



**ELEMENTARY** *Islamic Teacher Journal*

E-ISSN : 2503-0256 / ISSN : 2355-0155

Volume 10 Number 1 January - June 2022 (PP. 175-202)

<http://dx.doi.org/10.21043/elementary.v10i1.13912>

Diakses di : <http://journal.iainkudus.ac.id/index.php/elementary>

## **Islamic Science Education for Elementary School an Android Application as a Form of Integration of Islam, Science, and Technology**

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### **Abstract**

The purpose of this research is to produce an android application that is feasible to be applied to elementary school students. This research includes development research. The steps follow the Borg & Gall development model. The research location is in Kudus Regency, Central Java, with a population of prospective teachers, elementary school teachers, and PGMI lecturers in Kudus, while the samples were taken randomly. The data in the study includes assessment data from the validators, and data from field trials. Data collection is done by observation (use of applications) and questionnaires. Data analysis with qualitative descriptive analysis using the model of Milles and Huberman. This research produces an android application 'Islamic Science Education For Elementary School' which is feasible to be applied to elementary school students through scientific stages that can be accounted for. This can be seen from the validation results of two media experts covering 5 aspects, namely; Effectiveness, Ease, Suitability, Completeness, Communicative, and interaction. The test results showed that 60% of respondents gave a very good rating (very decent), and 40% of other respondents gave a good rating (decent) on the developed media. This research is expected to maximize the use of android, as well as alternative learning media in elementary schools.

**Keywords:** Android Application, Islamic Science, Islamic Integration

### Abstrak

Tujuan dari penelitian ini adalah menghasilkan sebuah aplikasi android yang layak untuk diterapkan pada siswa sekolah dasar. Penelitian ini termasuk penelitian pengembangan. Langkah-langkahnya mengikuti model pengembangan Borg & Gall. Lokasi penelitian berada di Kabupaten Kudus, Jawa Tengah dengan populasi calon guru, guru SD, dan dosen PGMI di Kudus, sedangkan sampel diambil secara acak. Data dalam penelitian ini meliputi data penilaian dari validator, dan data dari uji coba lapangan. Pengumpulan data dilakukan dengan observasi (penggunaan aplikasi) dan angket. Analisis data dengan analisis deskriptif kualitatif menggunakan model Milles dan Huberman. Penelitian ini menghasilkan sebuah aplikasi android 'Pembelajaran IPA Untuk Sekolah Dasar' yang layak untuk diterapkan pada siswa sekolah dasar melalui tahapan keilmuan yang dapat dipertanggungjawabkan. Hal ini terlihat dari hasil validasi dua ahli media yang meliputi 5 aspek, yaitu; Efektivitas, Kemudahan, Kesesuaian, Kelengkapan, Komunikatif, dan Interaksi. Hasil pengujian menunjukkan bahwa 60% responden memberikan penilaian sangat baik (sangat layak), dan 40% responden lainnya memberikan penilaian baik (layak) pada media yang dikembangkan. Penelitian ini diharapkan dapat memaksimalkan penggunaan android, sekaligus sebagai media pembelajaran alternatif di sekolah dasar.

**Kata Kunci:** Aplikasi Android, Ilmu Keislaman, Integrasi Islam.

## INTRODUCTION

The era of the industrial revolution 4.0 positions information technology as a very basic need in human life. This disrupts various human activities, including in the fields of education, art, and technology. Era 4.0 was marked by a shift from previously struggling in the real world to being replaced by the virtual world era. This era emphasizes the 'internet of things or internet based. This requires adjustments in various fields, including the world of education. In line with this, the world of education, in this case learning activities, is very likely to be disrupted.

Gadget, smartphone, or android has become a major need and almost everyone already owns and uses this gadget or android. Elementary school-age children or even toddlers, their parents have been accustomed to interacting with gadgets or androids. This is following a survey by the US Pew Research Center regarding the use of Android in Indonesia, which ranks 24 countries with the most smartphone users in the world (Taylor, K. & Silver, 2019).

The use of Android should support learning activities and support the achievement of educational goals. It's just that based on the results of initial



observations, the use of android has not been maximized, even more, sad at the age of elementary school children in the research environment in particular and in Indonesia in general it is more just for playing games or social media.

Science is mandatory and important knowledge in the world of basic education in Indonesia. However, when referring to the 2015 PISA results, Indonesia is ranked 62 out of 69 countries assessed, namely for the category of average achievement score or the scientific ability of children aged 15 years or basic education age. (The OECD Program for International Student Assessment, 2016). These results become homework for education stakeholders in Indonesia. There needs to be a development or improvement in the quality of education, especially with our entry into this 4.0 era which we must adapt quickly so as not to be left behind.

Science cannot be separated from the teachings of Islam. Many arguments in the Qur'an show scientific phenomena. It's just that there are still many that have not been revealed so far. There is a need for further study of this matter so that it will further enrich the treasures of scientific knowledge if it is integrated with Islam in this case based on the arguments of the Qur'an. (S. Purwaningrum, 2015).

With the development of this android application, it is expected to maximize the use of android for the community, especially the age of elementary school students. Android is not just for playing games but is a means of learning science and Islam that is integrated into an android application that so far no one has developed as a whole (not per theme or subject), especially one that integrates science with Islam. In addition to this, there is a threatening danger, namely the spread of pornographic content, hoaxes, hate speech, and radicalism, lately using social media through Android, so that with applications that are made as attractive as possible, they can divert and save those who incidentally is the nation's successors.

Learning media is a very important and effective tool because it is a tool to connect students with the concepts being studied so that these concepts can be more easily understood by students. The right media can make students learn more effectively. Wanda revealed that learning media is a creative medium that aims to provide subject matter to students so that the learning process will be more effective, efficient, and fun (Fikri, AA, Wijayanti, R., Laila, N., & Zain, 2018).



With the learning media will be able to bring out the learning process of students, students not only become subjects but also experience and enjoy the learning process itself. Interesting learning media aims to create a pleasant atmosphere so that interactions between teachers and students will be better established.

Learning media has several functions. In a learning activity, the functions of the media are: presenting actual objects in learning, making concrete concepts, providing common perceptions for all students, overcoming barriers of time and learning distance, and providing a pleasant learning atmosphere for students. (Bybee, 2013)

Learning media can be grouped into audio media, visual media, and mixed media, both audiovisual, multimedia, and others. From these various media, the selection of the right media will help attract students' attention and understand a learning material (Houtsuite, 2018). Today, especially in the 4.0 era in Indonesia, especially digital media based on mobile phones or androids, are the most likely to be used, because according to the US Pew Research Center survey on android use in Indonesia, Indonesia ranks the 24th most smartphone user country in the world. (Taylor, K. & Silver, 2019).

