

The Effect of E-Learning, Student Facilitator and Explaining Model Learning and Self-Regulated Learning on 11th Grade Students Learning Outcomes of Economic Subject in Senior High School 1 Perbaungan School Year 2019/2020

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Abstract: *This study aims to determine students taught by E-Learning and SFAE models obtain higher economic learning outcomes compared to SFAE models without E-Learning. The study is conducted in odd semester of Academic Year 2019/2020 in class XI of SMA Negeri 1 Perbaungan. The sampling technique of this study uses a cluster random sampling technique to establish an experimental group and a control group. The research approach is quantitative research with a quasi-experimental research design with non-equivalent (Pre Test and Post Test Design). The research design is pretest and posttest control design and the research design can be presented with a 2 x 2 factorial design with the Two Path Analysis of Variance (ANAVA) technique. The results shows that there is a difference between student learning outcomes in the E-Learning class + SFAE Learning Model, and student learning outcomes applied by the SFAE Learning Model model and students who gained the greatest influence from E-Learning + SFAE Learning Model on student economic learning outcomes, namely 0, 0929. It means that E-Learning + SFAE Learning Model can explain 9.29% the effect of variations in the score of student learning outcomes.*

Keywords: *E-Learning; SFAE learning model; self regulated learning; economic learning outcomes*

I. Introduction

The world is now entering the millennial era where millennials are the largest population of productive age in playing an important role in the demographic bonus of 2020 and facing future challenges. The current generation is surrounded by the world of computer technology, online games, digital music, and all-digital tools according to their needs (Ceylan, 2017). Human needs to build social relationships are stimulated by technological changes, one of which is the internet. In a social context, the way people interact and communicate changes too. The change in question is a social revolution connected to the internet (McFarland, 2015). Social networks and other modern technologies have spread among young people and they greatly contribute to the process of learning activities (Maletic, 2019).

Based on this, the teacher must be able to adapt to increasingly rapid technological developments. E-Learning is the use of information technology and computers in the learning process (Horton, 2006). E-Learning based learning can have a new impact or atmosphere which usually only takes place face to face. One of the uses of e-learning in the learning process is Edmodo. Edmodo is one of the social media platforms such as Facebook that can be used in the learning process and can be used as an online social network for teaching and learning purposes (Thongmak, 2013).

Good use of e-learning can increase learning outcomes to the maximum (Erviana, 2018). This is supported based on the results of Hanifah's research (2019) that there is an influence of e-learning learning models assisted by edmodo learning media on mathematical problem solving abilities as measured by the results of learning outcomes tests where in the

experimental class the highest score is 82 while in the control class the highest score was 76. Based on the explanation of the results of these studies it can be concluded that e-learning can improve student learning outcomes.

Then, when students get the learning process, especially electronic learning (E-Learning), students have the ability to self-manage (Self-Regulated Learning or SRL) that is different between students with one student to another. Self-Regulated Learning is when students can regulate and control behavior and cognition by observing the rules referred to as learning independence to control the course of the learning process, training to remember information obtained and developing and maintaining positive learning values (Schunk, 2005). In addition Darmiany (2016) argues that the ability of self-regulated learning places the importance of a person to learn discipline in managing and controlling oneself, especially when facing difficult tasks.

Based on the results of field observations, the average data obtained for the Semester Subject Exam in the last three years in Senior High School 1 Perbaungan are as follows:

Table 1. Average Grades of Semester Exams

No	Subject	School Year	Average
1	Economic Subject	2015/2016	65,55
2	Economic Subject	2016/2017	71,25
3	Economic Subject	2017/2018	74,56

The value of the Economic KKM in Senior High School 1 Perbaungan is 73. Therefore, the data shows that in the academic year 2017/2018 the average value of Economics has reached the KKM but globally the economic learning outcomes of 11th grade students have not yet reached maximum results.

