

Development of Interactive Teaching Materials Based on Articulate Storyline Software

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ABSTRACT: *This development research aims to analyze learning media to create Islamic education teaching media with interactive media with the help of Articulate Storyline Software. Using research and development methods with qualitative and quantitative approaches, this research was conducted at SMAN 12 Berau as a subject and a test tool for the teaching media. The use of ADDIE as a procedure and guideline for developing teaching media. Data collection techniques by distributing surveys to test subjects and a series of formative assessments. The analysis technique uses qualitative and statistics. The results of the analysis of the development of these teaching materials are in the form of software products or Electronic Student Book (BSE) applications. The teaching material is suitable for use based on test results and analysis, which explains the survey results of design experts are 86%, media experts give a percentage of 87%, and materials experts consider 80%. Due to the development of teaching materials, Articulate Storyline Software can be easily used via a cellphone or laptop with an attractive appearance so that students will efficiently operate and learn by utilizing the application.*

Penelitian pengembangan ini bertujuan menganalisis media pembelajaran guna menciptakan media ajar pendidikan Islam bermedia interaktif dengan bantuan Software Articulate Storyline. Menggunakan metode *research and development* dengan pendekatan kualitatif dan kuantitatif, penelitian ini dilakukan di SMAN 12 Berau sebagai subjek sekaligus alat uji coba media ajar tersebut. Penggunaan *ADDIE* sebagai prosedur dan pedoman pengembangan media ajar. Teknik pengumpulan data dengan penyebaran survey untuk subjek tes dan serangkaian penilaian formatif. Adapun teknik analisis menggunakan kualitatif dan statistik. Hasil analisis pengembangan bahan ajar ini berupa produk software atau aplikasi Buku Siswa Elektronik (BSE). Bahan ajar tersebut layak digunakan berdasarkan hasil uji dan analisis yang menerangkan hasil survei ahli desain adalah 86%, pakar media memberikan persentase 87%, serta pakar material menganggap 80%. *Software articulate storyline* sebagai hasil pengembangan bahan ajar dapat dengan mudah digunakan baik melalui hp atau laptop dengan tampilan yang menarik, sehingga siswa akan mudah mengoperasikan dan dapat belajar dengan memanfaatkan aplikasi tersebut.

Keywords: *Media Development, Teaching Materials, Interactive Media, Articulate Storyline.*

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I. INTRODUCTION

Education functions to develop abilities and shape dignified national character and civilization in the context of educating the nation's life, aiming at developing the potential of students to become human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, independent creative, and become democratic and responsible citizens. To achieve this goal, one of the fields of study that students must study is Islamic Education (Daryanes et al., 2023).

Islamic Education is one of the subjects that must be taught at all levels of education. Education is a planned and structured effort to form students to know, believe, implement and fear Islamic values based on the holy books, especially the Qur'an and Hadith and practice them in everyday life. Therefore, Islamic religious education is an interactive process between teachers and students to acquire knowledge, believe, live and practice Islam (Sinaga et al., 2022);(Sykorova, 2015). In carrying out learning activities, educators need not only to master topics, strategies, and teaching methods using teaching materials or learning devices. But the teacher must also create situations and conditions so that the teaching and learning process goes according to plan and achieves the desired goals (Cavanagh et al., 2019);(Fatah, 2019).

Article 19 (1) Government Regulation No. 19 of 2015 states that the learning process in educational units is designed interactively, stimulating, entertaining, challenging and motivating to enable active participation, and there is sufficient space for initiative, creativity and independence by skills, interests and physical and psychological development from the students (Permen 19 (1), 2015);(Pratiwi et al., 2021).

In the 2013 curriculum system, the process of teaching and learning activities is student-centred, which requires students to be more active and creative in exploring learning materials that are developing and gathering as much information as possible. Whereas in the previous education unit level curriculum (KTSP), teachers became the focus of information for students in learning, learning took place with. The teacher explains the material while the students only receive the material presented by the teacher even though the material is already listed in the book. In the 2013 curriculum, the teacher's role has changed. Where the teacher no longer presents the material in detail and only provides observations of the subject; after that, students look for information in books or teaching materials and compile it themselves (Kukano et al., 2020);(Ikhwan et al., 2020);(Suprpto et al., 2021).

