

Development of e-library applications for sociology learning

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Abstract. *The background of this study is the lack of learning resources owned by students during the sociology learning process. The purpose of this study is to produce a feasible and practical E-Library application for learning Sociology. The type of research used in this research is Research and Development (R&D). The development model used in this development research is the ADDIE development model. The research instruments used included: validation sheets and practicality questionnaires. Data collection techniques are carried out using observation, tests, questionnaires, and documentation. The results showed that the media validation test for the media expert's assessment of the E-Library 1 application was 96% "very feasible", and the media expert's assessment 2 of the E-Library application was 95% "very feasible". The final score of the eligibility validation of media experts is 95.5% so the E-Library application for sociology learning is "very feasible" to use. Meanwhile, the material validation test for material expert 1's assessment of the E-Library application was 93% "very feasible", and material expert 2's assessment of the E-Library application was 87% "very feasible". The final score of the material expert feasibility validation is 90% so the E-Library application for sociology learning is "very feasible" to use. Furthermore, the results of the particulate test by students were 92%, and the value was categorized as "very practical". Based on this assessment, it can be concluded that the E-Library application for sociology learning has received good responses from users so that it is practically used in a learning process..*

Keywords: *e-library, applications, sociology learning*

INTRODUCTION:

School as an educational institution is expected to be able to develop students' intellectuals to be better through the teaching and learning process. According to (Nata, 2016) the teaching and learning process is an interactive activity that influences each other between educators and students with the main function of educators providing subject matter, while students receive lessons. In the teaching and learning process, there are various kinds of subjects studied by students. These subjects are taught by educators who are by the field of study they have, as is the case with sociology subjects.

The study of sociology includes the diversity of the social world, from intimate relationships, between one person and another, to the impersonal encounters of large numbers of people (Noer, 2021). In the process of teaching and learning sociology, educators are expected to be able to apply teaching methods that are not monotonous and able to apply information and communication technology in the teaching and learning process.

Nowadays, of course, we can see and feel the development of science and technology in everyday life, and have become an inseparable part of our lives. (Astuti & Dewi, 2021). The rapid development of science and technology encourages renewal in the use of technological results that can be applied to the learning process. In line with this, educators are required to be able to use the results of this technology which can be

used as learning media in the teaching and learning process, these tools may be by increasingly modern technological developments.

The use of technology in education is none other than to improve the quality of education (Suminar, 2019). The application of technology in the sociology learning process must be supported by adequate learning facilities so that the teaching and learning process can run well and can help students to find the various knowledge needed. Facilities as one of the supporting factors for learning, because the success of students in obtaining good grades and achievements can be influenced by the completeness of the facilities in the school

According to Carter V. Good, the school library is characterized as a coordinated collection in a room with the aim that students and educators tend to use it, which requires a quarter to be taken from one of the educators. Furthermore, the library is one of the supports in increasing learning resources which is also a place for various scientific disciplines which also supports or as a means of educating the nation's life, especially in the field of education (Mangga, 2015).

Most schools still have limited book resources. Like the North Bengkulu State 5 Public High School. Based on the results of the researcher's initial observations on March 6 2022 at SMA Negeri 5 Bengkulu Utara in sociology lessons for classes X, XI, and XII IPS, students are still learning to use one learning resource, namely books. There are no other supporting learning resources, thus making students fixated on just one learning resource when in class.

Based on these observational data, the researcher is interested in developing an E-Library application for sociology learning at SMA Negeri 5 Bengkulu Utara. According to (Sintia et al., 2021) E-Library (digital library) is a system of various services and information objects that support access to these information objects through digital devices. This digital library service aims to enable you to quickly and accurately search for information objects in collections of information such as digital documents, images, and databases. Digital libraries do not stand alone but are connected to other sources and the information is available to users around the world. The Digital Library collection is not limited to electronic documents and the collection also includes digital artifacts that cannot be replaced by print format. This collection emphasizes informational content, from traditional documents to search results. This library serves machines, information managers, and information users.

