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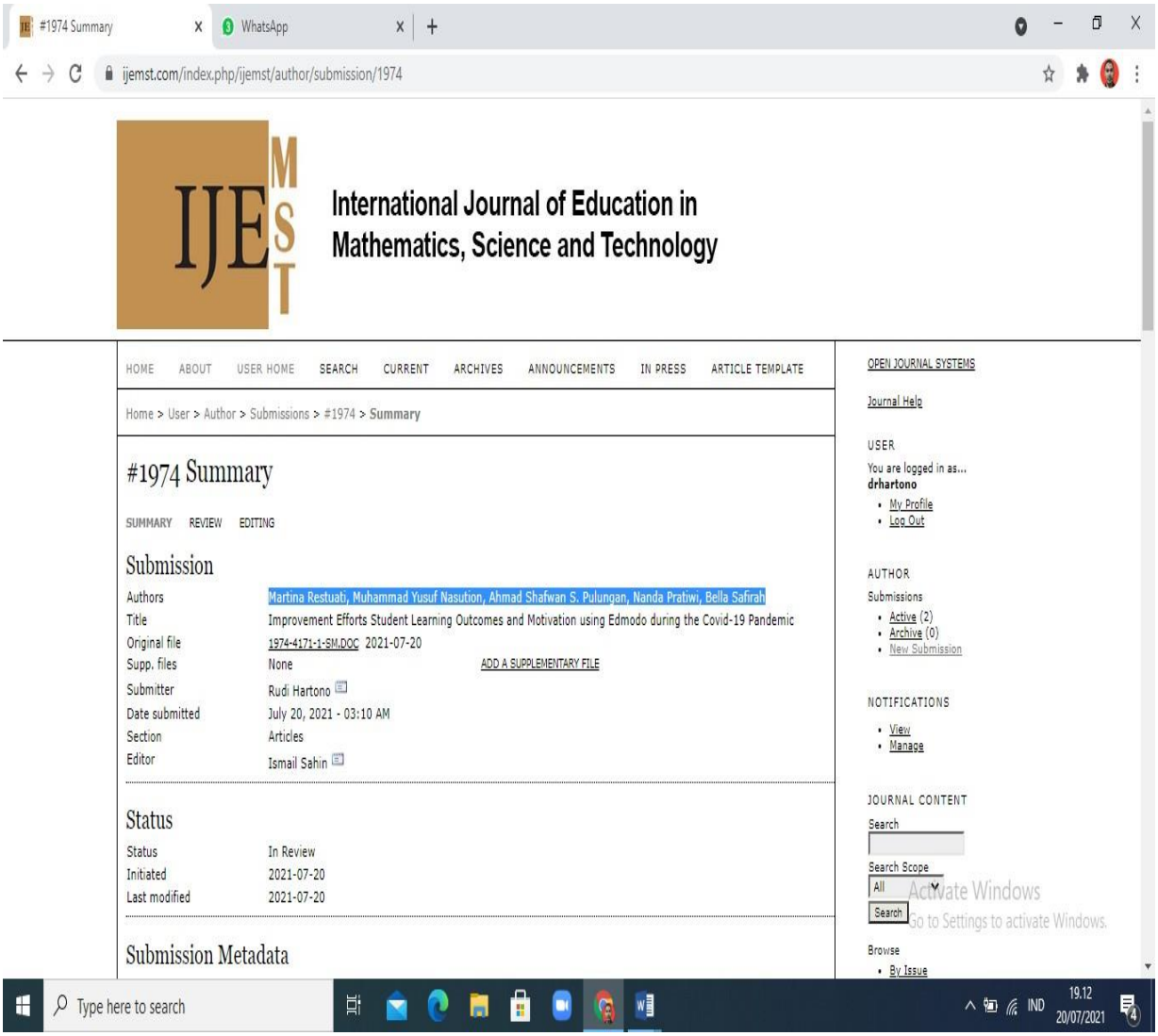
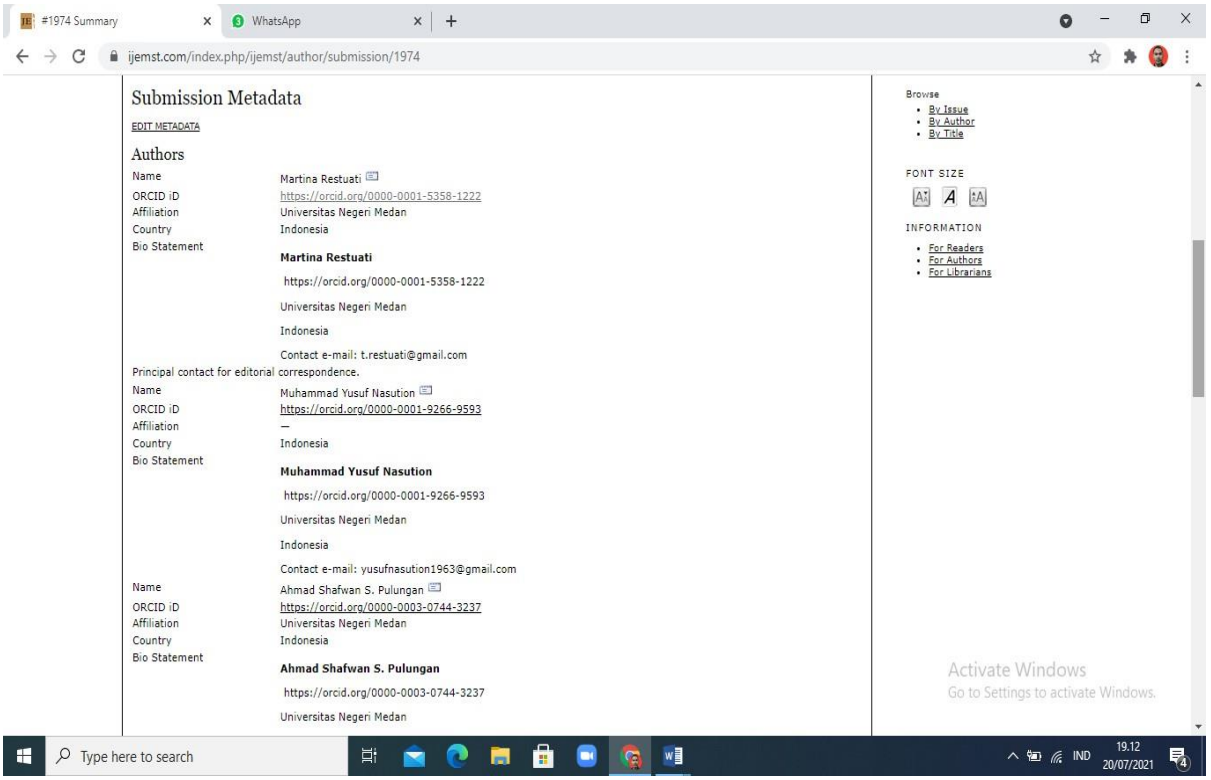
Paper submissions

