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## **DEVELOPMENT OF E-MODULE BUSINESS RECORDING USING QR CODE-BASED DIGITAL APPLICATION TO IMPROVE SOFT SKILL OF SMES DEAF DISABLED PERSONS IN DENPASAR CITY**

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### **ABSTRACT**

This research was compiled with the aim of developing learning materials for E-Module business recording using a QR Code-based digital application by testing the level of needs for users, assessments from expert validators, as well as participants' understanding and evaluation of their use. In this study, the type of research used is the type of research development Research & Development (R&D) using the ADDIE model. This model consists of four stages of development namely Analysis, Design, Development, Implementation and Evaluation. This study uses research instrument methods, namely by observation, interviews, questionnaires and also validation with research subjects a number of 12 MSMEs with Deaf Disabilities in Denpasar City with incidental sampling techniques. The E-Module for business recording using a QR Code-based digital application is stated to be very good for use as a learning medium with the results of validation details for material experts of 4.29 and validation for media experts of 4.37 out of a maximum value of 5.00. The results of the response of MSMEs with Deaf Disabilities to E-Modules are 4.1 out of a total maximum value of 5.00 which is categorized as very good. From these results, it has been shown that the development of the E-Module material for business recording using a QR Code-based digital application is feasible to be used in learning material for Deaf Persons in Denpasar City to improve the understanding of MSME actors regarding business recording.

### **KEY WORDS**

E-module, business recording, small medium enterprise, digital application, deaf disabled persons.

In the era of the development of information and communication technology 4.0, it has developed widely so that it can indirectly affect several sectors of people's daily lives, one of which is in the economic field. The existence of an information technology requires that all activities be carried out with a process skill. Advances in technology in people's lives today have changed the culture, lifestyle and perspective of the community in carrying out activities and all their activities. The materials that exist today are very different from the past where the development of information technology is increasingly rapid in the current era of globalization, especially in information and the development of existing materials. This change is also accompanied by repeated behavioral changes in the process of understanding the material [1]. In today's era, technology enters our lives easily, including in the field of micro, small and medium enterprises (SMEs).

It is unavoidable that the influence of this technology on the SMEs world has changed the lifestyle of business actors, both in their activities, socializing, playing and learning in the entrepreneurship process. Technological developments also support convenience for business actors in providing effective opportunities to develop their businesses in a variety of ways. Changes from these innovations have caused the SMEs world to experience changes in the field of business that must be integrated with the use of the internet and technology that can be widely accessed. The system implemented on SMEs in the digital era has brought renewal in the development of the business world. SMEs need a business mentoring process through the acceptance of new knowledge in interesting and fun knowledge material that can be done by utilizing technology so that it can support the ongoing mentoring process