Regarding the development of the E-Library application, several previous studies are relevant to the research that the researchers conducted. Like research (Lubis & Putra, 2015) titled Digital Library Application at the University Library. The results of his research show that using the Digital Library can reduce damage, and loss of books, make it easier for library users and save space usage. Implementing the Digital Library Application, it is hoped that it can support the library and assist library users in finding the information they need more quickly.

Next, research (Alfaris, 2021) entitled Utilization of Websites and E-Library Applications at the Cimahi City Public Library During the COVID-19 Pandemic. The results of his research show that the innovations and changes made by the Cimahi City Public Library are by reducing operating hours, only opening book borrowing and returning services, and utilizing library staff to find library materials needed by visitors directly. In addition, the Cimahi City Public Library also maximizes digital library services and digital collection provider applications to meet the public's need for information and reference during the COVID-19 pandemic.

Next, research (Larisu & Iba, 2021) entitled Planning for Library Digitization at UPT Library of Halu Oleo University. The results of his research show that planning for library digitization at the Halu Oleo University Library UPT so far in terms of network indicators, facilities, human resources, and performance evaluation monitoring have been quite optimal. But from these indicators, some indicators cannot be said to be optimal, namely funding. The funding process that comes from the government in conjunction with the library organizers or the university does not guarantee that the funding process will be available every year while planning for digitization requires substantial funds to support the process.

Another relevant research is research (Maulida, 2019) entitled Digital-Based Islamic Library Service. The results of his research indicate that one feasible alternative to develop in providing convenience, speed, and accuracy in accessing information to library users is to develop web-based services linked to social media such as Al-Maktabah Al-Syamillah. Al-Maktabah Al-Syamillah is a digital-based Islamic library software that has a complete and easily accessible collection.

Other relevant research is research conducted by (Utami & Nelisa, 2019) with the title Library SMA Negeri 1 Padang (Case Study: At SMA Negeri 1 Padang Library). The results of his research are the efforts

made on technology-based library management. First, processing a collection of books into digital data using the SLiMS application, digitizing information in books into digital-based data by scanning using a scanner. Second, the management of technology-based information services, namely the service of making membership cards, library member cards that have identity information, and the OPAC (Online Public Access Catalog) service functions to make it easier for users to find the desired library material quickly and easily. Third, technology-based library management facilities, namely the application of barcode scanners,

The five previous studies above looked at the results after the development of the E-Library application. So, researchers conducted research on conventional libraries at SMA Negeri 5 Bengkulu Utara by applying the E-Library application for learning Sociology in SMA, which is still rarely researched in learning Sociology in SMA. Based on the background of the problems above, the researcher is interested in conducting development research with the title "Development of E-Library Applications for Sociology learning at SMA Negeri 5 Bengkulu Utara"

METHOD

The type of research used in this research is Research and Development (R&D). The development model used in this development research is the ADDIE development model. The research was conducted only up to the ADD (Analysis, Design, Development) stage. Each stage of the development flow is explained in the research procedure.

The subjects in this study were 6 students, namely 2 students in class X, 2 students in class XI, and 2 students in class XII at SMA Negeri 5 Bengkulu Utara. The research instruments used included validation sheets and practicality questionnaires. Data collection techniques were carried out during the process of preparing this E-Library application, including observation, tests, questionnaires, and documentation. The data analysis technique used is validity analysis and practicality analysis.

RESULTS AND DISCUSSION

Result

This development research produced an E-Library application product for sociology learning for classes X, XI, and XII IPS. The results of this E-Library application product can be accessed on Android and PC. This study uses the ADDIE model development procedure, but in this development, it only reaches ADD (Analysis, Design, Development) due to limited research time and research sites which are quite far away. The following is the development result which is explained through the stages of the development procedure using the ADDIE model:

[1] Analysis

Based on the results of observations and interviews, researchers found several problems, namely the limited number of sociology learning resources available to support the learning process at school so that learning resources can only be used during the learning process, while students do not have sources other than those only at school. Then, the use of instructional media in the learning process is not maximized and teachers often use the lecture method during the learning process. With the development of this E-Library application, it can be used as a solution to overcome existing problems.