To further improve the effectiveness of learning, it is not enough just to choose the right media for learning that is considered, it is very good and grateful if the development of a media can be done. The development of learning media needs to pay attention to several principles that can be shortened to VISUALS, namely Visible (easy to see by users); Interesting (attractiveness); Simple (simplicity); Useful (usefulness); Accurate (accuracy); Legitimate (reasonable); and Structured (structured) (Masrah, 2017).

Based on the latest data published by Hootsuite in January 2018, there are 177.9 million Indonesians who are active mobile phone users out of a total population of 265.4 million. From here it becomes important to try to develop a device-based learning media that is most widely used, namely mobile phones or androids. In addition, based on Siti Muryoah's research, shows the effectiveness of learning outcomes for biology subjects using android-based learning media (Houtsuite, 2018).



Based on research, more than 25% of children around the world have a gadget before they turn 8 years old (Murdaningsih, D., & Faqih, 2014). This is certainly very necessary to the attention of educators and academics to develop android-based learning media for elementary school students.

The advantages of android-based learning media are as follows: 1. Easy to operate, beautiful and simple appearance 2. U-leaning or learning can be anywhere 3. Can be used offline or not connected to the Internet (except for learning videos), 4. No takes up a lot of phone memory (M. Mustaqim, 2015).

Android is software for mobile devices that includes an operating system, middleware, and key applications. Application development on the Android platform uses the Java programming language. Android's core suite of applications includes an email client, SMS program, calendar, maps, browser, contacts, and more.

The use of the Android operating system on smartphones is currently widely used by cellular phone-producing companies. Because of its advantages as software that uses a computer code base that can be distributed openly (open source), there are lots of applications that can be downloaded by smartphone users without paying the application fee. (Rasjid, 2018).

Science is an important part of the education curriculum for children in various parts of the world (Asoko, 2000). One of the characteristics of science is that it is dynamic and always evolving. The development of this science is none other than because of discoveries or new paradigms put forward by scientists in the field of science itself (all sciences in general) In science, there is no separation from one another, but specializations that run competitively and provide mutual benefits in all aspects of human life (Septiana Purwaningrum, 2015).

Science seeks to arouse human interest and curiosity so that intelligence and understanding of nature in its entirety continue to grow. Accompanied by the flow of information, the scope of science is getting wider, and applied science is born, namely technology. Science and technology achieved by a nation are usually used as a benchmark for the progress of a nation. The progress of this nation is largely determined by the ability of Indonesian human resources in mastering science and technology (Fikri, AA, Ismah, V., & Paidi, 2018).



Science is closely related to the educational process. Through education, science is not just transferred, but more than that, it is equipped with values, attitudes, and character. In Indonesia, education is not only the responsibility of the government but also the responsibility of the family and society. The government in applying education, in this case, is national education regulated by Law Number 20 of 2003 concerning the National Education System (Desstya, 2014).

One of the goals of national education as stated in Law Number 20 of 2003 concerning the National Education System is the development of the potential of students to become human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent, and become a democratic and responsible citizen (President of the Republic of Indonesia, 2003). From these objectives, it can be concluded that the final result of education is not only science and technology (IPTEK) but also faith and piety (IMTAK).

There are several problems of learning science that occur in the field today, including 1) the teaching and learning process in schools currently does not or has not provided maximum opportunities for students to develop their creativity, 2) the teaching materials provided in schools are still separated from the main problems that arise in society, especially those related to technological developments and the presence of technological products during society, as well as the consequences thereof, 3) process skills have not been seen in learning in schools with reasons to pursue curriculum targets, 4) lessons Conventional science only prepares students to continue higher studies, not prepares human resources who are critical, sensitive to the environment, creative, and understand the simple technology that is present during society (Desstya, 2014).

Islam is rahmatan lil alamin or mercy for all nature, the application of Islam which is integrated with science and technology is a form of creativity in developing Islamic concepts. Creativity or creative thinking must be nurtured from an early age because it can increase the ability to see various possible solutions to a problem (Ali Fikri, 2018).

Islam which is integrated with science or the Islamization of science is expected to be able to become a paradigm in presenting the glory of the “real” Islamic sciences as initiated by early and medieval Muslim scholars. (Muhamad Mustaqim, 2015). In



addition, to be in line to provide science material for the elementary school level, students can understand science concepts which can then be contextually connected to everyday life. Furthermore, students can develop gratitude towards God Almighty for all His greatness (Desstya, 2014).

Besides being integrated with science, Islam should also be integrated with technology. Especially in this 4.0 era, if you don't immediately follow and adapt, Muslims will be left behind with other people who have developed science and technology first. Rasulullah SAW has put Aqidah as the basis of knowledge. He invited him to embrace the Islamic creed first, then after that, he made the aqeedah the foundation and standard for various knowledge (Fikri, AA, Wijayanti, R., Laila, N., & Zain, 2018).

## **METHODS**

This type of research is research and development, namely research to produce a product (Sugiyono, 2012). The resulting product is an android application 'Islamic Science Education For Elementary School' which is an application for elementary school-level science learning that links Islam and science.

The research and development steps refer to the ten R & D procedural steps of the Borg & Gall model (Borg, WR & Gall, 1983). The reason for choosing this model is based on the systematic and sequential steps and it is clear enough to explain each step.

The ten steps were then adapted and modified into eight steps as follows: conducting a preliminary study and gathering information, planning and designing research, drafting an initial product (android application), and conducting a preliminary field test with prospective MI teachers. in Kudus related to application usage and content, revising products, conducting main field tests, revising the results of main field trials, conducting dissemination, and implementing products.

These eight steps are the result of modifications that are included in the limitations of the study, which are related to the stages of operational field trials, product revision of the results of field trials, and dissemination (done by exposing research results and distributing android application products to elementary school teachers through the play store application).



The location of the implementation and trial of this research is in Kudus Regency, Central Java. The determination of this location is intended to make IAIN Kudus, not like the Ivory Tower but to spread benefits to the community (academic) around the IAIN Kudus campus.

