The Development of Android-Based Basic Services Media to Measure Conceptual Understanding of Adolescents Sexual Behavior

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Abstract: This research aimed to find out how the development, feasibility, and effectiveness of android-based guidance and counseling primary service media are used to increase the conceptual understanding of the reproductive system and adolescents sexual behavior during the post-pandemic period. The researchers employed the Borg and Gall's concept by involving nine stages starting from potential and problem mapping, data collection, product design, design validation, design revision, product trial, product revision, trial use, and product revisions. The research instruments were media expert validation questionnaires, linguists, material experts, student and educator response questionnaires, concept understanding tests, and documentation. The sample used in the limited-scale test was 10 students, while in the wide-scale test there were 76 students. Based on the results of the research on the feasibility test of android-based primary service media on the conceptual understanding of the reproductive system and adolescents sexual behavior, the percentage of material experts was 82%, linguists was 82 %, and media experts was 84 %, all in the very decent category. The results of the questionnaire respondents were very positive in which it was seen from the results of the teacher's response questionnaire that was 94 % and 85 % of students with 'very interesting' criteria. Meanwhile, the effectiveness of the media can be seen from the average N-gain of the experimental class 0.58 (moderate) and N-gain of the control class 0.57 (moderate). Independent t-test with a sig 2-tailed 0.00 was less than 0.05 (alpha). Thus, it is concluded that the android can increase the conceptual understanding of the reproductive system and adolescents sexual behavior.

INTRODUCTION

Guidance and counseling have a strategic position and role in facing various changes in the current 21st Century, especially during and post-Covid-19 pandemic (Leach et al., 2021). In this sense, guidance and counseling services in schools can provide effective and efficient influence while developing the potential of the current generation Z and Alpha in accordance with their skills, interests, and talents (Takács et al., 2021); (Afrizawati et al., 2021). Therefore, guidance and counseling teachers should be able to improve their existence with various breakthroughs based on their competencies, particularly technological competencies in the distraction era today

(Darma et al., 2020); (Suryati & Salehudin, 2021); (Priyambodo & Saputri, 2021). The presence of technology for counselors can be utilized to facilitate the service delivery (Shopyan, 2020). Technology makes it easy to access various sources of information provided to the students through guidance and counseling services (Mathar et al., 2021). The most important thing to remember is that technology is a tool, not a substitute for humans, so its role should not replace the role of counselor as a whole (Hanifah & Fahyuni, 2021).

The 21st century learning is much oriented to a digital lifestyle (Kai et al., 2021). As such, guidance and counseling teachers have to be innovative in designing the basic service media applied both online and offline. It also indicates that the technological competence will become a new competency that makes the process of guidance and counseling services more attractive and able to provide optimal services during and post Covid-19 pandemic (Masya et al., 2022); (González & Ramírez, 2022).

Adobe CS6 application is one of the results of product innovation that can be used as a companion media for the implementation of basic guidance and counseling services, which is an android-based basic service media designed to facilitate the delivery of student service messages more easily, effectively, and efficiently (Zulfadewina et al., 2020); (Sukariasih et al., 2019). The android-based word in this media product is developed by using the Adobe CS6 application which of course can be easily applied to students' smartphones, and the information in it also can add to students' insights about the reproductive system and adolescents sexual behavior.

This basic service with android application products focuses on educating students, especially high school teenagers, about the understanding of the human reproductive system and adolescents sexual behavior (Saggioro et al., 2020);

(Patel et al., 2021). The adolescent phase is the phase of a child who undergoes the process of changes into an adult characterized by biological, psychological, and social changes (practice guidance for local authorities et al., 2019); (Ningsih et al., 2021).

The adolescent is divided into three stages, namely the early adolescent phase ages 11-14 years, the middle adolescent phase is around 15-17 years, and the late adolescent phase is between 18-21 years (Ali, 2022); (Yunalia & Etika, 2020). The adolescence at the high school level is a process of transition both physically, emotionally, and socially; between an innocent-joy childhood and with an adulthood which is the beginning of maturity and perfection of human existence. This teenage period has an urgency in human life and the formation of the personality because at that time many big changes have an effect on various stages of life (Husein, 2015).

Therefore, the focus of this research is carried out on adolescents in the senior high school level. The adolescence in this level is a vulnerable and critical period due to unstable emotional and behavioral development. This unstable state of behaviors is also due to the developmental stage at the age of 15-18 years (middle adolescence) which has the following characteristics:1) looking for self-identity; 2) raising the desire to date; 3) having a deep sense of love; 4) developing abilities in abstract thinking; 5) imagining sexual activity (Soetjiningsih, 2004). This android-based basic service media with the Adobe CS6 application is designed to facilitate sexual behavior services for adolescents strengthened by the concepts of the reproductive system biology, Islam, and counseling services.

