E-Learning Feasibility Analysis: Dwi Sejahtera Vocational High School Pekanbaru Context

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Abstract. The digital age has an important role along with the rapid development of technology, the need for concepts and mechanisms of information technology-based teaching and learning is inevitable. One of the learning concepts is E-Learning or electronic based learning. But there are an important thing that must considered by the stakeholders of a school that even though the learning system that developed by many parties is very good, if the institutions in the service field cannot see the opportunity or the difficulty of making decisions in analyzing to establish an electronic-based learning system, it will result in slow planning and implementation of the learning concept. The purpose of this research is to determine how feasible is the object studied in the design of electronic learning or E-Learning media in improving learning independence of the students so that it will also produce any content and feature needed in the e-learning system to designed. The main result to be achieved from the data analysis and processing in this study is to find out the factors that still need improvement and the factors that are considered good in the implementation of e-learning in the learning process at the Dwi Sejahtera Vocational School

Keywords: E-learning, Dwi Sejahtera School, quantitative descriptive, Feasibility analysis

1. Introduction

Dwi Sejahtera Vocational High School is one of the schools in the City of Pekanbaru. During this time the learning process in this school is still said to be conventional, in the sense of face to face interaction between teachers and students. With a traditional learning system, of course, there will be many shortcomings and obstacles in transferring knowledge to students in school. Along with the rapid development of information and communication technology, the need for information and the concepts of technology-based learning are inevitable. This concept can overcome space and time because the learning process did anywhere and anytime. One of the learning concepts is e-learning [1]. The learning process using electronic media or equipment assistance is expected to improve the effectiveness and efficiency of learning, the concept is known as e-learning. In its application, the e-learning media presented in the form of offline and online media [2].
E-learning is a learning system that utilizes information technology by utilizing online media, such as the internet as a method of delivering information and interaction [3]. The e-learning service has a variety of learning services that can be used by learning participants and tutor service so that it can help participants when experiencing difficulties. By using e-learning, students will get information and learn in an online manner, not only attend the teaching and learning process face to face in class. With this system, students can access lessons given by the teacher through the internet. The e-learning implementation also has many features that utilized including subject materials, discussion forums and assignments for students [4].

With today's technological sophistication, it is expected that Dwi Sejahtera Vocational High School would have internet technology-based learning support since it can reduce some of the problems faced by the school. One of the existing problems was the lack of planning in analyzing the extent of school feasibility in establishing an Internet-based learning system. Thus it led to the lack of learning independence of the students with no not supporting learning facilities for students to be more active outside of the school. It was due to the lack of an electronic-based learning support system [5]. Based on the description above, it is necessary to use an analytical method to test the feasibility of Dwi Sejahtera Vocational High School in applying Internet technology-based learning using E-Learning Readiness (ELR) method which can help an organization to implement technology-based learning.

2. Research Methods

The instrument used in this study was a questionnaire. Questionnaire instrument is a list that contains a series of questions about a problem or field to be studied. To obtain data, questionnaires distributed to the respondents (those who answered were those who investigated), especially in a survey study. The purpose of the questionnaire instrument is to obtain information relevant to the purpose of the study and obtain information about a problem simultaneously, Narbuko in [5].

The model used in this research was Aydin & Tasci's ELR model to assess the readiness of e-learning implementation. Aydin & Tasci ELR model has developed and adjusted to use in this study. Aydin & Tasci's ELR model uses four readiness factors. This model will provide a score for the level of readiness for the e-learning implementation in a school. The Aydin & Tasci ELR model is developed for institutions in developing countries, making it suitable for use in Indonesia. The data collection methods used in this research were observation, interviews, and questionnaires. After all, data collected, an analysis was conducted using the Aydin & Tasci ELR model, in [5]. The analysis is as follows

\[ \bar{x} = \frac{\sum x}{n} \]

Notes:
- \( \bar{x} \) = Final mean
- \( \sum x \) = Total Score
- \( n \) = The number of respondents

