Perception of vocational education students on the utilization of blended learning models

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Abstract. The development of technology and information has an impact on the learning process in the world of education, especially vocational education. In this era learning is not only held in class, but can be anywhere. The role of the internet has made it easy to access learning materials needed by students. An effective and efficient vocational education learning solution is to apply the blended learning model. The purpose of this study was to determine the perceptions of vocational education students from various majors or concentrations on the use of the blended learning model. This study includes a type of quantitative research with a descriptive approach. Data collection techniques using questionnaires and data analysis techniques carried out by steps 1) collecting respondents' data; 2) analyze the data by describing or describing the collected data; 3) presents in graphical form (visual). The results of this study show attention or interest if on average they get a response of 81.33% with the category "high", for the level of relevance to get a response of 85.50% with "high" activities, while for student response literacy towards the blended learning model learning gets a score of 80.38%. For confidence, the response was 69.07% with the category "enough". High interest is the starting point for the application of blended learning. If the initial perception has shown positive, then learning will be more focused to achieve the goal.

1. Introduction

The development of information technology has experienced rapid development, the use of the internet has become a habit in everyday life. More than 50 percent of 143 million people in Indonesia have made use of internet facilities (Kompas.com, 2018). This indicates that there is a shift in habits from what was originally conventional to modern, changes in human lifestyle and human mindset. Changes that occur are also experienced in the world of education, including in the world of vocational education. Basically vocational education is higher education that focuses on mastering applied skills, each learning involves cognitive, affective, and psychomotor aspects. In learning it is never separated from the use of technology, therefore the role of technological development will continue to be followed by those involved in vocational education, both teachers, students, and managers. The presence of information technology (internet) is one of the innovations for the 21st century learning model.

In this era learning is not only held in class, but can be anywhere. The role of the internet has made it easy to access learning materials needed by students. The present learning material is not only in the form of printed books in the form of modules or teaching materials similar to books, but teaching
materials are available in digital forms such as e-books, journals, etc. which can be downloaded. Aside from learning materials that are not only accessed in books, technological developments also change the conditions of the place of learning, learning not only in rooms or educational buildings but can be accessed anywhere with the help of the internet. So, now learning can be carried out in the classroom and outdoors or class by utilizing internet technology.

The use of communication and information technology in the world of education gives a lot of influence, in the learning system there is a tendency that is student-centered, the more open and long distance education grows, the more available learning resources. According to Rosenberg, M, J. (2001) the shift in the learning process occurs due to the development of communication technology, namely: a) the shift from the classroom to learning anywhere without limitation of time and distance; b) shifting from paper to online media; and c) shifting physical facilities to network facilities. With the development of technology, the teacher can provide services or facilities without having to deal directly with students, so students do not have to come to class. The use of information communication technology in learning has many positive impacts on student achievement. Web-based learning can provide convenience for students in accessing learning materials and assignments given by the teacher/lecturer/instructor. Kayler, M. & Weller, K. (2007) revealed that learning that utilizes internet or web-based facilities has the purpose of facilitating the provision of material with content deepening which can be in the form of questions or quizzes with solutions, virtual labs, examinations, assignments and discussions. Web-based learning can change student micro conceptions about style and movement and foster independence to construct students' own knowledge. Technological developments have influenced the learning model in the world of education, especially for vocational education, as stated in the Indonesian Minister of Education and Culture Regulation Number 65 of 2013 concerning the use of information technology to improve the efficiency and effectiveness of learning carried out online.

The learning model will help optimize the learning process and can also be implemented by combining conventional face-to-face methods with online, the method is called Blended Learning. According to Valiathan, P. (2002) Blended learning is used in learning with the aim of describing solutions that combine several methods of delivering material in different ways. Blended learning is also used to describe learning that includes a variety of event-based activities, facing classrooms, direct e-learning, and independent learning. Thus Blended learning can support the process of learning models applied in vocational education, help students in learning process activities to achieve more optimal learning outcomes because of supporting graphics in the form of video and audio, having content that includes syllabus, material, evaluations and reference sources. The following is a description of the blended learning learning model:

**Figure 1. Depiction of a blended learning mode**
(source: [http://www.swiftlearningservices.com/blended-learning-solutions/](http://www.swiftlearningservices.com/blended-learning-solutions/))

### 1.1. E-Learning

E-learning is electronic technology based learning as a learning technology revolution. As a whole e-learning can be defined as an effort to connect students with learning resources that are physically separated by distance but can communicate with each other or directly indirectly. Using technology like the internet. From the description of the definition of e-learning is a flexible learning media, so that the
characteristics can be changed according to the conditions, content, and the overall system used for learning (Orton-Johnson, K, 2009).