and can create good motivation in the knowledge acceptance process [3]. The mentoring system for providing knowledge in today's era is very different from that in the past. A change is needed in the procedure for providing knowledge and appropriate materials in order to attract the attention of users so that they are interested in following the knowledge provided. This certainly helps SMEs business actors in knowing new things. One of the things that can be developed in the inclusion of interesting material in the midst of the technology era is by developing an E-Module. E-Module is a module in the electronic version that can be accessed on electronics such as laptops or devices and is designed in such a way with the required software [4]. E-Module contains materials, methods, limitations and systematic design evaluations that are attractive in order to achieve the competencies expected to match the level of complexity in electronic media. This interesting thing makes the material more communicative in understanding the existing material [5]. This is also in line with [6] where the E-Module can increase the results of interest in learning for users who want to know new things. The electronic module displays information in the format of a digital book that can be presented electronically by using a flash disk, hard disk, or CD that can be read using a computer, laptop or device. So this E-Module is very well used in increasing the involvement of users in the learning process of something that supports their business activities. The development of E-Module will be applied to SMEs, especially in Business Recording. Business Recording in a business cycle is one of the important aspects in the cycle of business activities. The presence of digital applications in Business Recording can provide more experience for users to be able to take advantage of digital technology and provide value [7]. A digital-based application program is a ready-to-use program or a program created to be able to carry out a function for other users or applications [9]. Business Recording in SMEs is carried out by business actors in their business, especially in the process of buying and selling products or services. Along with the times and technology, the efficiency and effectiveness of Business Recording began to be made easier with digital-based applications in the development of business services [8]. Several digital applications began to appear in the midst of today's technological developments. One of the existing digital applications is the "Si-Apik" Business Recording application. The Si-Apik application is an application for recording business transactions from Bank Indonesia that can help provide standards for preparing business reports. So that this digital application can be used as a provision of knowledge in recording digital-based business transactions [10]. With the massive push for the development of digital applications, there is a risk that the group that is left behind is the Deaf Disabled Persons. According to data from Pusdatin and the Ministry of Social Affairs [12] in 2019, the number of Deaf Disabled Persons in Southeast Asia reached 180 million people, of which 7.03% were in Indonesia. As well as for Denpasar City itself, the latest data obtained in 2011 at the Denpasar City Social and Employment Service was recorded as 1,301 people [13] Among these, including SMEs which are managed by the business actors themselves. In addition, Denpasar City was named a Disability Friendly City by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as an inclusive city by jointly signing a partnership agreement to raise awareness for people with special needs and has issued Mayor Regulation (Perwali) No. 35 of 2011 related to Efforts to Increase the accessibility of Persons with Disabilities so that their rights must be considered. Currently, in the era of technological development, business actors with Deaf disabilities still have minimal access to material that can be used as a reference for them in managing their business, especially in managing business records. The Business Recording process carried out in business processes is still conventional when the ability of Business Recording skills must be balanced with the dynamic development of the era in using digital platforms to build the advantages of business actors in the era of technological development. Limited access to understanding the material, as well as the lack of practitioner assistants who can assist business actors, especially in understanding their language, namely sign language. Especially in this technological era, the orderly presentation of business records on SMEs is based on business transaction reports that are presented in a systematic and structured manner from time to time. This can be used as a reference to be able to find out the performance of business development during the run [11]. To support all of this, an



interactive E-Module is needed which in addition to containing material supporting the Business Recording business of the Deaf Disabled Persons, also contains digital sign language assistance via QR Code. Bali State Polytechnic as one of the best vocational campuses in Indonesia, it is necessary to assist in supporting excellence in the digital field for SMEs with Disabilities in Denpasar City as part of campus involvement in advancing human resources that are leading, professional and internationally competitive. In this case, the author wants to develop a Qr Code-based E-Module Business Recording for SMEs with Disabilities in Denpasar City to support the delivery of knowledge from the Department of Commerce Administration to the public so that it can be distributed properly. The Department of Commercial Administration is a department that specifically studies the business field, especially in the Business Administration study program. On the other hand, considering that during the COVID-19 pandemic, the condition of the economic sector in the field of commerce is increasingly uncertain, the author would like to provide an illustration that the process of developing the E-Module Business Recording will be able to provide provisions and develop skills in the digital field for SMEs actors. Deaf Disabled Persons in Denpasar City and introduce more closely the form of attention to the scientific development of the Bali State Polytechnic in areas outside the campus.

### METHODS OF RESEARCH

In this study, the approach used is to use the Research and Development (R&D) approach, which in this approach is used by researchers to be able to produce the resulting product and to test the effectiveness of the resulting product (Sugiyono, 2016). So that in the research conducted by this researcher, the product developed can be accounted for. The development of this E-Module uses the ADDIE model. This model can be developed as needed in designing a learning system on the E-Module [14]. The ADDIE model development model consists of several stages including analysis, design, development, implementation and evaluation. The development process through this model was chosen by the researchers because it has an appropriate framework guide in developing a learning product in education, one of which is SMEs.