One of the teacher's skills is to develop interactive teaching materials as it is understood that teaching materials are a set of teaching materials with learning methods, methodologies and evaluations that are structured and responsive to the desired objectives accordingly (Widodo and Jasmadi, 2013). The availability of teaching materials will change the teacher's role in learning activities. Modern learning activities currently refer to student-centred learning that provides opportunities for students to be active in completing assignments and gathering information through various literacy, where the teacher functions as a guide, director, guide, assessor and reflector of understanding the material (Mayasari, 2017). That way, not only the teacher plays a role, but students also have their respective roles.

The method of delivering interactive teaching material has changed the position of educators so that they are no longer the primary source of information (Pozdeeva & Obskov, 2015). Interactive teaching materials in learning activities are a priority to stimulate student interest in learning and provide motivation to actively receive material in class (Mayer & Schwemmler, 2023). Interactive teaching materials are intended to facilitate the delivery of the content offered and improve the quality of learning.

Among the reasons researchers get is the need for teachers to use interactive media teaching materials. This is due to teachers' lack of understanding regarding the use of interactive media teaching materials in the form of android, especially if they make their own interactive media teaching materials in the form of android, so teachers tend to present learning material traditionally (van Driel et al., 2023). Traditional patterns or lecture methods. With these conventional patterns, students become passive in receiving material in class, and it is these patterns that cause students to become bored (Rahmat et al., 2019).

In line with the opinion above, (Fathurrohman & Sutikno, 2017) argue that learning materials are tools used to realize educational targets "consumed" by students. Teaching materials are materials that continue to develop flexibly according to the development and progress of society. Learning materials consumed by students should be able to react to possible changes and adapt to future results (Ikhwan, 2020).

Technology's rapid development is necessary to avoid its impact on the world of education. For this reason, researchers consider it essential to make adjustments to improve education quality constantly (Arif & NA, 2017). This effort can be done by encouraging information and communication technology in education. The use of currently developing information technology is expected to enhance the quality of learning in terms of teaching materials strived to run effectively and efficiently (McKnight et al., 2016).

An interactive media teaching material that can be used on laptops or cellphones is urgently needed to provide opportunities for active processes to occur for students to be able to construct or build their knowledge, be directly and actively involved in the learning process, collaborate with them, solve problems and be able to display their full potential (Lukashevich et al., 2015);(Zaim, 2020).

The aim is to improve the quality of teaching, for example, through the use of information technology. In essence, the current generation of teenagers is the generation of information technology, using information and technology-based devices such as smartphones, tablets and the internet, which are services available every day. With the development of an increasingly advanced era, now is no longer the time to do monotonous learning traditionally. More creativity must be needed to guide students to think creatively (Setyoningsih, 2015).

Articulate Storyline software is one of them is an alternative offer that offers alternatives to solve the problem above. This software can be used to create multimedia content and various other exciting animations. This software is consistent on several desktops and multiple smartphones. Therefore, making some PAI teaching materials using this software will help deliver teaching materials effectively. It is undeniable that application-based learning is undoubtedly more attractive than traditional methods. Students can efficiently study subjects independently using smartphones, computers, or laptops. It is equipped with the necessary programs. After

reviewing the explanation above, the researcher is interested in researching the transformation of Islamic religious education teaching materials into interactive educational media assisted by the Articulate Storyline software.

For the purposes mentioned above, the author feels the need to make teaching materials assisted by interactive teaching materials using the Articulate Storyline software, which can be used to create and package interactive practice questions, similar to the Macromedia Flash software, Adobe Flash, the two software used to be the choice to present a variety of interactive and attractive presentations. This program can give content presentation displays containing text, sound, video, and animation so that it looks more beautiful and can motivate and attract students' attention to use it as a learning resource to the fullest.

II. METHOD

The type of method used in this research is research and development (R&D), used to produce specific products and test product effectiveness. The learning system design model focuses on the primary stages of designing a simple and practical learning system. ADDIE (Analysis, Design, Development, Implementation, and Evaluation) is used to develop interactive media teaching materials (Nadiyah & Faaizah, 2015);(Setyosari, 2016).