The early adolescence is the most vulnerable age for both men and women, because this period is the beginning of intense physical changes and psychic development that bring impacts on the development of sexual behaviors

(Wijayanti & Nurpratama, 2020). In this phase, the child is going through puberty. In Siegnal research, puberty is a period when both men and women have a sense of mutual attraction. Puberty involves physical and psychosocial aspects. This is very important to distinguish who will experience the adjustment problems during adolescence and who will not. Thus, puberty has implications for the adolescent health (Mendle et al., 2019).

Demographic data show that the age of starting the dating between the age range of 15-17 years is done by 45% of women and 44% of men. The most common courtship behaviors recognized by women and men are clasping hands (65% women, 75% men), hugging (17% women, 33% men), kissing (30% women, and 50% men), and touching (5% women and 22% men) (Ramadhanti et al., 2022); (Liu et al., 2020). The courtship behaviors in the form of kissing, touching, hugging can yield the sexual contact (Wijayanti & Nurpratama, 2020), (National Population and Family Planning Board (BKKBN), 2018). BKKBN stated that of the 125 respondents obtained by respondents who were 17 years old, 14 people (11.2%) had sexual intercourse for the first time, and the youngest was 12 years old or 1 person (0,8%) (National Population and Family Planning Board (BKKBN), 2018).

The results of a preliminary study on respondents with a total of 10 people, divided into 5 females and 5 males in one of the state high schools in Bandar Lampung, were known that there were 5 students who claimed to have dated with the varied ages, namely 9, 11, 12, 13, 14 years old. All students did not know the concept of the reproductive system as a whole and in detail or obtained sexual education at school or at home. Two from ten children said they knew little about sexuality and both got information from the internet.

The education of adolescents' sexual behaviors needs to be given to teenagers, considering that the knowledge of the dangers of promiscuous sexual has been something taboo and even frequently become a joke. This tendency is supported by Rosuliana's research that the lack of proper preparation in terms of knowledge about sexuality adversely affects young people (Rosuliana et al., 2019). Meanwhile, most parents feel uncomfortable when talking about the reproduction and sexuality to their adolescent children, in which eventually issues related to sexual education, adolescents' sexual behavior and the human reproductive system are ignored by parents (Suhaid et al., 2021).

In fact, more than that, based on data from a preliminary study, the Counseling Guidance teachers in one of the state high schools in Bandar Lampung admit that students are actually worried about deviant sexual behaviors. However, such concern is not seriously followed by the proper means, in which it can be seen from information services that still use outdated services, so the results are still ineffective. There is no a special media created in the form of applications to facilitate the understanding of adolescents sexual behaviors to students with easy and flexible access as the basic preventive services.

In this sense, sexual education can provide a precise explanation of human sexuality and the dangers of promiscuous sex for adolescents. Meilan said that male and female adolescents have the right to receive adolescent reproductive education so that they can live a healthy and responsible sexual life and avoid the dangers of the promiscuity among adolescents as well (Meilani et al., 2014). Sulastri and Astuti in their research related to Health Education in increasing knowledge and attitudes about adolescent reproductive health suggested the need to add more creative educational media (Sulastri & Astuti, 2020).

The development carried out in this study is to create an android-based basic service product using Adobe Flash CS6 to

improve the concept of the reproductive system and adolescent sexual behavior for high school students in the post-pandemic period. High school students become a research subject, all of whom have entered adolescence which is a transition period from the child to adult. It cannot be denied that the patterns of thought and characteristics develops rapidly causing their great curiosity and even dared to take risks without careful consideration (Naitul et al., 2021).
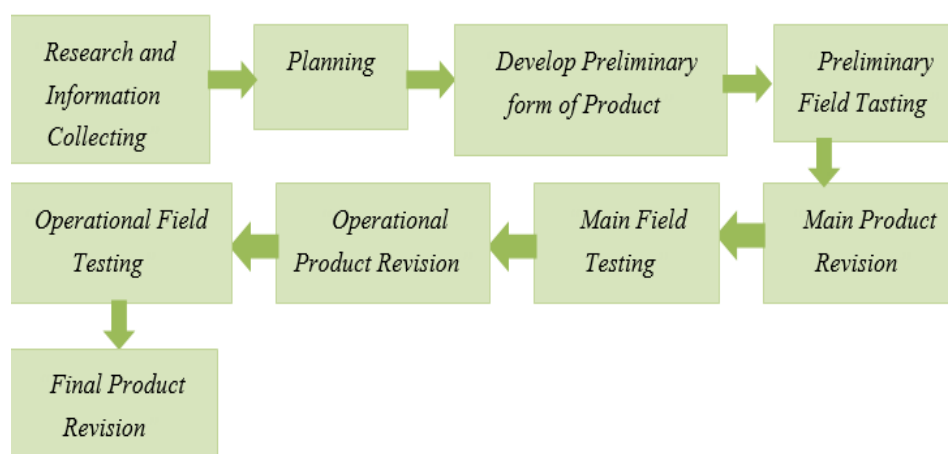
Most students know about sexuality through their friends, social media, and the internet. However, due to lack of knowledge about sexual education, they often abuse such access for certain bad attitude (Dela et al., 2022). By utilizing an android, teachers can deliver the subjects of materials without any obstacles. Its attractive design also makes the service more enjoyable and students can acces knowledge easily with a collection of summaries, schemes, drawings, tables that are opened sequentially based on basic service goals.

