



Development of Educational Media for Adolescent Reproductive Health

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Abstract

The starting point for the human life cycle in preparing for a healthy reproductive process begins during adolescence. During adolescence, rapid hormonal, physical, psychological and social changes occur. Preparing teenagers from physical, mental and social aspects is very important. The current lack of knowledge among teenagers can result in problems for teenagers related to reproductive health. Hence, scientific researchers aim to develop a media application model that can effectively disseminate knowledge and information regarding adolescent reproductive health education. Developing this application is a dedicated endeavour to deliver accessible education to teenagers about adolescent reproductive health in an easy and fun way.

Aims: This research aimed to develop educational media and analyse the suitability of the media from material experts, media experts and users.

Study design: The type of research was the Research and Development (RnD) using the ADDIE research and development model (Analysis, design, Development, Implementation, Evaluation) by Robert Maribe Branch. This research step uses 3 stages, namely needs analysis, design creation and development stages which will be validated by material experts, media experts and users. The research instrument used a questionnaire with a Likert scale and was analysed to see the feasibility classification.

Results: This research produced educational media for adolescent reproductive health which has screening, education and educational game features. The results of the material expert assessment were 87.5% (very worth it), media experts 95.2% (very worth it) and 50 teenage respondents (100%) assessed this media as very suitable for use.

Conclusion: The development of website-based adolescent reproductive health education media has been carried out and received a very appropriate classification from material experts, media experts and users. This media is very suitable to be applied to teenagers as an effort to increase knowledge about reproductive health in an easy and fun way. Apart from that, this media can be accessed anytime and anywhere by teenagers.

Keywords: technology-based media; adolescent reproductive health screening; educational media for teenagers; game-based education; appropriateness of educational media.

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Introduction

The initiation of the human life cycle in getting ready for a healthy reproductive process begins during adolescence. This period is marked by swift hormonal, physical, psychological, and social changes. It is crucial to prepare teenagers for these changes in terms of their physical well-being, mental health, and social interactions. Insufficient knowledge among teenagers during this phase can lead to issues in regard to their reproductive health. Significant progress has been made in adolescent sexual and reproductive health and rights in the 25 years since the International Conference on Population and Development in 1994. Data shows that today's adolescent girls are more likely to marry late, delay their first sexual experience, and delay the birth of their first child, compared to with 25 years ago; they are also more likely to use contraception. But overall, not all countries have experienced this progress. In some locations, living conditions for teenagers are getting worse [2].

The most important problems with adolescent reproductive health in Indonesia are the lack of information regarding reproductive health, shifts in adolescent sexual behaviour, poor health services and unsupportive legislation. This problem occurs due to a lack of knowledge about the reproductive health of adolescents themselves [3]. The National Family Planning Coordinating Board in Indonesia revealed that there were three risks that often occurred in adolescents which were closely related to sexuality and were grouped into TRIAD KRR (Adolescent Reproductive Health), namely unwanted pregnancy, abortion, and sexually transmitted infections (STIs) [4].

The Indonesian Demographic and Health Survey in 2017 showed that teenagers' knowledge about reproductive health was inadequate [5]. Data shows that 83.7% of teenagers do not understand reproductive health and only 3.6% know the importance of reproductive health [6]. Data in Malang Regency shows that as many as 21% of 116 students who were not virgins admitted to committing the forbidden act with other people who were not related. The number of students who had premarital sex, as many as 65%, admitted that they had been raped and eventually became addicted and had premarital sex over and over again. There are also some of them who have sex with their girlfriends. From the results of this research, it was also stated that most students admitted to getting information about sex from the internet [7].

Teenagers really need education about reproductive health to overcome their problems, but unfortunately teenagers do not use health facilities to get information about reproductive health. Parents, who should be a source of information for teenagers to get education about reproductive health, apparently also do not play a good role. The low role of parents in providing education is due to parents' lack of knowledge about reproductive health [8]. So, the majority of teenagers have never received correct knowledge about reproductive health. Teenagers tend to seek information about reproductive health through schools and the media. The internet is the media that most teenagers use to search for information about reproductive health [9].

Taking into account the aforementioned background, the aim was to develop a model for a media application focused on educating adolescents about reproductive health. This endeavour sought to offer teenagers a simple and enjoyable means of learning about adolescent reproductive health.