[a] Potential Analysis

Based on the results of observations and observations of researchers at SMA 5 North Bengkulu, researchers found that students generally carry and own mobile phones. The availability of supporting equipment such as cell phones can help develop this application quite adequately.

[b] Needs Analysis

Needs are determined based on observations to find out the needs of the product to be made which can be seen in the following table:

Table 1.1 Observation Results

No	Results of Observations and Interviews	Information
1	Research subject	There are 2 students in class X, 2 students in XI, and 2 students in Social Studies at SMAN 5 Bengkulu Utara.
2	Subjects observed	Sociology
3	Availability of books or learning resources	The available textbooks to support the learning process in schools are limited so books can only

		be used during the learning process.
4	Quality of learning	In the learning process still using existing books.
5	student condition	Students find it difficult to understand the subject matter due to limited learning resources and limited study time.
6	Technology owned by students as a learning resource	Each student has a cellphone with an Android type, which can be known at the time of observation.
7	Solutions needed in the learning process	Sociology learning E-Library application that contains sociology material, in the form of pdf, doc, video, and ppt that can be used in online and offline learning processes.

[2] Design

[a] Flowchart design

The following is an E-Library flowchart which can be seen in the following figure:



Figure 1 E-Library Flowchart

[b] Interface Design

The display design consists of several components. On the user page, there are several buttons and several lists of the latest material. On the admin page, there are several buttons and class data lists. The draft image of the E-Library system page can be seen in the following figure:

[1] Login Page

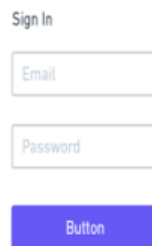


Figure 2 E-Library System Login Page

[2] Registration page

Sign Up

Name

Email

Password

Who is?