The presence of android-based service media is intended to complement the learning and provides opportunities for students to learn material that is not mastered anywhere and anytime. The emergence of media development using android is one of the alternative options for teachers to develop learning quality in accordance with the current situation faced by students. The use of android-based media can be done easily, just by installing an android-based basic service application on a smartphone, then it can be directly used as a basic service media that utilizes the features in it, and students can learn not only in the classroom but in any location where they are. This study aims to find out how to develop, the feasibility and effectiveness of android-based basic service media on understanding the concept of the reproductive system and adolescents' sexual behaviors in the post-pandemic

METHOD

This research is a development research with the Borg and Gall model which consists of 10 stages: research and data collection, planning, developing initial products, initial field trials, revision of initial field trial results, broad product testing, revision of widely tested products, feasibility tests, final product refinement, dissemination and implementation (Gall et al., 2003). However, the researchers only conduct research until the final product revision, which is nine stages.

Figure 1. Stages of R and D Borg and Gall according to Research Conducted (Maydiantoro, 2021)

This development research involves expert lecturers, guidance and counseling teachers who are tasked with validating the products developed, measuring the feasibility, response and effectiveness of the product, and the research subjects,

namely high school students of class XI science that consist of 76 participants as a subject of control and experiment. Field trials are carried out in two stages, namely preeliminary field testing which aims to see the response of students and teachers to android-based basic service media, and then main field testing which aims to determine the feasibility of media and test understanding of material concepts.

The instruments used to collect data in this study consisted of expert validation questionnaire sheets (media, language, and materials), teacher response questionnaires, student response questionnaires, and tests for mastery of reproductive system material concepts and adolescent sexual behavior. The expert validation questionnaire sheets are used to assess the feasibility of products, namely feasibility in terms of media, materials, and language. The teacher and student response questionnaires are used to determine product characteristics which consist of material, media, and learning aspects. The concept of comprehension test is developed based on Bloom's Taxonomic indicators with cognitive levels of remembering, understanding, applying, analyzing, evaluating and creating. It can be seen in Table 1.

Table 1. Concept Comprehension Test Indicators

No	Indicator	Cognitive Level
1	Mentioning the structure and function of the reproductive apparatus in humans	C1 (item 2, 7, 1, 4) C2 (item 4, 6, 8, 17)
2	Explains the process of formation of sex cells (gametogenesis)	C1 (item 5, 19) C2 (item 21, 1)
3	Associating the ovulation process with the menstrual cycle	C1 (item 12) C2 (item 11) C3 (item 9, 10)
4	Analyzing the process of fertilization, gestation, and childbirth	C2 (item 16) C4 (item 15)
5	Summing up abnormalities and diseases of the reproductive system	C4 (item 22) C5 (item 13)
6	Collecting information on hormones that affect the reproductive system	C4 (item 23, 25) C5 (item 3. 20) C6 (item 18, 24)

The data used to measure students' understanding of concepts are obtained from the results of the analysis of questions with a cognitive level of C1-C6 consisting of 25 items of pre-test and post-test questions with a form of multiple choice equipped with certainty of index response. This test is given on a broad-scale test in the experimental and control class to answer the effectiveness of the product being developed, in which it previously has been carried out the construct and content tests through expert lecturers and empirical tests through tests of validity, reliability, differentiability, difficulty level and deception level carried out on class XI students in state high schools outside the research site.

The value of understanding the concept can be known after using the N-Gain formula (Hake, 1998). The results of the analysis are consulted in the category Tabel 2.

$$N\text{-}Gain = \frac{Posttest\ Score - Pretest\ Score}{Maximum\ Score - Pretest\ Score}$$

Table 2. N-Gain Value Category (Langngan et al., 2021)

N-Gain Value	Category
g > 0,7	High
0,3 ≤ g ≤ 0,7	Keep
g < 0,3	Low

Furthermore, the N-Gain value was taken and hypothesis test was carried out using prerequisite tests (normality test using liliefors and homogeneity test using

fisher test). After normal and homogeneous data were distributed, and then an independent t-test with a significance level of 5 % was used to determine whether android-based basic service media products were effective in the conceptual understanding of the reproductive system and adolescents sexual behavior. The independent t-test formula uses a variant pooled t-test. The feasibility value of the product is obtained from the expert validation questionnaire sheets (media, material, and language), while the results of the feasibility value obtained are then interpreted into five criteria (Suharsimi, 2009) as described in Table 3.