1.2. Blended Learning

Blended learning can be said as an improvement obtained from the use of information and communication technology, by offering new ways that complement teaching and learning with conventional methods. Blended learning according to Keller (2010) consists of four aspects, namely attention, confidence, relevance, and literacy. Whereas according to Garrison, D. R., & Kanuka, H. (2004). Learning with the blended learning model is simple and complex integrated learning. Blended learning is different from learning which is only combined with online activities, but blended learning has certain characteristics, namely 1) has effective integration of the two main components, namely the internet and face-to-face so it is not dominant in the existing approach or method; 2) integrated learning design; 3) fundamental reconceptualization and reorganization of the dynamics of teaching and learning; 4) the complexity of integrated learning; 5) the quality of the learning experience. Here is the difference between face-to-face learning and online according to Eryilmaz, M. (2015):

|                         | Face to face learning | Online learning |
|-------------------------|----------------------|-----------------|
| Focus of course         | Group                | Individual      |
| Focus of content        | Teacher-centered     | Student-centered|
| Form                    | Synchronous          | Asynchronous    |
| Time                    | Scheduled            | Anytime         |
| Place                   | Classroom            | Anywhere        |
| Flexibility             | Standardized         | Customized      |
| Content                 | Stable, durable      | Dynamic, transitory |
| Number of students      | Space delimited      | Without limits  |
| Instructor preparation  | Some (transparencies) | Extensive pre-preparation |
| Distribution of materials | Hard copy           | Electronic download |
| Interaction             | Spontaneous          | Structured      |
| Range of interactivity  | Full interactivity   | Limited interactivity |

1.3. Vocational Education

According to Pavlova, M (2009) that vocational education is closely related to the skills to use tools or machines. Vocational education is different from general education, in vocational education learning emphasizes skills and understanding concepts explained through theory and then applied directly in practice. Whereas according to Clarke, L., & Winch, C. (2007) vocational education is education that prepares individuals to enter the world of work later in the learning process associated with practicum and mastery of competency techniques. The purpose of vocational education is to provide the labor market at the sub-professional level, it can be explained that the meaning of the statement is that vocational education aims to provide sub-professional level work.

2. Method

This study includes a type of quantitative research with a descriptive approach. Data collection technique in this study used questionnaires, with the category of respondent namely vocational education students from various majors or concentrations. The validity of the instrument in this study includes rational validity of judgment, namely by consulting instruments to competent experts by being consulted. Data analysis techniques are carried out by steps: 1) collecting respondents’ data; 2) analyze the data by describing or describing the collected data; 3) presenting data in a visual form.
3. Result and Discussion

Research results of Dziuban, C., Moskal, P., & Hartman, J. (2005) explain the results, implications and future directions for blended learning in the world of education. As a result of the development of information and communication technology it will affect the learning system, one of which is blended learning that can provide convenience for students in accessing material, and can accommodate student perceptions. Blended learning succeeds in accommodating the opinions of students who in the face-to-face classes tend to be minorities to be able to express their gain in discussion forums through online learning. Investigating student perceptions of the course has the advantage of expressing firm decisions and determining how students evaluate their educational experience. The rules for blended learning are independent, the relevance of the content, and the expected value. Blended learning precedes modern instructional technology, its evolution will be closely tied to contemporary information communication technology that approaches several aspects of human thought processes.

In this study the perception of the use of the Blended Learning model can be presented in four categories, namely in terms of attention, relevance, confidence, and literacy.  

Table 2. Categorization of Student Perceptions about the use of Blended Learning

| Score Range (%) | Category     |
|-----------------|--------------|
| 0 – 20          | Very Low     |
| 20.01 – 45      | Low          |
| 45.01 – 70      | Enough       |
| 70.01 – 90      | High         |
| 90.01 – 100     | Very High    |

Achievement = \( \frac{\text{real score}}{\text{ideal score}} \times 100\% \) ................................................... (1)

Table 3. Student Response to Vocational Education on the Utilization of the Blended Learning Model

| Aspects of Student Perception                                                                 | Score  |
|-----------------------------------------------------------------------------------------------|--------|
| ATTENTION                                                                                     |        |
| I often access social media (chat, email, facebook, twitter, etc)                             | 84.00% |
| I have participated in blended learning (a combination of online and face-to-face learning, or discussion through (email, blog, moodle, etc) | 79.00% |
| I am interested in the blended learning model                                                 | 81.00% |
| RELEVANCE                                                                                     |        |
| Technology based learning is relevant to present and future life                              | 88.00% |
| Technology based learning is future learning                                                  | 83.50% |
| Learning innovations using technology make it easy for me to learn                            | 85.00% |
| CONFIDENCE                                                                                     |        |
| Blended learning helps me in mastering learning material                                        | 78.00% |
| I like the blended learning model, but it is constrained by networks                          | 66.00% |
| The blended learning models will be a bored remover if applied continuously                   | 53.00% |
| The discussion in blended learning made me confident in expressing my opinion                 | 74.50% |
| Blended learning is effective and efficient learning                                          | 77.50% |
| Blended learning is a learning model that supports problem solving                            | 77.00% |
| Independent learning is more fun than group learning                                          | 57.50% |
LITERACY
I am used to using the internet as a medium to find solutions to problems that I have encountered around 80.50%
I use the internet as a means to get the latest information 86.50%
Blended Learning is suitable for use as a learning model in Vocational Education 78.50%
Blended Learning is a solution to increase student creativity in the Vocational Education department 76.00%