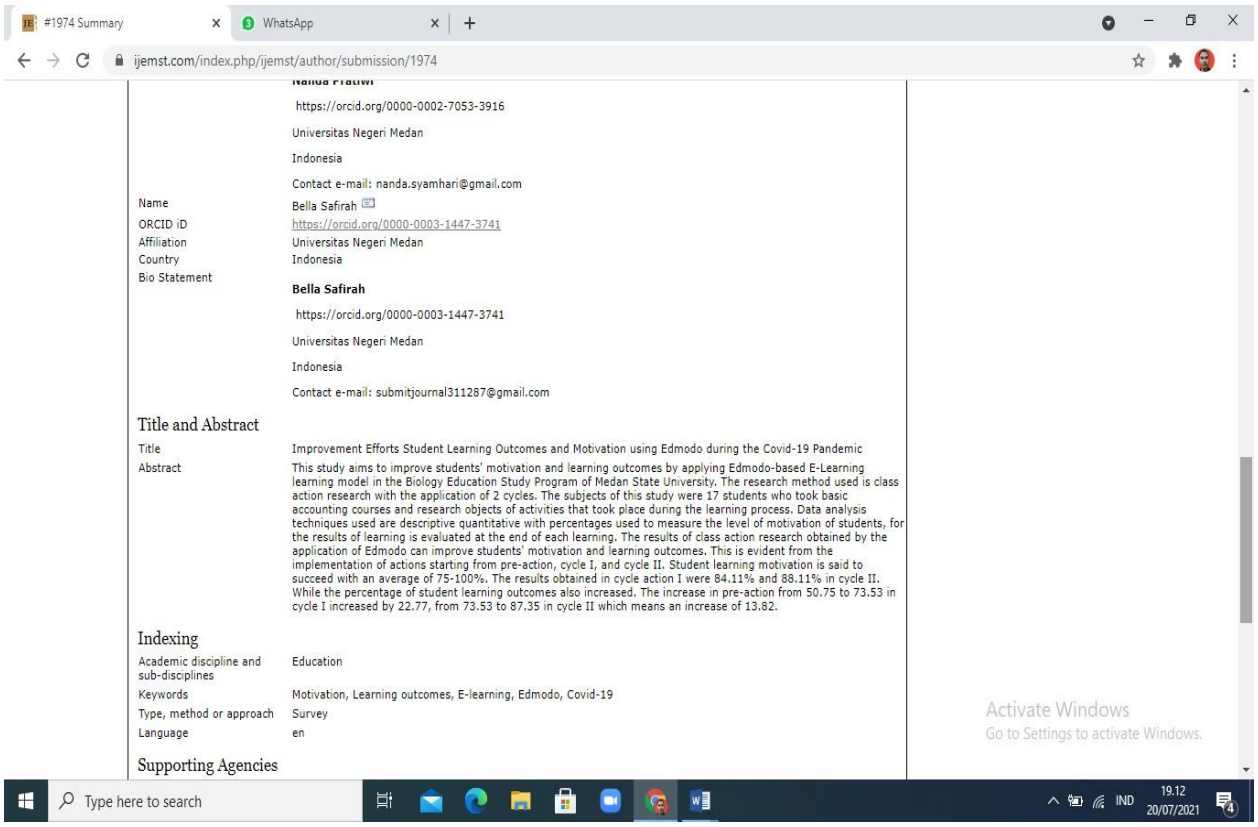
With the title "Improvement Efforts for Student Learning Outcomes and Motivation using Edmodo during the COVID-19 Pandemic" on 20-07 2021