In this study, the products produced were teaching materials for Islamic Religious Education subjects with interactive media and videos. This research was conducted at SMA Negeri 12 Berau using the issue of class XI Islamic Religious Education books. The product design is first tested in several stages. First, the validation test of content experts in the field of study review is needed to obtain data in the form of assessments, opinions, and corrections to the content of teaching materials. Second, this review needs the design expert validation test to obtain assessment data on the development model, learning media's content components and teaching materials' content components. Third, the validation test of learning media experts is needed to obtain assessment data on the development model, the members of the content of learning media and the components of the range of teaching materials. Fourth, Individual Trial. This trial aims to identify errors that may occur when making teaching materials. Fifth, the Small Group Trial, the purpose of this experiment is to check for errors missed in individual trials and help track improvements made according to the investigation results (Ikhwan, 2021).

The data was obtained from testing the product of teaching materials for Islamic religious education with qualitative and quantitative interactive media. Data was collected using a survey distribution technique for test subjects and a series of formative assessments. The assessment is carried out in three stages. The first level contains factual reviews, the second is individual assessments, small group and teacher assessments, and the third is field tests. Researchers used qualitative and statistical data analysis techniques to process and interpret expert reviews and try out teaching material development products for PAI subjects with interactive media (Fitri & Haryanti, 2020).

III. RESULT AND DISCUSSION

Product Development Process Analysis

Product analysis developed involves several steps, including the following.

Results of previous studies

This phase analyzed the need to develop teaching materials for Islamic education subjects. The purpose of this development is to close the gap between ideal conditions and concrete conditions, especially conflicts with (1) the availability of teaching materials that are updated according to current technological developments, (2) the availability of teaching materials for Islamic religious education subjects through interactive media, and (3) overcoming learning requirements of Islamic Religious Education using teaching. Material that can increase the attractiveness and effectiveness of Islamic education learning.

Analysis of the Availability of Teaching Materials

Based on the results of researchers' observations about the availability of teaching materials used by Islamic education teachers at SMAN 12 Berau, only Islamic religious education textbooks are still available in the form of books and are still very limited in number. During the Islamic Religious Education learning process, new students borrowed from the library to be used in teaching and learning activities during Islamic education subject hours. Because the textbooks are limited, all Muslim students cannot take the Islamic education packets home. Students can only take the texts home if they borrow the books from the library.

After analyzing the textbooks used as the primary reference for Islamic education learning at SMAN 12 Berau, it was found that there needed to be more teaching materials with interactive media. According to information obtained from Islamic education teachers, the textbook is a handbook for use in schools and student worksheets that are recommended to be used by students.

Learning Conditions of Islamic Education

The purpose of observing PAI learning is to describe the empirical conditions of Islamic religious education learning at SMAN 12 Berau, which are collected by observation, in the view of Islamic education teachers, that the textbooks used in learning are not compelling and exciting. Readers are only for use by students at school and are not to be taken home. This is due to the limited number of class XI PAI package books in the SMAN 12 Berau school library, anywhere with available textbooks.

This condition is certainly not an expected condition. With the development of existing technology, of course, it is hoped that the education and learning process should also develop by giving birth to new products in the world of education, which should make it easier for students in the learning process both at school and willing to study independently with the birth of new products. In the form of teaching materials with interactive media that can be used separately and anywhere (Veselinovska et al., 2010).

With the current technology, it is also hoped that it will make it easier for teachers to improve student's learning quality and the teacher's assessment process. Of course, this product is expected to increase student enthusiasm and motivation to enhance the

achievement of the PAI subject compared to the manual method amid many teacher administrative demands that must also be resolved.

Product Design

The initial step in designing the development of teaching materials is compiling storyboards. Before it can be used, the researcher created a display design consisting of an intro scene with a title, logo, animated Muslim cartoon, and a start button. The intro is made to attract students' interest so that they are interested in reading and working on the module. After the teaching materials for class XI PAI books were developed into interactive media teaching materials as an android application, the display design was obtained as follows.

