***Optimization of Learning Through Hybrid Learning based on Edmodo to Improv Independence and Learning Outcomes***

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**Abstrak**: Penelitian ini bertujuan untuk mengetahui efektivitas penggunaan Edmodo sebagai media pembelajaran ditinjau dari hasil belajar; mengetahui adanya hubungan kemandirian belajar dengan hasil belajar, serta mengetahui adanya perbedaan hybridlearning dengan hasil belajar. Rancangan penelitian ini adalah *Non-Equivalent* *Control Group Design*, terdiri dari empat kelompok perlakuan dengan proporsi hybrid learning bervariasi, masing-masing 50%, 60 %, dan 70%, dan satu kelompok yang lain adalah kelompok konvensional, kelompok ini sebagai kelompok kontrol. Sampel dalam penelitian ini siswa kelas X SMK program keahlian Tata Busana berjumlah 104 siswa. Pengumpulan data dengan kuesioner dan tes pengetahuan. Teknik analisis data menggunakan *Anacova.* Hasil penelitian menunjukkan: (1) penggunaan Edmodo efektif dalam meningkatkan hasil belajar kelas eksperimen yang lebih besar dibandingkan dengan kelas kontrol sehingga pembelajaran menjadi optimal; (2) adanya hubungan yang signifikan kemandirian belajar dengan hasil belajar, signifikansi 0.000; (3) adanya perbedaan yang signifikan hybrid learning dengan hasil belajar, signifikansi 0.037

**Kata kunci** : hybrid learning, Edmodo, kemandirian belajar, hasil

belajar

The development of information and communication technology has brought a great influence on the change of the new paradigm in the field of education. Along with these developments various educational devices and modern educational facilities also support the optimization of the learning process, The form of information technology development that is applied in the education world is e-learning, where e-learning is an innovation that has a major contribution to changes in the learning process.

One of the changes that occurred is the lack of interaction between teacher and students in the class, due to limited time available. This allows distance learning (distance learning). Some of the changes that occur are (a) learning in the classroom shifts learning wherever and whenever; (b) learning to use paper shifted to online facilities; (c) physical facilities are shifted to network facilities (Rosenberg, M.J.2010)

Successful learning, namely learning that is able to help students achieve the competencies they want. Therefore, the selection and application of learning model design is one of the critical success factors in mastering student competencies. One of the competencies that must be mastered by SMK students in the Fashion Design expertise program is Textile Material Knowledge. Textile Material Knowledge subjects are the basic subjects of vocational competence that require students' understanding before learning the Fashion Vocational competency.

Setiarini, Y.F. (2009: 71) according to the Ministry of National Education one of the objectives of the Fashion Management expertise program is to equip students with the skills, knowledge and attitudes to be competent in terms of choosing textile or fabric materials. Knowledge of textiles / fabrics is very important because textiles / fabrics are the main material in making clothes. Based on the data obtained from the results of discussions with the subject teachers of Textile Material Knowledge and observations in the classroom, it shows that in general the interest in learning textiles for Grade X students in Clothing is low, which influences learning outcomes. Noting this, the possibility of the learning model used is not right so that it affects the learning outcomes, and the lack of mastery of competencies possessed by students.

This happens because learning activities tend to be monotonous, lack of innovative learning models, combining theory and practice, as well as optimizing the delivery of material thoroughly so that students can learn independently without having to wait for the existence of the teacher. This independent learning is expected that students can construct ideas and knowledge to improve competence so that it affects student learning outcomes.

Student independence is needed to improve the quality of learning, and will indirectly have an impact on the quality of students themselves. The lack of independence will have an impact on student attitudes in the learning process, including the lack of student response to lessons; lack of student interest and curiosity; and lack of student confidence in interpreting abilities. This is demonstrated by the results of Chen's research, C.M (2009) that independent learning is an important factor influencing learning performance in the learning environment of e-learning systems by learning self-regulated mechanisms, accelerating their acquisition to improve independent learning abilities.