Economic learning outcomes are still low due to the delivery of monotonous learning and the limitations of measurement on the cognitive aspects only. Some students consider Economics to be a boring subject because it does not include innovative learning in the form of electronic learning (E-Learning) to facilitate the reception of subject matter, learning videos, questions and quizzes and other learning materials. Teachers must be able to provide innovative and varied ways of learning to stimulate students so that the assumptions in Economics change from difficult and boring to fun and enjoyable Economics lessons.

Then, based on the results of interviews with the teacher it was said that the students of Senior High School 1 Perbaungan already had electronic devices (laptops, smartphones, tablets) but they used only limited online communication media to parents, friends and played facebook, Instagram and so on. So researchers can conclude that very few of them use social media to support learning. At this time especially in supporting the era of digitalization or the industrial revolution 4.0, millennials must be able to involve technology in the learning process.

Students of Senior High School 1 Perbaungan will be directed to be able to use information and communication technology (ICT) into the learning process via the internet so it is called E-Learning. Students will familiarize themselves with using E-Learning to provide a learning innovation and easily understand the subject matter in this case E-Learning which is used with the help of Edmodo application.

In addition, the learning model also needs to be considered namely the learning model that is suitable with the subject matter being taught. This needs to be considered according to the general definitions and concepts of learning Economics. The indicator that students already understand Economics learning is when they are able to describe again about the subject of

Economics in terms of theoretical, mathematical and graphical. For this reason, the appropriate learning model used is Student Facilitator and Explaining where students are asked to be able to explain again and as a facilitator to their peers. The use of E-Learning and Student Facilitator and Explaining learning models with consideration of Self-Regulated Learning (SRL) are different from each other.

Therefore, in this study involving two classes where only one class uses E-Learning and combined with learning models while the second class without using E-Learning. This is done because it considers the readiness of schools to welcome electronic learning (E-Learning). If this is successful then in the future other teachers can implement E-Learning with the help of Edmodo application to provide learning in the classroom or outside class hours.

II. Review of Literature

2.1 Learning Outcomes in Economic Subject

In Bloom's taxonomy which has been revised by Anderson & Krathwohl as quoted by Moseley (2005) it is stated that learning outcomes are classified in three domains, namely the cognitive, affective, and psychomotor domains. The cognitive domain is related to the ability to think which consists of 6 levels, namely: (1) memory, (2) understanding, (3) application, (4) analysis, (5) evaluation, and (6) creation.

Reigeluth (1983) in general also categorizes three indicators of student learning success, namely: (1) the effectiveness of learning, as measured by the level of student success, (2) learning efficiency, as measured by learning time, and (3) the attractiveness of learning as measured by tendency of students who want to study continuously. From this statement it can be stated that the learning outcome is a performance which is indicated as an ability or competency that has been obtained through the learning process.

The word "economy" comes from the Latin word *Oikus* which means family, household and *nomos* which means rules, rules, laws. Therefore, the economy can be interpreted as household rules or household management (wikipedia.com).

Based on some of the opinions above, it can be concluded that the results of learning Economics are changes in the cognitive aspects of economic, affective and psychomotor materials in the application of economic learning.

2.1 Student Facilitator and Explaining Learning Model

The Student Facilitator and Explaining learning model is a model that provides opportunities for students or participants to present ideas or opinions to other fellow participants. Student Facilitator and Explaining model has the advantage that students are invited to be able to explain to other students, students can put out ideas in their minds so they can better understand the material (Trianto, 2013). This is also supported by the opinion of Huda (2013) which states that Student Facilitator and Explaining learning model is a series of presentation of teaching material that begins with an open explanation, gives students the opportunity to explain back to their peers, and ends with the delivery of all material to students.

Student Facilitator And Explaining learning model is one type of cooperative learning that emphasizes specific structures that are designed to influence learners' interaction patterns and have a goal of increasing mastery of the material. Using this learning model can increase enthusiasm, motivation, activity and pleasure. Therefore, it is very suitable for teachers to be

chosen because it encourages students to master a number of skills including speaking, listening, and understanding of the material (Shoimin, 2014)

Istarani and Muhammad Ridwan (2015) suggested the steps of the Student Facilitator And Explainin learning model, namely (1) competency information (2) material presentation (3) students develop it and explain again to other students (4) conclusions (5) evaluations (6)) reflection.