Research Problem

The research problem for developing website-based adolescent reproductive health educational media was based on the knowledge about reproductive health in adolescents who were in critical condition and required educational media that could be accessed anywhere and at any time using technological advances. What is the application model for Adolescent Reproductive Health educational media and how appropriate is the media to be used based on considerations from material experts, media and users?

Research Focus

The aim of this research was to develop a website-based educational media model about adolescent reproductive health as an effort to increase the adolescent knowledge about reproductive health.

Research Aim and Research Questions

- To analyse the feasibility of educational application models about adolescent reproductive health from material experts
- To analyse the feasibility of educational application models about adolescent reproductive health from media experts
- To analyse the feasibility of an educational application model about adolescent reproductive health from adolescent respondents

Research Methodology

General Background

The type of research used in this research was the Research and Development (RnD). R&D research is research that aimed to develop or provide innovation to products. The ADDIE (Analysis, design, Development, Implementation, Evaluation) research and development model developed by Robert Maribe Branch were used in the research [10]. The main goal of the ADDIE model is to design and develop a viable product. Researchers use the ADDIE research and development model up to stage 3, namely development. A development procedure that produced a website-based educational product as a medium for developing education about adolescent reproductive health was used.

Sample / Participants / Group

The subjects of this research were material experts, media experts and users, namely teenagers in Selorejo Village, Malang Regency. The material expert in this research was a lecturer at the State University of Malang who was an expert in the field of Adolescent Reproductive Health. The assessment of the media was carried out by an expert in the field of learning media design who was a lecturer at the Malang Christian Religious Education College. The user respondents in this research were teenagers from Selorejo Village, Malang Regency, totalling 50 respondents aged 13-21 years. The sampling technique used was simple random sampling technique. The informed consent was obtained from all subjects involved in this study. This research has applied the principles of health research ethics such as respect, fairness, benefit and no harm to respondents; and has received ethical approval from the Malang Ministry of Health Polytechnic Ethics Committee with number DP.04.03/F.XXI.31/917/2023.

Instrument and Procedures

The first stage in this research was the analysis. The analysis is the stage of observing a place or event which in fact produces research material. This research began with a number of data showing problems in adolescent health caused by a lack of knowledge about reproductive health. Therefore, by developing website-based educational media, it is possible increasing the knowledge about adolescent reproductive health and develop appropriate educational media.

The second stage was creating the design. The design is a stage for researchers to determine the form of design needed to develop a product. This media was designed to have screening, education and educational game features.

The third stage was the development. The development is a stage for researchers to develop their products according to the designs that have been made. At this stage, images were uploaded, as well as educational materials and videos about adolescent reproductive health that have been previously designed. The next step was the validation by media experts and material experts, then the product testing that has been developed on respondents was effectuated.

This research used a questionnaire as an instrument to obtain data from research subjects. Filling out the questionnaire was carried out by media experts, material experts and young users. The research instrument used in this study was a questionnaire using a Likert scale with answer choices: very good (score 4), good (score 3), not so good (score 2) and not good (score 1). The material expert questionnaire contained validation of the appropriateness of the material content, namely regarding adolescent reproductive health. The media expert questionnaire contained validation of the feasibility of the product design. The questionnaire to trial respondents contained information about acceptance and assessment of new media.

Data Analysis

The questionnaire used in this research contained 4 answer choices, so the total assessment score can be calculated using the formula:

$$\text{Percentage of Respondents' Answers} = \frac{\text{Number of Scores Obtained}}{\text{Total Highest Score}} \times 100\%$$

The results of the assessment scores were analysed for the average of the research subjects and then classified to determine the suitability of the fashioned product. The classification of scores into assessment requirements is presented in table 1.