Table 3. Product Eligibility Criteria (Sari et al., 2020)

Average Score	Category
80 < KK ≤ 100%	Very Feasible
60 < KK ≤ 80%	Feasible
40 < KK ≤ 60%	Decent Enough
21 < KK ≤ 40%	Less Viable
KK ≤ 21%	Very Less Feasible

RESULT AND DISCUSSION

The basic android-based media design of services on reproductive system materials and adolescents' sexual behavior is developed using Adobe CS 6 software. This media is equipped with two very comprehensive and detailed service material discussions. For instance, in the material section of the human reproductive system consists of core competencies, basic competencies, current info that display many hadith and Qur'an views on several phenomena surrounding the reproductive system in humans, reproductive system material (structure and function of reproductive devices in humans, the process of sex cell formation (gametogenesis), ovulation and menstruation, fertilization, gestation, and childbirth, hormones that affect the reproductive system, as well as disorders and diseases of the human reproductive system. This material section features learning videos, evaluations, glossaries, book lists, biolabs, and developer profiles.

Furthermore, the basic services of adolescents' sexual behaviors focus on the causes of sexual behaviors, how to prevent the deviant sexual behaviors in the Islamic view, the form of sexual behavior, and the impact of adolescents' sexual, evaluation, list of books, and equipped music that helps concentration

Research and Information Collect

In the preliminary studies that have been done by the researchers, the first step identifies problems in the field, especially in Guidance and Counseling services and Biology learning through field and literature studies. The field studies are conducted by interviewing guidance and counseling teachers, students, and observing the classical basic services carried out. It is known that: (1) most students own and use an android on smartphones, (2) the use of an android is widely used for things that are less educational, such as accessing social media, stalking games, marketplace applications, and TikTok applications, but very rarely the use of an android as a learning medium or a companion media for students guidance and counseling services, (3) the information service media provided has never existed in the form of an application, generally using class-based classical services using the discussion method, (4) so far learning has used teaching materials such as printed books, LKS, scientific magazines and newspapers. Meanwhile, the utilized media is still limited to power points, there is no application that comprehensively unites both knowledge of biological material content and guidance and counseling content, (5) basic services with content of adolescent sexual behaviors are rarely raised because guidance and counseling teachers do not have complete and in-depth knowledge of Biology materials to clarify the depth of the basic service process carried out, (6) there has never been a basic service process packaged in the form of an

application that is concise, flexible, and easy to use, (7) post-pandemic as it is currently the main stage to support the improvement of education and improve the character of students, (8) educators and students are very interested if the basic service process is packaged with applications that include not only reviews of human reproductive system Biology materials, but its association with the understanding of adolescent sexual behaviors from the aspect of the content of guidance and counseling services.

In the literature study, information is collected in the form of concepts that support research on the development of an applications of android-based basic service media on the reproductive system material and adolescent sexual behaviors based on some relevant research above. It shows that the basic service media supported by Adobe Flash CS6 is very helpful in the process of delivering the material. It is more effective and the display presented is very attractive so that it can encourage students to understand the content of the materials. Thus, the researchers are interested in developing android-based basic service media as the basic service innovations to improve the conceptual understanding of the reproductive system and adolescent sexual behaviors for students.
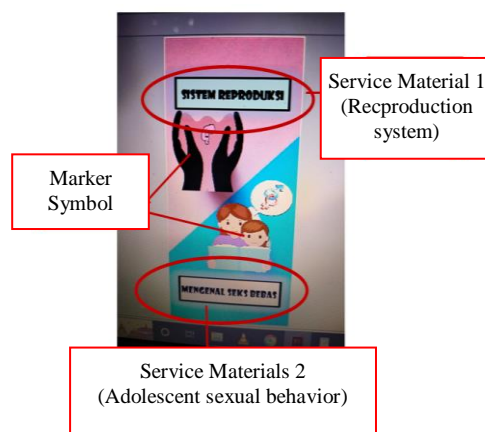
Planning

The second step in the development process is to plan the development of android-based service media which includes material, media, and language planning. In the material planning, this stage collects the relevant references to human reproductive system materials and adolescent sexual behaviors from school and college Biology textbooks. After that, it continues to prepare the language that is easy to understand according to the refined spelling standar (EYD). Then, planning the content of text, images, backgrounds and designs, uses the Adobe Flash Pro-CS6 application.

