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The Implementation of Blended Learning Model Integrated Flipped Classroom to Increase the Motivation of High School Students

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***Abstract*—Education is a process to foster students to become real human beings. The position of the educator is the same as the position of the learning media which is only a facilitator. In its development in the world of Education today there is still no development of a strong model that can effectively implement online learning, on the other hand, the development of online learning technology has been very socialized to each school. Educators are still bound by the classical method (lecture method) because they do not understand the model in applying the digital learning process, so educators are still fixated on the comfort zone in classical education. 80% of students want online learning, so they can continue to learn when unable to attend school, while the other 20% want direct learning, students are individuals who must be provided with facilities, so it is necessary to develop a blended learning model integrated with flipped classroom used as the application of technology-based learning facilities that aim to increase effectiveness and efficiency in the learning process. The motivation of SMK or vocational students is quite good with the acquisition of an average score of 3.16 that falls into the "Good".**

Keywords: blended learning, flipped classroom, motivation

I. INTRODUCTION

The development of the information and communication technology industry at this time is very fast, especially in terms of internet usage which experienced a significant increase in the current era. Quoting from the kominfo.go.id page, Indonesia itself was recorded in 2018 as the 6th largest internet user in the world, with 123 million people active in utilizing this network-based technology. Space and time are no longer limiting in the 21st century, this is a result of the increasing development that is being experienced by the information and communication technology industry. The role of technology is inseparable from the role of humans who continue to experiment to meet these human needs to be more effective and efficient. In addition, the development of technology has become a shift from community life, beginning with the ease of communication between humans with the presence of e-mails that can quickly send messages from islands to continents.

Education is one of the beneficiaries in the development of information and communication technology. The world of Education has entered its fifth change [14]. The first change when parents hand over the learning process of their children to an educator who has received a mandate from school, the second change is found and used stationery for the needs of the teaching and learning process, the third change is the discovery of printing machines and used to print teaching materials such as knowledge books for learning needs, the fourth change is the discovery and development of electronic devices to facilitate learning such as radio and television which are used as variations in the teaching and learning process; in learning such as the use of online-based learning. In the fifth change, the world of education in Indonesia should have developed and utilized online-based learning to improve learning effectiveness.

The development in the world of education today is still not incessant development of models that can implement online learning effectively, on the other hand, the development of online learning technology has been very intensively socialized to each school. Educators are still bound by the classical method (lecture method) because they do not understand the models in applying the digital learning process, so that educators are still fixated in the comfort zone in classical education. The challenges of this era are that vocational students are required to work more effectively and efficiently, can apply appropriate technology, think critically, and be able to create the latest inventions, especially in the field of appropriate technology that provides effective and efficient impacts on daily life - days, this is supported by the current curriculum which places students at all levels in the creating stage. The trend of the ASEAN Economic Community (MEA) has the effect of arriving foreign workers both as experts and laborers invading jobs in Indonesia. This, is a challenge for education players, especially the vocational institutions, which are required to be ready to enter the workforce. Quoted from liputan6.com, the Central Statistics Agency (BPS) released unemployment data which reached 7.04 million people. From these data are divided based on the level of education that is, elementary school (SD) at 2.62%, middle school (SMP) 5.54%, high school (SMA) 8.29%, vocational school (SMK) 11.41%, diploma I / II / III 6.88%, and polytechnic 5.18%. The number of vocational unemployment is more than the others, while vocational graduates are people who are prepared to jump into the world of work. The competitiveness of vocational graduates is still less compared to graduates from other education levels, thus encouraging researchers to get involved in solving problems that exist in vocational schools. Vocational students are required to always understand the

theories given which are accompanied by direct involvement in practicing into the world of work, so that it takes a long time to apply those demands.

Motivation is a process that stimulates human behavior or can move people to do something [2]. Learning motivation is an encouragement or factor that is found in someone who can cause, move, direct, and organize the behavior of students to learn [5]. There are several factors that can influence learning motivation in students, namely: (1) Intrinsic motivation, which involves science for its own sake; (2) self-effectiveness, is a belief in one's ability to learn or carry out at a certain level in achieving goals; (3) self-determination, as an approach to a person's motivation and personality who see the importance of self-development and self-regulation; (4) level of motivation, which includes other things from the components of extrinsic motivation; (5) career motivation, which arises from student perceptions of future careers by developing the skills needed for his career [9].