Table 1. Educational Media Eligibility Classification Scale

Percentage Score (%)	Classification	Keterangan
81% - 100%	Very Worth It	Not Revised
61% - 80%	Worthy	Not Revised
41% - 60%	Decent Enough	Needs Revision
21% - 40%	Not Worth It	Revision

0% - 20%

Very Inadequate

Revision

Source : Susanti Hasan (2021)[11]

The feasibility of website-based educational media regarding adolescent reproductive health was determined from the responses of material experts, media experts and trial respondents through questionnaires that have been distributed and analysed. Based on the data and criteria in table 1, product development ends when the percentage score for this website-based educational media meets the feasibility classification with the level of material suitability, media suitability, and assessment of the use of this educational media product being categorised as very feasible or appropriate. If the percentage score results are below the appropriate classification, then a revision of the product needs to be carried out.

Research Results

The design process for developing educational media based on this website application consists of 2 stages. The first stage is designing media and designing material about adolescent reproductive health to make it look more attractive. The media design uses a dominant colour combination of pink and white. Apart from paying attention to the colour, this media uses pictures of teenage boys and girls as well as other images that suit the content. The application design consists of adolescent reproductive health screening, educational pages and educational game pages related to adolescent reproductive health. The health screening feature uses a combination of text and images to clarify information. The educational feature combines textual and audio-visual media so that it is more attractive to teenagers. The game-based educational feature has 2 options, namely a quiz and a poster puzzle. The quiz contains questions in text form with right and wrong answer options, while the poster puzzle uses several choices of educational poster images with various colours and images. The next stage is the development of educational media with the address www.reaksikuy.com as follows:

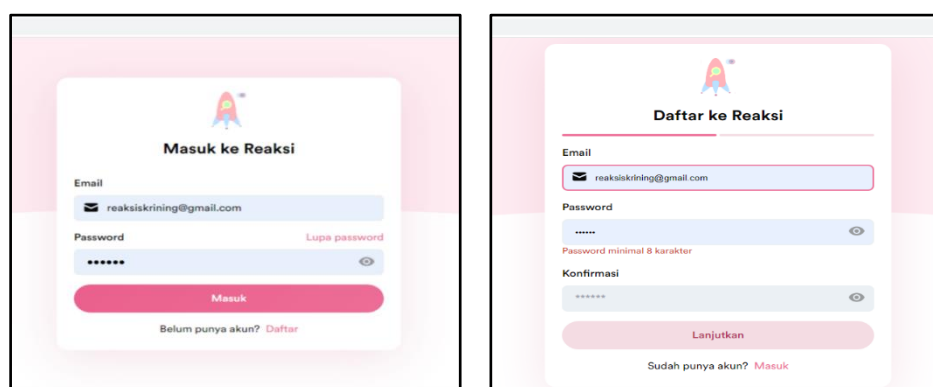


Figure 1. Registration and Login Page

The registration page is used to enter the website, select register if you don't have an account and log in with your email address and password if you already have an account. Account registration requires an email address and password to be able to enter the www.reaksikuy.com website.

