

**E - MODULE DEVELOPMENT ONLINE**  
**KKPI SUBJECT SPREAD-SHEET AT VOCATIONAL HIGH SCHOOL**  
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**Abstract:** The online learning model is an effective approach in the open and distance education (ODE). This approach allows the formation of a virtual classroom, where teachers still can submit material directly and collaboratively despite being in separate locations. Unfortunately, the limitations of learning resources such as books or modules of *Keterampilan Komputer dan Pengelolaan Informasi* (KKPI; Computer Skills and Information Management) vocational subjects is still scarce and limited. This resulted in less materials that are easy to understand, particularly with regards to illustrations, sketches, and modeling. Therefore, it is necessary to provide instructional media solutions that are flexible and can be used together.

This study aims to develop teaching materials with KKPI subjects using the spreadsheet software level to help improve the quality of vocational distance learning.

Development models used in this study was adapted from Sugiyono development steps, using a questionnaire on individual trials (media expert & subject matter experts) as data collection instruments and the respondents/students for the test user. While the data analysis is used to process data from media experts, subject matter experts and respondents/percentage of students using the technique.

Technology-based application development, Information and Communication Technology (ICT) is very appropriate in order to improve the quality of learning. This is in line with the mandate of the utilization of ICT strategic plan as outlined in the Ministry of Education and Culture in 2012. ICT solutions by utilizing the internet to bring collaborative learning network that is widely accessible, anytime, and anywhere. Result of the development of teaching materials in the form of an e-module KKPI subjects will play a role in improving the quality of vocational ODE to provide an equal educational service and creating a golden generation of Indonesia.

**Keywords :** e-module, KKPI, development

## INTRODUCTION

The rapid development of Information and Communication Technology (ICT), enabling the development of better information services especially in the learning process. Integration of ICT into education world has created a huge impact. By utilizing ICT sophistication, quality and efficiency of education can be improved. One product of the integration of ICT into education is online learning. Online learning models are widely applied in open and distance education (ODE) because the learning process can be done directly and simultaneously although teachers and learners are in remote locations.

In general, online learning has the ability to solve various problems, such as distance, time, cost, and limited teaching resources. Nevertheless, there are still some specific issues that need attention, one of which is the limited learning media. This issue resulted in the exposure of the materials which are less understandable, particularly with regards to illustrations, sketches, and modeling. Therefore, the required solutions and flexible learning media can be shared.

This study aims to develop an e-module on material processing software to increase the number of distance education services, with emphasis on complete learning system (mastery learning) and to test the feasibility of the application of e-learning module as interactive media .

ICT solution by utilizing the collaborative learning network that brings Internet is widely accessible at anytime, anywhere. Result of the development of e-module will be instrumental in helping to provide an equal educational services and creating a golden generation of Indonesia. The purpose of this development, namely: (1) Develop an e-odule online spreadsheets software to help improve the quality of distance education services, (2) testing results to ensure that the product developed is feasible .

Distance education is the education of the students apart from teaching and learning using a variety of learning resources through communication technology, information, and other media (Act No. 20 of 2003). Teachers who want to learn in order to improve their qualifications or competence do not have to leave their teaching job, but still can learn.

Distance education can be conducted on all lines, levels, and types of education. Distance education serves to provide educational services to community groups who can not attend face-to- face education or regular. Distance education are maintained in various forms, modes, and supported by means of coverage and service learning as well as assessment system that ensures the quality of graduate education in accordance with the national standard.

ODE serves as a form of education for students who can not attend face-to -face education without reducing the quality of education. ODE expansion aims to increase equitable access to quality and relevant education as needed. ODE has the characteristics of an open, self-learning, learning thoroughly, using information and communication technology, using technology other educational and/or college-integrated learning.

In the field of educational technology, the concept of electronic learning is the study or use of electronic devices, especially computers for storing, analyzing, distributing information in the educational process. Etymologically, the e-module consists of two parts, namely “e”, which means electronic and “module”.