The population in this study were prospective teachers, elementary school teachers/madrasah Ibtidaiyah and PGMI lecturers in Kudus and surrounding areas, while the samples were taken randomly. The data sources in this study are validators (experts), prospective teachers, elementary school teachers/madrasah ibtidaiyah, and PGMI lecturers in Kudus district who have tried using the 'Islamic Science Education For Elementary School' android application. After trying to use the application developed by the researcher, the respondents were asked to fill out a questionnaire and assess the feasibility of the product that had been developed. In addition, the researchers also conducted observations and interviews with respondents regarding the inputs for the application.

The data in this study include assessment data from the validators and data from field trials. Data collection is done by observation (use of applications) and questionnaires. Testing the validity of the data is done by data triangulation, namely by 1) Triangulation of sources, namely with various data sources including prospective teachers, elementary school/madrasah ibtidaiyah teachers, and PGMI lecturers. 2) Triangulation methods, namely several methods including questionnaires and observations.

Data analysis was carried out by qualitative descriptive analysis using the Milles and Huberman model, with the categorization formula from Djemari Mardapi with a range of A values(very good category), B value(good category), value C(enough category), and the value of D(bad category) (Mardapi, 2008). The product feasibility value is determined with a minimum value of "B" or "good" category. If the results of the assessment by experts, teachers, and students on average give the final result "B", then the application product is said to be feasible to use.

## **RESULTS AND DISCUSSION**

The result of this research is an android application 'Islamic Science Education For Elementary School' which is feasible to be applied to elementary school students





through scientific stages that can be accounted for. Therefore, in this section, the researcher also describes how the process or stages until the realization of an application that is feasible to be applied.

The stages (8 stages) in the development process to produce a product that is feasible to be used as an integrated learning media of Islam, science and technology can be explained as follows;

### 1. Preliminary studies

The implementation of this preliminary study was carried out by researchers assisted by a team of field assistants with a literature review related to the importance of science being taught, how the curriculum should be, how science learning should be in the 4.0 era, as well as the arguments of the Koran related to science. At this stage, the researcher analyzes KI-KD and MI/SD science material referring to or following the attachment of PERMENDIKBUD No 37 of 2018 concerning KI/KD Lessons in the 2013 curriculum.

### 2. Research Planning and Design

At this stage, the researcher was assisted by a team of field assistants to determine the KI-KD and MI/SD IPA material referring to or following the attachment of PERMENDIKBUD No 37 of 2018 concerning KI/KD Lessons in the 2013 curriculum. At this stage, the researcher also determined the verses of the Koran that related to the IPA material that has been determined. In addition, researchers also design the content of the android application that will be developed. At this stage, the researchers also conducted FGDs by inviting media experts, namely Dr. Wulandari Saputri M.Pd as well as academics in the field of media and PGMI to provide input on the draft that has been designed by the researcher.

### 3. Preparation of initial product draft

The development of android application-based media is motivated by the phenomenon of the high use of gadgets among children, including elementary school students. Gadgets are only used for games and social media by them. From there the researchers then had the idea to develop an android-based learning media that could be applied through their



gadgets, more than that the developed application also had the advantage of integrating science and Islam (Qur'anic verses) so that they got additional value or value from learning science. using this developed application.

At this stage, the researchers assisted by a team of field assistants drafted the design and layout of the menu display as well as the content in the application to be developed, namely the 'Islamic Science Education For Elementary School' application starting from the appearance and content. At this stage, the researcher uses the services of an application development consultant, so the important part is how to transfer the researcher's concept of the application to be developed to the application developer consultant. During the production process, researchers also coordinate, check and monitor the progress of making applications.

The following display of the 'Islamic Science Education For Elementary School' application is as follows:



