

## THE EFFECT OF EDMODO – BASED BLENDED LEARNING ON ACCOUNTING LEARNING OUTCOMES VIEWED SELF REGULATED LEARNING

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**Abstract.** The objective of this research was to investigate the difference effect between the Edmodo - Based Blended Learning and the conventional learning on accounting learning outcomes viewed self regulated learning. This research was an quasi experimental with nonequivalent pretest posttest control-group design. The population of research was the students in semester 4 of classes A, B, and C. The research sample was taken 2 classes, namely class B and class C. The data were analyzed by using the two-way analysis of variance and was continued with the Scheffe test. The findings showed that: (1) there was a difference effect between the Edmodo –Based Blended Learning on accounting learning outcomes; (2) there was a difference effect of the high, moderate, and low self regulated learning on accounting learning outcomes; and (3) there was not an interaction between the Edmodo – Based Blended Learning and the conventional learning with self regulated learning on accounting learning outcomes.

**Keywords:** edmodo; blended learning; accounting learning

### I. INTRODUCTION

The development of the business world in the era of the industrial revolution 4.0 requires all businesses to make changes not only to products but the methods used to promote sales results must follow current trends. Technology has become more sophisticated, people no longer need to go back and forth to the market to buy the goods they need, many people use technology to meet their daily needs. Apart from technological advances, many new entrepreneurs have emerged and are running their businesses well, with unique strategies to attract as many consumers as possible. This situation causes many companies to have to make new strategic strategies or even carry out various product innovations to maintain their customers well and strengthen the company's position in the market to face increasingly tough competitors. Whatever the strategy used by the company to attract consumers, it all comes back to consumers. Every consumer has a different perception of a product. Every consumer has different wants and needs, these needs must be met and only certain products can satisfy their wants and needs. Many companies make product innovations but do not know and understand whether the product is able to meet consumer needs, so it is very important to know consumer perceptions of a product.

By knowing consumer perceptions, companies can prepare new strategies and make comparisons by obtaining a lot of information from consumers. Companies can find out many things from consumer perceptions, one of which is knowing the advantages of competing products, the shortcomings of their own products. So that the company more quickly anticipates its shortcomings and makes improvements.

Le mineral and Aqua is a mineral drinking water business that has developed a lot in Indonesian society. These two companies compete to attract consumers, because they both run the mineral water business, consumers certainly have many reasons why they prefer Le mineral products or Aqua products. Of course, people have different perceptions of the two products. Companies must be able to study consumer perceptions because the success of a business cannot be separated from consumers. One of the main values that consumers expect is product quality. Every consumer would want the best product for himself, according to the needs of consumers. Product quality is one of the factors why consumers make a purchase. According to Kotler and Armstrong [1] product quality is the ability of a product to perform its functions, this includes overall durability, reliability, accuracy, ease of operation, and product repair, as well as other product attributes. There are many reasons and also perceptions why consumers decide to make a purchase of Le mineral or Aqua products. Because the buying decision process goes through several stages carried out by consumers. These stages will result in a decision to buy or not and after buying the consumer will be satisfied or not, if satisfied the consumer will repurchase or dissatisfied the consumer will switch to another brand.

The formulation of the problem in this study is (1) How do consumers compare consumer perceptions of purchasing decisions for drinking water in the brand of Le mineral with Aqua in Tikung sub-district, Lamongan regency? (2) Which is the most dominantly purchased by consumers between drinking water in the brand of Le mineral and Aqua on purchasing decisions in Tikung sub-district, Lamongan Regency?