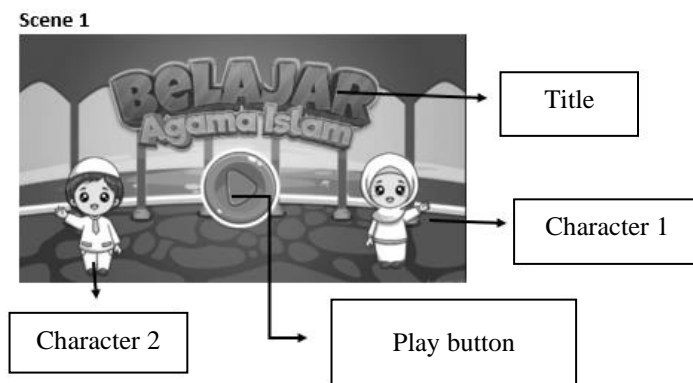


Figure 1. Book cover design on android

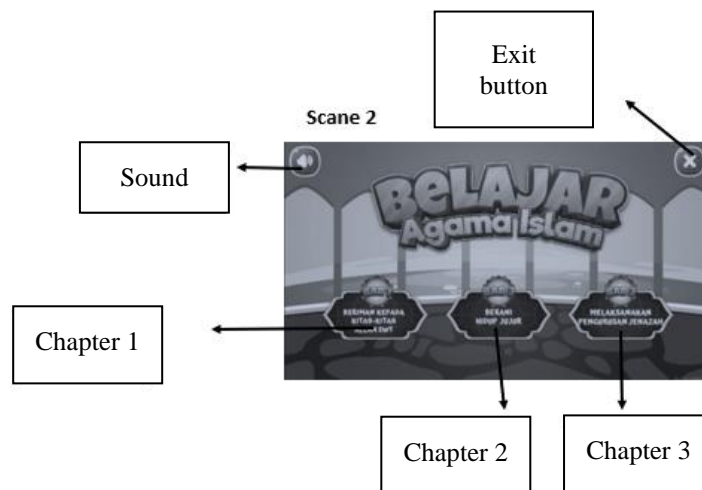


Figure 2. BAB design, after being developed

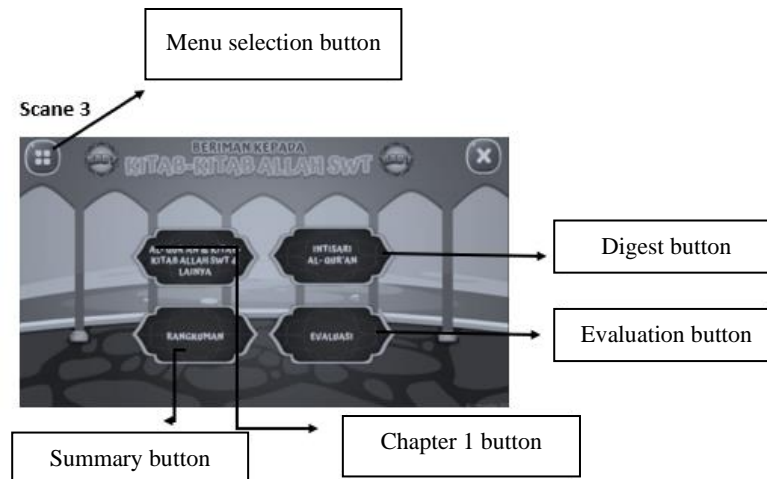


Figure 3. Design summary and evaluation

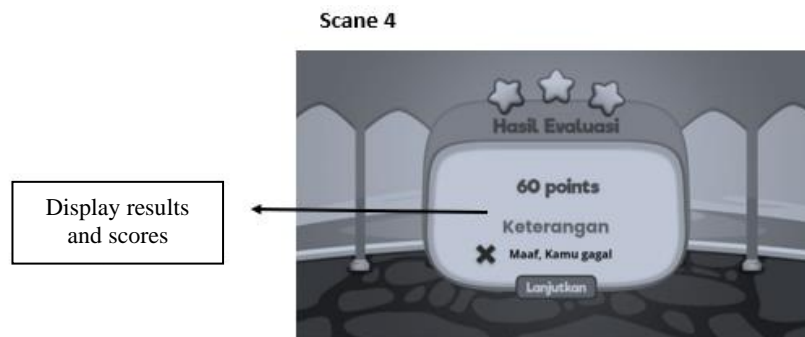


Figure 4. Evaluation design

Product Development

Prior to Development

The teaching materials that became the focus of the researchers developed in this study were the class XI textbooks of Islamic Religious Education and Moral Character. This teaching material is a student textbook prepared by the government to implement the 2013 curriculum, designed and evaluated by various stakeholders under the coordination of the Ministry of Education and Culture, and used in the early stages of implementing the 2013 curriculum. The 2013 curriculum is a "living document" constantly being evaluated, improved, and updated according to the needs and dynamics of the times.