3. Result and discussion

The planning of the research at Dwi Sejahtera Vocational High School Pekanbaru was conducted well and by the research procedures
Table 1. Respondent

| NO | RESPONDENT                        | TOTAL QUESTION | STATUS       |
|----|-----------------------------------|----------------|--------------|
| 1  | Headmaster                        | 36             | All filled up|
| 2  | Deputy Head of Curriculum         | 36             | All filled up|
| 3  | Deputy Head of Student Affairs    | 36             | All filled up|
| 4  | Treasurer                         | 36             | All filled up|
| 5  | Chairman of the Accounting Department | 36         | All filled up|
| 6  | Chairman of the Automotive Department | 36           | All filled up|
| 7  | Chairman of the Electric Power Installation (TITL) Department | 36 | All filled up |
| 8  | Chairman of the Computer and Networking (TKJ) Department | 36 | All filled up |
| 9  | PIC of the Laboratory             | 36             | All filled up|
| 10 | Teacher representative            | 36             | All filled up|

Table 2. The questionnaire recapitulation table based on Human Factors

| ELR Factor | Questionnaire     | Respondent’s Score | Total Score | Average X |
|------------|-------------------|--------------------|-------------|-----------|
|            | R 1   R 2 R 3   R 4   R 5   R 6   R 7   R 8   R 9   R1 0 |                   |             |           |
| Human      | k1     3 3 3 3 3 3 4 3 4 3 | 32           | 3.2         |
|            | k2     3 3 4 3 4 2 4 3 4 2 | 32           | 3.2         |
|            | k3     2 3 4 4 5 2 4 2 4 3 | 33           | 3.3         |
|            | k4     4 4 4 4 5 3 4 4 4 3 | 39           | 3.9         |
|            | k5     4 4 4 4 5 4 4 4 4 3 | 40           | 4           |
|            | k6     3 2 5 3 4 2 4 3 3 2 | 31           | 3.1         |
|            | k7     4 4 4 3 4 2 4 4 4 2 | 35           | 3.5         |
|            | k8     4 4 4 3 4 4 4 2 3 3 | 35           | 3.5         |
| Value      | 8      27 27 32 27 34 22 32 25 30 21 277 | 3.5         |
| Number of questionnaires | 8   |
| Respondent | 10    |
| Total      | 80    |

Likewise, the questionnaire recapitulation of self-development, technology and innovation factors, so that the following results obtained.
Based on the results of the ELR assessment with the Aydin & Tasci model it can be seen in Table 3 that the Dwi Sejahtera Vocational High School Pekanbaru had ELR score of x = 3.56, meaning that the score was above > 3.41 as the standard of readiness of an object in establishing internet-based learning. Dwi Sejahtera Vocational High School was considered feasible in the implementation of e-learning, and the implementation of e-learning continued. Improvements made to ELR factors that had low scores. ELR factors at Dwi Sejahtera Vocational High School Pekanbaru had x > 3.41. It meant that each ELR factor was ready for e-learning implementation. However, human factors, self-development factors, technology factors, and innovation factors still required a little improvement. The improvement made by looking at the items that had an ELR score of x <3.41.

5. Conclusion and Recommendations

After the analysis and discussion on the feasibility of e-learning implementation at Dwi Sejahtera Vocational School, some conclusions as follows.

1) Aydin & Tasci's E-Learning Readiness (ELR) model applied to five Dwi Sejahtera Vocational Schools showed that those schools were feasible in the e-learning implementation, It seen from the ELR score obtained by the Dwi Sejahtera Vocational School of x = 3.56 (ready, but requires a little improvement) which meant that the five Pekanbaru Dwi Sejahtera Vocational High Schools were included in the Feasible category in the implementation of e-learning, but required a little improvement in several factors.

2) The improvement needs to conducted on factors that have a low ELR score. Human factors had slightly more items in the questionnaire which categorized as need improvement, some questionnaire items had the mean scores of K1, K2 K3, and K6 ELR x = 3.2, which meant that it was not feasible, needed a little improvement. It means that the factors with those items in Dwi Sejahtera Vocational High School Pekanbaru must be improved in the future to meet the challenges of today's digital world so that the implementation of e-learning can run optimally

Some recommendations based on the research that has conducted are as follows:

1) The questionnaire instrument used in this research to retrieve data was still filled in by the official structure and some teachers in the school so that the instrument is also needed to involve students in the future
2) There should be an addition of factors as a forming component of the Aydin & Tasci ELR model questionnaire to provide more optimal assessment results according to the research site.

3) The management is recommended to provide financial support and make budget details to implement e-learning at schools to support students' learning in school.

4) Aydin & Tasci ELR analysis model can be combined with several other models to provide more optimal assessment results by the scope of the research

6. References

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