Developing Preliminary Form of Product

The basic android service media product has material that has been adapted to core competencies, basic competencies, and indicators. In addition, it is also completed by materials on the adolescent sexual behaviors. This basic android-based service media is equipped with learning videos to increase students' knowledge. This media is also fitted out with performance activities, case examples based on daily life, as well as evaluations to check the understanding of the concept of learners on the materials of the reproductive system and adolescent sexual behaviors. Furthermore, other menus are presented, and it includes the application developer profile as well. For more details will be visualized the design of the basic android-based service media application as described in Figure 2.
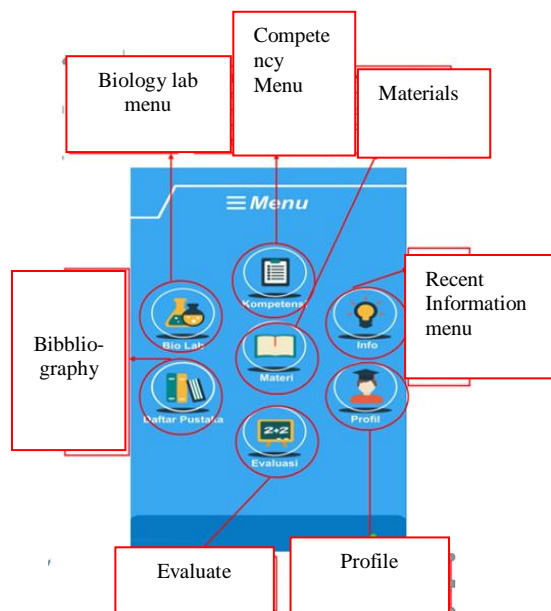

Figure 2. Initial Display of Android-Based Basic Media Loading Services

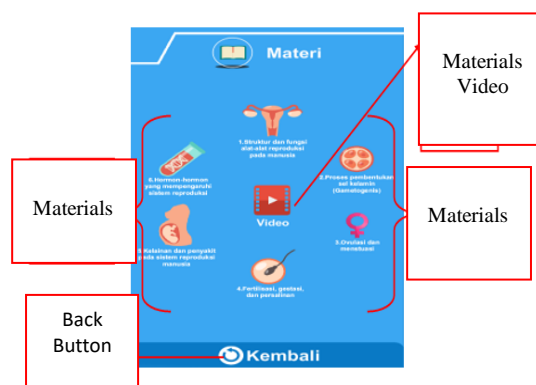**Figure 3.** Android-Based Basic Services Media Login Menu Display

Figure 2 shows the initial display of the media after it is installed. The blue icon will appear which indicates that the media is able to be applied by clicking on the icon. Figure 3 contains the title of the material to be discussed then. From this picture students know what will be learned, in regarding human reproductive system materials and adolescent sexual behaviors.
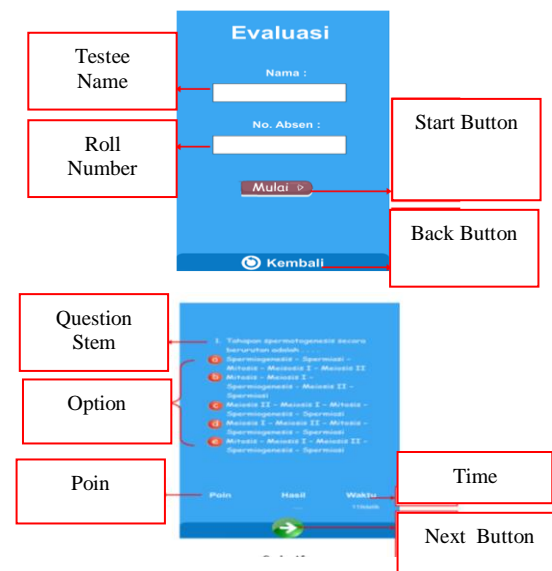

Figure 4. Android-Based Basic Service Media Menu Display on the Reproductive System Concept

Figure 4 shows the menu which consists of a lab biology menu containing information about the animal reproductive practicum. A competency menu contains core competencies, basic competencies and subsequent learning indicators, while in the material menu loads reproductive system materials with integrated verses of the Qur'an. Then, the info menu provides information related to issues of human's reproductive problems. Furthermore, the profile menu includes the identity of the authors, and the evaluation menu offers practice questions to see how further the students understand the materials. Then, the last part is bibliography containing the book sources used by the authors.

