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DEVELOPING MODULE FOR COMPUTER SCIENCE STUDENTS' VOCABULARY MASTERY

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This development research aimed to develop a learning module for students of Computer Science, to determine the feasibility of the module, and to determine the students' response towards the module. This study used Research and Developmet (R&D. The module was developed based on the results of the research. The results of the feasibility of the module showed the following points: 1) The material expert and the lecturer of the Computer Science Department gave percentage of 69,63% which means that the developed module gets "B" score The media expert and the lecturer of Computer Science Department gave percentage of 75,3% which means that the developed module gets "B" score. The students of Computer Science Department through the questionnaire also gave positive response. It can be concluded that the module for Computer Science Department students is eligible and can be used as media to teach English.

Keywords : *Computer Science, Module, Research and Development*

INTRODUCTION

Vocabulary is knowledge of word and meaning. Vocabulary is all the words in a language that are familiar and used by someone to communicate with each other (Handayani), To own excellent vocabulary knowledge, it is beneficial to infer the meanings of an English sentence but a lot of learners think that memorizing English vocabulary is something difficult especially for long or infrequently used vocabularies (Harmon). There are four categories of vocabulary i.e. Listening, Speaking, Reading, Writing vocabulary. So, in English there are four skills that should be mastered, and each skill needs vocabulary mastery (Lewis in Tanto).

Learning vocabulary is fundamental to support the learners to master English. The students will understand paragraphs and texts better if they have good vocabulary. Teaching vocabulary is very important for all education level. One of them is Universitas Duta Bangsa Surakarta.. Computer Science faculty is one of faculties in Universitas Duta Bangsa Surakarta preparing the students to face the global world especially in business. They are four programs in this faculty namely: Information System or Sistem Informasi (SI), Computer Engineering or Teknik Informatika (TI), Network Computer Engineering or Teknik Komputer Jaringan(TKJ) and Informatic Managemet or Manajemen Informatika.

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English for Computer Science is a teaching approach in order to achieve the goals or competence of the students to master English. The students of computer science department are expected to have competence related to the computer science field. Students who graduate from the department are expected directly to work. One of the ways to prepare them is by learning English. When the students are qualified, they will be able to apply for a job successfully. In teaching English to Computer Science department, a lecturer should have appropriate media to make the learning more interesting. One of media can be a module.

Module is relatively short self-contained independent unit of instructional designed to achieve a limited set of specific and well-defined educational objectives Meyer (in Lasmiyati), component of module consists of three parts, namely: introduction, contents, and end . The introductory section consists of cover, introduction, table of contents, guide for readers. The content section consists of the division of subject matter, each of which consists of several components: subtitles, student worksheets, material descriptions, and questions. The final section contains glossary and bibliography (Dasna et al). Module for Computer Science Department students is eligible and can be used as media to teach English (Kusumawati. et. Al).

However, during the learning, the researcher found some problems in the students of Computer Science Department, especially when learning English for Specific Purposes (ESP). The problems were: students lack vocabulary. Most of the students had relatively low learning motivation, and the students were difficult to translate the Computer Science terms into English. Furthermore, the students were difficult to learn English (ESP) because module used contains more general English.

Based on the problems identification above, the researcher choose to develop module as media instructional that can make students to practice and improve their vocabulary related to their study programme. By doing such a study, it is hoped that it can help students to learn English more easily and successfully.

RESEARCH METHOD

In this research, researcher developed module as learning media in the form of a vocabulary and relate it to sentence. The method used is research and development (Research and Development). Research and development is a research method used for a particular product and testing the effectiveness of the product. This development research refers to Borg & Gall research in the development of (Sugiono), which is adapted to the needs of researcher. Researcher have a limited time that is determined, so researcher choose eight of the ten stages but still include what will be studied according to the settings chosen so that researchers focus and can be completed immediately. Then the researcher simplifies the steps according to the needs and context of the research as follows:

1. Needs analysis, was carried out in this step to provide students with the appropriate learning needs and objectives.
2. Determine the specific material, after knowing the students' needs related to the design of supplementary materials, the next step was to determine the appropriate material and task that put in the product.
3. Design Product, In this step, the researcher designed the first draft of product developed.

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4. Design validation. The process for assessing whether a new work design or a new product is rationally fit for use by invoking the judgment of experienced experts.
5. Design revision, product revised based on limited trial research.
6. Product testing, conducting limited trial.
7. Usage testing, Product revised based on limited trial results.
8. Dissemination and implementation for related purpose.

The subject of this research are, the lecturer of Computer Science Department of Universitas Duta Bangsa Surakarta (to provide input on the materials used), material experts, media experts, the English lecturers and the second semester students of Computer Science Department of Universitas Duta Bangsa Surakarta amounted to 22 students. To get the data, these followings thing were used:

Questionnaire

The instruments used in this research and development includes student needs questionnaires and student satisfaction questionnaires for the second semester of information system. This questionnaire about student needs was used to collect information about student responses to develop vocabulary. This questionnaire contains a statement of students' needs for vocabulary by filling in the statement column. While the student satisfaction questionnaire was used to obtain data on student satisfaction after using the product. However, before the questionnaire was given to students, the questionnaire was validated first by the instrument validator. The students' response towards the module of English for ComputerScience were taken from 22 students who filled the questionnaire containing 20 questions. The answer from these students were categorized into: 1 = *disagree*,2 = *less agree*, 3 = *hesitate*, 4 = *agree*, 5 = *strongly agree*. *Agree* and *strongly agree* answers are considered positive. Meanwhile, *disagree, less agree*, and *hesitate* answers belong to negative response. The percentage of students' response is calculated using the formula below:

$$\%P = \frac{F}{N} \times 100\%$$

Legend:
$\%P$ = percentage score
F = frequency
N = total number of respondents

The student's response is said to be positive if the average percentage of student responses is greater than or equal to 60%.

