with physical presence during which the protocol for protection was observed. When asked which platform or application was used during the assessment process, Teams appeared as the most frequented with 47.4%. During the analysis of the questions, we find that the option for asynchronous assessment is not excluded, where teachers claim the use of applications such as Viber, WhatsApp, or mail.

As expected regarding teachers' experience with applying different modalities in assessment, 59.4% of teachers stated a lack of this practice. The group of teachers who denied the experience in question was that of the average age, respectively 41-50 years old, which continues to decline negatively.

According to the results reflected in the research, it turns out that the largest percentage of teachers, 89.2%, state that the guide from BDE did not come to their aid at all, while 78.2% of the same also deny the help from the training from MoE for competencies to compile and lead the assessment in question.

Concerning plans, according to the impressions they have created about whether they are metric, economic, and objective enough for student achievement, we approached the Chi-Square test. We conclude that the relationship between these two variables is statistically significant. Since the intersection table results in teachers' perception that they are insufficiently metric, objective, and economical, they plan to avoid this teaching practice.

Also, regarding how they plan to conduct the assessments in the future based on the position that the tests allow fraud, according to the value derived with Pearson correlation of 0.036, which is less than 0.05, presents the link as significant. It is precisely the reason why it is thought that the control of students' knowledge is achieved with a physical presence.

The Chi-Square value of 8.468, with the probability of obtaining the same frequencies at random 0.004 and with a test value of 0.006 (<0.05), reflects significant links between initial impression and summative formation assessment of the same students. The data extracted from this analysis cast doubt on the extent to which the assessment was dominated by the impression that this type of assessment was approached with prejudice.

The disclosed results initiate future research in the field of pedagogy. The problem that appears as evident in this research prompts research to find variations on how to avoid the difficulties encountered, respectively finding modalities to assess student achievement without being influenced by impression, use of objective, metric, and similar assessments. The need for quality training by the BDE and the provision of detailed instructions through guidelines should not be overlooked and the need for ongoing support and encouragement of teachers by experts in the field.

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