On August 3, 2021, it received a revision, namely

1. Check the writing according to APA
2. Citation is adjusted to the quote used
3. Then there are no significant problems in the revision of the paper



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Title and Abstract

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Indexing

Academic discipline and sub-disciplines: Education
Keywords: Motivation, Learning outcomes, E-learning, Edmodo, Covid-19
Type, method or approach: Survey
Language: en

Supporting Agencies

Activate Windows
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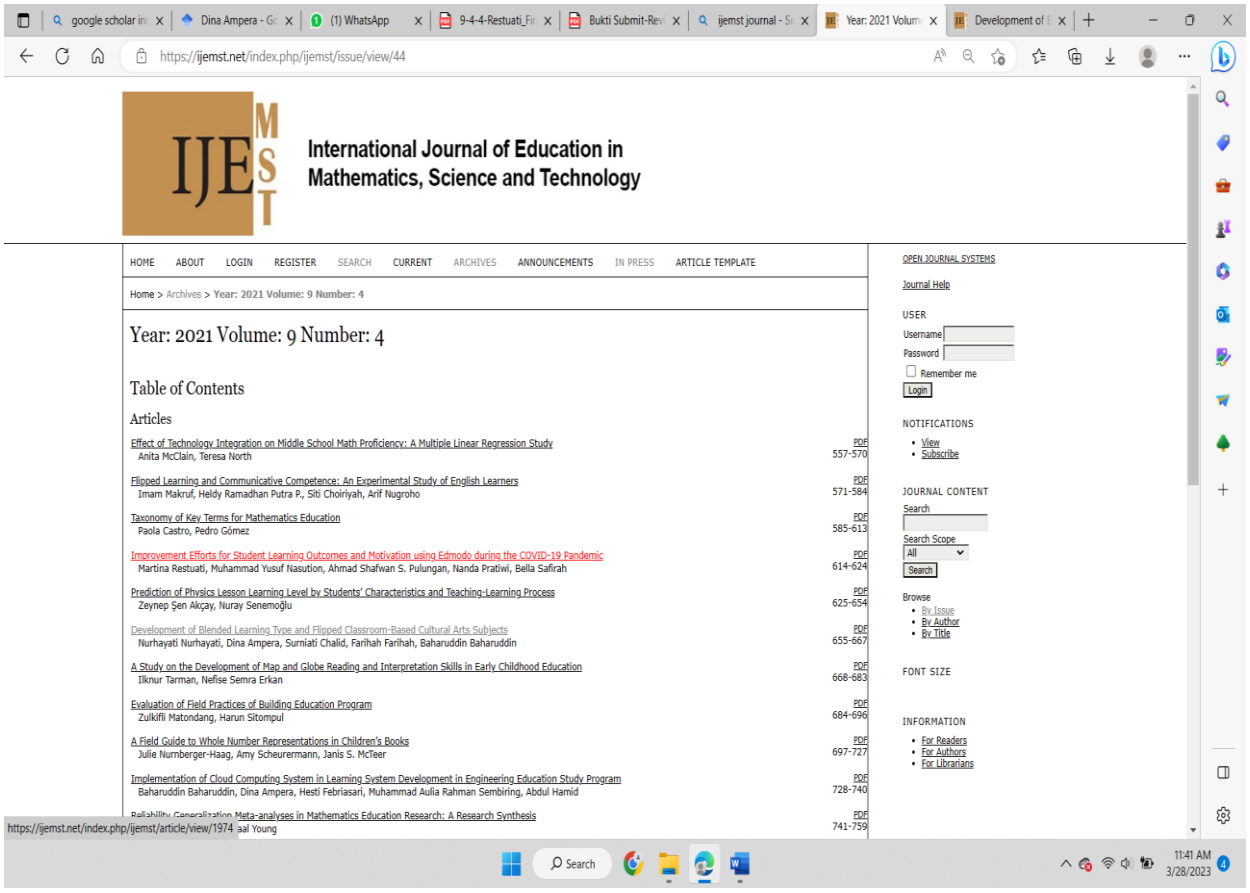
Received:
30 0ctober 2020 Accepted: 25 July 2021
Received on volume 9 no4 2021