Figure 5. Menu Display of Android-Based Basic Service Media Materials on the Concept of a Reproductive System

Figure 5 is a material menu that shows the appearance of the materials given with symbols where and when students click on it. The material will appear and is able to read it in which such material is also added with a video to clarify the material. It is then completed a section back to exit the material menu.
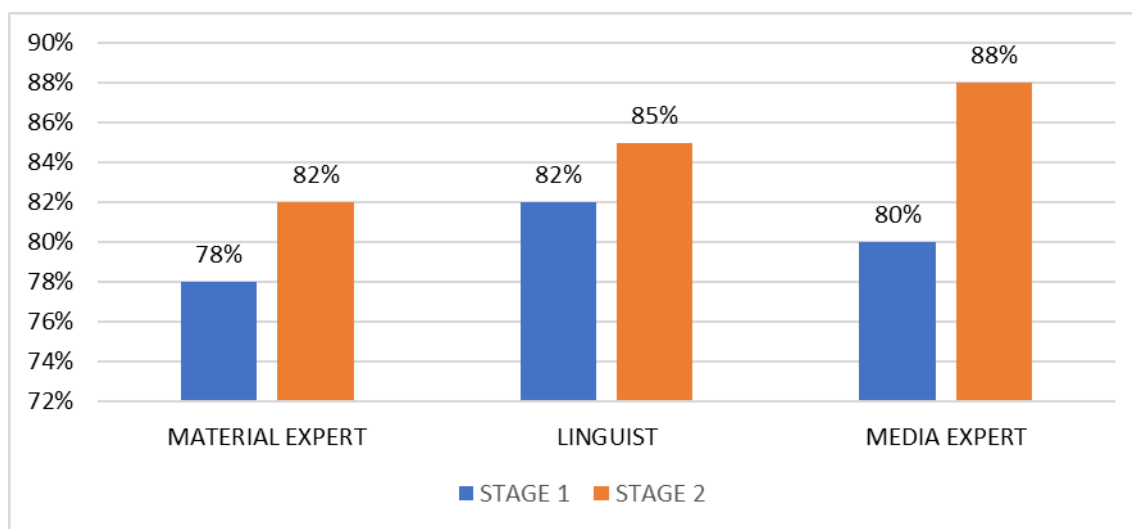

Figure 6. Evaluation Menu View

Figure 6 shows an evaluation menu which contains a column filling in the names and absences of students, and a start button which will then display the questions in the form of multiple choices, then filling in the questions will be given time and points automatically after finishing the questions.

Preliminary Field Testing

Products in the form of basic android-based service media applications that have been successfully developed will be carried out in the next stage, namely product validation or product feasibility testing. Validation is held by involving material expert validators, linguists and media experts, each of which consists of one expert lecturer. Product validation using questionnaire sheets that have previously been validated by experts. The validation results of material experts, linguists, media experts involving three expert lecturers in their fields through two stages obtain the validation results.

Figure 7. Validation Results of Material Experts, Linguists, and Media Experts

Based on the validation of material, it shows that experts' stage 1 with a percentage of 78 % (feasible) and stage 2 with a percentage of 82 % (very feasible), then the validation of linguists stage 1 with a percentage of 82 % (very feasible) and stage 2 with a percentage of 85 % (very feasible). Meanwhile, based on the validation of stage 1, media experts with a percentage of 80 % (very feasible), and stage 2 of 88 % (very feasible).

Main Product Revision

The results of the revision of material expert products include: the addition of a material menu icon; the placement of the back, next, and main menu buttons; the removal of inappropriate images because those visualize things in the material; the addition of videos to the material; the addition of taglines with the aim of allowing teenagers to stay away from free sex; adding glossaries to the media for the concept of a reproduction system; writing capital letters in revised; adding images and image layouts to the material; the writing of Qur'anic verses carried out systematically according to the materials; and reviewing the integration between the postulates of the Qur'an and hadith.

In addition, linguist validators provide an assessment of the developed android-based basic service media. Media expert validators are also requested to provide an assessment of the developed product. The revised results of linguist validator and media expert can be seen in Table 4.
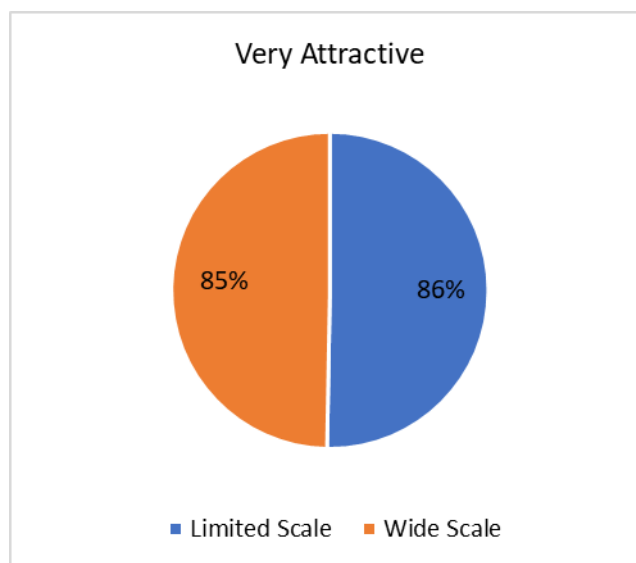
Table 4. E- Revision of the Linguist and Media Expert Validator