Hamzah and Mohamad (2014: 88) suggest the steps of Student Facilitator And Explaining learning model, namely (1) The teacher conveys the competencies to be achieved. (2) The teacher demonstrates / presents the material. (3) Providing opportunities for students / participants to explain to other participants, both through charts, maps, concepts and others (4) The teacher concludes the ideas / opinions of students (4) The teacher explains all the material presented at that time (6) Closing.

From the theory regarding the steps of implementing Student Facilitator and Explaining learning model, it can be concluded that this model requires students to be active in learning because students are given the opportunity to explain back to their friends the rest of what has been explained by the teacher. Therefore, with the Student Facilitator and Explaining learning model, students can re-understand the subject matter, especially Economics because it is repeated and developed again by their peers

2.2 E-Learning

E-Learning is a medium used to convey information using electronic devices connected to the internet. E learning is a web technology application used by teachers by utilizing internet technology during learning activities (Rusman, 2013).

One of the technologies used in education is e-learning media that can facilitate learning activities. With the e-learning media, the teacher can communicate with students without meeting in person. It is also useful if sudden things happen that do not allow the implementation of the learning process in the classroom then the solution can be controlled through learning with e-larning media (Erviana, 2018).

Based on several definitions put forward by some experts, it can be concluded that E-Learning is a learning activity that utilizes internet technology so that it can facilitate the learning process.

The use of E-Learning requires preparation and qualification of several components such as computer hardware and the internet, student motivation and teacher qualifications. When educators and students work well together in the application of E-Learning learning and supporting facilities it can have a positive impact in the form of innovation and improvement in the quality of learning, in this case E-Learning is used with the help of Edmodo application.

2.3 Edmodo Application

There are some great educational tools, one of which is Edmodo application. Edmodo is a School Based Environment Network developed by Nicolas Borg and Jeff O'Hara in 2008 intend for use by teachers, students and parents. Edmodo has the appearance of a social network Facebook that is well known to millennials today. Edmodo Media can be used by an educator as a visual media in the form of educational sites to provide teaching with a combination of face to face and web learning.

This is consistent with the opinion of Priowijanto (2013) who argues that Edmodo is a social media platform that is often portrayed like Facebook for schools and can function even more as needed. A teacher can easily manage a system that provides the best and practical

features, so that the teacher is always connected with students and organizes student activities easily.

Some of Edmodo's strengths when compared to other Learning Management System social media systems are as follows: (1) Similar to Facebook, so it can be easily used; (2) Closes Group Collaboration, where those who only have code can join the class; (3) Free, freely accessed online and free; (4) does not require a server at school; (5) can be accessed anywhere and anytime; (6) Edmodo is always updated by the developer; (7) Edmodo can be applied in one class, one school, between schools in one class, one school, between schools in one district / city; (8) Edmodo can be used for students, teachers and parents; (9) Edmodo is used to communicate using social media models, learning materials, and evaluation; (10) Edmodo supports the team teaching, co teacher and teacher models; (11) there is a notification or notification; (12) the badge feature can be used to increase student motivation (Priowirjanto, 2013).

2.4 Self-Regulated Learning

Self-Regulated Learning (SRL) is self-generation and self monitoring of thoughts, feelings, and behaviors in order to achieve goals. The intended purpose can be academic (increase reading comprehension, become a good writer, learn how to divert, ask relevant questions) or can be socio-emotional (controlling his own anger, being with friends more comfortably). With the ability of SRL, we can direct our thoughts, feelings, and actions to achieve the goals to be achieved. Thus, students must be able to have the ability of SRL by planning their learning activities in advance according to the targets and objectives they want to achieve. (Santrock, 2007)

Schunk & Ertmer (2005) state that Self-Regulation Learning refers to the thoughts, feelings, and actions of a person that is planned and systematically adjusted according to their needs so that it affects one's learning and motivation. Self Regulation Learning is an active constructive process in which students set their learning goals and then try to monitor, regulate, and control cognition, motivation, and behavior to suit their goals and the contextual conditions of their environment (Wolters, 2003). This is also supported by Zimmerman's opinion (2002) that in Self Regulation Learning (SRL) the independence of students is not only reactive to learning outcomes but also proactively looking for opportunities to learn. Students will carry out the activities that they have designed and will begin observation, self-evaluation and self-improvement of these activities.