International Journal of Education in Mathematics, Science and Technology

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Home > Archives > Year: 2021 Volume: 9 Number: 4

Year: 2021 Volume: 9 Number: 4

Table of Contents

Articles

Effect of Technology Integration on Middle School Math Proficiency: A Multiple Linear Regression Study — Anita McClain, Teresa North — PDF 557-570

Flipped Learning and Communicative Competence: An Experimental Study of English Learners — Imam Makruf, Heldy Ramadhan Putra P., Siti Choiriyah, Arif Nugroho — PDF 571-584

Taxonomy of Key Terms for Mathematics Education — Paola Castro, Pedro Gómez — PDF 585-613

Improvement Efforts for Student Learning Outcomes and Motivation using Edmodo during the COVID-19 Pandemic — Martina Restuati, Muhammad Yusuf Nasution, Ahmad Shafwan S. Pulungan, Nanda Pratiwi, Bella Safirah — PDF 614-624

Prediction of Physics Lesson Learning Level by Students' Characteristics and Teaching-Learning Process — Zeynep Şen Akçay, Nuray Senemoğlu — PDF 625-654

Development of Blended Learning Type and Flipped Classroom-Based Cultural Arts Subjects — Nurhayati Nurhayati, Dina Ampera, Surniati Chalid, Farihah Farihah, Baharuddin Baharuddin — PDF 655-667

A Study on the Development of Map and Globe Reading and Interpretation Skills in Early Childhood Education — Ilknur Tarman, Nefise Semra Erkan — PDF 668-683

Evaluation of Field Practices of Building Education Program — Zulkifli Matondang, Harun Sitompul — PDF 684-696

A Field Guide to Whole Number Representations in Children's Books — Julie Nurnberger-Haag, Amy Scheurermann, Janis S. McTeer — PDF 697-727

Implementation of Cloud Computing System in Learning System Development in Engineering Education Study Program — Baharuddin Baharuddin, Dina Ampera, Hesti Febriasari, Muhammad Aulia Rahman Sembiring, Abdul Hamid — PDF 728-740

Reliability Generalization Meta-analyses in Mathematics Education Research: A Research Synthesis — [illegible] Young — PDF 741-759

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Improvement Efforts for Student Learning Outcomes and Motivation using Edmodo during the COVID-19 Pandemic

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To cite this article:

Restuati, M., Nasution, M. Y., Pulungan, A. S. S., Pratiwi, N., & Safirah, B. (2021). Improvement efforts for student learning outcomes and motivation using Edmodo during the COVID-19 pandemic. *International Journal of Education in Mathematics, Science, and Technology (IJEMST), 9*(4), 614-624. https://doi.org/10.46328/ijemst.1974

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International Journal of Education in Mathematics, Science, and Technology (IJEMST) affiliated with
International Society for Technology, Education, and Science (ISTES): www.istes.org

IJEMST

International Journal of Education in Mathematics, Science and Technology

2021, Vol. 9, No. 4, 614-624

https://doi.org/10.46328/ijemst.1974

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Article Info

Article History

Received:
30 0ctober 2020
Accepted:
25 July 2021

Keywords

Motivation
Learning outcomes E-learning
Edmodo
COVID-19

Abstract

This study aims to improve students' motivation and learning outcomes by applying Edmodo-based E-Learning learning model in the Biology Education Study Program of Medan State University. The research method used is class action research with the application of 2 cycles. The subjects of this study were 17 students who took basic accounting courses and research objects of activities that took place during the learning process. Data analysis techniques used are descriptive quantitative with percentages used to measure the level of motivation of students, for the results of learning is evaluated at the end of each learning. The results of class action research obtained by the application of Edmodo can improve students' motivation and learning outcomes. This is evident from the implementation of actions starting from pre-action, cycle I, and cycle II. Student learning motivation is said to succeed with an average of 75-100%. The results obtained in cycle action I were 84.11% and 88.11% in cycle II. While the percentage of student learning outcomes also increased. The increase in pre-action from 50.75 to 73.53 in cycle I increased by 22.77, from 73.53 to 87.35 in cycle II which means an increase of 13.82.

Introduction

The 4.0 industrial revolution benefits people's lives. According to Jamun (2018) explained that cyber technology provides facilities in the process of production,

distribution and utilization of goods and services effectively and efficiently. The application of cyber technology in an educational environment especially occurs in universities both the system and the lecture process as well as administrative and publication services that are undergoing changes in accordance with the technology that is developing today. The application of industrial revolution 4.0 technology is able to improve the quality of education better and able to create quality and competitive human resources (HR). Services to students at public and private universities have implemented technology in lectures, registration, learning resources, and study reports. This, explained in the research on pedagogic and professional competency improvement among prospective economics teachers, states that (Ismanto & Erbianita, 2019), "The industrial revolution 4.0 influences the social and cultural behavior of students. The physical contacts of lecturers and students are diminishing, due to faster internet communication, and smart. Academic administration systems, guardianship, guidance, developed based on line students can access from various places and times according to their choice. The lecturers are worried; the character of students experience problems in the formation of personal and social competencies, while for pedagogical and professional competencies there is no problem".