No	Linguist Validator Notes	Media Expert Notes
1	Fix spelling errors and should use the latest spelling reference i.e. EYD	In this revision, it adds a menu of instructions for using the application, to make it easier for users to run the application
2	Fix errors in the selection of diction (choice of words)	Added zoom in and zoom out facilities to images
3	Use of capital letters	

Main Field Testing

The next stage is for the researchers to conduct product trials with teachers and students to find out the responses of teachers and students in regarding the developed products. The limited-scale test involved 10 students of class XI science in high school. In a broad-scale test, 76 students of class XI science in high school were carried out, and at this stage, pre-tests and post-test of understanding concepts were carried out, the results of which were analyzed to see the effect of the product. Data from limited-scale and wide-scale trials are displayed in Figure 8.

Figure 8. Results of Student Response Questionnaires on Limited Scale and Wide-Scale Tests

In addition to student responses, teachers also respond to the developed products. The goal is to discover the teacher's responses and to assess the feasibility of the developed product. It is known that the results of the teacher response questionnaire of 94 %. It can be stated that the product was very attractive.
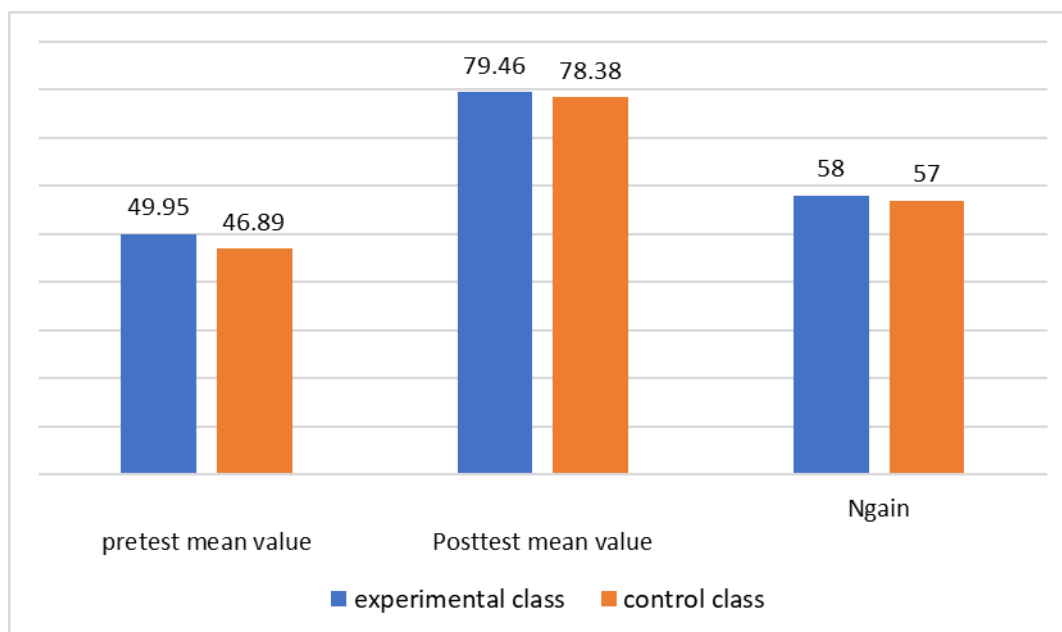
Operational Product Revision

In this stage, the researchers enhance the product in accordance with the results of the input of all material expert validators, media experts, linguists, and teachers and students'responses.

Operational Field Testing

After revising the product, the refined product was then tested more broadly by involving 76 students in an experimental class and a control class with 38 students respectively. This phase of widespread trials was carried out to see the effectiveness of android-based basic service media to improve the ability of understanding the concept of the reproductive system and adolescent sexual behaviors by providing questions. This basic android-based service medium is then applied to the experimental class. Meanwhile, in the control class, it still uses a classic basic service model. Then,

both the experimental class and the control class are given a pre-test and a post-test of understanding the concept.

The pre-test and post-test results can be seen in Figure 9.

Figure 9. Product Effectivity Test Results

Based on the N-gain results obtained, the independent t-test was carried out after the data were confirmed to be normal and homogeneous. From the results of t-independent, it is known that the$_{sig}$ count obtained is 0.000 and the α is 0.05 which means sig$_{count}$ < α so that H$_1$ is accepted which means that there is an influence of android-based basic service media on increasing understanding of the concept of class XI science students in high school on reproductive system materials and adolescent sexual behaviors. Thus, the developed products are effective to enhance students' understanding.