Development Stage

The following development stages are used in the development of this teaching material. (1) Formulating objectives, (2) formulating material points, (3) developing a measure of success, (4) script writing, and (5) script testing.

1. Formulating goals

The learning objectives used refer to the standard core competencies and essential curriculum competencies issued by the Ministry of Education and Culture and metrics developed through the addition of interactive media teaching materials using the ADDIE model learning system.

2. Formulate material items

The formulation of substantive items follows learning objectives, from which learning materials and sub-materials are developed to produce detailed learning materials that support these objectives.

3. Develop measuring tools for success

Success measurement tools are developed according to the desired goals and material indicators delivered to students. Aspect benchmarks are student competencies expressed in KD as indicators of student achievement results. The development of this measuring instrument for student learning achievement includes evaluation standards, evaluation tools, evaluation methods, components that can be analyzed and calculation of evaluation scores, all of which are carried out using the 2013 curriculum standards, which are still valid today.

4. Scriptwriting

At this point, the material text is compiled from primary sources, i.e. Ministry of Education and Culture Teaching Materials 2013 Teaching Materials for High School Islamic Religious Education Subjects and Characteristics.

5. Script Testing

This phase is carried out only in consultation with the promoter and co-promoter. This test serves to determine whether this manuscript is feasible to produce. After the review is completed and declared possible, the compilation of interactive media teaching materials for prototypes is continued.

Post Development

After developing teaching materials, there will be very significant changes between teaching materials before being acquired and after being created. Usually in the form of a book consisting of sheets of paper, after being developed with the help of Articulate Storyline, the product display can be downloaded and opened on a smartphone or android. The introduction and appearance of the front cover are much different. The collection of the android application consists of titles, logos, and animated Islamic cartoons in the form of animations with buttons to start. The introduction aims to attract and arouse students' interest so that they are interested in reading and working on the teaching materials developed.

The following display is obtained after the teaching materials for class XI PAI books were developed into interactive media teaching materials in the form of digital books that can be used in android applications.



Figure 5. Front cover

After pressing the play button, the following display will appear in the next show, which describes the ingredients button. To move to teaching materials, students only need to press the button of one of the chapters they want to open.



Figure 6. Chapter display

After pressing one of the chapters of the teaching material you want to open, a sub-chapter of the opened teaching material will appear, and the summary and evaluation buttons will also appear.



Figure 7. Display of summary and evaluation

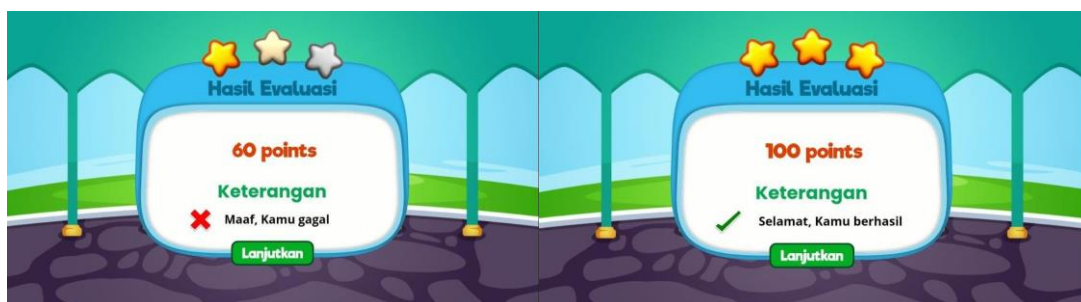


Figure 8. Evaluation display

Study of Product Development Trial Results

Learning using teaching materials adapted to the characteristics of students will foster their passion and enthusiasm to explore deeper information about the material presented. Teaching materials that are designed taking into account their features are also expected to be able to solve one of the problems in learning, namely the availability of relevant teaching materials. Teachers are generally reluctant to develop these teaching materials and prefer to use materials readily available in bookstores. The primary consideration is that teachers need more time to create them. This classic

reason is then suspected of causing learning activities not to take place comfortably. This discomfort then impacts the decreased motivation of students to explore further information on the subject being studied.