In this all-digital era, teachers are not the only source of learning for participants educate. Therefore, teachers and students are required to be technology literate. One example technology in education that can support a conducive atmosphere in the learning process teaching is the use of IT-based learning media, which is better known as e-Learning. The use of e-Learning continues to increase, one of which is the educational network global Edmodo. Despite the many benefits of Edmodo, there are some students who don't really like it with Edmodo this is because students feel their interaction with the teacher is reduced by using Edmodo, and the Edmodo application still has some drawbacks in its presentation and is very dependent on the internet. However, Edmodo-based e-learning learning media can be used as alternative in the learning process in the classroom, because it makes it easier for teachers to conduct teaching, interact with students, monitor student activity in groups, and do an evaluation.

Online learning is on the rise Ananga, 2020; Batmang, Sultan, Azis, & Gunawan, 2021; Hu & Huang, 2022; Irsalina Savitri, 2019; Johariah, 2017; Kibici & Sarıkaya, 2021; Korkmaz &Toraman, 2020; Mardhiyana & Nasution, 2018; Nugraha, 2013; Slamet, 2003; Sugiyono, 2011; Sustenance, 2013; Rachmawati. 2010; Rusman, 2012; Tampubolon, 2014; Xhelili, Ibrahimi, Rruci, & Sheme, 2021; Yuliati, 2018). According to a 2013 report by Babson Survey Research Group, more than 6.7 million post-high school students enrolled in at least one online class in 2011, compared to only 1.6 million in 2002, and educational institutions in some countries continue to improve and enhance their online curriculum. In 2002, approx. 72 percent of these schools offer some form of learning online, and that number continued to rise to nearly 87 percent in 2012.

Understanding online learning in general is a learning that is done online electronically using computer-based media and a network. Study online learning is also known as electronic learning, e-Learning, on-line learning, internet- enabled learning, virtual learning, or web-based learning. Online learning or e-Learning has started around the 1970s as a result of a learning that is delivered electronically by using a computer and computer-based media. The material is often accessed via a network. Source can come from websites, internet, intranet, CD-ROM, and DVD. In addition to providing instructions, e-learning can also monitor student performance and report student progress. E-learning not only accesses information, but also guides students to achieve specific learning outcomes. In this all-digital era, teachers are not the only source of learning for participants educate. Therefore, teachers and students are required to be technology literate. One example technology in education that can support a conducive atmosphere in the learning process teaching is the use of IT-based learning media, namely Quipper School and Edmodo.

According to Gatot (2013, p. 3) "Edmodo is a social media platform that is often described as Facebook for schools and can function more as needed". Edmodo is an attractive medium for teachers and students with social elements that resemble Facebook. A teacher can easily manage a system that provides the best and practical features, so that teachers are always connected to students and manage student activities easily. Learning activities that can be used are in accordance with the features available on Edmodo media, namely content sharing or sharing subject matter, assignments, quizzes, polls and allowing discussion activities in the comments feature. In order for the atmosphere in the Edmodo circle to remain conducive, the teacher will become a kind of supervisor. Teachers can give points to user students whose opinions are good and useful. Teachers can also penalize students who are rude or disruptive. In Edmodo, there are no abbreviations such as SMS or Twitter. The language used should be formal and clear. Parents can also join their children's Edmodo circle. Edmodo is a private social network for teachers and students with a secure social platform. With a tweet model like social networking sites in general, Edmodo can create a special network for teachers and students to share ideas, files, events, and assignments (Gary, Kotleri, & Philip, 2001, pp. 6-54). Edmodo is a social network and micro blogging service specially designed for the world of education, which can be operated like Twitter. By restricting access roads to specific rooms or groups, teachers and students can send notes, links, files, announcements, assignments and exchange information in a secure environment (Wankel, 2011, p. 24). Edmodo is a website that can be used as a forum or discussion forum by students who have a background view such as Facebook or Myspace. Edmodo users can create profiles and chat with other people connected to the website. In addition, students can also ask the teacher for information about grades or assignments, and teachers can upload student grades and assignments on the web (Purcell, Varberg, & Rigdon, 2012, p. 14). It can be concluded that Edmodo is a social networking site that

is intended to help the learning process, where the appearance of Edmodo resembles the appearance of Facebook which makes it easier to use.

