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USE OF MICROSOFT TEAMS ADD-ONS IN HIGH SCHOOLS: THE EFFECT ON STUDENT LEARNING OUTCOMES

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Abstract

Online learning is an essential thing during the covid-19 pandemic. Especially the education sector, whereas almost everything must be put on the online system. Online learning implementation can harm the achievement of student learning outcomes. The SMA Katholik 2 Kabanjahe experienced a decline in their learning outcomes using online learning, far below the standard built from minimum competence for the test scores of mathematics subjects. This study aims to increase student learning outcomes with optimized Microsoft Teams Add-ons in mathematics subjects based on these problems. The type of this research is Classroom Action Research, and the subject of this research is students class X SMA Katholik 2 Kabanjahe with 21 students as participants. Observation student evaluation, an evaluation test, and a questionnaire are used to collect data. The result has shown that students' learning outcomes were significantly improved from the first cycle by 42.85% on average increased to 72.16% in the second cycle. Student's activity also significantly changed from the first cycle by 32.14%, increasing to 72.00% on average from the second cycle. 79.87 % of students gave positive responses and 20.13% for negative responses.

Keywords: action class research, online learning, microsoft teams

1. Introduction

The development of educational technology has proliferated after the internet began to enter and use by many sectors, one of them is online learning, which transforms knowledge to students. In addition to teachers who will keep update with the new technology, students also benefit from applying this educational technology[1]. Another advantage gained is cost and time efficiency that students can use to access the material provided by the teacher at any time[2][3]. Educational technology does not always provide benefits, online learning also needs to be mastered by teachers to maximize the learning process so that students are enthusiastic about learning the subject[4]. SMA Katolik 2 Kabanjahe is a school that is still in difficulties implementing optimized online learning.

Microsoft Teams with Add-ons bring the class to gamification feature so that the student does not have to learn the same way as the regular class. Reaching the highest level like playing a game will put the student like in the game, thus produce a more active class, thus increasing the learning outcome of the class on average[5][6]. Not far from urban districts is a bonus for the school to optimize online learning because of accessibility for the available resources, so researchers are interested in implementing online learning using Microsoft Teams using Add-Ons and analyzing their impact on student learning outcomes.

2. Method

The Classroom Action Research method is used in this study. This study focuses on increasing and improving students' learning desires, as seen from student's learning outcomes SMA Katolik 2 Kabanjahe[7][8]. 21 participant of the class was used in this research. Class Action Research method contains of four (4) main phases, which can be described as the picture above:

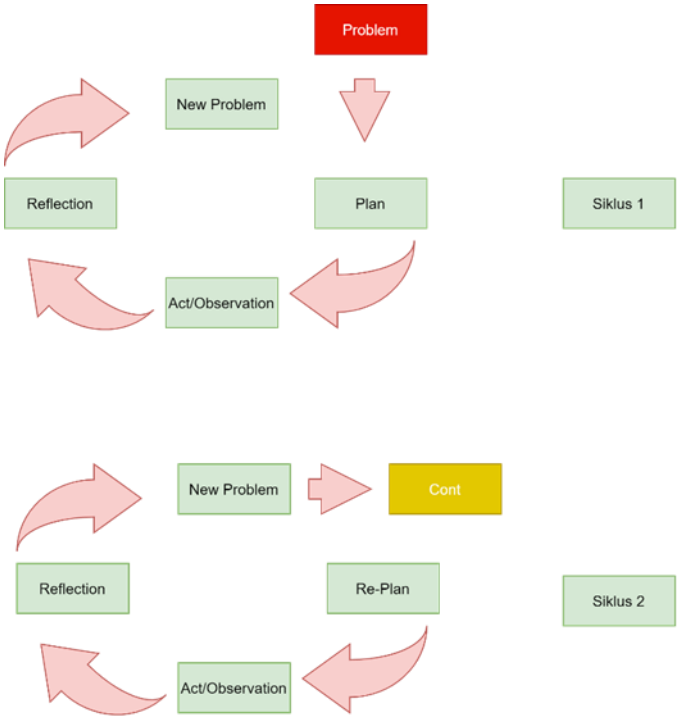

Figure 1 Class Action Research Framework

Data collection techniques were carried out in this study using observation methods and questionnaire methods. The instruments used for data collection are divided into three parts consisting of 1). Learning outcomes test instrument, 2). Observation result sheet, and lastly 3). Questionnaire responses of students who will be analyzed quantitative data[9].

This research is considered adequate if, after being given an action, namely the implementation of Microsoft Teams and this action, students' learning outcomes have increased[10]. Furthermore, conversely, the research fails if the first cycle, namely the students' results before being given action, is higher than students after being given the action. In detail, this classroom action research can be described as follows:

Planning Phase

The initial process for this stage is by concluding the results of the analysis of the problems faced by the SMA Katolik 2 Kabanjahe[7]. The main activities at this stage are 1). Analyze the curriculum used as a standard of basic competence and the material for students. 2). Materials obtained will be processed and uploaded into Microsoft Teams, specifically in this study, the material presented is Mathematics for Class X or class ten. and 3). Prepare student evaluation questions as an assessment of student learning outcomes.