Final Product Revision

After all stages of Borg and Gall development have been carried out from preliminary studies to final product improvements, it is known that android-based basic service media can help learners in improving the understanding of concepts and it is also very feasible. Product feasibility is carried out through validation of linguists, material expert validators and media expert validators.

The application of android-based basic service media to the understanding of the concept of the reproductive system and the adolescent sexual behavior can be one of the basic service media that supports and optimizes the basic service process in android-based guidance and counseling. Through interesting and innovative basic service media, students can be more enthusiastic in learning the materials. This is actually in accordance with research conducted by Nurrita that learning media is a tool used by educators in teaching so that the message conveyed is clearer and the learning objectives can be achieved effectively and efficiently (Nurrita, 2018). Muhson reveals that well-designed and innovative learning media will greatly help students in digesting and understanding the materials, through the use of the digital product, learning media becomes much more attractive to students (Muhson, 2010). The other study also argues that the development of guidance

and counseling products for the prevention of students' premarital sexual behaviors has been carried out and it is also suitable to use by the guidance and counseling teachers in providing services for students.

In today's digital era, there is a need for educational applications that contain a lot of sex education information (Leung et al., 2019); (Lindberg & Kantor, 2022). It is hoped that through this media product, students can brainstorm themselves about the reproductive system and adolescent sexual behaviors. It is expected that with the existence of a basic android-based service application, when students are forgotten with the materials of the reproductive system and adolescent sexual behaviors, they can repeat or re-read the entire information (Rofi'ah & Widatiningsih, 2021). In this sense, the education is adapted to the development of the 21st century marked by an extraordinary acceleration of science. Such acceleration is definitely supported by the application of information media and digital technology or the so-called as the information super highway which is felt by the educational subjects, including students. (Elitasari, 2022).

In the 21st century, the existence of education is important and able to guarantee students to have several skills such as innovation and skills in using technology and information media as well (Laksana, 2021). Thus, it can be concluded that in the application of classical basic services, the basic service media is needed to strengthen the provided materials. In this context, the basic service media that gains the best response is an android-based considering the character of generation Z and Alpha currently is in urgent need of educational media and counseling guidance services that are appropriate for the adolescent psyche using language of the adolescent development. (Rofi'ah & Widatiningsih, 2021); (Setianingsih & Naimah, 2021), (Maharani, 2022); (Handayani et al.,

2022); (Mataka & Taibu, 2020), (Goldstein et al., 2022).

This android-based basic service media is a means to provide knowledge, understanding of the concept of the reproductive system and the adolescent sexual behavior. The sexual education provided through this research product offers and affirms the proper teaching of Sexual education. Before teaching, the teachers have to understand about all sorts to support the teaching for sex education ranging from media, books, vocabulary and others, so that learners can understand the purpose of sex education to prevent acts of sexual abuse and adolescent sexual behaviors (Francis, 2019); (Ezer et al., 2019); (Goldfarb & Lieberman, 2021); (Saputra & Juliana, 2022). Even, sex education is needed in order children know the function of their reproductive organs to avoid sexually deviant behaviors from an early age (Haley et al., 2019). The schools play a strategic role to assist the implementation of counseling and guidance services and the provision of knowledge about sex education. Thus, the schools should have an inverse paradigm with the negative views of the general public about sex education (Maryuni & Anggraeni, 2016); (Saputra & Juliana, 2022); (Downing et al., 2021); (Muhimmah & Miftahuddin, 2021); (Thammaraksa et al., 2014).

CONCLUSION

Based on the results of this research, it can be concluded that in the development of the android-based basic service media using the development theory of Borg and Gall to the ninth stage. The feasibility of android-based basic service media to improve understanding of the concept of the reproductive system and adolescent sexual behavior obtained average results from material expert assessments of 80 % with the criteria of "Very Worthy", linguist assessments of 85 % with criteria of "Very Worthy", assessment of media experts of 84 % with

criteria of "Very Worthy", and student responses to android-based basic service media by 86 % with the "Very Interesting" criterion. The basic android media service product based on Adobe CS6 received a positive response from students and teachers as well. It is known that based on a limited scale test that obtained a very interesting response. Thus, android-based basic service media is more effective in improving the understanding of the material concepts related to the reproductive system and adolescent sexual behavior. The study was limited to students of class XI SMA totaling 76 participants as research subjects. Sexual education should be integrated between religion, science and the concept of guidance and counseling services. As such, it is hoped that every student will not only know sexual (science) but also realize its values and norms (religion).

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