The following table shows the frequency distribution of respondents response to the product:

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Table 1: The frequency distribution of respondents response to the product

Category response	Category score
Very Positive	80-100 %
Positive	60 – 80 %
Negative	40 – 60 %
Very negative	20 – 40 %

Interview

Interview is conducted to obtain information about vocabulary used previously. And to know the extent of the students interest in learning English. Interview is also used as guidelines for asking the material to be summarized in the Module vocabualry. The alternative answers using the Likert Scale provided for the media feasibility questionnaire with 5 alternative answers, which are very good, good, fair, less, poor.

Validation

Validation is a measure that shows the level of validity or authenticity of an instrument. Valid instruments have high validity and low validity for instruments that are less valid. (Arikunto, 2010) instrument validity test is intended to achieve accurate measurements. (et al, 1966) say a product is said to be true if it can calculate what it should count. Product validation is carried out to assess whether vocabulary developed and learning is valid or not. The product validity test is carried out by a team of experts consisting of material experts and media experts.

Reliability

Data analysis techniques used to analyze the result of validation is to calculate the final value of the item in question. The following formula calculates the average value. According to (Arikunto, 2010), reliability is then interpreted using the percentage of results that can be calculated using the following formula:

$$P = \frac{\Sigma x}{\Sigma xi} \times 100\%$$

Information:
P = Eligibility
ΣX = Number of assessment answers
ΣXi = Highest number of answers

Table 2: The percentage analysis eligibility criteria for expert validation, lecturer responses and students.

No	Percentage (%)	Eligibility Category
1	< 21 %	Very improper
2	21 - 40 %	Less feasible
3	41- 60 %	Decent enough
4	61-80 %	Feasible

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FINDING AND DISCUSSION

The researcher identified the need for vocabulary in learning for lecturers and students. Identify the need for vocabulary by giving questionnaires to students and conducting interviews with lecturers from Universitas Duta Bangsa Surakarta. The purpose of conducting this analysis is to assist lecturers in the teaching and learning process so that the difficulties experienced by students can be overcome by using learning media that will be developed by researchers. Questionnaires and interviews were conducted on lecturers and students of Informatic Management at the second grade in the academic year 2022/2023.

To know the eligibility of the developed modules, it was done through some validation processes by some experts. Product appropriateness validation for a module was done by a material expert, media expert, and lecturers of Computer Science Department. After that module revision process was done with the students of Computer Science Department. The result of this process was the decision whether the module is worth to test in the field or not. After that, the module was implemented among the Computer Science students of the second semester. Field trials were conducted with 22 students. The researcher introduced the module, explained the contents of the module, then explained the benefits of modules for learning of Computer Science subject. After that, the researcher did practice teaching to the students. The students looked enthusiastic when learning English using the module.

After learning using the module, the students assessed the module through a questionnaire. The researcher provided questionnaires containing 20 questions to 22 students. The questionnaire used Likert scale of 1-5. This functions to obtain the data of the students interest towards the module. Based on the questionnaire response it showed that the module, which was developed under aspects of vocabulary and then use them to make sentences got students' positive response.

To know the students' response towards the module, it was done through interview. The interview results showed that the students were interested and more motivated in following the lesson by using the English module. In addition, the students informed that the English module made the learning interesting. In sum, the results of the interviews showed that the students gave positive response towards the use of module during the learning process.

Expert Judgment

a. Media Expert Validation Result

Media that has been finished and approved by the supervisor, then brought to the expert forassessment. The media is validated by two experts, namely media experts and material experts.

Table 3. Media expert validation results

Criteria	Score	Max score	Percent	Category
Graphic Feasibility aspect	25	44	69,63%	Feasible

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The media expert validation result table gives the results of the validity of the learning media andshows a presentation of 69.63% and can be categorized as feasible.

b. Learning Expert Validation Result

Table 4. Learning expert validation results

Score	Max score	Percent	Category
4	37	75,3 %	Feasible

On the table learning expert validation results give the results of the validity of the learning material and shows a presentation of 75.3% and can be categorized as feasible.

The Try-Out

Learning media product testing activities generate data on the effectiveness of the learning media used. Exercises are carried out by giving tests to students according to the material being tested. It is known that from the test scores with a total of 22 students all completed 100%. It is indicated that the learning media received are in accordance with what is expected score.

Revision

The media expert gives suggestion from the product. The suggestion can be seen in the table below:

Table 5. Revisions from media experts

Suggestion	Revision
Additional learning objectives	Learning objectives been added
Give more detail materials related to computer and technology	Detail materials related to computer and technology have been added

Revisions are made on the advice of media experts who have validated this product.

CONCLUSION

Based on the results of the research, it can be concluded that the module of ESP for students of Computer Science Department of Universitas Duta Bangsa Surakarta is eligible and therefore can be used for English learning media. However, it is suggested that the next researches can be focused on developing English materials for Computer Science which specializing in other skills, such as listening, writing, speaking, and reading.

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