Button

Figure 3 Registration Page

[3] User Dashboard page

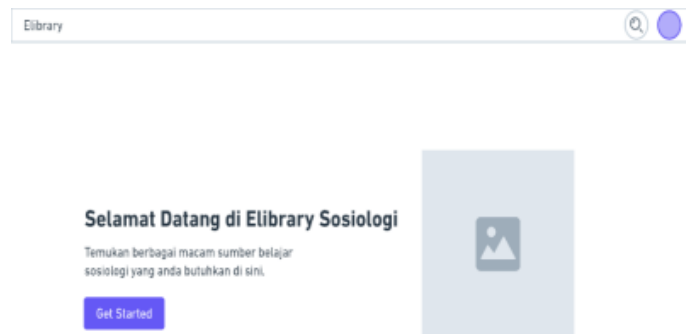


Figure 4 Dashboard page

[4] Admin Dashboard page

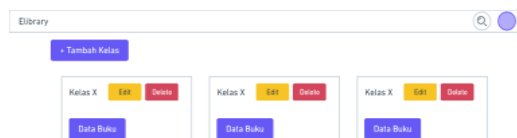


Figure 5 Admin Dashboard page

[5] Book Search Page

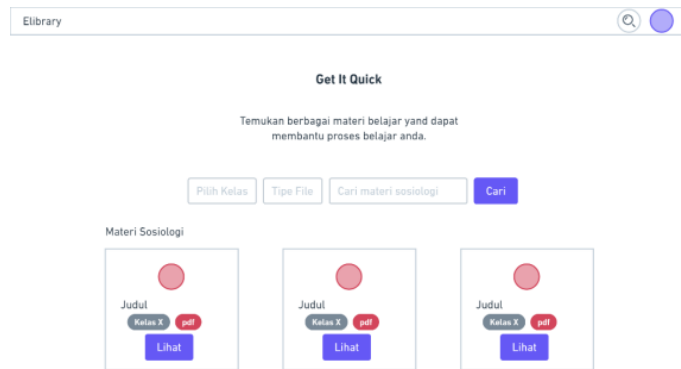


Figure 6 Book Search Page

[6] Book Data Page Saved



Figure 7 Book Data Pages Saved

[7] Material Shown page

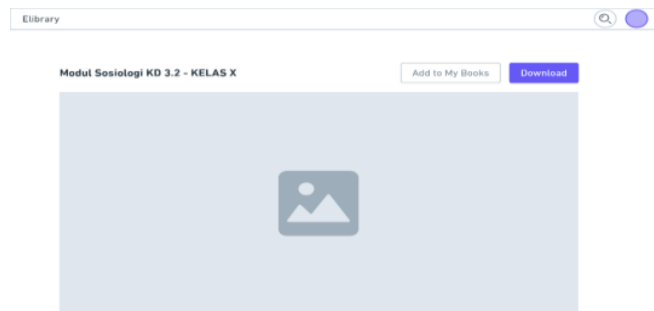


Figure 8 Page Shown Material

[8] Book Data Page

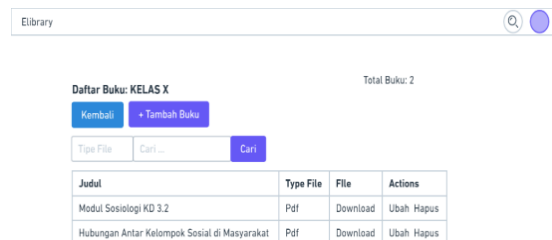


Figure 9 Book Data Page

[3] Development

At the development stage, the development and testing of the E-Library system are carried out. At this development stage, the product that has been designed is developed into a system. The development of the sociology E-Library system was made with the help of Laravel 8 and Cpanel as servers.