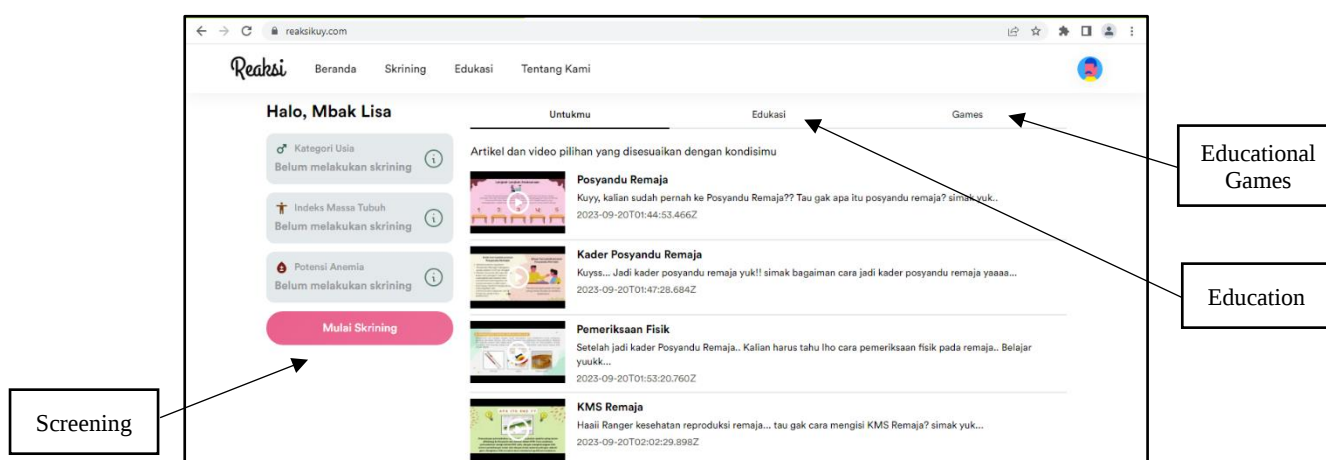


Figure 2. Features in Educational Media

The first feature in educational media is screening which will categorise teenagers' age, nutritional status based on body mass index and the potential for anaemia in teenagers.

The adolescent age category is divided into 3, namely early adolescence, middle adolescence and late adolescence according to the WHO adolescent age category. Nutritional status is measured based on body mass

index and is categorised into 3, namely underweight, ideal and overweight. Meanwhile, screening for potential anaemia is seen based on signs and symptoms of anaemia as well as intake of foods containing iron. After screening, teenagers will receive information regarding age category, nutritional status and potential for anaemia as well as education in accordance with the screening results. The next feature is education about adolescent reproductive health. This education about reproductive health contains various information about reproductive health that can be accessed according to teenagers' needs. The last feature is educational games, this feature contains games in the form of quizzes and poster puzzles. Apart from providing education in an interesting way, this game can also evaluate teenagers' knowledge about reproductive health. The quiz game contains 10 questions about reproductive health with true or false options. There is an explanation of the answer according to the material for each question after it has been answered by the teenager. At the end of the quiz there is a conclusion on the results of the assessment of how many questions the teenagers could answer correctly. This value can be used as evaluation material regarding teenagers' knowledge about reproductive health.

- Material Expert Assessment Results

Table 1. Material Expert Assessment Results

Assessment Indicators	Assessment Items	Assessment	Scores
Eligibility of content	1. Completeness of material	Good	3
	2. Accuracy of the material		
	a. Accuracy of concepts and definitions	Very Good	4
	b. Accuracy of data and facts	Very Good	4
	c. Accuracy of images, diagrams and illustrations	Good	4
	d. Accuracy of the terms used	Good	3
	e. Accuracy of reference to library sources	Good	3
	3. Depth of material	Good	3
	4. Suitability of Material	Good	3
Language	1. Use communicative language	Very Good	4
	2. The effectiveness of the sentences used	Very Good	4
	3. Standardity of terms used	Good	3
	4. Correct use of terms	Good	3
	5. The language used is acceptable	Very Good	4
Interest	1. Ability to motivate learning	Very Good	4
	2. Ability to encourage curiosity	Very Good	4
	3. Ability to Encourage Critical Thinking	Good	3
Total			56
Percentage			87,5%
Eligibility Classification			Very Worth It

Based on table 1, it is visible that the results of the material expert's assessment of educational media were 87.5% with the feasibility category being very worth it.

- Media Expert Assessment Results

Table 2. Media Expert Assessment Results

Assessment Indicators	Assessment Items	Assessment	Scores
Eligibility and Graphics	1. Media Design		
	a. Features a good viewing centre	Very Good	4
	b. The profile layout display has a consistent unity	Very Good	4
	c. The size of the letters on the profile is proportional	Very Good	4
	d. Shape, colour, size is appropriate and proportional	Very Good	4
	e. Don't use too many fonts	Very Good	4
	2. Design the content of educational materials		
	a. Clear image descriptions	Very Good	4
	b. The placement of image illustrations does not interfere with understanding the material	Very Good	4
	3. Clarity of writing to read		
	a. The sentence structure/explanation between paragraphs is clear	Very Good	4
	b. Don't use too many fonts (max. 2)	Very Good	4
	c. Use of variations in letters (bold, italic, all capital) is not excessive	Very Good	4
	d. Normal spacing between letters	Very Good	4
Media Attraction	1. Usefulness for learning	Good	3
	2. The colour composition used	Good	3
	3. Illustrative images used	Very Good	4
	4. Encourage learning motivation	Very Good	4
	5. Encourage critical thinking	Good	3
	6. Use of symbols and icons	Very Good	4
Language Eligibility	1. The language used is straightforward	Very Good	4
	2. The sentences used are communicative	Very Good	4

3. In accordance with the development of website users	Good	3
4. Use of terms and symbols	Very Good	4
Total Percentage Eligibility Classification		68 95,2% Very Worth It

Based on table 5.2 of the media expert validation results, it is known that the media feasibility percentage results obtained 95.2% so it is classified in the very worth it category.