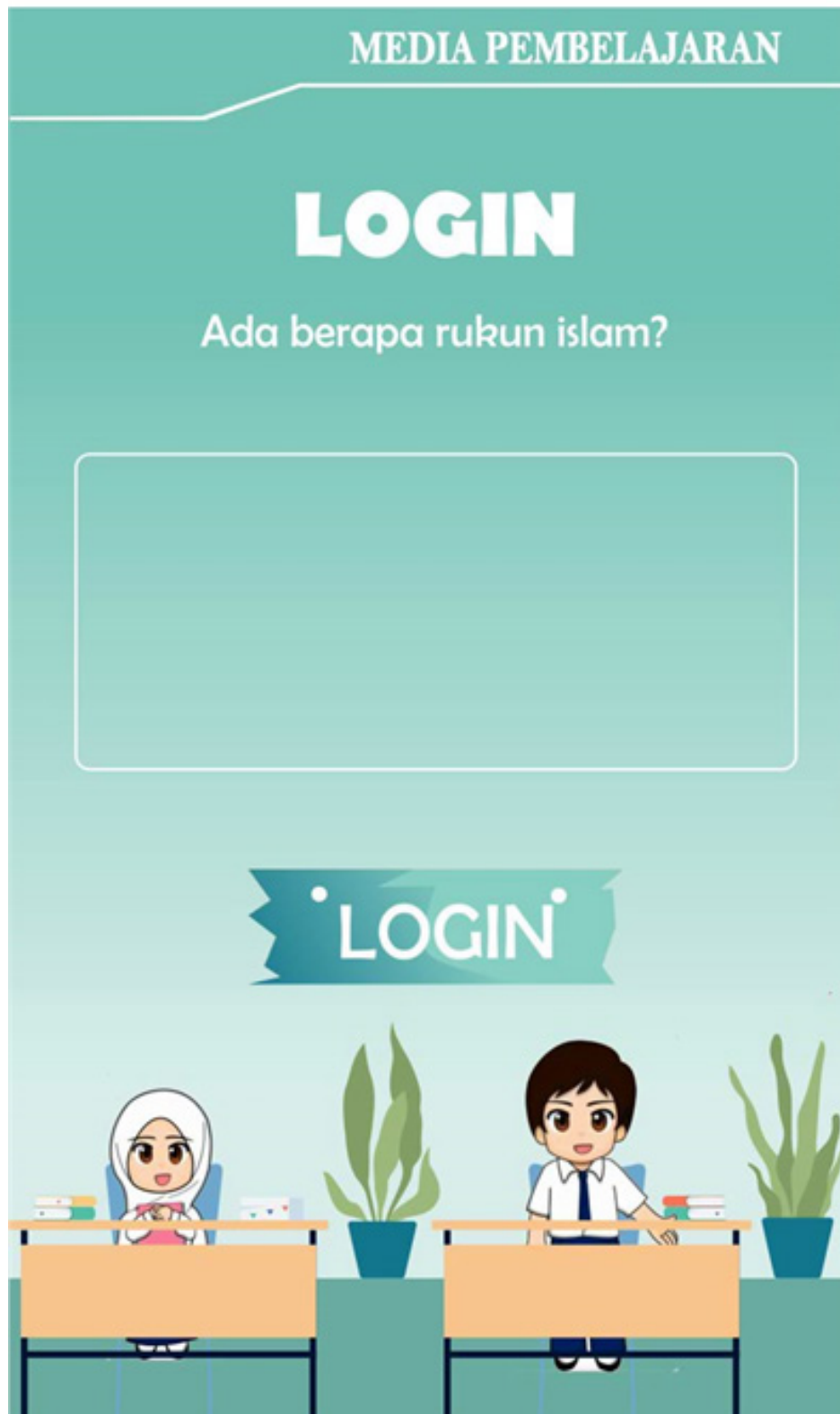


Figure 1. Application Login Page

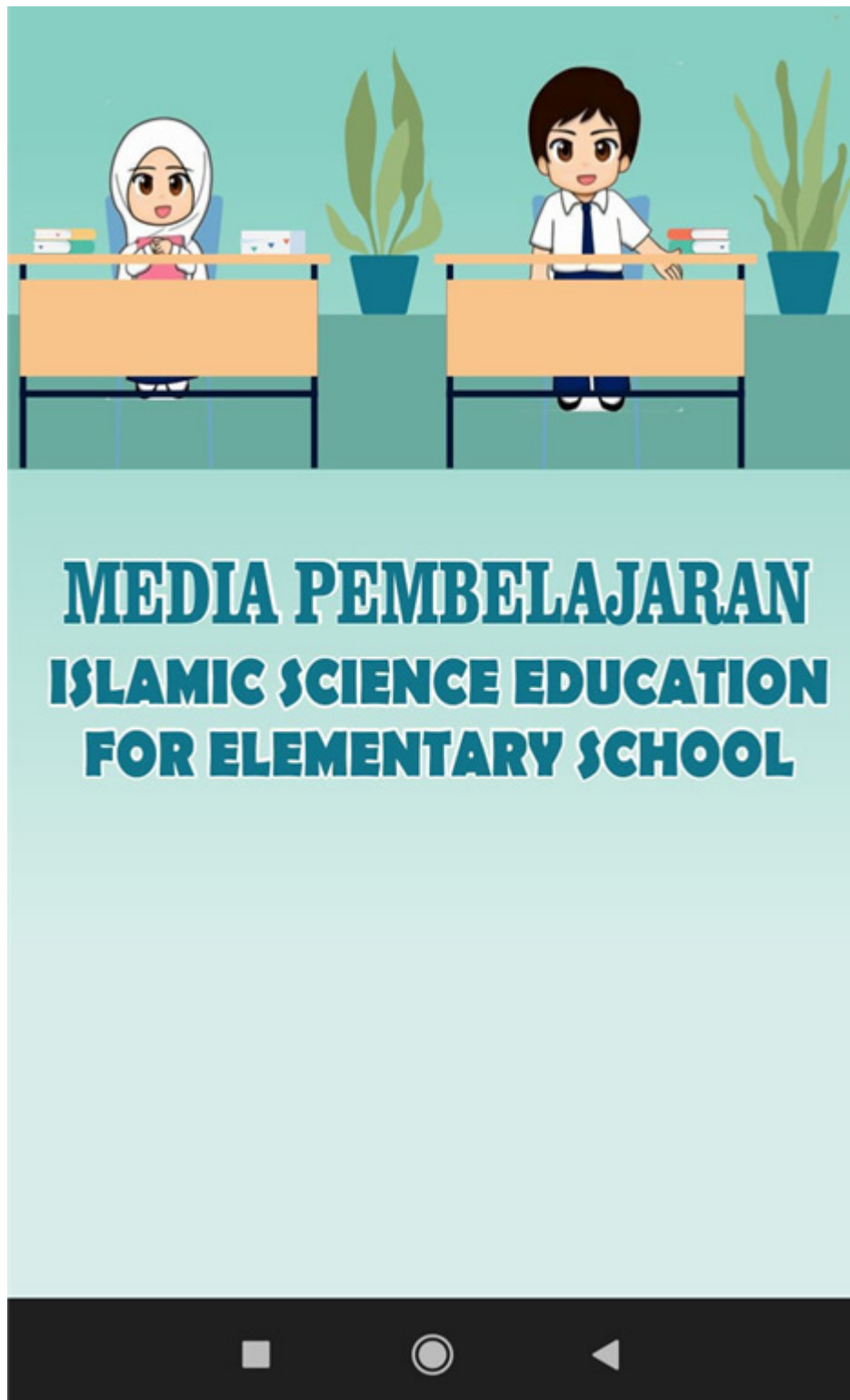


Figure 2. Home screen or main page



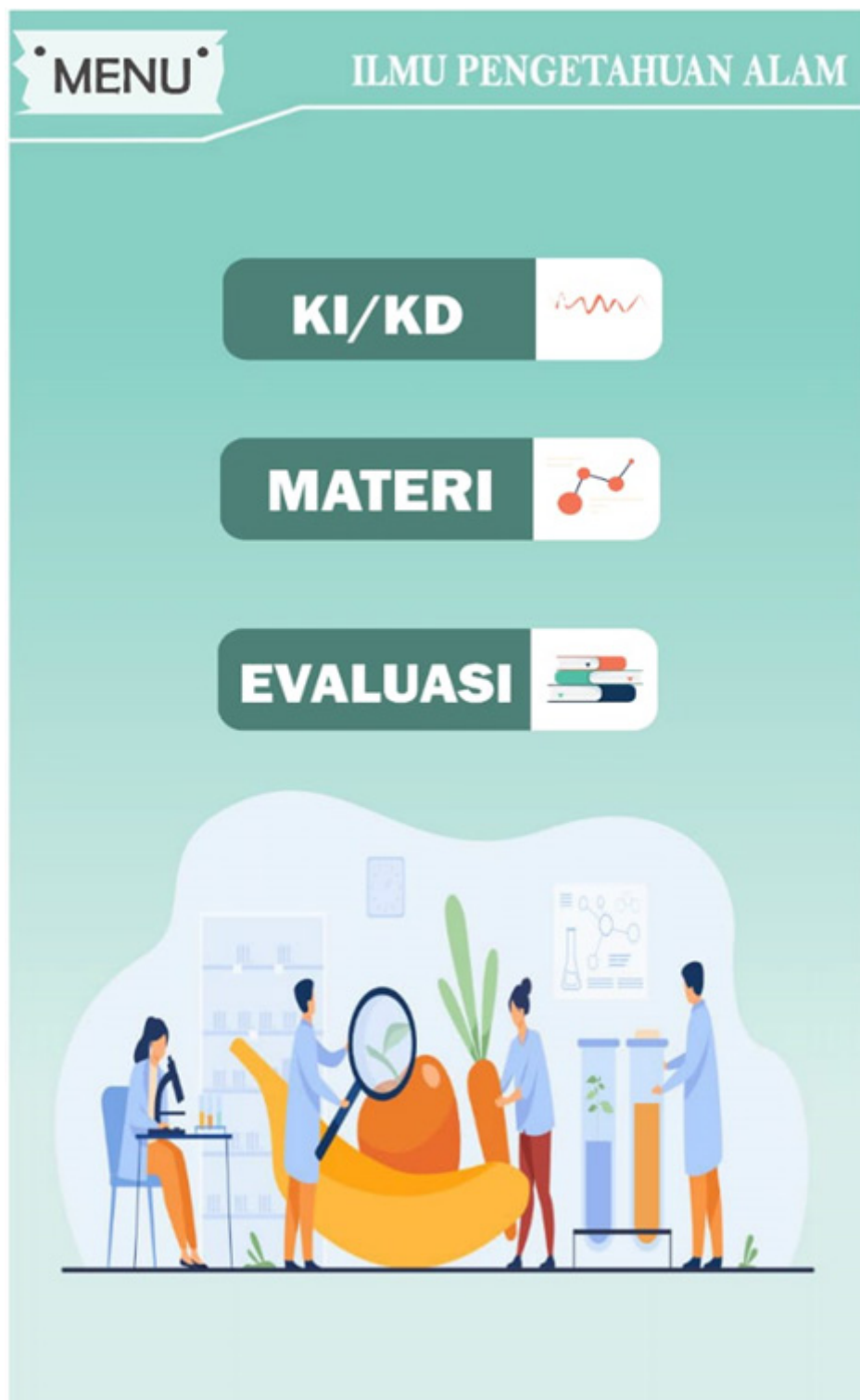


Figure 3. Main menu display

**MENU** **ILMU PENGETAHUAN ALAM**

### Kompetensi Inti

Memahami pengetahuan faktual dengan cara mengamati dan menanya berdasarkan rasa ingin tahu tentang dirinya, makhluk ciptaan Tuhan dan kegiatannya, dan benda-benda yang dijumpainya di rumah, di sekolah dan tempat bermain

### Kompetensi Dasar

- 3.1 Menganalisis hubungan antara bentuk dan fungsi bagian tubuh pada hewan dan tumbuhan
- 3.2 Membandingkan siklus hidup beberapa jenis makhluk hidup serta mengaitkan dengan upaya pelestariannya
- 3.3 Mengidentifikasi macam-macam gaya, antara lain: gaya otot, gaya listrik, gaya magnet, gaya gravitasi, dan gaya gesekan
- 3.4 Menghubungkan gaya dengan gerak pada peristiwa di lingkungan sekitar
- 3.5 Mengidentifikasi berbagai sumber energi, perubahan bentuk energi, dan sumber energi alternatif (angin, air, matahari, panas bumi, bahan bakar organik, dan nuklir) dalam kehidupan sehari-hari
- 3.6 Menerapkan sifat-sifat bunyi dan keterkaitannya dengan indera pendengaran
- 3.7 Menerapkan sifat-sifat cahaya dan keterkaitannya dengan indera penglihatan
- 3.8 Menjelaskan pentingnya upaya keseimbangan dan pelestarian sumber daya alam di lingkungan