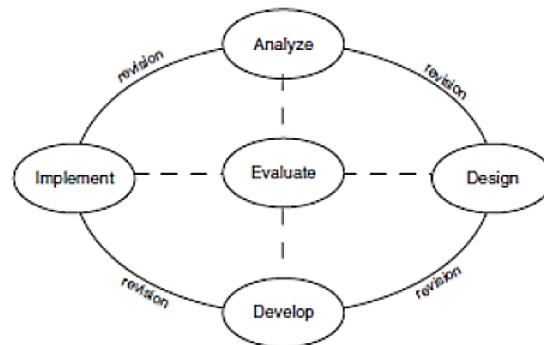


Figure 1 – Stages in the ADDIE Model (Branch in [15], 2016)

In the analysis phase, the researcher observed the activities of SMEs Deaf Disabled Persons in Denpasar City. Observation activities were carried out using incidental sampling technique because there had never been a special data collection related to SMEs with Disabilities, especially those with Deaf Disabilities. Interviews were also conducted with other activists and observers of disability. At this stage, the analysis carried out by the researcher was through 1) needs analysis, 2) material analysis and 3) SMEs characteristics analysis.

Furthermore, the design stage is one of the next stages of the process after going through the previous analysis stage. At this stage also, the design of the instrument is carried out by the researcher to measure the feasibility of the E-Module that has been developed by the researcher. This design stage consists of several designs, including 1) compiling an



outline of the contents of the E-Module, 2) compiling the framework of the E-Module, 3) compiling the learning content of the E-Module, and 4) designing the instrument.

In this development stage, the researcher carried out three development steps on the E-Module which were arranged as 1) development on the E-Module, 2) development on the instrument, and 3) assessment on the E-Module.

In the next stage, namely the implementation stage, it is carried out after the E-Module is assessed by validators from both material experts and media expert validators. In addition, there is a process of improvement from the suggestions that have been given. Furthermore, the E-Module was then tested on SMEs Deaf Disabled Persons in Denpasar City with a total of 12 (twelve) Deaf Disabled Persons working in the SMEs sector for further testing of material materials in learning activities in understanding Business Recording. The results of this trial are used as a reference for researchers in improving the E-Module that has been developed by researchers. The assessments are based on several aspects, namely 1) content feasibility, 2) language, 3) usefulness, and 4) graphics.

The evaluation stage is carried out by the researcher after going through the process from the previous stages. In the development of this E-Module, the evaluation was carried out after getting some input from experts in the form of improvements that the researchers had to make based on the results of suggestions and responses from students to the development of the E-Module, as well as evaluation of student learning outcomes.

Responses from online questionnaire instruments addressed to validators of media experts, material experts and also student evaluations are processed directly through the responses tab on google form in tabular form. Furthermore, the results of the spreadsheet generated from the google form are downloaded directly and then processed by further researchers towards the average process.

This quantitative data is then calculated by the following formula (Muliyardi in [16], 2019):

$$R = \sum_{i=1}^n V_i / n$$

Where: R = Average score; Vi = Number of assessment scores; n = Number of assessors.

## RESULTS AND DISCUSSION

In the analysis stage, the researcher used the observation method on the activities of SMEs Deaf Disabled Persons in Denpasar City. Interviews were also conducted with these SMEs activists and observers. From the results of interviews that have been conducted with activists and observers of SMEs Deaf Disabled Persons, So far, in entrepreneurship in the SMEs world, they have never continuously received special material on Business Recording and still rely on ordinary records obtained from several trainings that have lasted several years and it has never been imagined that this pandemic will occur so that you have to adjust to the conditions plus the position as Deaf Disabled Persons is increasingly difficult to reach new knowledge in understanding Business Recording, so in the future it is necessary to develop materials that take advantage of the times and balance with the features that are friendly to Deaf Disabilities at a time when the need for the internet is growing day by day.

So far, SMEs with Deaf Disabilities still rely on sources of knowledge related to Business Recording through direct visualization obtained from several exercises that they get from routine activities that they have participated in. In addition, some of them are faster to capture the practice visually and then put it into practice when running the SMEs process. There are several reference sources used in the development of science, but most of them are still trying to adapt to existing sources. There are several reference sources in their delivery which are admittedly less attractive in learning design and are not widely understood because they use complicated words so that the curiosity of Deaf Disabled Persons becomes less. SMEs players have difficulty understanding Business Recording in a professional manner. So far, the Deaf Disabled Persons have only kept a simple record and





prefer direct involvement in the field rather than paying attention to complete records. When they go down to the field, the Deaf Disabled Persons actually really want to know new things that can be complementary materials for them in carrying out their selling activities, but in adjusting business transactions with records made by normal people in general, they need to be further deepened to understand, This can be seen during the purchase transaction process at one of the SMEs Deaf Disabled Persons, where when they asked (in sign language) regarding the recording of sales, they admitted that they did not focus too much on it but in the future would like to know how to record correctly.