[a] Product Development

[1] Display Login Page

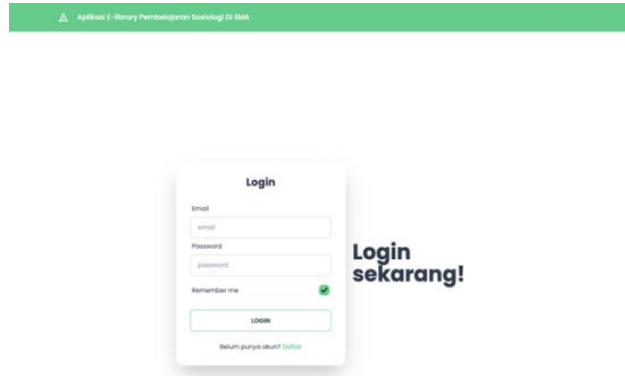


Figure 10 Login Page

[2] Display Registration Page

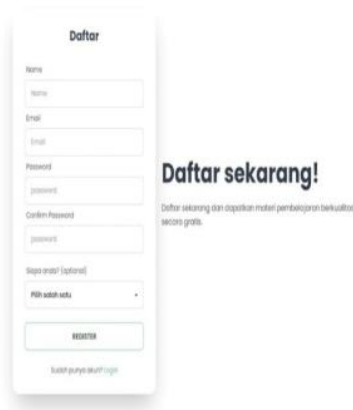


Figure 11 Registration Page

[3] Student Dashboard Page Display



Figure 12 Student Dashboard Page

14 | Title Character: Xxxx

[4] Book Data Display



Figure 13 Book Data

[5] Material Detail View

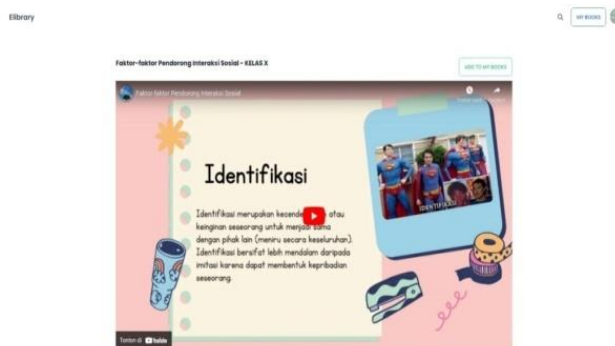


Figure 14 Material Details

[6] View My Books Page



Figure 15 My Books page

[7] Admin Page Display



Figure 16 Admin Page

[8] Material Data Display

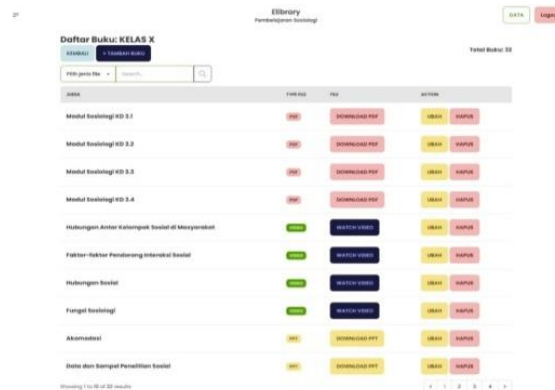


Figure 17 Display of Material Data

[9] User Data Display

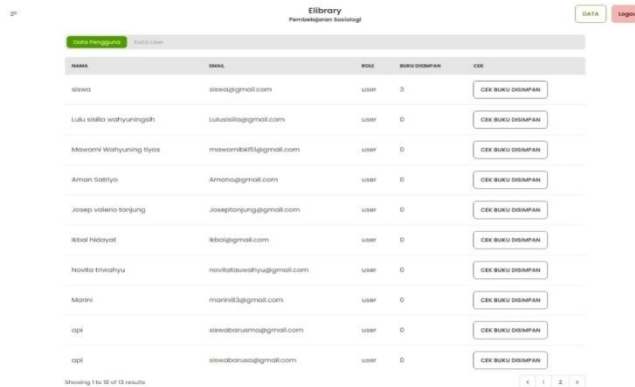


Figure 18 Display of User Data

[10] Display Chat Room / Virtual Meeting

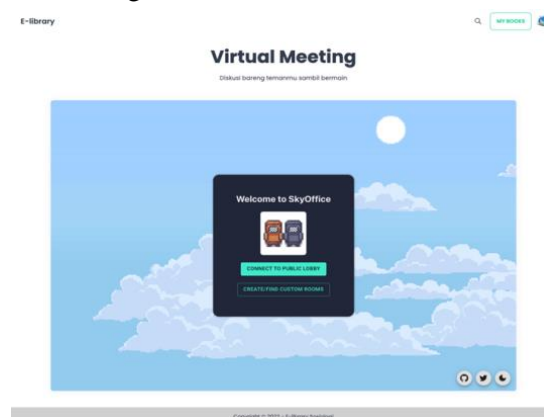


Figure 19 Display Chat Room

[b] Validation and Trial

[1] Media Validation Test

Assessment of media validity and trials were carried out to assess sociology E-Library application products. The related assessment was carried out by one media expert (IT) and one media expert (Librarian), namely Mr. Ismail Arifin, M.Kom, and Mrs. Mardiyah, A.md. The media experts were given a questionnaire

to assess the validity and test the E-application. Developed libraries. The following is data from the evaluation of media experts for E-Library application products which can be seen in the following table:

**Assessment Result Data
Media Expert E-Library Application Products**

Table 1.2 Media Expert (IT)

NO	STATEMENT	SCORE
1	This app is easy to use	5
2	Buttons work according to function	5
3	Applications can run smoothly	5
4	The display design is presented attractively	4
5	The menu layout and content in the application are neatly presented	5
6	The color match on the background is correct	5
7	The consistency of the use of colors and the readability of the text is on point	5
8	Learning resources are presented in an interesting way	5
9	The application can be installed on different android devices	4
10	Applications can be used smoothly without any hangs and lags	5
11	This application can facilitate the learning process for students independently	5
PERCENTAGE		96%

The results of the media expert's assessment of the E-Library application are 96% "very feasible".

Table 1.3 Media Expert (Librarian)

NO	STATEMENT	SCORE
1	This app is easy to use	5
2	Buttons work according to function	5
3	Applications can run smoothly	5
4	The display design is presented attractively	5
5	The menu layout and content in the application are neatly presented	5
6	The color match on the background is correct	4
7	The consistency of the use of colors and the readability of the text is on point	4
8	Learning resources are presented in an interesting way	5
9	The application can be installed on different android devices	4
10	Applications can be used smoothly without any hangs and lags	5
11	This application can facilitate the learning process for students independently	5
PERCENTAGE		95%

The results of the media expert's assessment of the E-Library application are 95% "very feasible".