Action Phase

This implementation refers to the Microsoft Teams model that has been uploaded at the planning stage. The primary process carried out at this phase consists of two (2) parts: pre-test and post-test. At this stage, the researcher prepares material to introduce online learning using Microsoft Teams. Students download the material that has been uploaded and prepared for students following the material relevant to Class X Mathematics. The next step is to provide material that has been downloaded by students so that it can be discussed further so that students can understand the material provided clearly. Maximum opportunities given to students are also given in the form of open discussions to provide insight or opportunities for other students to understand the material more deeply.

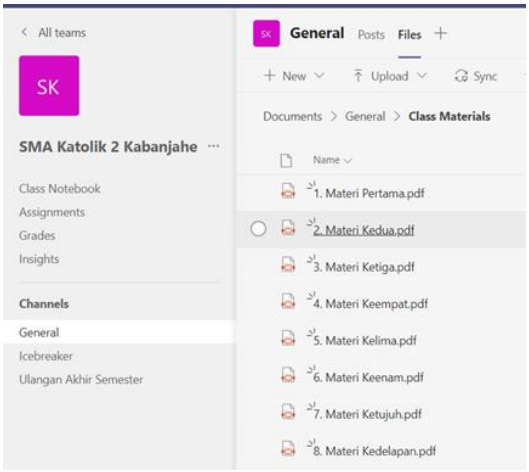

Figure 2 Uploaded Material

The next process is the provision of questions from the learning evaluation that has been carried out and used as a result of the first cycle assessment and these results become the initial data from the second cycle and will only be carried out after the first cycle is completed. The presentation of the material that has been discussed will be carried out again using the help of Microsoft Teams gamification, while the add-ons used in Microsoft Teams are Nick Nash, MyQuiz, and Breakthru[11].

Myquiz Add-ons, which is an additional application with gamification will applied to the question. These gamification Add-Ons is seen when students compete to get the highest points. Students are given special access rights or certain prizes that can be inserted into the questions after the evaluation is complete by getting the highest points[12]. Researchers made this to increase students' interest in getting the highest points to complete learning outcomes.

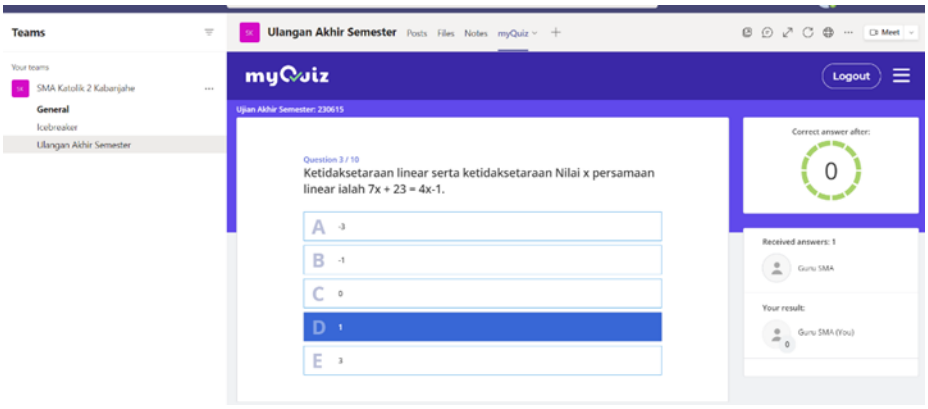

Figure 3 Gamification Quiz

3. Results and Discussion

The research was conducted using Classroom Action Research which was divided into two (2) cycles, from the first cycle it was divided into two more, namely before the action was given and the results after the action was given. The data before the action is taken from the UAS scores obtained by the students and the data after the action is taken from after the posttest. The posttest activity was taken after learning with the implementation of Microsoft Teams with Add-Ons. The UAS scores and posttest results were compared with the results of the KKM (Miminal Competence) at the SMA Katolik 2 Kabanjahe was 70 point. The data obtained from the Final Semester Evaluation results and posttest results can be seen in Figure 4 below:

Table 1 Final Evaluation and Posttest I Result

	Final Evaluation	Posttest	Increase (in %)
Completed	19.04%	42.85%	23.81%
Not Completed	80.96%	57.15%	-23.81%
Average	59.7	64.76	5.06
Deviation Standard	12.89	13.73	0.84
Lowest Point	30	35	
Highest Point	75	95	

In the table above, it can be seen that there was an increase in student learning outcomes after taking action by doing learning using Microsoft Teams. The total percentage of posttest results that fall into the complete category is 42.85, thus the percentage increase is at 23.81 percent. The average score of students also increased from only 59.7 to an average score of 64.76, it was concluded that there was an increase of 5.06 points. Judging from the level of completeness of the students which only reached 57.15 percent, so that it is less than the KKM that has been set, the second cycle will be continued in this study.

