Self-directed learning analysis: A response of students using e-learning (SPOT-UPI)

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Abstract. Analysis of the use of SPOT in the process of learning in the Universitas Pendidikan Indonesia is very important, so that it can be known to what extent the use of SPOT can be used as self-directed learning for Students at the Universitas Pendidikan Indonesia, especially in Culinary of Education Study Program. In this study, data was collected from 61 student respondents in the Culinary of Education Study Program 2016 at the Universitas Pendidikan Indonesia using SPOT. The variables studied were the documentation process on SPOT, SPOT operation, and SPOT accessibility. The research instrument used in this study was a questionnaire. The results of data analysis can be explained that the use of SPOT as an application in the learning process is said to be very feasible seen from the results of processing observational data as much as 91.3%. The results of the observation data processing as much as 88.3% have been very feasible to operate the SPOT application used in the learning process. The feasibility of the results of the accessibility test on the use of SPOT by analysing the results of observations on students 80% is very feasible for the accessibility of the SPOT application used in the learning process. Utilization of SPOT as the implementation of ICT and learning tools can provide motivation to the students, because the range is in a very broad SPOT. Interaction between teacher and students can take place anytime and anywhere, not limited by time. In addition to the teacher and students can monitor the progress of the learning process that lasted one semester. However, this study requires special skills of teacher and students because they are required to master a variety of applications associated with the Internet.

1. Introduction

Learning is a business process carried out by a person to obtain a change of new behaviour as a whole, as a result of his own experience in interaction with his environment to obtain the desired knowledge [1]. Students are members of the academic community who have entered the adult stage and have self-awareness in developing abilities in higher education to become experts and professionals [2]. Self-Direct Learning (SDL) was first claimed by Malcolm Knowles in 1975. SDL is a learning in which the conceptualization, design, implementation and evaluation of learning projects is directed by the learner, establishing his own learning objectives from the identified learning needs and choosing methods and resources appropriate for achieving learning goals. An important aspect of self-direct learning is that students can evaluate whether the methods they choose and resources have helped them achieve their learning goals [3-5].
The current learning and teaching process must be supported by technology, both used in educational environments such as face-to-face classrooms and in online learning platforms namely e-learning [6]. E-learning can be accessed to devices such as smartphones, laptops, tablets and computers. With the help of e-learning in schools it can support individual approaches that are not limited to the distance that can be taken at any time, so that educational goals can be achieved more effectively [7].

E-learning is a web-based learning ecosystem for the dissemination of information, communication and knowledge for education and training [8]. In education, e-learning can contain adaptive elements that are implemented created in accordance with Bloom's Taxonomy. Meanwhile, for the type of knowledge delivered where it can support a student-centred learning environment known as e-learning environment [9-10].

The e-learning system in learning is carried out by distributing learning materials through electronic media or the internet, so that the teacher or lecturer can transfer knowledge and learning styles. But some weaknesses are most essential in e-learning such as costs, supporting media and the resources themselves [11].

Based on this, students are required to be able to study independently. The analysis of the use of SPOT in the process of learning and learning in the University of Indonesia is very important, so that it can be known to what extent the use of SPOT can be used as self-directed learning for Students at the Universitas Pendidikan Indonesia especially in Culinary of Education Study Program.

Analyse self-direct learning that has been applied at the University of Education Indonesia with the SPOT learning system. students are required to learn independently, students organize the learning process in the form of self-initiative, independence, self-regulation, self-exploration and freedom of learning to achieve optimal learning outcomes. With a variety of advantages possessed, education with an independent learning system must continue to be developed, especially by integrating information and communication technology which is currently growing rapidly. This research has shown that self-directed learning has a positive impact associated with many constructs in the field of education: academic performance, aspirations, creativity, and curiosity [12].

The purpose of this study is to synthesize current research on self-directed learning models through a meta-analytic review of important variables that are nomologically related [13]. In addition, we will analyse the practical application of self-directed learning using the SPOT Application.

2. Methods
The next step is to collect data from 61 student respondents Culinary of Education Study 2016 using SPOT UPI. The variables studied were the documentation process on SPOT, SPOT operation, and SPOT accessibility. The research instrument used in this study was a questionnaire. The questionnaire used was a closed questionnaire using a Likert scale with a scale of strongly agree (SA) = 4, agree (A) = 3, disagree (D) = 2 and strongly disagree (SD) = 1 for positive statements and vice versa for negative statements. The instrument of this study was taken from the reference of scientific journals that had previously conducted research on information systems in learning. So that researchers adopt and further develop the instrument and do not conduct validity tests and relativity tests [14,15].

| No | Question |
|----|----------|
| 1  | SPOT helps me to collect assignments during learning. |
| 2  | SPOT can reflect what I have learned during learning. |
| 3  | By using e-Portfolio, I can remember and reopen what I have learned during learning. |