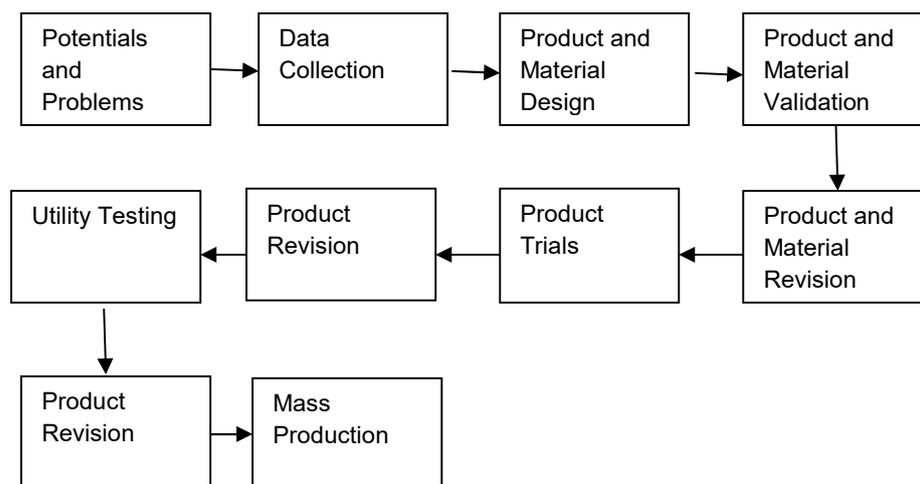
While the module according to Russell (in Setyosari 1991:8) is a unit (unit) learning package related to a single concept lesson materials unit. Associational Communication and Technology (in Setyosari, 1991:9) also argues module is a collection of learning experiences

designed to achieve specific objectives a group of related, usually consisting of several meetings. Another definition of the modules was also expressed by Santyasa (2009:8) as a way of organizing learning materials containing sequencing which refers to making the presentation order of the subject matter, and synthesizing that refers to an attempt to demonstrate to learners the links between facts, concepts, procedures and principles contained in the learning materials. From those mentioned opinions expressed, it can be concluded that the e-module is a computer aided learning package designed systematically to demonstrate to the students about the relationship between facts, concepts, procedures and principles contained in the learning materials in achieving a certain goal.

## METHOD

Model of development that will be used is taken from the steps of Sugiyono development (2009 : 409 ) which has been modified as follows: (1) Potential and problems, (2) data collection, (3) Product design and materials, (4) validation and product design materials, (5) Revised product design and materials, (6) test products, (7) Revision products, (8) the use of test, (9) Revision products, (10) The mass production.

Step-by- step development of products that have been modified according Sugiyono shown in Figure 1.1.



**Figure 1.1 Model of Product Development**

## RESULTS

At the trial, there were 30 students of SMK Negeri 2 Jombang on KKPI subjects acted as the subjects (trial data can be found in Annex Data Report on Testing Students). From the table it can be seen, TSEV1 states scores of students first, TSEV2 claimed scores of students both, until TSEV30 to declare scores of students to -30. S-MAX ideal declared scores of students, and V ( % ) claimed validity.

The relationship between these factors are used to calculate the validity (V) between  $\Sigma TSEV$  to  $\Sigma S - \max$  using the following equation:

$$V = \frac{TSEV}{S - \max} \times 100\%$$

$$V = \frac{1387}{1560} \times 100\%$$

$$V = \frac{1387}{1560} \times 100\%$$

$$V = 88.91\%$$

Based on eligibility criteria, the percentage of test scores included is in the valid qualification. In general, it can be concluded that e-module has been interesting and valid or fit for use as a medium of learning according to the test results. However there are some drawbacks that must be refined so that the robotics module can be used as a means of supporting students to learn independently.

## CONCLUSIONS AND RECOMMENDATIONS

From the description, it can be concluded that the research is done to provide a medium of learning as a supplement to the existing learning media, the media can be a tool in the learning process so that learning does not just focus on the conventional learning.

The following suggestions are provided by researchers with the hope that it can be utilized and implemented by the parties concerned in the effort for the success of student learning objectives optimally. The suggestions can be formulated: (1) for students: students are expected to learn the other articles that are relevant, so that students have a greater knowledge, (2) for teachers: teachers should be able to observe the development of students that can be addressed as learners who coined the problems that can interfere with learning activities.

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