Learning Technology is a field of cultivation that has a function to facilitate learning and improve performance by creating, using, and managing appropriate technological processes and resources, so that learning activities can be carried out effectively and efficiently. The role of the field of learning technology is to facilitate students by developing and utilizing the role of technology that has been developed so that it can provide a good effect on the learning process both in the classroom and outside the classroom. Improvement of learning outcomes can be carried out in various ways, one of which is using technology that has been developed in accordance with the needs of the times. The role of learning technologists in accordance with the definition of AECT 2004 is to facilitate students with various resources that have been developed in accordance with the times, so that the processes that occur in a learning can be done optimally and can improve the performance and learning outcomes of students. Learning outcomes are capabilities. After learning, individuals will have skills, knowledge, attitudes, and values. While learning outcomes, if someone has learned there will be a change in the individual behavior, for example from not knowing to know and not understand to understand [11]. Interpretation of learning facilities is part of the learning activity support, there are three things that must be considered in providing learning facilities, namely learning media, learning equipment, and study room facilities. These three components cannot be determined where each of these facilities influences each other in contributing to the learning carried out both individually and together [11].

Degeng [7] describes changes in a person's behavior as part of learning outcomes consisting of various aspects, namely as follows:

TABLE I. PERSON'S BEHAVIOUR AS PART OF LEARNING OUTCOMES CONSISTING OF VARIOUS ASPECTS

Cognitive aspects	Knowledge, this classification emphasizes the individual's ability to remember and re-recognize something that has been captured by the five senses, both ideas, terms, and so on. This classification is the lowest classification.
	Understanding, this classification leads to the ability to understand or interpret something that has been learned.
	Application, this classification refers to the ability of using material that has been studied.
	Analysis, this classification emphasizes the ability to think critically in describing a material into small parts and is able to connect these parts.
	Synthesis, this classification leads to the incorporation of small parts of material to be used as whole and new entities.
	Assessment, this classification refers to the formulation of consideration of a condition.
Psychomotor aspects	Perception, this classification depends on the use of the five senses as a guide in helping movement.
	Readiness, this classification refers to mental, emotional and physical readiness in carrying out a movement.
	Response, this classification leads to the desire to do movement both mentally, emotionally or physically.
	The mechanism, this classification leads to a level of confidence in displaying the movements learned.
	Patterned response, this classification refers to high skill levels.
Affective aspects	Accept, this classification leads to the sensitivity of individuals in receiving stimuli from the outside.
	Respect, this classification refers to giving value in a particular activity or object.
	In response, this classification shows the desire to carry out an action in response.
	Organizing, this classification is organizing that is someone can consistently display a value.
	Characteristics based on values, this classification leads to the formation of individual characters.

Various expert statements about factors that affect student learning outcomes are divided into two parts, namely internal factors and external factors where internal factors are the willingness of the students. Psychological factors are important for the sustainability of the learning process carried out, if the psychological learners are good (in prime condition) then the learning process will run optimally. Conversely, if the students' psychology is not good then the learning that is carried out is not optimal. The development of blended learning integrated flipped classroom as a learning resource will have a positive impact on improving the psychological of students, because learning by utilizing technology is fun and not limited by space and time. Characteristics of students now, tend to want to be free, not bound by space and time so that students can freely study anywhere and anytime. Learning Technology is a field of cultivation that has a function to facilitate learning and improve performance by creating, using, and managing appropriate technological processes and resources, so that learning activities can be carried out effectively and efficiently. The role of the field of learning technology is to facilitate students by developing and utilizing the role of technology that has been developed so

that it can provide a good effect on the learning process both in the classroom and outside the classroom. Improvement of learning outcomes can be carried out in various ways, one of which is using technology that has been developed in accordance with the needs of the times. The role of learning technologists in accordance with the definition of AECT 2004 is to facilitate students with various resources that have been developed in accordance with the times, so that the processes that occur in a learning can be done optimally and can improve the performance and learning outcomes of students.

The concept of blended learning makes it easy for students to learn material online without time and space limitations, but the role of educators as facilitators still exists, so that they can be monitored to maximize learning tailored to the needs of each individual [18]. Blended learning is also an effort to increase the effectiveness of information and communication technology into conventional learning designs to improve the cognitive structure of students and educators by involving them in unusual learning [4]. Thus, blended learning can be said as a learning program designed according to the needs by collaborating between conventional learning (face-to-face) with information technology-based learning and technology that is expected to create a varied learning environment that aims to create an effective and efficient atmosphere. The blended learning approach proposed by Allison Rosset, Felicia Douglas and Rebecca V. Reference [8] Frazee from Strategies for Building Blended Learning as follows:

TABLE II. THE BLENDED LEARNING APPROACH

Live Face to Face (Formal) in Class	Live Face to Face (Informal)
Instructor-Led classroom	Collegial connection
Workshop	Work teams
Coaching or monitoring	Role modelling
On the job training	

Blended learning is a mixture of several learning patterns, as for the patterns in the blended learning program, classroom learning (face to face) with online-based learning [14]. The portion in implementing blended learning is 30% - 79% of learning carried out online and as many as 21% - 70% of learning is carried out conventionally (face to face) [1]. Carman [6] describe the main component in a blended learning study as follows:

1) Direct Activity: Synchronous, the learning process chaired by educators, and all students participate in the similarity of space and time.

2) Online Content: The learning process carried out by students independently, with style, speed and self-study time.

3) Collaboration: Setting the learning communication environment experienced by students with others.

4) Assessment: Cognitive measurement of students. This measurement can be carried out before starting the learning process in order to find out the initial abilities of the students, and assessment after the treatment can be carried out after the learning process.

5) Reference Material: Teaching materials in the form of books, modules, multimedia, simulators and so on by increasing learning activities.

The description above shows the completeness of the blended learning model that has a component of the activity process directly, various interactions that will be experienced by students, learning content that can be used independently or in groups, easy and flexible assessment. Learning through blended learning can be carried out in any way so that it has high flexibility and the convenience of the learning process.

Flipped classroom strategy allows running blended learning methods, presentation of material in the form of videos, images, and texts online or offline, will make it easy to complete the test as an evaluation of students. Blended learning can overcome weaknesses in an e-learning based learning. The definition of flipped classroom itself is a theoretical study carried out outside the school, and assignments or projects are given by educators to be done in schools [12]. In flipped classroom learning allows students to be actively involved with learning material. Students will be encouraged to learn independently and free time in class for effective, creative, and active learning. Flipped classroom programs are carried out by a combination of technology and conventional learning in the classroom. Students are directed to access a material in the form of videos, modules, e-books, and so on outside of school so that students can build their cognitive in the material according to the speed of understanding each individual. In the classroom, students already have the knowledge they have learned so that students are better prepared to receive knowledge that will be aligned with the knowledge of educators.

Vocational students are already in the early stages of maturing themselves, at that stage they can already think abstractly and logically. Reference [5] describe about cognitive development, individuals over the age of 12 have been able to think abstractly and logically by using “probable” thinking patterns. Thus, the individual has entered the period of formal operational development. At the level of formal operational development, the individual has been able to solve problems with logic and think scientifically in solving complex problems. By entering that stage, the individual already has maturity in his cognitive structure.

II. METHOD

This type of research is descriptive research conducted on January 28, 2019 as a pre-survey as part of research and development. The research sample was 34 multimedia class tenth grade students and graphic design subject educators at SMK Negeri 1 Serang. The technique of data collection is done by collecting primary data and secondary data. Data collection techniques are using interview techniques, observation and documentation. Primary data obtained through interviews about the needs of models that can accommodate electronic learning related to the learning process occurs. Observations were made to collect data by giving questionnaires to students related to learning so far.

Data that has been obtained from the results of student questionnaires is changed to interval data using the Likert scale value. In the Likert scale assessment aims to provide better response variability and avoid respondents who answer enough. The results of quantitative data are then converted into qualitative data. The scale conversion formula of four from quantitative data to qualitative data as follows [10]:

TABLE III. EXPERIMENTAL DESIGN

Interval Score	Criteria
3.25 _< M <_ 4	Very Good
2.5 _< M < 3.25	Good
1.75 _< M < 2.5	Poor
1 _< M < 1.75	Not Good

III. RESULTS AND DISCUSSION

A. Results

The needs analysis of the blended learning model is divided into two, namely the needs in terms of students and in terms of educators in graphic design subjects, and learning experiences of students in learning graphic design.

(1) Analysis of educator needs. The results of the needs analysis of integrated blended learning models that are flipped classroom given to educators of graphic design subjects contain activities on learning graphic design, applied learning models, materials and practices that must be carried out simultaneously and identification of learning resources needed by students in learning design graphic.

(2) Analysis of educator needs. The result of the educator need analysis of graphic design subjects are as follows: (a) educators respond to the lack of time in delivering learning information to students, this has an impact on the learning process that is less than optimal. (b) The learning process is fixed on the delivery of information only through educators so that there is less activity experienced by students. (c) the learning model has not been implemented which can coordinate between electronic based learning so that the learning process is not optimal. (d) graphic design learning is learning that emphasizes theory and practice so that it requires accuracy and flexibility in the implementation of the learning process.