Table 1. Questionnaire for the documentation process on SPOT.
Table 1. Cont.

| No | Question |
|----|----------|
| 4  | By using e-Portfolio, I can summarize my learning content regularly. |
| 5  | By using e-Portfolio, I can evaluate what I have done during learning. |
| 6  | I can see my learning progress and personal growth through the SPOT system. |

**Table 2. Questionnaire for SPOT operation.**

| No | Question |
|----|----------|
| 1  | In general, SPOT is easy to use / operate. |
| 2  | I feel helped by the tools / facilities available in this SPOT. |
| 3  | If there is a problem with SPOT, I can easily find out the problem and how to solve it. |
| 4  | The login process to the SPOT system is easy. |
| 5  | SPOT provides sufficient functions needed to document activities during learning. |
| 6  | The appearance of SPOT is good and organized. |
| 7  | The process of uploading files on SPOT can be done easily. |
| 8  | I can easily review SPOT. |
| 9  | Logout can be done easily. |
| 10 | Display of SPOT can be easily understood and operated. |
| 11 | SPOT settings can be set according to my needs. |

**Table 3. Questionnaire for SPOT accessibility.**

| No | Question |
|----|----------|
| 1  | Enables me to online interact or guide with lecturers during learning. |
| 2  | In this website is explained the purpose of SPOT. |
| 3  | SPOT content is structured and assists student in the process of collecting task documents. |
| 4  | SPOT can develop my potential and expertise during learning, because my task documents can be seen and re-learned at any time. |
| 5  | In SPOT, my task documents can be monitored at any time by the lecturer. |
| 6  | I can receive feedback from lecturers regarding task documents that I uploaded on SPOT. |
| 7  | SPOT is an innovation that can help and benefit all parties (students, campus supervisors, and industry advisers). |

2.1. **Data processing**

This stage is processing data using the help of the SPSS version 24 program and Ms. Excel 2013.

2.2. **Data analysis**

After the data is collected, the next step is to analyse the data. The first step to analysing questionnaire data is a description of the data. Data description is describing existing data in order to obtain a real form from the respondent, so that it is easier to understand. The data description steps will be carried out as follows [16]: (1) Make a table based on the questionnaire number and the respondent's number, then enter the scores of each questionnaire item from each respondent. (2) Calculate the total score for each
research variable. (3) Change the total score for each research variable into a value (percent) with the formula:

\[ \text{Value} = \frac{\text{total score}}{5 \times \text{number of question}} \times 100\% \]

(4) Calculate the statistical quantities of each research variable, namely the average, median, mode and standard deviation.

If the percentage value has been obtained, then the designation of product quality is made based on the Rating Scale measurement scale. Rating scale is the conversion of the results of data obtained from quantitative to qualitative [17]. The table below is a rating scale used to determine the feasibility of SPOT-UPI.

Table 4. Feasibility category based on the rating scale.

| No. | Score in Percent (%)   | Feasibility Category       |
|-----|------------------------|----------------------------|
| 1.  | 0% - 25%               | Very inappropriate         |
| 2.  | >25% - 50%             | Not feasible               |
| 3.  | >50% - 75%             | Fair enough                |
| 4.  | >75% - 100%            | Very feasible              |

3. Result and discussion

3.1. Result

The results of the retrieval of data from 61 respondents’ students Culinary Art of Education Universitas Pendidikan Indonesia student 2016 using SPOT UPI. The variables studied were the documentation process at SPOT, SPOT operational and SPOT accessibility.

Table 5. Questionnaire about the Documentation Process on SPOT.

| No | Questions                                                                 | Percentage |
|----|---------------------------------------------------------------------------|------------|
|    |                                                                           | Strongly agree | Agree | Disagree | Very disagree |
| 1  | SPOT helps me to collect assignments during learning.                     | 40         | 21    | 0         | 0            |
| 2  | SPOT can reflect what I have learned during learning.                     | 41         | 18    | 2         | 0            |
| 3  | By using e-Portfolio, I can remember and reopen what I have learned during learning. | 41         | 20    | 0         | 0            |
| 4  | By using e-Portfolio, I can summarize my learning content regularly.     | 41         | 20    | 0         | 0            |
| 5  | By using e-Portfolio, I can evaluate what I have done during learning.    | 41         | 18    | 2         | 0            |
| 6  | I can see my learning progress and personal growth through the SPOT system. | 41         | 18    | 2         | 0            |

The total score of the observation of the data regarding the process documentation on the use of SPOT number of 1,337 (91.3%) of the expected score is 1,464 (100%). Based on the chart eligibility criteria [18], Percentage of total scores are included in the category of Eligible. Presentation of the scale according to the percentage of the total score in detail can be described as shown below:
Figure 1. Scale category eligibility test results documentation on SPOT.