The purposes of this study are (1) to determine the comparison of consumer perceptions of the decision to purchase bottled drinking water with the brand Le mineral and Aqua in the Tikung sub-district, Lamongan Regency. (2) To find out which is the most dominant purchase by consumers between drinking water in the brand of Le mineral and Aqua on purchasing decisions in Tikung sub-district, Lamongan Regency? The benefits of this research are (1) Theoretical benefits (a) This research is expected to be used as material for scientific information, especially marketing management. (b) As a reference material (2) practical benefits (a) Benefits for researchers, Expanding knowledge about marketing management science, especially consumer perceptions (b) Benefits for other parties or readers, are expected to also be used as additional information to increase knowledge and materials comparison for other researchers who want to do similar research or further research. (c) for companies, as information to increase knowledge about consumers, find out the advantages and disadvantages of competing products so that they are able to apply new strategies to compete

Blended Learning (BL) was carried out in recent years of research from various disciplines, and the results explained that BL has an effect on learning outcomes and is effective in improving learning outcomes (Setyaningrum, [2]; Hinampas [3]; Oweis, [4]; Ekawati, [5]; Anggraini [6]; Daulay [7]; Kazu & Demirkol, [8]; [9]; [10]; Al-Ani, [11]). However, there has not been much research on BL on accounting science, so this research needs to be done by researchers in order to improve accounting learning outcomes. BL has 5 characteristics. First, BL combines various ways of delivery, teaching models, learning styles, and various technology-based media, so that students are able to get new learning experiences. Second, BL is a combination of direct (face-to-face) teaching, independent learning, and online learning, so this combination of online learning will require students to learn independently and be more active. Third, BL is learning that is supported by an effective combination of ways of delivery, teaching methods, and learning styles. Fourth, teachers and parents of learning students have an equally important role, namely the teacher as facilitator, and parents as supporters (Husamah, [12]).

BL is a concept that includes the framing of the teaching and learning process that combines face-to-face learning and ICT-supported learning. BL combines direct instruction, indirect instruction, collaborative teaching, individual computer-assisted learning (Lalima and Dangwal, [13]). The results of Oweis' research [4] prove that BL using computerized material makes learning interesting and fun for students because it contains display and sound features The computerized system is able to provide corrections to students to provide improvements from the results of the work they are doing. Isti'annah [3] explains that the use of offline and online learning can provide better results compared to traditional face-to-face learning. Online learning helps students understand and practicing material. BL is able to increase understanding and interest in learning.

Students taught using BL show better learning achievement than traditional learning. Students acquire existing knowledge and actively create new knowledge to be given task performance in the knowledge process with peers, so that BL improves student learning achievement through cognitive activities (Hinampas [3]). Students have a better conceptual understanding than students who learn using traditional methods. Students access learning material and revisit some difficult material in their spare time (Setyaningrum [2]). BL offers many alternative learning resources for students outside of materials that have been provided by lecturers through the use of information technology. The results of Al-Ani's [11] research conducted on students of Sultan Qaboos University in the State of Oman explain BL helps students to be more independent and reflective in the learning environment because BL is supported by constructivist theory that focuses on the learning context, which is to provide more opportunities for students to interact with learning materials, lecturers, and other students, thus helping students experience and build on the knowledge they have.

Edmodo is a microblogging-based social network designed specifically for education. Edmodo is an interesting social media application in the world of education with social elements that resemble Facebook. In addition, Edmodo has an e-learning based educational application. Edmodo is a social media for learning based on Learning Management System (LMS), which consists of Assignment, File and Links, Quiz, Polling, Gradebook, Library, Award Badges, and Parent Codes features. Edmodo provides facilities for lecturers and students to provide a safe place to communicate, collaborate, share content and learning applications, lecture assignments for students, class discussions with students in learning activities plus facilities for parents to monitor all their children's activities on Edmodo if they have a parent code for their children (Mulyono [14]).

Edmodo provides facilities for lecturers, students, a safe place to communicate, collaborate, share content and learning applications, homework for students, discussions in virtual classes, online exams / tests, provide grades, and so on (Ekawati, [5]). Edmodo has three functions in the learning process, namely the replacement, companion, and complementary functions (Ainiyah & Puspari [15]). By using Edmodo, students and lecturers can discuss useful ideas / thoughts, problems and tips (Sulistiani [16]). Edmodo provides facilities for a safe place to communicate, collaborate, share content and learning applications, lecture assignments, in-class discussions with students in learning activities plus facilities for parents to be able to monitor all their children's activities (Mulyono [14]). In various studies, the application of Edmodo has a major influence in improving learning outcomes (Fardhany [17]; Mulyono, [14]; and Basori [18]). Bashori [18] in a study on Mechanical Engineering Education students at Sebelas Maret University Surakarta found: (1) the application of Edmodo can significantly increase in lectures, amounting to 52.94% in the high category, and 38.24% in the very high