![Figure 2. Average result of student responses to blended learning](image)

Attention or interest if on average gets a response of 81.33% with the "high" category, for the relevance level to get a response of 85.50% with "high" category, while for student response literacy on the blended learning model gets a score of 80.38%. For confidence, the response was 69.07% with the category "enough". High interest is the starting point for the application of blended learning. If the initial perception has shown positive, then learning will be more focused to achieve the goal. According to Means, et al. (2014) stated that the system design of the blended learning model must look at the needs and expectations of students. With the results of the data presented it has illustrated the perceptions of students who show positive answers, that blended learning will be more effective if applied in vocational education. For the successful implementation of blended learning, it must also be balanced with the ability of self-directed learning, internal motivation and collaborative skills (Dabbagh & Ritland, 2005).

Research is expected to contribute to instructors/lecturers/teachers in a variety of uses of learning models, especially for 21st century learning that prioritizes creative, critical thinking, collaboration and communicative. With the variation of learning models, students will feel the effects on learning outcomes. For other contributions in this study can lead to improvement of the learning model (method improvement) that will be carried out by the teacher and will be accepted by students.

4. Conclusion

Vocational education students with various concentrations or majors give positive responses to the application of the blended learning model, both in terms of attention, relevance, confidence, and literacy. The initial perception that is high in response needs to be maintained to realize blended learning, because if the initial perception has shown positive, then learning will be more focused on achieving the goal. Thus it can be concluded that the blended learning model can be utilized and get a high response if applied in vocational education.
The implications of applying the blended learning model to teachers (Husamah, 2013), 1) the instructor should master and be skilled in using information and communication technology; 2) the instructor should be able to choose and sort the material used in face-to-face and online learning; 3) the teacher must ensure that e-learning that will be accessed by participants can be felt easy, safe, and efficient. Then the implications of applying the blended learning model to students are 1) students must be skilled in choosing learning resources; 2) students must be skilled in using information and communication technology; 3) students need to increase interaction and communication with the teacher / lecturer in the learning process (example: virtual classroom schedule).

5. References

[1] Clarke, L., & Winch, C. (2007). Vocational education, international approaches, developments and systems. New York: Routledge 270, madison Avenue, NY 10016
[2] Dabbagh, N., & Bannan-Ritland, B. (2005). Online learning: Concepts, strategies, and application (pp. 68-107). Upper Saddle River, NJ: Pearson/Merrill/Prentice Hall.
[3] Dziuban, C., Moskal, P., & Hartman, J. (2005). Higher education, blended learning, and the generations: Knowledge is power: No more. Elements of quality online education: Engaging communities. Needham, MA: Sloan Center for Online Education, 88-89.
[4] Eryilmaz, M. (2015). The Effectiveness of Blended Learning Environments. Contemporary Issues in Education Research, 8(4), 251-256.
[5] Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. The internet and higher education, 7(2), 95-105.
[6] Husamah. (2013). Pembelajaran Bauran (Blended Learning). Jakarta: Hasil Pustaka.
[7] Kayler, M. & Weller, K. (2007). Pedagogy, Self-Assessment, and Online Discussion Groups. Educational Technology & Society. Vol 10(1), p136-147.
[8] Keller, J. M. (2010). What is motivational design?. In Motivational design for learning and performance (pp. 21-41). Springer, Boston, MA.
[9] Kompas.com. (2018). Jumlah pengguna internet Indonesia. Retrieved from https://tekno.kompas.com/read/2018/02/22/16453177/berapa-jumlah-pengguna-internet-indonesia
[10] Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. Teachers College Record, 115(3), 1-47.
[11] Orton-Johnson, K. (2009). ‘I’ve stuck to the path I’m afraid’: exploring student non-use of blended learning. British Journal of Educational Technology, 40(5), 837–847.
[12] Pavlova, M. (2009). Technology and vocational education for sustainable development. Queensland: Springer.
[13] Peraturan Menteri Pendidikan dan Kebudayaan No. 65, 2013 about Penggunaan Teknologi Informasi.
[14] Rosenberg, M. J. (2001). E-Learning: Strategies for Delivering Knowledge in te Digital Age. McGraw-Hill Professional.
[15] Valiathan, P. (2002). Blended learning models. Learning circuits, 3(8), 50-59.