- User Rating Results

Table 3. User Assessment Results

Classification	Amount	Percentage (%)
Very Worth It	50	100
Worthy	0	0
Decent Enough	0	0
Not Worth It	0	0
Very Inadequate	0	0

Based on table 3, the results of the educational media trial that was carried out in Selorejo Village, Dau District, Malang Regency on 50 teenagers aged 13-21 years as respondents, obtained a very worth it classification result of 100%.

Discussion

Today's teenagers are the Gen Z generation / digital natives. They are children born in 1995-2010. This generation is very adaptive to developments in Technology, Information and Communication (ICT), especially social media [12]. The changes and developments occurred as a result of globalisation offer a new paradigm in education [13]. With the progress of the current generation, it is also necessary to change educational methods about reproductive health. Education is not only through direct counselling but can utilize information technology through websites to convey reproductive health education to teenagers.

The knowledge of reproductive health is needed in increasing adolescent knowledge related to reproductive health, so that efforts to provide health education are also needed through internet. Digital interventions in adolescent reproductive health such as online platforms, mobile applications, or digital tools that have been employed for reproductive health education among teenagers. In Indonesia, the most popular online platform nowadays is Instagram, Twitter and Tiktok where the latest information spread very fast among teenagers including health information. The research by Sambow et al (2021) with quasi experimental on 44 respondents showing the result that health education about reproductive health through internet electronic media is effective in increasing the level of knowledge of young teens, so the hopes of the use of internet electronic media in adolescent reproductive health counselling activities needs to be increased [14]. The strengths of social media platforms make the information spreading faster and easier to access and also have various kinds and more fun contents compared to the traditional media information. The example of media trends nowadays like conveying messages with infographics, short videos and memes is considered most effectively delivered via social media platforms, this is something that needs to be taken into consideration for reproductive health messages for teenagers [15]. Digital interventions and social media also have some weakness like the limited character contents and durations that could be posted on social media like Instagram, Twitter and Tiktok, for example video on Instagram, Twitter and Tiktok only limited for 2-3 minutes durations, other weakness of information based on social media and digital interventions would be harder for adults to fully control what adolescents read on internet so that the adolescents need to do self-filtering the information they read on internet and social media platforms. The information which available on applications and specific websites could be the solutions for this weakness since the information available there already specific according to each of the application purpose.

One of the features developed on this website is the reproductive health screening for teenagers. Screening is an effort to select people who appear healthy, do not suffer from a certain disease from a certain population. Screening is usually used to detect someone from a certain disease who does not show symptoms (not visible) in a community or group of people by carrying out a short and simple test or examination, and separating those who are healthy from those who are most likely to suffer from the disease. Those who are considered positive are then processed through a complete diagnosis and will receive appropriate treatment. The similarity with Rajab's definition quoted by Eka Sulastiningsih (2018), Screening is an effort to test people who do not show symptoms. Screening is an early detection of a disease, not a diagnostic tool. If the screening result is positive, diagnostic tests will be performed to confirm the presence of the disease [16]. Reproductive Health Screening in adolescents is used to detect reproductive health problems and how to improve their health. Screening usually used for early detection of women, mother dan children health problems for example screening premarital for bride dan groom to be, screening for

systemic disease, screening for preeclampsia, screening for mental health, screening for stunting early detection and many more. In the past, Screening usually carried out by traditional methods with direct anamnesis and physical examination at public health service but following development of technology now, researchers developed some online screening or digital applications.