category; (2) Edmodo feature is very supportive in managing learning activities. From the data it is known that 44.12% of respondents stated the very high category, and 35.29% in the very high category; (3) Edmodo's appearance is very user-friendly, making it easy to use. From the data, it is known that 67.65% in the high category, and 14.71% in the very high category; (4) Students feel a high level of satisfaction with Edmodo services. From the data, it can be seen that 61.76% of the category is very high, and 35.29% is in the high category. Daulay [7], Syarifuddin, & Manurung [7] also found that Edmodo had an effect on learning outcomes.

One of the factors that affect learning outcomes is learning independence (Ejubovic & Puska, [19]; Bungsu [20]; Alotaibi [21]). Learning independence shows that a student has a sense of responsibility for his success in learning. Independent learning is defined as a process in which an individual is able to: (1) Take the initiative, either with or without the help of others to diagnose their learning needs; (2) Formulating learning objectives; (3) Identifying learning sources, whether in the form of humans or goods / materials; (4) Selecting and implementing a learning strategy suitable for him; (5) Evaluating the learning outcomes. Independent learning is a learning activity that is more driven by willingness, choice, and responsibility from learning. Students must build their own knowledge and have the awareness to use their own strategies in learning (Bungsu et al [20]; Aulia & Armiati [22]). Independence places students can acquire knowledge through their own efforts, responsibility, confidence, initiative, have a strong motivation to move forward for the sake of goodness of themselves, being able to solve their own problems does not depend on others. Students will choose, manage, and assess their own learning activities that can be taken anytime and anywhere in many ways because having independent learning tends to have awareness to be able to seek, carry out, and organize their learning activities in order to achieve the goals they set (Indriyani [23]).

Learning independence is described through levels that include active participation both metacognition, motivational, and behavior in the learning process. The characteristics of independent learning according to, namely: (1) Awareness of the importance of self-regulation; (2) Monitoring the effectiveness of learning; (3) Self-respect; (4) Having a self-concept; and (5) Self-actualization (Hanidah [24]). In independent learning, students are required to be independent in terms of: (a) accessing learning materials and resources; (b) understand the learning material; (c) actualizing oneself in the classroom, (d) recording the subject matter that is read and explained; (e) perform tasks; (f) studying together with peers (study group); (g) discuss and argue; (h) reading and writing scientific papers; (i) prepare for and take examinations; (j) analyzing and following up on examination results; (k) rejects pressure to follow other people's demands regarding beliefs in the field of values (Merdekawaty & Fatmawati, [24]).

Bungsu et al's research [20] found that there was a significant positive effect of independent learning on

learning outcomes. It is necessary to develop student learning independence so that it can be maximized in every lesson. Sandi's research results found that students with high independence in BL are very supportive of the learning process. Students with high independence, who take part in BLakan always compete to show the best results. This will lead to optimal learning outcomes. Research using pre and post self-study questionnaires in the experimental and control groups, indicating that there are significant differences between the two groups in terms of SRL skills. Students in the experimental group scored higher on post-SRLQ. There was a greater increase in students with SRL learning than students in the control group. Eden & Kanadli 's research results show that learning independence has an effect on student learning outcomes. Self-learning strategies show a substantial effect on learning outcomes. Alotaibi [21] in their research conducted at King Saud University shows that there is a significant and positive relationship between independent learning and the achievement of student learning outcomes. Likewise, the constructs of SRL (i.e. goal setting and planning, keeping records and monitoring, practicing and memorizing, and seeking social assistance), particularly goal setting and planning, were found to be significant and positively related to learning outcomes. The thinking framework in this study is described in Figure 1 below