Figure 4. Display menu 1 KI/KD



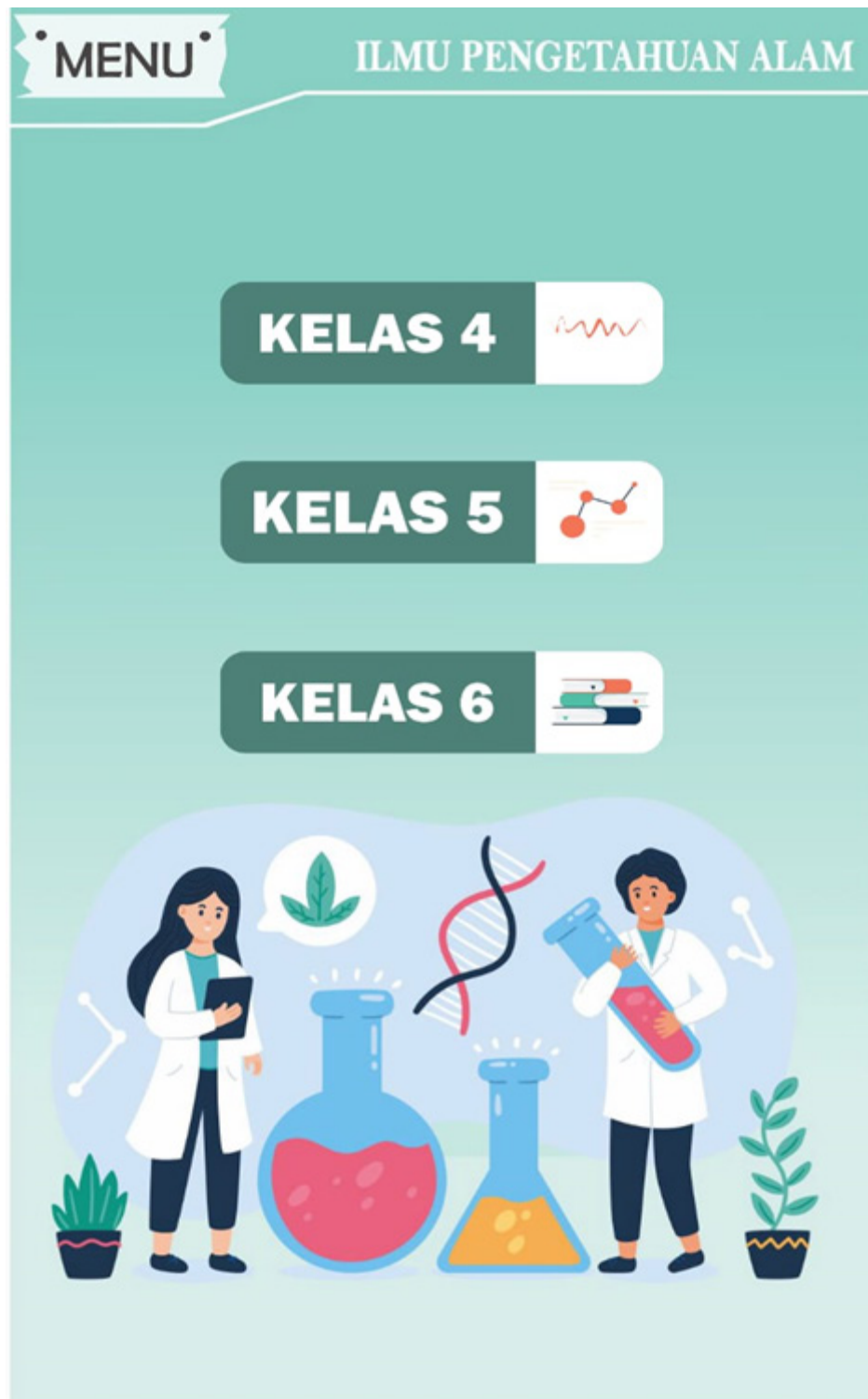


Figure 5. Display menu 2 Material

**MENU**

**BENTUK DAN FUNGSI TUBUH TUMBUHAN DAN HEWAN**

**BENTUK DAN FUNGSI TUBUH TUMBUHAN**

Pernahkah kamu mengamati tumbuhan disekitarmu? Apa Saja bagian-bagian tumbuhan dan fungsinya? Apakah tumbuhan memiliki bentuk-bentuk tertentu?  
Berikut adalah bagian-bagian dari tumbuhan :



The diagram shows a tomato plant with four labeled parts: Daun (Leaves) at the top, Bunga (Flowers) on the left, Batang (Stem) in the middle, and Akar (Roots) at the bottom. The plant is set against a background of a landscape with trees and a pond.

Figure 6. Display an example of the contents of the material menu





**MENU**

**BENTUK DAN FUNGSI TUBUH  
TUMBUHAN DAN HEWAN**

**Ayat Al-Qur'an Tentang Tumbuhan**

Tumbuhan memiliki fungsi yang sangat penting bagi kehidupan manusia di bumi. Hal tersebut dijelaskan dalam Al-Qur'an surah 'Abasa ayat 24-32.

فَلْيَنْظُرِ الْإِنْسَانُ إِلَى طَعَامِهِ، أَنَا صَبَبْنَا الْمَاءَ صَبًّا، ثُمَّ شَقَقْنَا الْأَرْضَ شَقًّا  
فَأَنْبَتْنَا فِيهَا حَبًّا، وَعَبَبْنَا وَقَضْبًا، وَزَيْتُونًا وَنَخْلًا، وَحَدَاقًا وَغُلْبًا  
وَفَاكِهَةً وَأَبًّا، مَتَاعًا لَكُمْ وَلِأَنْعَامِكُمْ

Artinya = “Maka hendaklah manusia itu memerhatikan makanannya. Sesungguhnya Kami benar-benar telah mencurahkan air (dari langit), kemudian Kami belah bumi dengan sebaik-baiknya. Lalu Kami tumbuhkan biji-bijian di Bumi itu, anggur dan sayur-sayuran, zaitun dan kurma, kebun-kebun yang lebat, dan buah-buahan serta rumput-rumputan, untuk kesenanganmu dan untuk binatang-binatang ternakmu”

Ayat diatas menjelaskan tentang kenikmatan, kesenangan, dan jug manfaat dari tumbuh-tumbuhan yang sudh di ciptakan oleh Allah SWT. Sudah semestinya umat manusia harus menjaga tumbuhan tumbuhan di bumi ini.

Figure 7. Sample display of the contents of the material menu which contains integration with the verses of the Qur'an

## ALAT GERAK MANUSIA DAN HEWAN

Simaklah video berikut untuk mengetahui pembahasannya alat gerak manusia secara lebih rinci!



[https://youtu.be/SsYlr\\_gwPeM](https://youtu.be/SsYlr_gwPeM)

### Alat Gerak Manusia dan Hewan dalam Al-Qur'an

Penjelasan alat gerak seperti tulang pada manusia dan hewan juga dijelaskan dalam Al-Qur'an surah Al-Mu'minun ayat 14 :

(ثُمَّ خَلَقْنَا النَّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً فَخَلَقْنَا الْمُضْغَةَ  
الْمُضْغَةَ عِظْمًا فَكَسَوْنَا الْعِظْمَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ  
فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ

Artinya = “Kemudian air mani itu Kami jadikan segumpal darah, lalu segumpal darah itu Kami jadikan segumpal daging, dan segumpal daging itu Kami jadikan tulang belulang, lalu tulang belulang itu Kami bungkus dengan daging. Kemudian Kami jadikan dia makhluk yang (berbentuk) lain. Maka Maha sucilah Allah, Pencipta Yang Paling Baik.”

Pada surah tersebut dijelaskan bahwa Allah SWT telah menjadikan tulang pada tubuh manusia dan hewan. Oleh sebab itu perlulah kita menjaga apa yang sudah dititipkan kepada kita dengan menjaga kesehatan tulang.

Figure 8. Sample display of the contents of the material menu containing learning videos and integration with the verses of the Qur'an