So it can be concluded that after students carry out activities that have been designed and planned by themselves, students will be able to evaluate the extent of success and failure to make improvements from learning activities that have been carried out. SRL is a series of a person's ability to organize learning activities that include planning, implementing, evaluating learning in cognitive, affective and psychomotor aspects.

III. Research Methods

The research is conducted at Senior High School 1 Perbaungan located at Mayjend H.T Rizal Nurdin Street, Perbaungan, Serdang Bedagai Regency, North Sumatra Province. The study is conducted in odd semester of School Year 2019/2020 in 11th Grade Students Senior High School 1 Perbaungan. The sample of this study were students of 11th grade IPA 1 as the Experiment class and class 11th grade IPA 2 as the control class. The sampling technique of

this study used cluster random sampling techniques to establish the experimental group and the control group. The research approach is quantitative research with a quasi-experimental research design with non-equivalent (Pre Test and Post Test Design). The research design uses pretest and posttest control design and the research design can be presented with a 2 x 2 factorial design with the Two Path Analysis of Variance (ANAVA) technique. The research design can be described as follows:

Table 2. Factorial Experiment Design 2 x 2

Learning Model	<i>E-Learning</i> + Model SFAE (A₁)	Tanpa <i>E-Learning</i> + Model SFAE (A₂)
Self Regulated Learning		
High (B₁)	(A₁ B₁)	(A₂ B₁)
Low (B₂)	(A₁ B₂)	(A₂ B₂)

Source: Modification of Sugiyono, 2017: 174

Data collection techniques and tools used are observation, interview methods, documentation methods, and learning achievement test methods. The test uses in this study is an objective test in the form of multiple choice with five answer choices totaling 25 items. Before the data is analyzed, the regression model must meet the classical assumption requirements, which include: Test for normality, homogeneity, hypothesis testing

IV. Discussion

In general, three indicators of student learning success are: (1) the effectiveness of learning, as measured by the level of student success, (2) learning efficiency, as measured by learning time, and (3) learning attractiveness as measured by the tendency of students who want to learn continuously continuously. From this statement it can be stated that the learning outcome is a performance which is indicated as an ability or competency that has been obtained through the learning process.

The KKM Economics value in Senior High School 1 Perbaungan is 73 and the results of the observation before the study that the economic learning outcomes of students in Senior High School 1 Perbaungan are very low. If compared after applying the SFAE Model combined with E-Learning, the average value has increased from the observation results after the research as follows:

Table 3. Comparison of Student Economic Learning Outcomes

Experimentation Class	Student Learning Outcomes of Economic Subject
	\bar{X}
Model SFAE dipadukan dengan E-Learning	81,94
Model SFAE	72,92

Students learning outcomes of economic subject are then analyzed to see differences in the learning outcomes of the economy taught by E-Learning + SFAE models compared to economic learning outcomes of students taught by the SFAE model without E-Learning in terms of students' self-regulated students and how the application of E-Learning and the SFAE

model gets results higher learning economics compared to the SFAE model without E-Learning.

Based on the results of inferential statistical analysis with two-way Anava shows that Hypothesis 1 test results obtained $F(A) \text{ count} \geq F(A) \text{ table} = 8.337 \geq 3.9778$ and SPSS-24 results for the learning model obtained $0.015 < 0.05$ then H_a is accepted. The conclusion is that at the 95% confidence level there is a difference between student learning outcomes in the E-Learning class + SFAE Learning Model, and student learning outcomes that are applied by the SFAE Learning Model model and students who get the greatest effect from E-Learning + SFAE Learning Model on learning outcomes student economics is 0.0929. This means that E-Learning + SFAE Learning Model can explain 9.29% the effect of variations in the score of student learning outcomes.