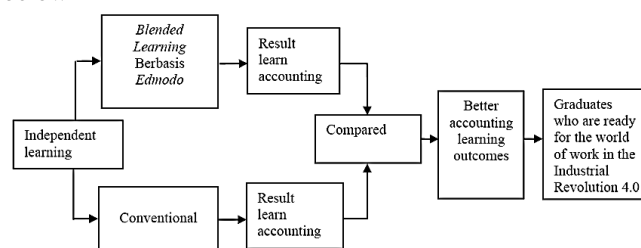


Figure 1. Thinking Framework

## II. RESEARCH METHODS

This type of research is quasi-experimental research. This study used a nonequivalent pretest and posttest control-group design. The experimental and control groups were selected without a random placement procedure and both groups were given pretest and posttest, but only the experimental group was given treatment. The dependent variable in this study is the learning outcomes of accounting. The independent variables are: (1) The learning method, namely the Edmodo-based BL method and the conventional method. (2) Learning independence, including high, medium and low independence. This research instrument is in the form of tests and questionnaires. Tests to obtain data on accounting learning outcomes and questionnaires to obtain learning independence data. Testing of the test instrument was carried out by testing the validity, reliability, difficulty level of the questions, and the distinguishing power of the questions. Testing the questionnaire instrument included

validity testing, internal consistency, and reliability. The data analysis technique used in this research was two-way ANOVA with different cell frequencies at the 5% significance level. Prior to data analysis, a balance test and analysis requirements test were carried out. The balance test was carried out using the t test through the pretest value data before treatment. The analysis requirements test includes the normality test and the homogeneity test. Hypothesis testing is carried out in two stages, namely stage I and stage II. Testing phase I used two-way ANOVA 2x3 factorial design. Phase II testing (post-postova test) aims to determine which learning method is better if each is linked to independent learning, with the Scheffe method.

### III. RESULTS AND DISCUSSION

#### Data Description Comparison of Pretest and Posttest

The pretest data comes from the students' initial ability data taken before treatment, while the posttest data comes from the accounting learning outcomes data taken after the treatment. The comparison of pretest and posttest data is presented in Table 1.

Table 1. Description of Pretest and Posttest Data

| Data     | Group      | N   | Max | Min | Mean  | Variansi | SD     |
|----------|------------|-----|-----|-----|-------|----------|--------|
| Pretest  | Experiment | 51  | 76  | 44  | 60,63 | 112,238  | 10,594 |
|          | Control    | 54  | 76  | 44  | 59,85 | 109,261  | 10,453 |
|          | Whole      | 105 | 76  | 44  | 60,23 | 109,793  | 10,478 |
| Posttest | Experiment | 51  | 100 | 72  | 86,82 | 73,788   | 8,590  |
|          | Control    | 54  | 88  | 56  | 73,56 | 75,723   | 8,702  |
|          | Whole      | 105 | 100 | 56  | 80,00 | 118,462  | 10,884 |

(Source: Primary data that is processed)

#### 1. Initial Ability Balance Test

The initial ability balance test is used to determine whether students in the experimental and control classes have the same initial ability before being given treatment. The data in the initial ability balance test are taken based on the pretest results. This test is carried out using the t-test. Before the test is carried out, it must first be done. The prerequisite test for the balance of initial ability is carried out, namely the normality test and the homogeneity test. The following are the test results on the initial capability. Uji Normalitas

Table 2. Pretest Normality Test Result

| Class      | Statistics | Significance | Test Decision     | Conclusion |
|------------|------------|--------------|-------------------|------------|
| Experiment | 0,113      | 0,099        | $H_0$ be accepted | Normal     |
| Control    | 0,112      | 0,087        | $H_0$ be accepted | Normal     |

The results of the normality test with Kolmogorov Smirnov Z showed the statistical price for the experimental class was 0.113 with a significance of 0.099. The statistical price for the control class was 0.112 with a significance of 0.087. The significance value in each class is  $> 0.05$ , so the pretest data for students' initial ability comes from a normally distributed population.