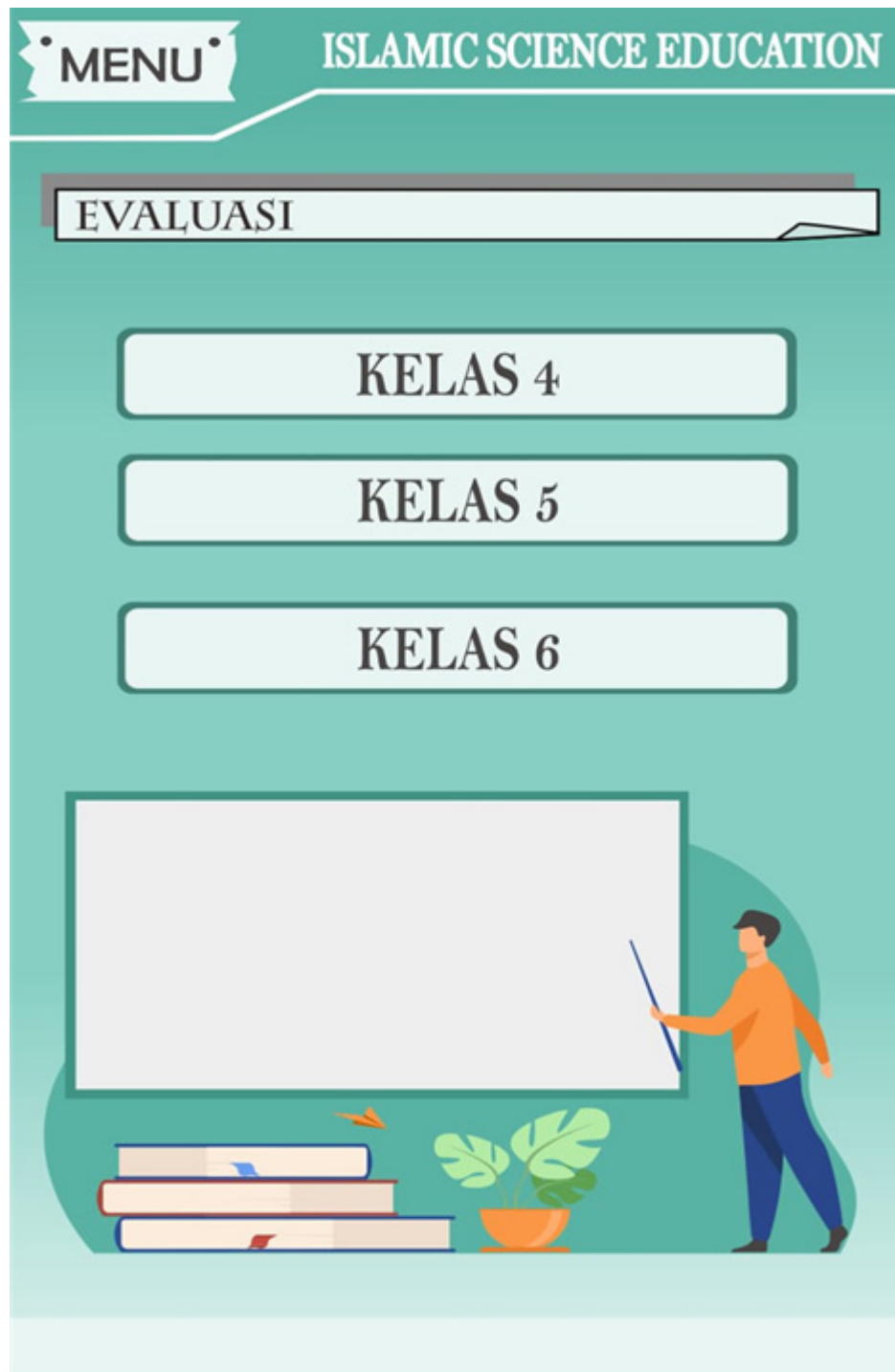


Figure 9. The evaluation menu display is made by class

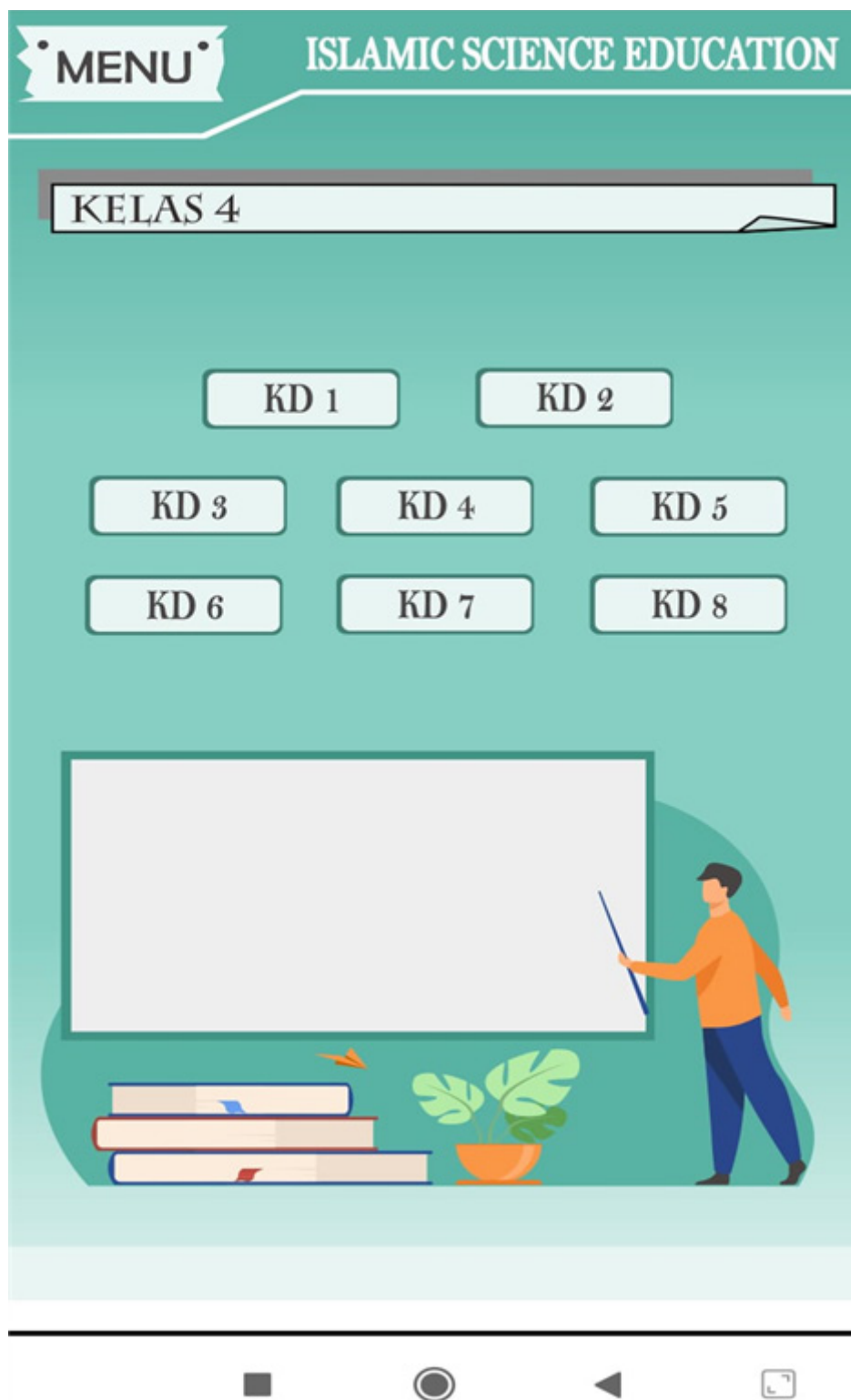


Figure 10. The display of the evaluation menu is not only made per class but also per basic competency





Figure 11. Display for logging into the evaluation menu

At this stage, after the product has been successfully developed, the next step is to carry out product validation tests. The validation test was carried out with 2 validators, namely application validation to media experts and application content validation to material experts.

