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Development of Arithmetic Rows and Series Learning Media in Malay Islam Context

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Abstract

This study aims to produce computer-based mathematics learning media using the Adobe Animate CC application on arithmetic sequences and series material in the context of Malay Islam with valid and prismatic categories. This type of research is design research in the development study section of the Akker method with the Tessmer procedure which consists of a preliminary stage and a prototyping stage with a formative evaluation flow (self-evaluation, one-to-one, small group, and field test stages). The research subjects were students of class XI MA Aulia Cendekia Palembang. The results show that the learning media developed is valid and practical.

Abstrak

Penelitian ini bertujuan untuk menghasilkan media pembelajaran matematika berbasis komputer menggunakan aplikasi Adobe Animate CC pada materi barisan dan deret aritmetika dalam konteks Islam Melayu dengan kategori valid dan priaktis. Jenis penelitian ini adalah design research pada bagian development study metode Akker dengan prosedur Tessmer yang terdiri dari tahap preliminary dan tahap prototyping dengan alur formative evaluation (tahap selft evaluation, one-to-one, small group, dan field test). Subjek penelitian adalah siswa kelas XI MA Aulia Cendekia Palembang. Hasil menunjukkan bahwa media pembelajaran yang dikembangkan valid dan praktis.

Keywords: *Learning Media, Arithmetic Rows and Series, Malay Islam*

INTRODUCTION

Technological developments require the world of education to always innovate in the learning process (Saniriati et al., 2021). Technology has a role in increasing student independence in obtaining knowledge (Permendikbud No. 65. Th. 2013). In the learning process, some teachers use conventional methods and rarely use learning media (Alwi, 2017). Teachers as educators must be directed to be able to develop computer-based learning media and Information and Communication Technology (ICT) (Ulfa, Yoshe Larissa, 2016; Murtikusuma et al., 2019; Saputra, Thalia, & Gustiningsi, 2020).

The use of learning media can affect learning motivation (Falahudin, 2014; Faruq et al., 2018; Cahyanindya & Mampouw, 2020). Good motivation can ultimately make students understand the subject matter.

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The use of computer-based learning media can provide convenience in delivering information more quickly and flexibly (Wibawanto, 2017). In addition, the use of computer-based media students can study independently, anytime, and become an alternative to learning apart from books (Abdullah & Yunianta, 2018)

One application that can be used by teachers in making learning media is Adobe Animate CC. Zahroh, et al. (2019) in their research using the Adobe Animate CC application can produce effective learning media to help the learning process, increase student motivation, and make it easier for students to understand the concept of learning material.

Research on the development of learning media using Adobe Animate CC has been carried out by several researchers. Cholifah et al. (2021) researched the development of learning media using Adobe Animate CC on Algebraic Junior High School material. Abdullah & Yunianta (2018) developed trigonometry material.

Research conducted by Cholifah, et al. (2022) and Abdullah & Yunianta (2018) tend to focus on students studying at school with content in the form of an explanation of the material being studied. The two previous studies have not provided the context in real life and have not provided interactive material content that can make students active when learning to use learning media. The two studies also have not provided various evaluation questions, especially based on the context of life in media applications. The provision of subject matter is to link mathematics with real-life contexts is an important portion so that the construction of student understanding can be formed (Nur et al., 2018). This shows that it is necessary to develop learning media that focus on the context of life and involve students actively when using the media. Malay Islam is one of the contexts that can be integrated with mathematics material, namely arithmetic sequences, and series material. The choice of this context is due to the diversity of culture, art, tradition, and architecture (Huda, 2016), which can be integrated with mathematics material with Malay Islam. Based on this, research entitled "Development of Arithmetic Rows and Series Learning Media in Malay Islam Context."