E-learning provides teaching regardless of the place and time of learning. Students can access the subject matter anytime and anywhere so there is no time limit to access it (Tasri, I.2011). With the e-learning learning media, it is expected that the learning process is more conducive, increases student interest, and can improve student learning outcomes. This is because e-learning requires students to be able to interact with the internet, such as accessing extensive information, leading to student independence in learning. Although e-learning can be used independently by students, the existence of a teacher becomes very meaningful as an adult whose function is to provide support in the learning process. In other words face-to-face process becomes important and should not be left behind in learning (Plummer, C.C., 2012: 1)

In learning what is needed is to utilize information technology elements, by not leaving the pattern of direct guidance from the teacher. This concept combines e-learning with conventional learning (face to face) called hybrid learning. As shown by E.Chan (2010) research results that hybrid learning combining information and communication technology with face-to-face learning can increase flexibility for student interaction, and increase the speed and efficiency of interaction between teachers and students.

Hybrid learning is an approach that seeks to combine the best benefits of "old" and "new" teaching methods so that the quality of learning that is developed is an optimal quality that is better than just the quality of face-to-face or just online learning activities. Abdelrahman, N. & Irby, Baverly J. (2016) in their article explained that hybrid learning refers to the best practices of old and new pedagogy combined.

Hybrid learning is also used as an alternative tool in optimizing the learning process. This optimization has implications for increasing student learning time; fostering students' attitudes of independence and critical, active, creative and innovative attitudes so that they can motivate students to improve their achievement and learning outcomes. The implementation of hybrid learning models makes variations on models, methods, tools, and learning media. As research Ramadhan (2015) which explains that with optimal learning will increase learning activities and outcomes. The results showed the activeness of students experienced an increase from the first cycle 68.51% an increase of 80.12% in the second cycle. Followed by an increase in the grade average value in the first cycle of 7.6%, an increase of 8.3% in the second cycle.

Tsai, A. (2011) suggested an e-learning - hybrid model integrating learning and effective methods to remove the limitations of time and location availability and the teacher in the classroom. E-learning offers learning assistance when conventional learning (classical learning) which requires the face-to-face process between teachers and students cannot be done. Research conducted by Ahmad, Z & Ismail, I.Z. (2013) suggested that hybrid learning is a concept of a combination of online and face-to-face learning. The results show that hybrid learning must be implemented in an era of globalization that leads to the achievement factor of student satisfaction.

Allen, I.E.dkk. (2007: 5) provides a clear categorization of hybrid learning, traditional learning, web enhanced, and online learning. Based on the proportion of content delivered online, it can be seen that learning is said to be a hybrid form when the portion of e-learning is in the range of 30 - 79% combined with face to face learning (face to face learning). On the other hand, the hybrid learning model encourages teachers to change the educational paradigm from teacher-centered learning to student-centered learning.

Yendri, D. (2011) suggested the benefits of hybrid learning: (1) improving learning outcomes through distance education; (2) providing ease of learning for students; (3) reduce learning costs. With these benefits are expected to overcome problems in learning.

Of the several uses of hybrid learning, the implementation of hybrid learning in this study is to use edmodo. Borg, N. & Hara, J.O. (2008) stated that edmodo is a social network for learning based on Learning Management System (LMS). Edmodo provides facilities for teachers, students and parents of students. Edmodo itself is an e-learning program that applies learning that is easy, efficient and more enjoyable. Edmodo is very helpful in the learning process.

Some of the benefits of edmodo for learning: (1) edmodo is a very efficient vehicle of communication and discussion for teachers and students; (2) with edmodo, students with other students can easily interact and discuss with direct observation from their teacher, (3) edmodo facilitates communication between teachers, students and parents of students; (4) as an appropriate tool for the test or quiz; (5) teachers can provide teaching materials such as questions, photos, learning videos to students easily and students can download these teaching materials; (6) with Edmodo makes it easy for teachers to give questions from anywhere and anytime.

Based on the explanation, the researcher conducted a study with the aim of knowing that learning with edmodo-based hybrid learning models can improve learning independence and textile learning outcomes of SMK students in the Fashion Design expertise program.

***METHOD***

The design of this study is *Non-Equivalent Control Group Design*. This design is identical to *Pretest-Posttest Control Group Design*. The design has a control group, but does not function fully to control the external variables that affect the implementation of the experiment. The experimental group and the control group were chosen with consideration as close as possible to the characteristics in each group (Thomas, JR et al. 2011: 345) Quoting the writings of Creswell, JW (2014: 238) that this type of research is a study conducted by providing treatments (treatments) certain of the research subject concerned using the Pretest-Posttest Control Group Design experimental design.