The learning process plays a very important role in improving the quality of education. To achieve the quality of education, especially in learning activities, it is necessary to use some of the principles of learning that have been established. According to Hosnan (2014) there are five principles used in learning activities, namely:

(1) student-centered learning, learning conducted in the classroom should involve learners. Not only teachers who deliver materials but students also participate in following learning such as discussions, giving opinions, giving questions, and others.
(2) develop the creativity of learners.
(3) create pleasant classroom conditions.
(4) contain values (knowledge), ethics (attitudes), aesthetics (works), logic (way of thinking), and kinesthetics (ability to use the body including ideas and feelings).
(5) provide a divers e-learning experience through the application of various strategies and learning methods that are fun, contextual, effective, efficient, and communicative.

If the quality of education is good then the motivation of students' learning will increase. Students will do the best for each learning process, most likely also will have an impact on student learning outcomes that will be better. According to Karwati and Priansa (2014) the sources of motivation obtained by students include intrinsic motivation (stimulation from within students) Motives that have been active without the need for encouragement, because basically this motivation is already in the student. While extrinsic motivation (stimulation from outside the student) motivation that arises because of external motivation and not related in the student. This motivation arises because of influences from outside students, such as: the invitation, the order, even the coercion of others, thus the student will do something.

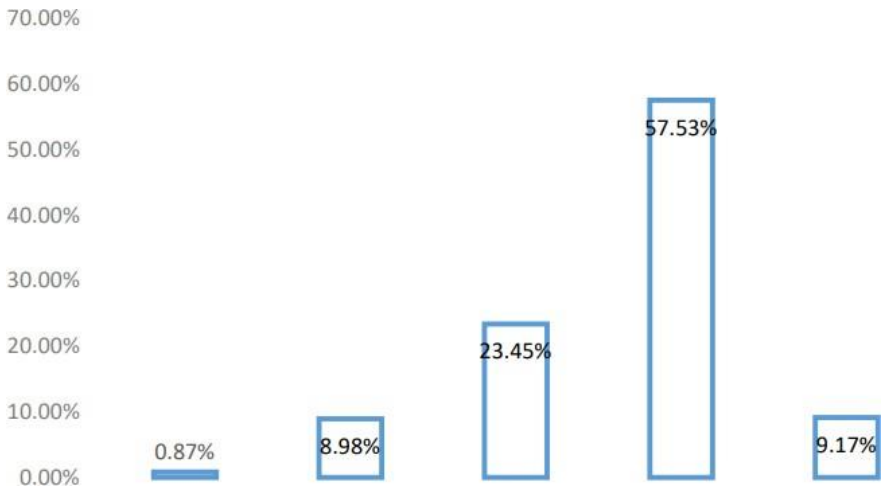
Liani and Rustiana (2013) explained that the decline in learning outcomes is due to the lack of interest in students to ask questions and only answer questions when appointed by the teacher, students usually only listen to explanations and record what is delivered by the teacher. So that learning is only centered on teachers and students become passive during the learning process. This is also the case in the Economic Education Study Program. Based on the initial observations there are some problems that occur during the lecture process, among others: lecturers still use conventional methods by explaining the material in the power point so that some students tend to pay less attention to the explanation given, they tend to look for other activities when experiencing boredom, in addition when the student's observation will have difficulty. Especially in Basic Accounting courses that require attention so that students can do the task given. The initial data obtained for the results of studying basic accounting courses

with the subject matter of the adjustment journal is less than the maximum. From the results of the initial data processed the average value of students 51.76 out of 17 students, 14 students have not achieved KKM scores and tree students have achieved KKM scores. Therefore, there needs to be innovation in learning either methods or models used by lecturers, so that students' motivation and learning outcomes increase.

The number of responses from students who strongly disagreed was 0.87%, disagreed 8.98%, hesitated 23.45%, agreed 57.53%, and strongly agreed 9.17%. It is known that the most response high is agree and from the average overall response 69.07% with good category. This matter shows that some students like lessons using Edmodo. This matter because learning is more relaxed because it uses familiar media with students, namely smartphones. Edmodo also makes it easy for students to send assignments with the teacher, no need to wait long to see the results of the assignments we are doing, the teacher is no longer have difficulty in giving assignments or quizzes, assignments and quizzes can be given without have to wait for a face-to-face schedule, making it easier for students to see information or teaching materials given by the teacher, and students can collect it anytime and anywhere.

Although there are many benefits of Edmodo, there are some students who don't really like it with Edmodo this is because students feel their interaction with the teacher is reduced by using Edmodo, and the Edmodo application still has some drawbacks in its presentation and is very dependent on the internet. Actually, app usage Edmodo as a learning medium provides both positive and negative benefits. The negative effects of Edmodo should be minimized by both teachers and students. When the lack of clarity in lessons using Edmodo, the teacher can re-explain or open a real discussion room with all students. Students who don't understand can discuss with friends or ask again with the teacher. This corresponds to According to Aniyah (2015), Edmodo as an e-learning medium in schools is very good used because there are so many benefits, the only drawback is the problem only technical and according to Khoiroh (2016) the use of Edmodo-based e-learning media can be used as an alternative in the classroom learning process, because: make it easier for teachers to teach, interact with students, monitor student activity in the group, and conduct evaluations. But Edmodo not only be a medium of communication between teachers and students, but can be a forum for sharing with teachers to develop learning methods that have been applied (see Graph 1).