[2] Material Validation Test

Assessment of the validity of the material and trials were carried out to assess the sociology E-Library application product. The material-related assessment was carried out by two material experts, namely Ms. Nurlizawati, S.Pd, M.Pd (Lecturer in Sociology Education UNP) and Ms. Marini, S.Sos, gr (Sociology

Teacher at SMA 5 North Bengkulu). The material experts were given a questionnaire to assess the validity and test the E-Library application that had been developed. The following is the data from the expert evaluation of the material for the E-Library application product which can be seen in the following table:

**Assessment Result Data
E-Library Application Product Material Expert**

Table 1.4 Material Expert (Mrs. Nurlizawati)

NO	STATEMENT	SCORE
1	The material presented is by the basic competencies	5
2	The indicators presented are the learning objectives	5
3	The material presented is by the learning objectives	5
4	The videos presented are the learning material	4
5	The language used in conveying the material is appropriate	4
6	The material is presented clearly and easy to understand	5
7	The material presented in the application is complete	5
8	The examples given in conveying the material are appropriate and easy to understand	5
9	The material is presented in an interesting and not boring way	4
10	This application can simplify and grow students in the learning process	4
11	This application can be used in class or studied independently	5
PERCENTAGE		93%

The results of the material expert's assessment of the E-Library application were 93% "very feasible".

Table 1.5 Material Expert (Mrs. Marini)

NO	STATEMENT	SCORE
1	The material presented is by indicators of competency achievement	4
2	The material presented is by KI/KD	4
3	The material contains complete ideas	4
4	The material presented can measure students' abilities	4
5	The language used in presenting the material is easy to understand	5
6	The language used in presenting the material is effective	5
7	The words used in the presentation of the questions do not have a double meaning	4
8	The language used in presenting the questions is by the EYD	4
9	Instructions for working on questions can be understood	5
10	Questions are presented randomly	4
11	Questions on questions relevant to the answers provided	5
PERCENTAGE		87%

The results of the expert's assessment of material 2 on the E-Library application were 87% "very feasible".

Furthermore, the E-Library application was also validated and tested on 2 students in SMA 5 North Bengkulu, class X, 2 students in class XI, and 2 students in class XII. In the process of testing the sociology E-Library application product, it is directly used in the sociology learning process. Students use their respective email accounts to be able to enter the E-Library application. After each student successfully enters the application the teacher provides information related to the learning process using the application.

In the first step, the teacher instructs students to look for learning resources and the material being studied. After that, the teacher asks students to open the material that is already available for students to listen to. The following are the results of testing the E-Library application on students to find out the practicality of the E-Library application product that has been used in the learning process:

[c] Practicality Test Results

The practicality of the E-Library application was obtained from a practicality test questionnaire which was distributed to students with a total of 6 people. Based on student responses of 92%, based on the table of practicality criteria for the E-Library application the value is categorized as "very practical".

The research results are presented in full and in accordance with the scope of the study. The results of the research can be completed with tables, graphs (images), and / or charts. Tables and figures are numbered and titled. The results of the data analysis were interpreted correctly

The purpose of the Results and Discussion is to state your findings and make a interpretations and/or opinions, explain the implications of your findings, and make suggestions for future research. Its main function is to answer the questions posed in the Introduction, explain how the results support the answers and, how the answers fit in with existing knowledge on the topic. The Discussion is considered the heart of the paper and usually requires several writing attempts.