On the other hand, the unavailability of contextual teaching materials and the characteristics and needs of these students have an impact on the results of learning acquisition in the subjects taught, especially Islamic religious education subjects. So, to improve the learning outcomes of these subjects, especially for class XI students at SMA Negeri 12 Berau, the author feels the need to design and develop teaching materials designed to meet the wants and needs of students while at the same time being able to improve learning outcomes in the future.

The product for developing teaching materials for the subject of Islamic Religious Education for class XI SMA Negeri 12 Berau with interactive media entitled Islamic Religious Education and Behavior consists of a Teacher's Guide, Student's Guide and Learning Module.

The learning module is equipped with interactive problem exercises using the Articulate Storyline software. Besides being used as a characteristic of the teaching materials being developed, the addition of practices packaged in an interactive form is also intended to accommodate the learning interests of class XI students of SMA Negeri 12 Berau, most of whom are already very familiar with information technology and computers. Internet access in schools can be used not only as a learning resource but also to develop student's creativity, talents and interest in information technology and computers.

The teaching material product developed entitled Islamic Religious Education for Class XI is a development of the Electronic Student Book (BSE), which has been modified in such a way as to suit the socio-cultural context and students in the Berau district, especially at SMA Negeri 12 Berau. Revision of teaching material products is carried out continuously after going through trials and intensive discussions with material/content experts, design, and instructional media experts. This is intended to achieve ideal conditions as the primary reference for English subjects for class XI for SMAN 12 Berau students who have unique characteristics compared to most students in other high schools in the Berau district.

The development model is used in the development of the ADDIE model of Islamic religious education teaching materials, and this is based on the fact that this model has high flexibility in each phase, especially in conducting evaluations (Arisandy, 2016). Evaluation can be carried out in each stage partially without waiting for the product to be completed. In addition, this development model is by the characteristics of dynamic students who always try to innovate, develop and deepen material through various learning sources. Thus, the resulting product can meet user needs in the product development activities for this teaching material, namely individual trials, small group trials and field trials on students in class XI, totalling 20 randomly determined students.

The results of field tests using questionnaires show that these pedagogic material products can be classified as appropriate to meet the material needs and learning problems, mainly because of the availability of relevant educational material. Although it is possible, revisions still need to be done because information and knowledge development occurs very quickly. From the whole series of sketches, the writer can conclude the use of this teaching aid product as follows:

1. Almost all SMA Negeri 12 Berau class XI students feel deep concern and appreciation because they have been directly involved in developing the teaching materials they have always wanted. The entire material presented is to their needs and is within the reach of their understanding. This can be seen from a) students are allowed to determine or choose learning materials that suit their interests, cognitive abilities, and learning needs, and b) students are allowed to choose and determine learning strategies that suit their needs and learning styles.
2. Almost all students can work in groups to solve many problems with little student involvement. In other words, they can carry out learning activities independently and construct knowledge together. They can find a more comprehensive understanding of learning materials built into collaborative learning. Thus, the developer can conclude that this teaching material cannot only provide additional new knowledge but also make them more active and dynamic in participating in learning activities.
3. Some additions or tips are given to provide additional information about Islamic Religious Education materials that can be accessed online. For example, a concept map is a brief overview of what material will be studied. Students can use this concept map as a guide and to correlate material with one another. The author intends to motivate and stimulate curiosity in the study of the material to be presented, including the relationship between one material and another.
4. The learning guide contains a guide for teachers and a guide for students prepared to provide information about teaching materials, both the scope of the material and the steps on how to use it. Learning guides need to be delivered to help teachers and students in the learning process. This learning guide can also be used to establish more intensive communication between teachers and students so that learning activities can be carried out correctly. So that the learning objectives can be achieved easily.
5. Students directly involved in development activities feel prosperous, considering that almost all their wishes are fulfilled. Their desires include that the material presented is the result of their proposal but within the limits and scope of the material prepared by the Ministry of National Education in collaboration with the Ministry of Religion. So, they are also responsible for the material realized in teaching material products. This motivates them to go deeper and try as much as possible to help understand other friends who experience problems during learning activities. This motivation can be felt both individually and in groups. Individually, they are very proud to be able to tell other friends that the material being studied is the material resulting from their proposal. Pride is shown by one of them with the courage to explain the material in front of other students.
6. Implementing teaching materials during the learning process was smooth, and students showed active interaction and participation. This was felt when field trials involved students from various classes. Students find it easier to master the material presented, considering that these materials are proposed materials, and most have studied them even though they are not in-depth. This can be seen from