Expert validation is carried out by filling out an assessment questionnaire <https://forms.gle/aye7CahKSDxrptQ58> which consists of 5 aspects namely; Effectiveness, Ease, Suitability, Completeness, Communicative and interactive. These five aspects are described in 23 statements, by media experts namely Dr. Wulandari Saputri M.Pd, a teaching media lecturer from the Biology Education Study Program, Muhammadiyah University of Palembang, and Mr. Febri Trifanto from the Sunan Pandanaran Education Campus, Yogyakarta. At this stage, the validators provide assessments and also suggestions regarding product development. Some notes and input for the application are as follows:

- a. There should be a special menu/button to return to the main/home page (Basic competencies, materials, and evaluation), the writing is still too dense, it is better to multiply pictures and illustrations, and it is better to enlarge the image size so that it is easier to see, some verses of the Koran are displayed but have not been linked directly clearly with the material (eg motion material and the letter ar rad) if the evaluation questions are given direct feedback regarding the correct answers, the evaluation questions have not been integrated with Islamic values.
- b. Adding animation, adding color to avoid monotony because the target is elementary school children, and adding an exit button.

After receiving notes and input from the research experts and the team, they then coordinate to make revisions and improvements, besides that they also coordinate with application consultants to make revisions to applications that have been developed.

4. Conduct a preliminary field test with prospective MI teachers in Kudus regarding the use and content of the application.  
At this stage, the researcher was assisted by a team of field assistants distributing application files (APK) and GForm links for preliminary test



questionnaire sheets to prospective MI/SD teachers (PGMI students). At the time of the implementation of this trial, the researchers had distributed the research instrument to dozens of prospective teachers, however, the researchers experienced a limited number of sources and even only got 2 sources or respondents. After conducting the analysis, it is known that the prospective respondents who received the application/APK file when they were about to install it on their smartphone received an alert/warning from their device that the APK file was not safe (this is because the default device settings will provide alerts if installing outside of the device). official app store like Play Store etc).

From the respondents or subjects of this preliminary field trial, it was found that the application developed was good and innovative. With a note that:

- a. This learning media is very innovative and in my opinion, it is following its application at the basic level, such as MI / SD, which will provide students with more experience in learning.
- b. It would be better if learning was followed by media that made it easier for students to understand the material presented.

#### 5. Doing product revision

After receiving notes and input from the respondents, the researcher, and the team then coordinated to make revisions and improvements, besides that they also coordinated with the application developer consultant to revise the applications that had been developed. The revisions carried out are minor revisions, which are related to evaluation questions and introduction to more challenging material for students according to their daily experiences around students.

#### 6. Carry out the main field test (main field test)

At this stage, the researcher was assisted by a team of field assistants distributing the application file (APK) and the GForm link for the main field trial questionnaire to MI/SD teachers in Kudus district. At the time of the implementation of this trial the researchers had distributed research instruments to 30 teachers, the researchers also experienced a limited number of respondents or sources, but in terms of quantity, there were more than in the previous trial, namely 5 sources or respondents. The five respondents were representative, consisting of 4th-grade, and 5th-grade teachers, 2 madrasah principals, and 1 PGMI lecturer. The steps taken by researchers to overcome the limited number of respondents were to provide rewards in the form of quota/internet packages for respondents, and researchers were able to gather more information through indirect interviews.



From the five respondents, information such as the following diagram can be obtained:

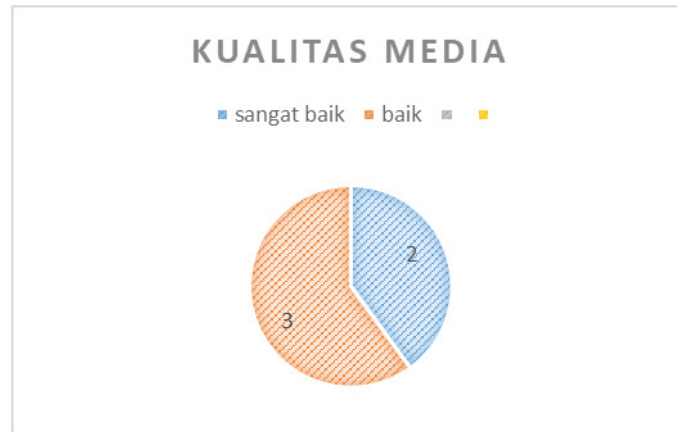


Figure 12. Response diagram to media quality

In addition, there are some notes and inputs as follows:

- a. ok continue
  - b. Make it easier for teachers to assess and make it easier for children to understand the material
  - c. Very good
  - d. Learning media still need improvement, because all of them need maintenance
  - e. Learning Media The Android application "Islamic Science Education" can be used for elementary school students.
7. Revise the results of the main field trials

After receiving notes and input from the respondents, the researcher, and the team then coordinated to make revisions and improvements, besides that they also coordinated with the application developer consultant to revise the applications that had been developed. The revisions made are minor revisions related to the appearance of the application so that it is more attractive and easy to operate.

8. Conducting Dissemination and Implementing Products

Temporary dissemination is carried out by exposing research results and





distributing android application products to WA primary school teachers. For broad implementation in the future, after the fic, this application will be submitted to the play store so that it can be used and utilized by all teachers and elementary school students or madrasah ibtidaiyah.

The Android application “Islamic Science Education For Elementary School” is expected in addition to be a medium that attracts the attention of students who are already familiar with Android, it can also be inserted or incorporate Islamic concepts into science material. The process of developing this media is also a form of integrating Islamic concepts with technology that is widely used today.

## **CONCLUSION**

This research succeeded in realizing an android application that is feasible to be applied to elementary school students. Media feasibility refers to 5 aspects, namely; Effectiveness, Ease, Suitability, Completeness, Communicative, and interaction. The application was then given the name ‘Islamic Science Education For Elementary School’. Step by step has been running on the track, referring to the research stages that have been previously determined, namely the ten procedural steps of R & D from the Borg & Gall model. (Borg, WR & Gall, 1983)which has been adapted and modified into eight steps so that it can be accounted for.



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