The data obtained in the first cycle will be processed into initial data or posttest I or data before the action in cycle II. The results after the action with the implementation of Microsoft Teams or posttest II. The results of students in posttest I and posttest II can be seen in Table 2 below:

Table 2 Result of Posttest I and II

	Posttest I	Posttest II	Increased (in%)

Completed	42.85%	76.19%	33.34%
Not Completed	57.15%	23.81%	-33.34%
Average	64.76	69.04	4.28
Deviation Standard	13.73	11.6	-2.13
Lowest Point	35	40	
Highest Point	95	90	

The table above shows that the number of students who passed posttest II was 76.19%, an increase of 33.34% from the results of posttest I. The average value of the results obtained in the posttest results also increased to 69.04 from the results of posttest I, only 64.76. the lowest score in posttest II also became 40 which previously only got a score of 35. However, the upward trend did not occur in the highest score, which previously reached a value of 95, while in posttest II there was a decrease, with the highest score only getting 90 points. This does not affect the overall score, because in fact, the results of posttest II change the KKM score of students, which has increased by 33.34% so that it passes the percentage that has been determined in the previous stage, which is 70%.

At the observation stage at SMA Catholic 2 Kabanjahe, researchers still found that the level of student participation was still low, it was found in the learning process of the first, second and third meetings. These results can be described in Table 3 below:

Table 3 Observation Result in Cycle I

No	Students Activity	Cycle I	
		Total	Percentage
1	Memperhatikan penjelasan materi	12	57.14%
2	Mendownload materi pembelajaran Microsot Teams	7	33.33%
3	Melakukan Diskusi	7	33.33%
4	Memaparkan Hasil Diskusi	4	19.05%
5	Memperhatikan kelompok lain	8	38.10%
6	Mengajukan pertanyaan dalam Pemaparan Disksusi	3	14.29%
7	Mengerjakan Kuis yang sudah disediakan	8	38.10%
8	Perilaku yang tidak relevan	5	23.81%
Total		54	-
Average		6.75	32.14%

And then in the second cycle of observations obtained at the fifth and sixth meetings. The results of these observations can be seen in Table 4 below:

Table 4 Observation Result in Cycle II

No	Students Activity	Cycle II	
		Total	Percentage
1	Memperhatikan penjelasan materi	17	81%

2	Mendownload materi pembelajaran Microsot Teams	18	86%
3	Melakukan Diskusi	17	81%
4	Memaparkan Hasil Diskusi	15	71%
5	Memperhatikan kelompok lain	19	90%
6	Mengajukan pertanyaan dalam Pemaparan Disksusi	13	62%
7	Mengerjakan Kuis yang sudah disediakan	20	95%
8	Perilaku yang tidak relevan	2	10%
Total		121	-
Average		15.125	72%

Furthermore, students were asked to fill out a questionnaire to find out the students' interest in learning in the implementation of Microsoft Teams. A questionnaire consisting of 15 questions using a Likert scale [6]. The questions were made using four (4) answer choices consisting of 1) SA (Strongly Agree), A (Agree), D (Disagree), SD (Strongly Disagree). The results and the percentage of data that have been collected from student questionnaires are as follows:

Table 5 Questionaire Result

Aspects	**Positive Respond**				**Negative Respond**			
	SA	A	Amount(%)	Kriteria	D	SD	Amout(%)	Criteria
1	11	8	90%	Very Good	2	0	10%	Very Enough
2	9	9	86%	Very Good	3	0	14%	Very Enough
3	9	6	71%	Very Good	6	0	29%	Very Enough
4	7	9	76%	Good	5	0	24%	Enough
5	7	12	90%	Very Good	2	0	10%	Very Enough
6	5	12	81%	Good	4	0	19%	Enough
7	6	4	48%	Kurang	9	2	52%	Good
8	8	6	67%	Good	6	1	33%	Enough
9	7	13	95%	Very Good	1	0	5%	Very Enough
10	7	8	71%	Enough	4	2	29%	Enough
11	8	12	95%	Very Good	1	0	5%	Very Enough
12	0	10	48%	Not Enogh	11	0	52%	Very Baik
13	8	11	90%	Very Good	2	0	10%	Very Enough

14	10	10	95%	Very Good	1	0	5%	Very Enough
15	6	14	95%	Very Good	1	0	5%	Very Enough
Total	108	144			58	5		
Average	7.2	9.6	79.87%	Good	3.87	0.33	20.13%	Enough

4. Conclusions

Learning outcomes of students in class X SMA Katolik 2 Kabanjahe during online learning by using Microsoft Teams with gamication Add-ons for the mathematics subject have increased, it can be seen from the number of students who completed the KKM in the first cycle by 19.04%, increasing to 42.85% for the second cycle. The activity of students using e-learning with Microsoft Teams also increased, this was shown in the first cycle by 42.85% increasing to 76.19% in the second cycle. In the first cycle, students focused more on the category of studying/understanding the material. In the second cycle, the categories increased more in discussing and answering the question and listening to other groups during presentations. Student responses during the learning process using online learning with Microsoft Teams in class X SMA Katolik 2 Kabanjahe. For the questionnaire, students gave a positive response with an average was 79.87%, and those who gave a negative response were 20.13%.

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