(3) Analysis of the needs of students. The results of the integrated blended classroom blended learning needs analysis from the point of view of students get the results that: (a) students complain about the lack of time in understanding learning that is both theoretical and practical so that it has an impact on decreasing effectiveness in the learning process, (b) students need learning which varies, so that it can create comfort for students, basically students have their own learning styles. (c) lack of learning resources that can be accessed by students, so far students only have electronic books from the government for their sources of knowledge. (d) 80% of students want online learning, so that they can still attend learning when unable to attend school, while 20% want to learn directly. Interviews conducted for students who do not need online based learning have limitations in accessing the internet. Both groups cannot be ignored or choose one of the two groups, all students must get the facilities they want to increase their motivation and provide comfort in learning. Therefore, the integrated blended classroom blended learning model is suitable for facilitating the overall learners by not taking their rights.

TABLE IV. RESULT ANALYSIS OF THE STUDENTS NEED

No	Item	Answer
1	The opinions of students that it requires online-based learning.	80%
2	The opinions of students that there is no need for online-based learning.	20%

(4) Analysis of learning support facilities. The observations of the researchers that the SMK Negeri 1 Serang has quite complete supporting facilities in implementing integrated blended learning models flipped classroom. In terms of equipment in the form of a computer that is quite a lot, so that students can use it individually. SMK Negeri 1 Serang has internet network facilities that are quite adequate in every computer laboratory already installed internet network. Wi-Fi or wireless network is available which can be accessed in each classroom, so students can access the internet.

(5) Student Motivation Questionnaire Results. The results of student motivation questionnaires in following the learning process by applying integrated blended learning models flipped classroom can be seen from the aspects of self-efficacy, aspects of self-determination, aspects of grade motivation, and career motivation aspects. From the distribution of motivation questionnaires that have been carried out, the overall data is obtained with an average number of “3.16” which is included in the category “Good”.

TABLE V. NORMALITY TEST RESULTS OF SCIENTIFIC LITERACY

Item	Mean	Information
Intrinsic Motivation	3.1	Good
Self-Efficacy	3.1	Good
Self-Determination	3	Good
Grade Motivation	3	Good
Career Motivation	3.6	Very Good
Total	**15.8**	
Mean	**3.16**	Good

B. Discussion

Learning in the 2013 curriculum demands learning that is centered on students or student centered which involves students actively and directs students to explore the potential of each individual. Learning is very dependent on facilities to support these activities. Facilities are materials or everything that facilitates and facilitates all activities of students in getting learning information. The concept of blended learning makes it easy for students to learn material online without time and space limitations, but the role of educators as facilitators still exists, so that they can be monitored to maximize learning tailored to individual needs. Blended learning is also an effort to improve the effectiveness of information and communication technology into conventional learning design to improve the cognitive structure of students and educators by involving them in unusual learning.

Graphic design learning has learning characteristics that emphasize understanding theory and practice so that it takes time to deliver material to students. The learning activities that have taken place so far still need to be further improved so that students can receive learning information effectively and efficiently. The right learning model in accommodating between theoretical based learning and practice at present is by applying blended learning models that are combined further with flipped classroom models.

Motivation is a process that stimulates human behavior or can move people to do something. There are several factors that can influence learning motivation in students, namely: (1) Intrinsic motivation, which involves science for its own sake; (2) self-effectiveness, is a belief in one's ability to learn or carry out at a certain level in achieving goals; (3) self-determination, as an approach to a person's motivation and personality who see the importance of self-development and self-regulation; (4) level of motivation, which includes other things from the components of extrinsic motivation; (5) career motivation, which arises from student perceptions of future careers by developing the skills needed for his career.

Vocational students are already in the early stages of maturing themselves, at that stage they can already think abstractly and logically. In Piaget's opinion on cognitive development, individuals over the age of 12 have been able to think abstractly and logically using "probable" thinking patterns. Thus, the individual has entered the period of formal operational development. At the level of formal operational development, the individual has been able to solve problems with logic and think scientifically in solving complex problems. By entering that stage, the individual already has maturity in his cognitive structure. In terms of student characteristics, it is now relevant in applying integrated blended learning models, with the application of this model students can be given good time management between theoretical learning and practical learning.