Digital health applications are transforming healthcare systems worldwide including digital screening or online screening. It promises benefits for population health but might also lead to health inequities. From an ethical perspective, it is hence much needed to adopt a fair approach. Recent research has shown the efficacy of screening for some medical conditions from data collected while people interact with online services. In particular, queries to search engines and the interactions with them were shown to be advantageous for screening for some diseases. However, these advantages need to be balanced against the potential harm to privacy, autonomy, private data, which are recognized as the cornerstones of ethical medical care [17]. Medical ethics concentrates on the relationship between patients and medical workers so it will be very necessary to get the patient consent [18]. Digital screening application will provide inform consents that need to be accepted by the user first before they register their account and agree to follow up the screening. In which, the agreement included the statement about the data that will be submitted to the applications will only visible and be accessed by the user and the domain administrator and ensure to not leak to the other parties, any leaks and break of agreement can lead to break the laws, any parties who break the agreement will need to fully take responsibility in court and in front of law, the other statements will be about the security guarantee of application origin and domain.

In Indonesia, there are many digital screenings that focused on mother and children health. Some application were already launched to be used by general public for example pre-marital screening "KESCATIN" by Ministry of Health and "Elsimil" from BKKBN (Family Planning Official Organization) dan some applications that still under development for example android application screening for preeclampsia in women [19] and Screening for early detection of Stunting [20]. Some adolescent and teenagers screening applications that under development were MOBILE HEALTH TITEER for teenagers [21], Adolescent's Mental Health Screening [22], "Clever Teen Mobile" on the knowledge, attitudes, and self-efficacy of adolescents about the prevention of prediabetes [23] but online screening or screening application for health reproductive status still not yet developed. Therefore, researchers developed educational media on adolescent reproductive health which has screening features including adolescent developmental age categories, nutritional status using body mass index and screening for potential anaemia.

Several researches indicate that age, employment, educational attainment, sources of information about preconception care services, and intention to conceive are among the factors influencing adolescents' understanding of reproductive health. It has been demonstrated that teenagers' behaviour is primarily influenced by how much acceptance their friends can provide them. Numerous studies have demonstrated that adolescents who are well-informed about reproductive health will find value in the services that are offered. Adolescents who have poor levels of awareness about reproductive health are half as likely to use teenage reproductive health services as students who have high levels of knowledge about these services [24].

Education media is the most important tool to spread the health reproduction knowledge for adolescent. The development of technology also brought many researchers and educators to develop education media that will be the most effective for teens and adolescents. The results of research by Azhari et al (2022) on 81 respondents using the Quasy experimental one group pre-test-post-test method, showed that education through leaflet media had a significant effect on reproductive health knowledge in one of the high schools in Makasar (Indonesia) [25]. Another study by Wahyuni et al (2022) used a quasi-experiment with a pre-post-test with control group. The total sample was 60 people, 30 control samples and 30 intervention samples taken using non-probability sampling techniques. Data were analysed using the Mann-Whitney test. This research shows that the group that used audio-visual media in the form of reproductive health videos had higher reproductive health knowledge scores compared to booklets [26]. Research conducted by Lestari et al (2021) used Quasi Experimental Design with a pre-test-post-test control group design on 100 Nurul Jadid Middle School female students who took part in adolescent reproductive health education activities. The results of the t-test statistical test show an increase in reproductive health knowledge after providing education using animated videos [27]. The website-based educational media developed by researchers combines several types of methods, namely textual, image and video. It is hoped that this media can facilitate teenagers with various interests in seeking information about reproductive health.

Another educational innovation program developed in this research is a combination of education and games. Learning media is a tool for teachers to convey information in learning activities, but there are still many learning activities that still use media that require audio visuals, props and lots of objects so that students easily get bored when participating in learning activities and also move props and objects. become less effective. Technology allows educators to create interesting learning media in the form of Android-based educational games and websites. Based on research by Windawati (2021) which used Android-based educational games for learning Indonesian and science in an elementary school, it showed high validation for increasing students' grades in these lessons [28]. Education through games is also used as a medium for promoting reproductive health. The results of the Monopoly Learning Game (GEMA) research show an increase in students' knowledge about anaemia and the importance of preventing

anaemia [29]. The application of the Reproductive Health Educational Game (KEPO) by Damayanti et al (2019) also shows results in increasing motivation for Reproductive Health [30]. From the collective studies above showed the similar results were the implementation of game innovations on educations made the learning process become more fun, more effective and more efficient, these innovations will be very useful to develop educational curriculum at formal or informal education in future. The challenge of this method will be the need of control of the student time schedule so the students will manage will in balancing between studying and gaming, also for teachers and lecturers to develop more educational games for students not to get bored and to develop the games that fit the learning purpose and contents including games for reproductive health.