Figure 2 – E-Module pages



At the design process stage, the next step after going through the analysis stage is to design an E-Module Business Recording using a QR Code-based digital application to improve soft skills for SMEs Deaf Disabled Persons in Denpasar City. At this stage, the researcher designed the instrument to be able to measure the feasibility of the developed E-Module. The design is carried out, among others, first by compiling an outline of the contents of the E-Module by setting 5 learning activities, including materials related to 1) Entrepreneurship, 2) SMEs, 3) Digital Marketing, 4) "Si-Apik" digital applications and 5) Business Recording practices. The five designs already contain general understandings, functions, types, summaries and evaluations and in some parts of the learning activities there are practical video tutorials with sign language services. In the next stage in the preparation of the E-Module framework, it consists of five parts in the E-Module. The sections include the introduction section; the next is the glossary, then material activities, evaluation, and the bibliography section. The next stage is the process of compiling the contents of the contents of the E-Module. This process starts with the presentation of general material from each material activity. In the material that has been given, there are several evaluations provided. In the implementation of the Business Recording practice, there are practical video tutorials that are friendly to Deaf Disabled Persons. This access is obtained from access to the QR barcode provided in the E-Module. The last step is to design an instrument that is designed using a 5 Likert scale questionnaire with answers ranging from Strongly Agree (SS), Agree (s), Neutral (N) and Disagree (TS) to Strongly Disagree (STS). The answers are then converted into a score of 1-5 according to the order of the statements of the answers.

At this stage there are 3 development steps, namely the development of the E-Module, the development of instruments, and the assessment of the E-Module. The result of this E-Module development stage is to develop on the cover side, inside cover, introduction, table of contents, glossary, E-Module information map, material activities and bibliography. In the initial development of this e-module, the E-Module was developed using Microsoft Office Word to collect and compile material and also collect questions for the questionnaire and its summary components. In making the background design and cover of the E-Module, the researcher used the Canva digital application, in making and editing the sign language assistance practice video tutorial using the Cap application on the researcher's smartphone, in making evaluations using google forms and in making barcodes using the QR Code Generator application. Furthermore, the E-Module data files, which are still in .doc form, are transferred to the designs that were previously created through the Canva application, adding components in the form of video tutorials and sign language tutor videos are uploaded to the drive and an evaluation form is then made in the form of a QR Barcode. The whole thing is made into one file in the form of an E-Module which has been compiled in a Canva design and downloaded in .pdf format.

From the results of the development of the E-Module that has been made, then the development of a feasibility instrument is carried out by experts. The instruments in the E-Module that have been previously discussed with observers and activists as well as the research team and also made improvements, then validated by a team of material experts and media experts using the E-Module assessment sheet previously made by the researcher. In this case, the results of the E-Module validation from the material expert validator are as follows:

Table 1 – E-Module Validation Results by Material Experts

No	Assessment Aspect	Average Score for Each Aspect	Category
1	Contents	4,33	Very good
2	Linguistic	4,00	
3	Presentation	4,55	
Average overall rating score		4,29	

In this case, the evaluation of the E-Module by the material expert validator on the material in the E-Module is assessed from the aspect of content, linguistic aspects, as well as the presentation aspect resulted in an overall average score of 4.29 from a maximum



score of 5.00 in the very good category. Then, the validation stage by media experts includes, among others, aspects of the screen design display, aspects of ease of use, aspects of consistency, aspects of usability, and also aspects of graphics.

Table 2 – E-Module Validation Results by Media Experts

No	Assessment Aspect	Average Score for Each Aspect	Category
1	Display Design Screen	4,57	Very good
2	Ease of Use	4,57	
3	Consistency	4,00	
4	Benefits	4,16	
5	Graphics	4,57	
Average overall rating score		4,37	

In the E-Module assessment carried out by media expert validators on the material contained in the E-Module, it resulted in an overall average score of 4.37 from a maximum score of 5.00 with a very good product category. Furthermore, from the results of the assessment by media expert validators, it can also be seen that this product is declared good based on the media. So in general the quality of the E-Module is said to be good and feasible to use in the material process at the implementation stage.