IV. CONCLUSION AND SUGGESTIONS

Learners complain about the lack of time in understanding theoretical learning as well as practice so that it has an impact on decreasing effectiveness in the learning process, students need learning that varies, so that it can create comfort for students, basically students have their own learning styles, lack of learning resources that can be accessed by students, so far students only have electronic books from the government for their sources of knowledge, 80% of students want online learning, so they can still attend learning when unable to attend school, while 20% more want direct learning, interviews conducted with students who have not needed online-based learning have limitations in accessing the internet. Students are individuals who must be given facilities, so it is necessary to develop a flipped classroom integrated blended learning model that is used as the application of technology-based learning facilities that aim to improve effectiveness and efficiency in the learning process. The motivation of SMK or vocational students is quite good with the average score of 3.16 entering the category "Good" so that in the application of integrated blended learning models flipped classroom provides increased motivation for students in carrying out the learning process.

REFERENCES

[1] Allen, I. E., Seaman, J., & Garrett, R. (2007). Blending In: The Exrent and Promise of Blended Education in The United States. USA: The Sloan Consortium.

[2] Arends, R. I. (2012). Learning to Teach (9th ed). New York: The MC Graw-Hill Companies, Inc.

[3] Arnold, S. & Garza. (2014). The Flipped Classroom Teaching Model and Its Use for Infromation Literacy Instruction. Communication in Information Literacy. 8, 7-22.

[4] Bath, D., & Bourke, J. (2010). *Getting Started with Blended Learning*. Griffith University 2010. From:https://www.griffith.edu.au/data/assets/pdf_file/0004/267178/Getting_started _with_blended_learning_guide.pdf.

[5] Budiningsih, A. (2012). *Belajar dan Pembelajaran*. Jakarta: Rineka Cipta.

[6] Carman, J., M. (2005). *Blended Learning Design: Five Key Ingredients*. Retrieved from http://www.agilantlearning.com/pdf/Blended%20Learning%20Design.pdf.

[7] Degeng, N. S. (2013). Ilmu Pembelajaran Klasifikasi Variabel Untuk Pengembangan Teori Penelitian. Bandung: Kalam Hidup.

[8] Dodon Yendri. (2012). Blended Learning : Model Pembelajaran Kombinasi E-Learning Dalam Pendidikan Jarak Jauh. Universitas Andalas.

[9] Glynn, S. M., Brickman, P., Armstrong, N., & Taasoobshirazi, G. (2009). Scnience Motivation Questionnaire: Construct Validation With Nonscience Majors. Journal of Research in Science Teaching, 46,127-146.

[10] Haviz, M. (2015. Cooperative Learning Model on Developmental of Biology. America. America Journal of Edcation Research. Vol. 3(10, 1298-1304.

[11] Hamalik, Oemar. 2003. *Proses Belajar Mengajar*. Jakarta: Bumi Aksara.

[12] J. Bregmann & A. Sams. (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day*. Washington DC: International Society for Technology in Education.

[13] Januszewski, A. and Molenda, M. (2008) Educational TechnologyL A Definition with Commentary. Lawrence Erlbaum Associates: New York.

[14] Rusman. (2012). Belajar dan Pembelajaran Berbasis Komputer: MengembangakanProfesionalisme Guru Abad 21. Bandung: Alfabeta.

[15] Slamento. (2003). Belajar dan Faktor-faktor yang Mempengaruhi. Jakarta: Rineka Cipta

[16] Stein, J., & Graham, C., R. (2014). *Essentials for Blended Learning : A Standards-Based Guide*. New York: Routledge.

[17] Wahyuningsih, D., & Makmur, R. (2017). *E-Learning : Teori dan Aplikasi*. Informatika: Bandung

[18] Watson, J & Powell, A, (2015). Blended Learning: The Evolution of Online and Face to Face Education from 2008-2015. INACOL, The International Association for K-12 Online Learning.

[19] Widjaya. 1994. *Sarana Pendidikan*. Bandung: Tarsito.

[20] Wina Sanjaya. (2009). *Perencanaan dan Desain Sistem Pembelajaran.* Jakarta: Kencana, Prenada Media Group.

[21] Woodall, D. (2012). *Blended Learning Strategies:Selecting the Best Instructional Method*. Retrieved from http://www.skillsoft.com/assets/whitepapers/bleanded_learning_strategies_wp.pdf

[22] Yusufhadi Miarso. (2009). *Menyemai Benih Teknologi Pendidikan*. Jakarta: Kencana.

[23] Zainudin, Z. & Halili, S., H. (2016). *Flipped Classroom Research and Trends from Diferent Field of Study*. Athabasca University, 17, 313 – 340.