This research aims to improve students' motivation and learning outcomes by applying Edmodo-based e- learning learning model during the COVID-19, and supporting platforms such as Google forms for collecting student learning motivation data and zoom.us applications are used when lecturers explain materials in Basic Accounting courses with adjustment journal subject matter, the reason for using zoom.us application is free access, the number of participants reaches 100 people, the quality of sound and images is good, only the duration is limited to 40 minutes.



Graph 1. Student Responses Using Edmodo Lessons

Method

In this study the method used is class action research conducted by lecturers. This research was conducted in basic accounting courses with adjustment journal subject matter. The subjects of this study were 17 students in the even semester of the 2019/2020 school year. Class action research will be conducted using 2 cycles where each cycle there are 4 stages that will be carried out during the learning process, namely planning, acting, observing, and reflecting. While data analysis techniques using quantitative descriptive with percentages are used to measure student motivation levels during the learning process by

(1) formulating the scoring of each student's learning motivation indicators.
(2) calculating and summing student learning motivation scores on each indicator.
(3) calculating the percentage of student learning motivation score on each indicator (Value = Number of Score/50 x 100%).
(4) calculating the percentage of the average student's learning motivation score (Percentage number/Number of students).

As for the student's learning outcomes, evaluation is carried out at the end of each lesson.

Results

This research consists of the application of 2 cycles, namely cycle I and cycle II, each cycle consists of 4 activities, among others: planning, implementation of actions, observation of class action activities, and reflection on the implementation of class actions both the implementation of cycle I and cycle II. It is expected that with this class action, student learning motivation will most likely have an impact on student learning outcomes for the better. Data collection to know the motivation of students' learning during the learning process, researchers compile observation sheets that have been consulted first to lecturers, observation sheets are used to retrieve student learning motivation data, observation sheets can be accessed using *Microsoft form.* To measure the results of learning to make an evaluation tool in the form of adjustment journal posts and done individually in *the Edmodo* application with the time limit of the collection of tasks determined by the lecturer. This study is said to be successful when students reach an average of 75-100% for student learning motivation as for the student learning outcomes 80% of the KKM achievement.

The implementation of cycle I action is done in advance to make a learning plan and learning scenarios that will be carried out. The planning stage of the lecturer prepares teaching materials for the Accounting Basic lecture with adjustment journal materials. For the implementation stage of student actions first absenteeism in the forum in *Edmodo* then lecturers will explain the lecture materials through *the application zoom.us* due to the COVID-19 outbreak that requires lectures to be conducted online, during this process students can see, discuss, conduct question and answer sessions to lecturers.

After the learning process is completed, the lecturer will give an assignment for the evaluation of individual cycle I learning that has been done with the time limit of collection, thus the lecturer will know how much students understand the material taught by looking at the discipline of students in collecting assignments and doing the right thing. Other activities carried out at the evaluation stage are students filling out motivation questionnaires on *the Microsoft form* platform After the learning activities in cycle I are completed, then reflect on the series of activities that have been carried out based on observations made by observers and researchers. This is also done in the implementation of cycle II.

The class action research process is carried out with the application of two cycles. Class action research on cycle I was conducted on Thursday 02 June 2020 with adjustment journal material. The learning process is done online assisted by several

applications, among others: *Edmodo* is used for student attendance, quiz questions, as well as learning materials to be used and assignments, *zoom.us* used for lecturers to present learning materials, and *Google form* is used to retrieve student learning motivation data. It is implemented with 4 stages of research planning, implementation of actions, observation, and reflection. Students' learning motivation can be seen from the activeness of students when lecturers explain lecture materials or ask questions. The implementation of cycle II was carried out on Tuesday 14 June 2020 just like the class action of cycle I by correcting its shortcomings that occur in cycle I.

The results of reflection of cycle I student learning motivation with an average of 84.11% compared to the results before the action increased by 9.64%. While the results of studying in cycle I with an average of 73.53% where 13 students achieved KKM and 4 others have not achieved KKM compared to the results before the study was conducted increased by 22.77%. After the implementation of *Edmodo* in the Basic
Accounting course with the subject matter of the adjustment journal made with two cycles and the results showed the following data.

In Table 1, it can be seen that when we want to take action in the process of student learning motivation both intrinsically and extrinsically it has an average of 64.47%, while when it was implemented in the first cycle it had an increase of 9.64%, then continued in the second cycle because it was felt that it was not enough in the first cycle. The first cycle, in the second cycle has a return increase of 6% from the increase in the first cycle.