the many questions that are very important and related to the material presented. In the end, students were able to solve problems based on the results of discussions with other students in both groups. The author believes that teaching materials developed using the ADDIE model can help students think more actively, act more dynamically and make them enjoy learning activities.

7. Product development of teaching materials using the ADDIE model has characteristics and uniqueness not shared by other development models. This particularity begins with analyzing the characteristics of students at SMA Negeri 12 Berau. This is important so that the teaching materials developed genuinely reflect their features and needs. After conducting an in-depth analysis, the author designs teaching materials by considering several aspects, such as determining and selecting images, colouring, choosing fonts, layout and other elements that can support and attract students' attention. In addition, this teaching material is also equipped with interactive problem exercises based on the Articulate Storyline, which is also the hallmark of this teaching material. After getting the ideal design, the writer began to develop teaching materials by considering the materials partly proposed by the students. This needs to be done so that these teaching materials can accommodate students' wishes and be a solution for the minimal availability of teaching materials, which have been inadequate so far. The following process implements the teaching materials through individual trials, small groups and field trials. The results of this implementation are then used as a consideration for making improvements coupled with input and suggestions from several related experts, for example, design experts, material content experts and learning media experts.
8. Overall, the authors also conclude that this teaching material development product has advantages that meet the expectations, desires and needs of users. So, all products containing student guides, student guides and learning modules are excellent to be used as the primary reference for PAI learning activities, especially in class XI SMA Negeri 12 Berau. However, it does not rule out the possibility of making improvements and adjustments so that this teaching material is still relevant for use by students in other schools.

The author also succeeded in identifying several technical obstacles during the development process from the participating team, who were still confused about what to do, and there were still doubts about the implementation of this development model. These technical constraints include. The author's minimal knowledge and skills in design and graphic science or software are used explicitly in graphic design, for example, Corel Draw, Adobe Photoshop, etc. This teaching material's structure and visual appearance are still straightforward and far from ideal because the design only utilizes Microsoft Word PowerPoint software and a little knowledge about Articulate Storyline.

In addition, the distance between the writer and the test subjects, namely class XI students at SMA Negeri 12 Berau and the author's partners, namely teachers of Islamic Religious Education at SMA Negeri 12 Berau, became a significant obstacle because not all problems that emerged could be resolved immediately. However, thanks to

advances in communication technology, issues that arise can be resolved more quickly and effectively by using facilities such as Telegram, WhatsApp, etc.

Overall, the authors conclude that this teaching material is appropriate for use as a source of learning for class XI students at State Senior High School 12 Berau for the 2022-2023 academic year, even semester. However, the author must also present some overall product analysis summary.

IV. CONCLUSION

The teaching material product developed by the researcher entitled Islamic Religious Education for Class XI is a development of the Electronic Student Book (BSE), which is modified in such a way as to suit the socio-cultural context and conditions of students. Revision of teaching material products is carried out continuously after going through trials and intensive discussions with material/content experts, design, and instructional media experts. This is intended to achieve ideal conditions as the primary reference for Islamic Religious Education subjects.

Overall, the researcher concluded that this teaching material is very appropriate for students to use as literacy and teaching materials. Based on the validation test and the results of data analysis, this expert design was declared fit for use. A survey of design experts is 86%, meaning this product can be used. Media experts give a percentage of 87%, which means this product can be used. Material experts consider 80%, which means this product can be used.

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