Table 6. Questionnaire about SPOT operation.

| No | Questions                                                                 | Percentage |                      |                  |                  |
|----|--------------------------------------------------------------------------|------------|----------------------|------------------|------------------|
|    |                                                                          | Strongly agree | Agree | Disagree | Very disagree |
| 1  | In general, SPOT is easy to use / operate.                               | 55         | 6        | 0     | 0              |
| 2  | I feel helped by the tools / facilities available in this SPOT.          | 50         | 11       | 0     | 0              |
| 3  | If there is a problem with SPOT, I can easily find out the problem and how to solve it. | 30         | 20       | 11    | 0              |
| 4  | The login process to the SPOT system is easy.                            | 61         | 0        | 0     | 0              |
| 5  | SPOT provides sufficient functions needed to document activities during learning. | 20         | 30       | 11    | 0              |
| 6  | The appearance of SPOT is good and organized.                            | 30         | 30       | 1     | 0              |
| 7  | The process of uploading files on SPOT can be done easily.               | 44         | 17       | 0     | 0              |
| 8  | I can easily review SPOT.                                                | 50         | 11       | 0     | 0              |
| 9  | Logout can be done easily                                               | 60         | 1        | 0     | 0              |
| 10 | Display of SPOT can be easily understood and operated                    | 40         | 21       | 0     | 0              |
| 11 | SPOT settings can be set according to my needs                           | 0          | 0        | 61    | 0              |

The total score of the observation of data concerning operations in progress on the use of SPOT number of 2,369 (88.3%) of the expected score is 2.684 (100%). Based on the chart eligibility criteria [18], the percentage of the total score is included in the category of Most Eligible. Presentation of the scale according to the percentage of the total score in detail can be described as shown below:

Figure 2. Scale category eligibility test result operating on uses SPOT.
Table 7. Questionnaire about SPOT accessibility.

| No | Questions                                                                 | Strongly agree | Agree | Disagree | Very disagree |
|----|---------------------------------------------------------------------------|----------------|-------|----------|---------------|
| 1  | Enables me to online interact or guide with lecturers during learning.    | 10             | 30    | 21       | 0             |
| 2  | In this website is explained the purpose of SPOT.                         | 0              | 30    | 31       | 0             |
| 3  | SPOT content is structured and assists student in the process of collecting task documents. | 11             | 25    | 35       | 0             |
| 4  | SPOT can develop my potential and expertise during learning, because my task documents can be seen and re-learned at any time. | 30             | 31    | 0        | 0             |
| 5  | In SPOT, my task documents can be monitored at any time by the lecturer   | 30             | 31    | 0        | 0             |
| 6  | I can receive feedback from lecturers regarding task documents that I uploaded on SPOT. | 30             | 31    | 0        | 0             |
| 7  | SPOT is an innovation that can help and benefit all parties (students, campus supervisors, and industry advisers). | 40             | 21    | 0        | 0             |

The total score of the observation of data on the accessibility of the use of SPOT number of 1,203 (80%) of the expected score is 1.504 (100%). Based on the chart eligibility criteria [18], the percentage of the total score is included in the category of Most Eligible. Presentation of the scale according to the percentage of the total score in detail can be described as shown below [18]:

![Scale Diagram](image)

Figure 3. Scale category eligibility test results accessibility at uses SPOT.

3.2. Discussion

From the results of data analysis can be explained that the use of SPOT as the application in the learning process is said to have been very decent views from the observation data processing as much as 91.3% is very feasible SPOT applications used in the learning process. Feasibility test results on the use of SPOT operation by analyzing the results of observation of the student, otherwise has been very decent. Said to have been very decent views from the observation data processing as much as 88.3% is very feasible operation SPOT applications used in the learning process. Feasibility test results on the use of SPOT accessibility by analyzing the results of observation of the student, otherwise has been very decent.
The use of ICT in learning easier for lecturers and students [19,20]. The use of ICT in the learning process covers all aspects, from the learning and assessment process [21,22]. The use of ICT provides convenience in the assessment process, other than that facilitate interaction between students and teacher without having to face [23-25].

4. Conclusion
From the exposure of the feasibility study SPOT system as in e-learning applications can be concluded that, SPOT is very fit for use as an application in e-learning it is supported from the observation to the users such as students. Utilization of SPOT as the implementation of ICT and learning tools can provide motivation to the students, because the range is in a very broad SPOT. Interaction between teacher and students can take place anytime and anywhere, not limited by time. In addition to the teacher and students can monitor the progress of the learning process that lasted one semester. However, this study requires special skills of teacher and students because they are required to master a variety of applications associated with the Internet, other than that.

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