#### Homogeneity Test

Table 3. Pretest Homogeneity Test Results

| Sample | Significance | Test Decision  | Conclusion |
|--------|--------------|----------------|------------|
| Kelas  | 0,824        | $H_0$ diterima | Homogen    |

The results of the Levene test showed a significance value of 0.824. This value is more than the significance of 0.05, so the pretest data for students' initial ability comes from a homogeneous population.

#### Balance Test

Table 4. Balance Test Results

| Sample | t     | Significance | Test Decision     | Conclusion |
|--------|-------|--------------|-------------------|------------|
| Class  | 0,378 | 0,707        | $H_0$ be accepted | Balanced   |

The results of the balance test using the t-test showed that the obtained value was 0.378 with a significance of 0.707 ( $> 0.05$ ). Based on the results of the balance test, it was stated that the experimental and control classes had equal initial abilities.

#### 2. Test Instruments for Accounting Learning Outcomes

##### a. Content Validity Test

The content validity test has met the criteria. Of the 30 items, it was declared valid by the validator (expert judgment).

##### b. Test the difficulty level of questions

There are 1 item with difficult criteria, 27 items with moderate criteria, and 2 items with easy criteria. The items used are items that have a medium difficulty level.

Table 5. Difficulty Level of Accounting Learning Outcome test Questions

| Criteria | Many Grains | Nomor Butir                                                                                          |
|----------|-------------|------------------------------------------------------------------------------------------------------|
| Hard     | 1           | 17                                                                                                   |
| Moderate | 27          | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 19, 21, 22, 23, 24 25, 26, 27, 28, 29, dan 30 |
| Easy     | 2           | 11 dan 20                                                                                            |

The reason that strengthens BL provides better learning outcomes, especially in Accounting learning because BL has a combination of media in the delivery of learning, so that it can accommodate various differences in preferences. BL combines online and offline (face-to-face) learning. Online learning consists of media equipped with the controller used by the user so that the user can access offline (face-to-face) learning is not equipped with a controller used by users who are not connected to the internet network, but lecturers are very much needed to be able to provide feedback Directly between lecturers and students. Edmodo-based BL is balanced learning between face-to-face and online learning using multimedia that can be loaded on computers, cellphones, video convection and other technology media. Edmodo features in the form of



Assignments, Files and Links, Quiz, Polls, Gradebook, Library, Award Badges, and Parent Codes, facilities for lecturers and students to provide a safe place to communicate, collaborate, share content and learning applications, lecture assignments for students, internal discussion virtual classes, online exams / tests, providing joint scores with students in learning activities.

This is in line with Kiranawati's statement [26] through BL, students are given the opportunity to carry out activities to implement management and understanding of information and the concept of learning materials in a more integrated manner with various ways of delivery, learning models, and learning styles, as well as introducing various choices of dialogue media between facilitators and people who get learning (Sihabuddin [27]). BL Combines electronic aspects such as web-based, video streaming, synchronous and asynchronous audio communication with face to face. E-learning illustrates that with the existence of information and communication technology, especially the internet, learning becomes more open and flexible, occurs anytime, anywhere and with and to anyone in any location (distributed), community-based (Setyaningrum [2]; Isti'anah [3]; Lalima and Dangwal [13]). BL allows students to interact with other students and lecturers without the limits of time and space. In addition, students are assisted with complete references because there is a unity between the material, practice questions, and various additional pictures and learning videos. EDModo-based BL using computerized material makes learning interesting and fun for students because it contains attractive display and sound features (Oweis, [4]). The computerized system is able to provide corrections to students to provide improvements from the results of the work they are doing (Hinampas [3]).

### ***Differences in the Influence of High, Medium, and Low Learning Independence***

#### ***Levels on Accounting Learning Outcomes***

The results of hypothesis testing show that Fcount on learning independence is 3.263 with a significance of 0.042. The significance value obtained is  $< 0.05$ , then  $H_0$  (B) is rejected. Thus, there are differences in the effect of high, medium, and low levels of learning independence on accounting learning outcomes. To find out which level of learning independence is better, the Scheffe test is conducted. The results of the Scheffe test are based on the interaction between columns: (1) Students who have high learning independence have accounting learning outcomes that are as good as students who have moderate learning independence. (2) Students who have high and moderate learning independence have better accounting learning outcomes than students who have low learning independence.