The results of this study are reinforced by relevant research by Paechter, Maier & Macher (2010: 254) that: "In just a few years, the use of e-learning has increased rapidly in Austria. In certain subjects, up to 60% of students report using e-learning platforms at least 'sometimes' or 'often' (Unger & Wroblewski, 2006) ".

Furthermore, relevant research results by Laksmi, Gede, and Dewa (2014: 1) were carried out on fifth grade students of Elementary School in Tukadsumaga Village, Gerokgak Subdistrict, Buleleng Regency in the academic year 2013/2014 namely "The results of the study found that (1) the learning outcomes of students who took part learning using the Student Facilitator and Explaining learning model with mean (M) = 23.55 included in the very high category, (2) student learning outcomes following the learning using conventional learning models with mean (M) = 18.7 included in the high category, (3) there is a significant difference in science learning outcomes between students who take learning using the Student Facilitator and Explaining learning models and students who take learning using conventional learning models ($t \text{ count} = 5.323 > t \text{ table} = 2,000$) ".

Student learning outcomes using the learning model of student facilitator and explaining assisted by E-Learning media become better because students understand more about the material being learned because they are directly involved in learning so as to create meaningful learning because of a pleasant learning atmosphere. This is consistent with what was explained by Riyanto in his book "Student facilitator and explaining learning models (students as facilities and explaners) is learning with the intention of students or students learning to present ideas or opinions to other fellow students." This learning is effective for training students talk and convey ideas, ideas or opinions themselves. This learning technique motivates all students to be active and gives students the opportunity to teach their friends and learn something well at the same time, and can make questions and express opinions. So this learning model will be in accordance with the characteristics of national income material that is expressing opinions. In addition, student learning facilitation and explaining learning models are faced with questions that stimulate students 'minds so that students' critical thinking skills can develop optimally. Student facilitator and explaining learning models provide opportunities for students to work together, are interdependent and learn to respect one another. The E-Learning media which have an important role that is to provide an overview of national income within the Government.

Besides learning by using E-Learning students feel happy and actively participate in learning. This is in accordance with Gagne said in Hamdayama (2014: 14-17) that one of the principles that can be done by teachers in implementing learning is learning that attracts attention (gaining attention), things that arouse students' interest by expressing something new, strange, contradictory or complex. Because the creation of a happy learning atmosphere will

make optimal learning. Like what was stated by Noddings (2003) in Darmadi Hamid (2014: 0-31) that education should be directed to the fundamental goal of human life, namely happiness. Because learning like this is an indication of optimal learning.

Relevant research M Ammar & Rasheed (2014: 50) conducted by students of the University of Islamia in Bahawalpur shows that E-learning is strongly influenced by these factors such as decreased workload, time savings and technology. Where using E-learning can save a lot of time, can divide our workload and can reduce workload and concluded that using the latest technology can develop the E-learning process easily understood by everyone about the subject matter being studied.

E-Learning Learning has several advantages, namely: (1) the availability of e-moderating facilities for teachers and students which can be as easy communication through internet technology anywhere and anytime; (2) The use of instructional materials and schedules in a structured manner by teachers and students so that it can be seen the extent to which teaching materials have been learned; (3) Students can repeat the contents of teaching materials anytime, anywhere according to their needs; (4) if the student needs additional information relating to the material learned, then he can access the internet more easily in accordance with the desired needs; (5) Teachers and students can discuss about learning so that they can broaden their knowledge; (6) Learning takes place with the role of active and independent students; (7) Learning can still take place efficiently when constrained by distance by the teacher or student.

V. Conclusion

Based on the results of analysis of research data on student economic learning outcomes taught by E-Learning and SFAE learning models and SFAE learning models in terms of self-regulated, there are differences between student learning outcomes of E-Learning classes + SFAE Learning Models, and student learning outcomes applied the SFAE Learning Model model with students who gained the greatest influence from E-Learning + SFAE Learning Model on student economic learning outcomes that is 0.0929. This means that E-Learning + SFAE Learning Model can explain 9.29% the effect of variations in the score of student learning outcomes.

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