College Students Perceptions of Web-Based Learning in Basic Mathematics Subject

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Abstract. With the emergence of the Internet, e-learning has increasingly become the promising solution that continues to grow day after day. Considering students’ perception toward e-learning is important in successful development of e-learning in higher education, since attitude of user towards application of information technology is one of the most effective factors. This study aims to determine students’ perceptions of using basic math textbook for physics with web-based. Students’ perceptions are closely related to their achievement. The learning media in accordance with the desire of students will make them motivated. This research is qualitative data analysis was done descriptively. The data obtained in this study comes from researchers as the main instrument, the data questionnaire and interview data is unstructured. The results are students’ perceptions of using basic math textbook for physics with web-based are in the positive category.

1. Introduction
Introduction to mathematics is a subject which is taught to students in STKIP PGRI West of Sumatra to prepare or equip students about mathematics. Introduction to mathematics is not only learned in mathematics education department but also in physics. The introduction to mathematics for the study program physics learn about The system of real numbers and its properties, Inequality and absolute value, Coordinates Cartesian, Functions and graphics functions, Trigonometry, Systems of linear equations, Probability and statistics, Geometry, Logarithms, Limits and continuity, Derivatives and applications in physics, Integral and applications in the physical science.

The results of interviews with students who had been taken introduction to mathematics regarding the difficulties in understanding the material. They often only find numbers, formulas, charts, and die pictures, thus all things make the students feel less interested and they think the materials are boring. Students commonly use the textbook as an aid in studying for exams, but many students do not read the textbook to the extent that they should (Burchfield & Sappington, 2000; Clump, Bauer, & Bradley, 2004; Sappington, Kinsey, & Munsayac, 2002; Sikorski et al.,2002). Therefore, we need a media that is able to increase the attractiveness to students so that it can improve students’ motivation and understanding. This is in accordance with the views expressed by Daryanto (2010: 5), the usage of media in the learning process can clarify the message that is not too verbal, overcoming the limitations of space and time, and excite student’s learning.
The use of instructional media should provide positive impact on student achievement. Like awise the use of web as a multimedia learning for Basic Mathematics subject should have positive impact for student achievement. Use of media or multimedia learning that is not in accordance with the students expectations can make the students fell less interested in learning, therefore the student can not achieve the achievement desired learning both in process and learning outcomes(Islami, 2009).

Several studies have been published exploring student perceptions and expectations regarding e-learning (Wang, 2004). Recent studies by the National Center for Education statistics show a growing demand and acceptance of online learning (Waits & Lewis, 2003). Online access can affect how successful students will be in Web-based classes (Anawati & Craig, 2006). Previous research into online collaboration and education in international environments indicates that maintaining contact and access is essential to educational success or students' affective and cognitive development. This contact involves (a) keeping students involved in online projects and (b) building a kind of online community essential to educational success (Vogel et al., 2001).

2. Method
The research method used is qualitative method. Data collection techniques used interviews, observation, and documentation. While the technique of selecting informants using purposive sampling is in some students that take Basic Mathematics Courses. The technique of data validity using triangulation technique of source and method with data analysis start from data collecting, data reduction, data presentation, verification. Research subjects are Physics education study program students who take the basic mathematics courses amounted to 25 people. Research data were analyzed using the percentage distribution (%).

3. Result
The result of filling the questionnaire for 25 students.

| No | Indicator                                                                 | Yes | No   |
|----|---------------------------------------------------------------------------|-----|------|
| 1  | Do you prefer learning using web-based instead of conventional learning? | 80% | 20%  |
| 2  | Is the web-based learning application useful?                            | 88% | 12%  |
| 3  | Do you interesting with web based learning?                              | 84% | 16%  |
| 4  | Do you think web based learning can help you to understand the material? | 88% | 12%  |
| 5  | Are you motivated to study material with using web based learning?       | 76% | 24%  |
| 6  | Whether with your web-based learning is not necessary face to face with  | 20% | 80%  |
|    |    |    |      |
| 7  | Whether with web-based learning you can apply the materials in everyday   | 56% | 44%  |
|    |    |    |      |
| 8  | Are you more diligent with web based learning?                           | 60% | 40%  |
| 9  | Is the web based learning increase you learning achievement?             | 60% | 40%  |
| 10 | Is the web based learning can make your time in study the material more  | 68% | 32%  |
|    |    |    |      |
| 11 | Do you find any difficulties in understanding the material with web based| 16% | 84%  |
|    |    |    |      |
| 12 | Do you like the web-based assignment method?                             | 76% | 24%  |
| 13 | Do you agree if web-based learning is applied to the Basic Mathematics    | 76% | 24%  |

Criteria: < 50% not good, 50-70% good and >70% very good.

Based on the results of questionnaires by 25 students in table 1, then basically the perception of students on web-based learning process is good enough, useful, interesting and motivating students to
study the materials. This is seen with the percentage obtained > 70% of students answered yes with very good category. Based on table 1, there are also some questions that are categorized as unfavorable percentage of student answers <50% that is related to student statement that although using web-based learning still need to face to face with lecturer, and web-based learning still can’t apply learning in daily life.

The results of the questionnaire that has been analyzed also stated that there is difficulty in understanding the material by using web. This is due to several reasons such as internet connection, students' ICT skills are still low, and students are not familiar with web based learning. As explained by Surjono (2009), that the access gap in Indonesia between those residing in urban areas with rural areas and supporting facilities is an obstacle to the use of the internet. Web-based learning is a learning that can be accessed anytime and from anywhere, besides learning materials can be enriched with various learning resources including multimedia and can also be updated quickly by teachers. This learning also facilitates interaction between students and lecturers. Web-based learning can also support government programs in reducing paper use. Therefore familiarize students learn to use the web needs to be done in order to improve the learning process flexibility and interactivity can be realized.

4. Conclusion
The findings showed that the students' perceptions of the web-based learning in basic mathematics courses responded well by the students.

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