Table 1. Recapitulation of Increased Student Learning Motivation

No.	Action	Intrinsic Motivation	Extrinsic Motivation	Average	Increased
1	Pre-Action	64.23%	64.70%	64.47%	
2	Cycle I	73.64%	74.64%	84.11%	9.64%
3	Cycle II	80.23%	80%	88.11%	6%

In Table 2, the value intervals have varying value ranges, namely very good, good, sufficient, not good, and very poor, this table is used to measure the average value interval that will appear when increasing motivation and learning outcomes during the pandemic COVID-19.

Table 2. Value Interval

Value Interval (%)	Category	Interpretation (meaning)
81 – 100	a	Excellent
61 – 80	b	Good

41 – 60	c	Enough
21 – 40	d	Less Good
0 – 20%	e	Very Poor

Recapitulation of the increase in student learning motivation in Table 3 shows an improvement in each cycle carried out in class action research. The average motivation of pre-action students with an average of 64.47% increased cycle I by 84.11% so there was an increase of 9.64%. While cycle II was also increased by 6%, the average obtained in cycle II by 88.11%. The use of *Edmodo-based e-learning* models proves that students' learning motivation is increasing. Students tend to be more enthusiastic in following learning when in the learning process accompanied by the use of technology.

Table 3. Recapitulation of Student Learning Outcomes Improvement

No.	Learning Outcomes Activities	Progress made			Increased
		Pre-Action	Cycle I	Cycle II	
1	Number of students reach KKM	3	13	16	10 / 3
2	KKM Reach (%)	17.6%	76.4%	94.1%	
3	Average learning outcomes	51.76	73.53	87.35	22.77 / 13.82

This study also agrees with the research conducted by Sri Kantun (2017) that the application of *e-learning* can increase learning motivation with the following results as well as student learning motivation in cycle I of 2.7 with moderate criteria, increasing to 3.5 with high criteria in cycle II. The research conducted by Sangeetha (2016) entitled "Edmodo and Padlet as a collaborative online tool in Enriching Writing Skills in Language Learning and Teaching" has similar results. The results of the study implementation of *blended learning* were able to increase students to collect assignments, have materials and conduct discussions together with a percentage of 90.71% in *Edmodo* class. The similarity of research with research that will be conducted by researchers is an effort to increase motivation and learning outcomes using *Edmodo.* Furthermore, research conducted by Fitriyani et al. (2020) concluded that the motivation of learning students in semester 6 of elementary school teacher education program at Kuningan University is very good, it is obtained from the motivation percentage score of 80.27%. This research is expected to be an evaluation of various parties in organizing online learning in universities, especially involving the motivation of learning in it.

The percentage of student learning outcomes also increased from before the action

and after the action. The increase in pre-action from 51.76 to 73.53 in cycle I increased by 22.77. From 73.53 to 87.35 in cycle II it means an increase of 13.82. Learning outcomes occur in each action, starting from pre-action, cycle I, and cycle II. The evaluation results showed an increase in kkm scores from 3 students (17.6%) 13 students (76.4%) in cycle I. in cycle II to 16 students (94.1%).

This research is also in line with research conducted by Aminoto and Hairul (2014) showing that the application of *e-learning* model on business materials and energy to student learning outcomes has increased in cycle 1 and cycle 2 with an average learning outcome of 32% (cycle 1 62.81, cycle 2 82.81). This proves that the application of the E – Learning model can help improve the learning outcomes of learners, in addition to Edmodo there are still many *e-learning* applications that can help improve learning outcomes and research results from Sasongko and Harimurti (2019) by the application of Edmodo-based *self-directed learning* to improve learning outcomes. The results of the study were obtained by disseminating a questionnaire of student response with a percentage of students of 68.47% so that it can be concluded that students respond very well to the application of *Self-Directed Learning* based on *Edmodo*.

This class action research is said to be successful based on the success criteria of class action research. Student learning motivation is said to be successful when the average is 75-100%. The results obtained on cycle action I were 84.11% and in cycle Action II 88.11%. Based on the description above the application of *Edmodo* in basic accounting courses can increase the motivation of learning and student learning outcomes can be seen from the results of the action of cycle I and cycle II. While the average student learning outcomes increased from pre- action by 51.76 to 73.53 in cycle I and to 87.35 in cycle II.

Conclusion

This study concluded that class action research obtained by the application of Edmodo can improve students' motivation and learning outcomes. This is evident from the implementation of actions starting from pre-action, cycle I, and cycle II. Student learning motivation is said to succeed with an average of 75-100%. The results obtained in cycle action I were 84.11% and 88.11% in cycle II. While the percentage of student learning outcomes also increased. The increase in pre-action from 50.75 to 73.53 in cycle I increased by 22.77, from 73.53 to 87.35 in cycle II which means an increase of 13.82.

Acknowledgements

I would like to express my deepest gratitude to the leaders of Medan State University, colleagues and all parties who have supported the process of compiling this research.

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