During the implementation of the E-Module, at each meeting conducted by researchers, at the beginning of the implementation meeting, SMEs actors were given a brief explanation regarding the development objectives of developing an E-Module Business Recording using a Qr Code-based digital application in Denpasar City and an initial explanation regarding the introduction of Entrepreneurship. In the following week, the researchers introduced the SMEs material which is an activity they do every day. Furthermore, at the next meeting, briefly explained about marketing products in the digital world. From some of the material above, the researcher tries to understand the wishes of SMEs actors who are constrained by their limitations. The following week began at the stage of introducing the "Si-Apik" digital application listed in the E-Module. At the initial meeting until the introduction of the "Si-Apik" Digital Application, SMEs actors were introduced by a form of sign language video assistance in the form of a barcode. Furthermore, after SMEs actors have finished testing the application of digital applications in practice and introduction, SMEs actors are asked to fill out an evaluation instrument form for the E-Module that has been used. The results of the assessment of the response to the E-Module can be seen in the following table.

Table 3 – Results of Assessment of SMEs Responses to E-Modules

No	Assessment Aspect	Average Score for Each Aspect	Category
1	Appropriateness	4,56	Very good
2	Linguistic	4,42	
3	Benefit	3,08	
4	Graphics	4,35	
Average overall rating score		4,1	

The results of the assessment of the response of SMEs Deaf Disabled Persons to the development of E-Module have obtained an average overall rating of 4.1 from a maximum value of 5.00 with a very good product category. The results of filling out the instruments and complete calculations are presented along with attachments. Based on the results of the assessment, it can be seen that this E-Module is included in the very good category so that it can be used as a material for implementation in the field.

After going through the previous stages of the process, the development of this E-Module received several inputs from several experts as well as the response of SMEs Deaf Disabled Persons actors in the form of improvements. As for the evaluation in the form of suggestions and follow-up, among others, the writing in the E-Module should be justified, it needs to be enriched with materials in the video tutorial format, there are naming errors in existing quotes, need to be enriched with materials in video tutorial format, input in the title in



one section of the E-Module, the addition of additional colors to the E-Module so that it is not monotonous and needs to be enriched with material in the prefix video format of each material that is friendly to deafness that previously only existed in the initial material, needs to be added.

## CONCLUSION

Research on the development of this E-Module produces a product in the form of learning media in the form of E-Module Business Recording Using a QR Code-based Digital Application for SMEs Deaf Disabled Persons in Denpasar City. The reference in this study is the ADDIE development model with details of the stages, namely 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation. And still pay attention to the methods that apply at the time of the preparation of the learning module. The e-Module developed by the researcher contains material for activities that can be studied, including Entrepreneurship, SMEs, Digital Marketing, and the “Si-Apik” digital application before applying it to the implementation of practical tutorials. This E-Module is in .pdf format which contains in addition to the material there is also video tutorial content in the form of practice that shows practical activities that contain a complementary sign language video and the application of the “Si-Apik” digital application as well as an evaluation containing a brief understanding of the material and also filling out the database of SMEs actors. This E-Module is also very interactive for its users, especially SMEs Deaf Disabled Persons who use it. Based on the research results obtained by the researchers, it can be seen that the E-Module Business Recording Using a QR Code-based Digital Application for SMEs Deaf Disabled Persons in Denpasar City is feasible to be used as a learning medium. Based on the results of the acquisition of the average overall score, it can be seen that the total score for the aspects by material experts is 4.29 in the very good category, and the average overall score for the aspects by media experts is 4.37 in the very good category. And the total value of the overall score aspect of the student response to the E-Module is 4.1 with a very good category. In the future, it is hoped that this E-Module can be used in other SMEs with Disabilities activities by providing more complete material. And the research that has been done has not yet reached the effectiveness test of the E-Module in everyday learning. Therefore, further researchers can examine further testing the effectiveness of the E-Module in understanding learning.

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