Information technology is very necessary in human life. One of the functions of information technology is to help human work run more effectively and efficient. Information systems development has many methods and platforms diverse. Platforms that can be used in developing information systems are mobile-based platforms, and websites or desktops [31]. Development of a website-based information system will use website page as data provider. A website is a collection of web pages that have been published on the internet network and has a domain/URL (Uniform Resource Locator) that can be accessed by all internet users by typing in the address. This matter made possible by World Wide Web (WWW) technology. Website page usually a document written in Hyper Text Markup Language format (HTML), which can be accessed via HTTP. Meanwhile, HTTPS is a protocol that conveys various information from the website server to be displayed to users or users via a web browser [31].

Several studies have been conducted to see the effectiveness of websites in conveying education. Septiyani, et al. (2021) stated that with online learning students are more enthusiastic, especially in doing quizzes or games, which helps form critical thinking [32]. Improvements in learning outcomes also occur in students who are given web-based learning methods and educational games [33]. Other research shows that there is a significant influence of web-based nutrition education media on students' knowledge, attitudes and practices [34].

In our application based on website "www.reaksikuy.com" is the combination of online screening of health reproductive status and health reproductive educations. "www.reaksikuy.com" was developed has many features, such as reproductive health screening, education media (poster, info graphic, comic, audio visual, animation videos) and educational games in the form of quizzes and poster puzzles about reproductive health. This website application-based educational media has a different design from the design of print and audio-visual educational media because it combines both methods. In the process of designing educational media, focus on appearance to increase user attraction to increase interest in learning, as well as paying attention to the most important aspects so that they are easily understood by users. This educational media design consists of various educational materials about adolescent reproductive health which are made more attractive and easier to understand in the final form of a website. These features aim to detect reproductive health problems early in the screening feature as well as how to overcome these problems in the education feature. Apart from that, there are game features that function to develop teenagers' critical thinking and evaluate the knowledge teenagers have about reproductive health. The website can be accessed via computer or smartphone.

Conclusions and Implications

1. The media assessment from material experts obtained a score of 87.5% with the media classification as very suitable for use. Material experts assessed that the material used in the media was appropriate for teenagers, but additional material was needed so that the discussed material was broader and more in-depth.
2. The media assessment from media experts obtained a score of 95,2% with the media classification as very suitable for use. This media used images, colours and writing that were attractive to teenagers. It was necessary to choose neutral colours so that they could be enjoyed by young girls and boys.
3. Media trials carried out on teenagers resulted in 100% of teenagers assessing this educational media as suitable for use. Teenagers hoped that this media could be widely disseminated so that more teenagers could access this media to increase teenagers' knowledge about reproductive health. In the current era when communication and information technology is rapidly developing, conventional media or mass media are gradually being abandoned by society, the search for information is turning to new media. This development was triggered by rapid advances in communication technology, especially in digital technology or computers and the internet. Blogs, social media, and websites are examples of applications that are included in new communication media. The advantage of this new media is unlimited access, it can be accessed anywhere and at any time.

Declarations

Author Contributions

The following statements should be used:

Conceptualization, Lisa, Duhita and Anindya; methodology, Lisa; software, Lisa; validation, Lisa., Duhita and Anindya; formal analysis, Lisa; investigation, Lisa; resources, Lisa; data curation, Lisa; writing—preparation of original

draft, Lisa, Duhita.; writing–review and editing, Lisa, Duhita.; visualization, Lisa; supervision, Lisa; project administration, Lisa; funding acquisition, Lisa. All authors have read and approved the published version of the manuscript.

Data Availability Statement

Below are suggested Data Availability Statements (Please select one of them).

- Data available on request due to restrictions such as privacy or ethics: The data presented in this study are available on request from the corresponding author. The data is not publicly available because it contains personal information from users.

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Institutional Review Board Statement

This study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board (or Ethics Committee) on behalf of the Malang Ministry of Health Polytechnic Ethics Committee with number DP.04.03/F.XXI.31/917/2023, August 24, 2023.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest

The author declares that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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