This study was divided into four treatment groups with varying proportions of hybrid learning, 50%, 60%, and 70%, respectively. One other group is a conventional group, without treatment, this group is a control group. The sample in this study was 104 grade students of the Fashion Management expertise program with 104 students. Collecting data with knowledge tests, questionnaires, and observations. Data analysis techniques using *Anacova.*

***RESULTS***

            After analyzing the data for testing the hypothesis then a discussion of the results of data analysis is carried out. The results of data analysis can be seen in the following table.

*Table 1. Results of Analysis of Average Learning Outcomes of the Experiment Group*

*(group 1,2,3) and Control Group (group 4)*

**Descriptive Statistics**

Dependent Variable: Learning Outcomes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Eksperimen | Proportion Hybrid Learning  (%) | Mean | Std. Deviation | N |
| 1 | 70 | 73,46 | 8,575 | 26 |
| 2 | 60 | 77,12 | 6,953 | 26 |
| 3 | 50 | 69,81 | 9,108 | 26 |
| 4 (kontrol) | 0 | 53,65 | 9,006 | 26 |
| Total |  | 68,51 | 12,265 | 104 |

Data analysis of the average learning outcomes of the four experimental / treatment

groups can be shown in the following diagram :

*Figure 1. Diagram of average learning outcomes*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Table 2. Covarian Analysis Test Results Relationship Learning independence with*  *Learning Outcomes*  **Tests of Between – Subjects Effects**  Dependen Variabel: Learning Outcomes   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | Type III Sum  of Squares | df | Mean  Square | F | Sig | Partial Eta Squareed | Noncent  Parameter | Observed  Powerb | | Corrected Model | 10575,025a | 5 | 2115,005 | 42,137 | ,000 | ,683 | 210,685 | 1,000 | | Intercept | 29,540 | 1 | 29,540 | ,589 | ,445 | ,006 | ,589 | ,118 | | Kemandirian | 746,120 | 1 | 746,120 | 14,865 | ,000 | ,132 | 14,865 | ,968 | | Keaktifan | 406,359 | 1 | 406,359 | 8,096 | ,005 | ,076 | 8,096 | ,804 | | Perlakuan | 440,901 | 3 | 146,359 | 2,928 | ,037 | ,082 | 8,784 | ,680 | | Error | 4918,965 | 98 | 50,194 |  |  |  |  |  | | Total | 503625,000 | 104 |  |  |  |  |  |  | | Corrected Total | 15493,990 | 103 |  |  |  |  |  |  | |
| |  | | --- | | a. R Squared = .683 (Adjusted R Squared = .666) | | b. Computed using alpha = ,05 | |
|  |

*Table 3. Covarian Analysis Test Results Differences in Hybrid Learning with Learning*

*Outcomes*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Univariate Tests** | | | | | | | | |
| Dependent Variable: Learning Outcomes | | | | | | | | |
|  | Sum of  Squares | df | Mean  Square | F | Sig. | Partial Eta Squared | Noncent.  Parameter | Observed  Powera |
| Contrast | 440,901 | 3 | 146,967 | 2,928 | ,037 | ,082 | 8,784 | ,680 |
| Error | 4918,965 | 98 | 50,194 |  |  |  |  |  |
| The F tests the effect of Perlakuan. This test is based on the linearly independent pairwise comparisons among the estimated marginal means. | | | | | | | | |
| a. Computed using alpha = ,05 | | | | | | | | |

*Table 4. Covarian Analysis Test Results Differences in the Group of Hybrid Learning*

*Treatment Learning Outcomes*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter Estimates** | | | | | | | | | | |
| Dependent Variable: Learning Outcomes | | | | | | | | | | |
| Parameter | B | Std. Error | t | Sig. | 95% Confidence Interval | | Partial Eta Squared | Noncent. Parameter | Observed Powerb |
| Lower Bound | Upper Bound |  |  |
| Intercept | 3,137 | 7,816 | ,401 | ,689 | -12,373 | 18,647 | ,002 | ,401 | ,068 |
| Kemandirian | ,545 | ,141 | 3,855 | ,000 | ,265 | ,826 | ,132 | 3,855 | ,968 |
| Keaktifan | ,472 | ,166 | 2,845 | ,005 | ,143 | ,801 | ,076 | 2,845 | ,804 |
| [Perlakuan=1] | 3,499 | 3,203 | 1,093 | ,277 | -2,857 | 9,856 | ,012 | 1,093 | ,191 |
| [Perlakuan=2] | 6,406 | 3,278 | 1,954 | ,054 | -,099 | 12,910 | ,038 | 1,954 | ,490 |
| [Perlakuan=3] | 6,311 | 2,464 | 2,561 | ,012 | 1,420 | 11,201 | ,063 | 2,561 | ,718 |
| [Perlakuan=4] | 0a | . | . | . | . | . | . | . | . |
| 1. This parameter is set to zero because it is redundant. 2. Computed using alpha = 0,5 | | | | | | | | | | |
|  | | | | | | | | | | |