Discussion

[1] Development of E-Library Applications for Sociology Learning

This E-Library application is included in research and development or RnD (research and development) which is developed using the ADDIE model development procedure, but in this development, it only reaches ADD (Analysis, Design, Development) due to limited research time and research sites which are quite far. The first stage in the E-Library application development research is the analysis stage which consists of a potential analysis and a needs analysis. The next analysis stage is the design stage which contains the flowchart design and interface design. The next stage is the development or development of the E-Library application that has been designed at the design stage which is made using the help of Laravel 8 and C panel as a server. Then an assessment by experts is carried out at this development stage to validate and test the E-Library application that has been developed. The validation and testing of the E-Library application were also carried out for 2 students in class X, 2 students in class XI, and 2 students in class XII at SMA 5 North Bengkulu to find out the practicality of the E-Library application that has been used. The result of this development is the sociology learning E-Library application which contains material related to sociology learning for grades X, XI, and XII.

[2] Application Validity of Sociology Learning E-Library

The validity of the sociology learning E-Library application was obtained from the results of an assessment consisting of media experts and material experts.

[a] Media Expert Validity Assessment Results

Assessment of the results of the validity of the application of the E-Library for sociology learning obtained from 2 media experts can be seen in the following table:

Media Expert Validity Assessment Results

No	Media Expert	Eligibility Percentage	Category
1	Ismail Arifin, M.Kom	96%	Very worth it
2	Mardiyah, A.md	95%	Very worth it
Final Score		95.5%	Very worth it

Based on the table above, the results of the validation percentage score were obtained from media expert 1, namely Mr. Very Decent". The final score of the eligibility validation of media experts is 95.5% so the E-Library application for sociology learning is "very feasible" to use.

[b] Material Expert Validity Assessment Results

Assessment of the results of the validity of the sociology learning E-Library application obtained from 2 material experts can be seen in the following table:

Material Expert Validity Assessment

No	Material Expert	Eligibility Percentage	Category
1	Nurlizawati, S.Pd., M.Pd	93%	Very worth it
2	Marini, S. Sos., gr	87%	Very worth it
Final Score		90%	Very worth it

Based on the table above, the results of the validation percentage score were obtained from subject matter expert 1, namely Mrs. Nurlizawati with a feasibility percentage of 93%, which was in the "very feasible" category, and validation from material expert 2, namely Ms. Marini, with an eligibility percentage of 87%, which was included in the "Very feasible" category. Worthy". The final score of the material expert feasibility validation is 90% so the E-Library application for sociology learning is "very feasible" to use.

[3] The practicality of Sociology Learning E-Library Application

The practicality test was carried out to find out the practicality of the sociology learning E-Library application product obtained from the practicality instrument which was filled in by 2 students in class X, 2 in class XI, and 2 in class XII in SMA 5 Bengkulu Utara.

The results of the practicality test that the researchers carried out on the sociology learning E-Library application obtained a score of 92% which can be categorized as very practical. Based on this assessment, it can be concluded that the E-Library application for sociology learning has received good responses from users so that it is practically used in a learning process.

CONCLUSIONS AND SUGGESTIONS

Based on the research that the researchers have produced, the following conclusions are obtained:

- [1] The development of the sociology learning E-Library application for students in class X, XI, XII IPS SMA 5 North Bengkulu was developed with the ADDIE development model stage, in this study it only reached the ADD (Analysis, Design, Development) stage due to limited time and research space. quite far. The product produced in this study is the sociology learning E-Library application which can be accessed on Android and PC. This sociology learning E-Library application can be used for the learning process in the classroom or outside the classroom which has featured in the form of a class selection menu, and the desired subject matter menu.
- [2] Media validation test media expert 1's assessment of the E-Library application was 96% "very feasible", and media expert 2's assessment of the E-Library application was 95% "very feasible". The final score of the eligibility validation of media experts is 95.5% so the E-Library application for sociology learning is "very feasible" to use.
- [3] Material validation test for material expert 1's assessment of the E-Library application was 93% "very feasible", and material 2's expert assessment of the E-Library application was 87% "very feasible". The final score of the material expert feasibility validation is 90% so the E-Library application for sociology learning is "very feasible" to use.
- [4] The practicality test by students is 92%, the value is categorized as "very practical". Based on this assessment, it can be concluded that the E-Library application for sociology learning has received good responses from users so that it is practically used in a learning process.

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