The results of this study are in accordance with the research hypothesis which states that there is a difference in the effect of the high, medium, and low levels of learning independence on accounting learning outcomes. This is supported by the results of previous research by Ejubovic & Puska [19], Bungsu [20], Indriani et al (2019), Aulia &

Armiati [22], Merdekawati & Fatmawati [24], Alotaibi [21], Learning independence allows students to learn anytime and anywhere using teaching materials, videos, tutorials that can be accessed through an Edmodo account or the internet, so students can control themselves, behave in discipline, and never give up. This makes students independent from others, have self-confidence and be responsible for themselves. Learning independence has an important role in improving learning outcomes. Learning independence is the ability of students to carry out learning activities with their own encouragement and without coercion (Bungsu [20]). Students who have learning independence will be able to plan goals, plan strategies, manage behavior, and evaluate self-improvement. This is a factor that makes the learning process more effective. Independent learning strategies that include cognitive, metacognitive activities, resource management and motivational strategies will have an impact on conceptual understanding and motivation, so that they will be able to improve learning outcomes. Five factors in learning independence, namely goal setting, metacognition, environmental structuring, computer self-efficacy and social dimensions are able to influence learning outcomes (Ejubovic & Puska, [19]). If independent learning is good, students will have a willingness to always learn and focus pay attention to the subject matter, so that learning objectives can be achieved and learning outcomes will also be good [5]

Students who have high learning independence, do not depend on other people's instructions, they will take the initiative themselves to seek and find sources of the material to be studied (Aulia & Armiati[22]). Students who have independent learning tend to have the awareness to be able to try to find, do, and organize their learning activities in order to achieve the goals they set. Students will choose, manage, and assess their own learning activities that can be taken anytime and anywhere in many ways (Indriyani [23]). Students can find solutions to problems faced in various ways, including by looking for solutions via the internet or asking questions again from lecturers and fellow friends concerned. Learning independence can be seen in students' daily learning habits such as how to plan and carry out learning. High learning independence can improve accounting learning outcomes (Merdekawati & Fatmawati, [24]).

### ***The Interaction Between the Edmodo-Based BL Method and Conventional Methods with Independent Learning on Accounting Learning Outcomes***

Fcount on the interaction of learning methods with learning independence of 0.617 with a significance of 0.542. The significance value obtained is  $> 0.05$ , then  $H_0$  (AB) is accepted. Thus, there is no interaction between the Edmodo-based BL method and conventional methods with independent learning on accounting learning outcomes. The results of this study are not in line with previous research by Fitriyanti [25], Tsaniyah which state that there is an interaction between the Edmodo-based BL method and conventional methods with independent learning on

accounting learning outcomes. The absence of interaction between the Edmodo-based BL method and conventional methods with independent learning on accounting learning outcomes is possible because researchers cannot fully control the condition of students, both in terms of health and learning motivation because learning is carried out online and face-to-face. In addition, researchers also cannot fully control students when carrying out test activities because tests are carried out online and face-to-face, and are carried out during the last lecture hours, which allows the student's concentration condition to decrease slightly.

#### IV. CONCLUSION

The conclusions of this study are: (1) There are differences in the effect of the Edmodo-based BL method and conventional methods on accounting learning outcomes; (2) There are differences in the effect of high, medium and low levels of learning independence on accounting learning outcomes; and (3) There is no interaction between the Edmodo-based BL method and the conventional method with independent learning on accounting learning outcomes. The conclusion of the research explains that the Edmodo-based BL method plays an important role in improving accounting learning outcomes, so that it can be a reference for lecturers in choosing accounting learning methods that are in accordance with the learning objectives to be achieved. Furthermore, lecturers can stimulate and increase student learning independence so that learning can be centered on students who in the end can improve accounting learning outcomes.

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