The results showed that (1) the average value of learning outcomes from the experimental / treatment group was greater than the control group, this shows that the use of edmodo effective in learning; (2) the significance results obtained by 0.000, smaller (<) than the significance of 0.05, this shows that there is a significant relationship between learning independence with learning outcomes, (3) the significance results obtained 0.037, smaller (<) than the significance of 0 , 05, this shows that there are significant differences in hybrid learning with learning outcomes

The results also showed (1) differences in hybrid learning of the first treatment group with learning outcomes, significance of 0.277; (2) the difference in the hybrid treatment of the second treatment group with the learning outcomes, the significance of 0.054; (3) differences in the hybrid learning of the third treatment group with learning outcomes, the significance of 0.012; (4) the difference in the hybrid learning fourth treatment group / control group with learning outcomes, significance 0

The results of the analysis of the average learning outcomes of the first treatment group 73.46. The average learning outcomes of the second treatment group was 77.12. The average learning outcomes of the third treatment group was 69.81, the average learning outcomes of the fourth treatment group / control group was 53.65.

***DISCUSSION***

          The results of this study indicate a significant relationship between learning independence and learning outcomes. The significance value of learning independence is 0,000, meaning that the value is smaller (<) than the significance level of 0.05. In addition there are also significant differences in hybrid learning with learning outcomes with a significance of 0.037, meaning that the value is smaller (<) than the significance level of 0.005. from the results of tests conducted on all treatment groups and control groups, the highest average results obtained from learning outcomes, namely in the second treatment group with the proportion of hybrid learning 60% and conventional 40%.

The results of this study are in accordance with the proportion of content delivered online written by Allen, I.E.dkk. (2007: 5). They provide clear categories for hybrid learning, traditional learning, web enhanced, and online learning. Learning is said to be in the form of a hybrid when the portion of e-learning is in the range of 30 - 79% combined with face-to-face learning (face to face learning). On the other hand the hybrid learning model encourages teachers to change the educational paradigm from teacher-centered learning to student-centered learning

**The Proportion of Content Delivered Online**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Course** | **% of Online Content & Facilitation** | **Typical Description** | **Example** |
| Traditional | 0% | Course where online technology | Course is totally |
|  |  | used-content is delivered in writing | delivered in |
|  |  | or orally | classroom |
|  |  |  |  |
| Web | 1-29% | Course that uses web-based | - Distribute content |
| Enhanced |  | technology to facilitate what is | online |
|  |  | essentially a face-to-face course. May | - Push - out |
|  |  | use a course management system | announcements |
|  |  | (CMS) or web pages to post the | -Test/Exams |
|  |  | syllabus and assignments |  |
|  |  |  |  |
| **Hybrid** | **30% - 79%** | Course that blends online and face-to-face delivery. Substantial proportion | - Discussion |
|  |  | of the content is delivered online, | - Flipped classroom |
|  |  | typically uses online, discussions, and | - Lectures online |
|  |  | typically has a reduced number of | - Group Work |
|  |  | face-to-face meetings a 15-week term | - Concept |
|  |  | 3% online = 5 classes or 15 hours | - Engagement in the |
|  |  | 8% online = 12 classes or 35 hours | classroom |
|  |  |  |  |
| Online | 80% - 100% | A course where all of the content ts | Course is totally |
|  |  | delivered online. Typically have no | delivered online |
|  |  | Face-to-face meetings |  |

**Source: Allen, E.Seaman, J & Garrett, R. (2007).Blended in: the extent and promise of hybrid education**

**in hybrid education in the United States Annual Report; Sloan Consortium**

This research is supported by the results of research conducted at Lancaster Wheatland Middle School by Aritonang, M. (2004) proving hybrid students score 81% advanced and proficient on the Algebra Keystone exam, reaching levels twice as high as the state average, related to changes in motivation and confidence in hybrid learning. The fact that there is a positive change related to the motivation of participation involved in learning is done by hybrid learning methods.

From several research results that have been conducted on hybrid learning models, Buzzetto, NA & Sweat, R. (2006) in their article on Hybrid Learning Defined, states that hybrid learning as an effective and efficient development method supports in-depth analysis of knowledge, and increases student satisfaction and cause a paradigm shift in higher education. Experience outside the classroom and other non-traditional ways can enhance the learning experience of higher education and even produce growth in hybrid learning models.

Ahmed, H.M.S. (2010) Hybrid e learning acceptance model: Leaner perceptions. The research explained that there were three critical success factors in the hybrid e learning program, namely instructor characteristics, information technology infrastructure, and organizational and technical support. The results showed that all three factors significantly and directly impacted student acceptance of the hybrid e-learning program. Information technology infrastructure and organizational support have proven to be the main determinants of instructor characteristics as a determining factor for the success of hybrid e-learning acceptance by students. Supports online learning because it achieves more access to higher education.

Research conducted by Rahmatillah, H (2013) on the Application of Hybrid Learning Models to Improve the Quality of Learning in Vocational Schools. In his research, the method used is True Experimental Design with pretest and posttest control group design, namely the experimental class and the control class. The results of the study were obtained (1) the product was said to be feasible to use, the average results of the media feasibility test to improve the quality of learning by 78.56%, (2) the average student learning outcomes increased by 29.96% for the control class and 48.72% for the experimental class, (3) the response of students and teachers to the research in the experimental class at a good level and the results were 81.50% and 80.00%

Another article written by Klimova, B.F & Kacetl, J. (2015) Hybrid Learning and its current role in the teaching of foreign languages. In his research aims to explore perceptions about the concept of hybrid learning and to describe the methodology such as the integration of face-to-face and instructional components online. The use of innovative technology, the conceptualization of learning paradigms, or continuous assessment and evaluation of mixed learning demonstrates the added value of its role in foreign language teaching

Research Rahmawati, E.dkk (2015) The Effect of Edmodo on Learning Outcomes. The conclusion of the study explains that learning uses edmodo media as an alternative to improve student learning outcomes. The same research conducted by Putri, S.R., et al (2017), the conclusion of the study explained that the use of edmodo learning media can improve student learning activities and outcomes. Muhajir, et al (2019) in his research concluded that the application of edmodo learning media was more effective because there was an increase in interest and learning outcomes. Furthermore, Purnawarman, P., et al (2016) research results show edmodo is implemented in teaching writing in learning English, and edmodo also facilitates students' cognitive involvement in learning activities.

Pintrich, P.R. & De Groot, E.V. (1990) in his article Motivational and Self-Regulated Learning Components of Classroom Academic Performance. This is a correlational study that examines the relationship between orientation motivation, which is governed by independent learning and classroom academic performance for 173 students. With the regression analysis method, the results obtained, independence (self-regulation), self-confidence (self-efficacy) and anxiety test appear the best. Performance predictors of intrinsic value do not have a direct influence on performance but are strongly related to self-regulation and cognitive strategies.

Meanwhile Maher, A. (2003) Learning Outcomes in Higher Education: implications for Curriculum Design and Student Learning. In his article written, universities in the UK has experienced extraordinary changes in the last thirty years. Successive governments have tried to make this sector more efficient and more accountable. Learning outcomes can act as benchmarks to ensure quality and efficiency in tertiary institutions. How learning outcomes are used in tertiary institutions and evaluate their implications for designing curriculum and student learning.

***CONCLUSION***

     Based on the above discussion the results of the study can be concluded as follows: (1). Edmodo-based hybrid learning can improve independence and learning outcomes; (2) There is an increase in the average value of learning outcomes in the treatment group from the control group; (3) There is a significant relationship between learning independence and learning outcomes; (3) There is a significant difference between hybrid learning and learning outcomes; (4) Learning through hybrid learning is recommended as the most effective learning model trend in optimizing the learning process, fostering an attitude of student independence and an active, creative and innovative attitude so that it can motivate in increasing student achievement and learning outcomes.

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