METHOD

This research is included in the development research (Design Research) with the

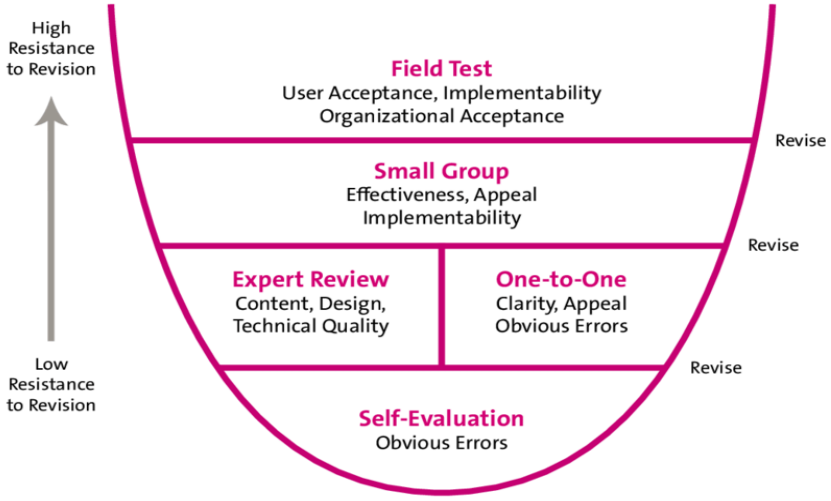


Figure 1. Formative evaluation design flow (Tessmer, 1993)

aim of developing learning media for high school/MA students. Learning media was created using Adobe Animate CC software using the method from Akker et al. (2013) and the Tesmer plot (1993). The steps include the preliminary stage (preparation and design) and the prototyping stage (self-evaluation, expert review, one-to-one, small group, and field test).

In the preliminary stage, the researcher analyzes the material to be developed and makes the initial product from the media. Furthermore, at the prototyping stage, the researcher developed it based on the revisions contained in the learning media. This revision stage is called formative evaluation. Formative evaluation is an assessment of the advantages and disadvantages of a learning media in its development stage, with the aim of revising, increasing the effectiveness, and attractiveness of the media (Tessmer, 1993). The design flow for formative evaluations can be seen in Figure 1.

The Self-evaluations stage independently assesses the learning media from the aspect of obvious errors (obvious errors), after being assessed the media is revised to become a prototype 1. The expert review stage of the media is assessed from the validation of mathematical material and media validation. Validation uses a validation sheet that has been compiled based on material and media aspects. The validator consists of six people, namely a mathematics lecturer with doctoral and master's degrees, and a teacher in the field of mathematics studies. After validating the revised media, the results of the revision are called prototype 2. The small group stage is assessed from the aspects of effectiveness, attractiveness, and applicability. The data at the small group stage was obtained from a student practicality questionnaire, which was then revised, and the revised results were called prototype 3. The field test stage was assessed from user acceptance. Field test data obtained from student practicality questionnaires, at this stage there are no more revisions. The validation sheet and questionnaire use an assessment with the Guttman scale, namely, there are two intervals if "yes" is worth 1 and if "no is worth 0 (Sugiyono, 2020).

The result is calculated by the formula:

$$\boldsymbol{P = \frac{\sum x}{\sum i} \times 100\ \%}$$

Description: P = Score; $\sum x$= Total number of respondents' answers in all items; and $\sum i$ = Total ideal score in per-item

The validation assessment criteria and practicality questionnaires were adapted from (Saniriati et al., 2021) as presented in the table below.

Table 1. Assessment criteria

Score Interval	Category Percentage
$85\% < P \leq 100\%$	Very Good
$70\% < P \leq 85\%$	Good
$55\% < P \leq 70\%$	Enough
$40\% < P \leq 55\%$	Less
$P \leq 40\%$	Less once

RESULTS AND DISCUSSION

Result

Preliminary Stage

This stage consists of two stages, namely the preparation stage and the design stage. In the preparatory stage, the researcher identified the curriculum, the result used by the MA Aulia Cendekia Palembang school was the 2013 Curriculum. Furthermore, the identification of the subject matter obtained by class XI students had difficulty understanding the material for arithmetic sequences and series, especially in real-life context-based

questions.

The context chosen in this study is Malay Islam, this context was chosen based on the observations of researchers because the school culture and students have Islamic nuances with Malay local wisdom. The Malay Islamic context used, namely 1) Sultan Agung's calendar, this calendar was created during the reign of Sultan Agung (1613-1645). This calendar is usually used by the Javanese Malays. Sultan Agung is the third king of the Islamic Mataram Kingdom. At that time, the Javanese people used the Saka calendar which came from India. The Saka calendar is based on the movement of the sun (solar), in contrast to the Hijri Calendar or Islamic Calendar which is based on the movement of the moon (lunar). Therefore, the traditional celebrations held by the palace are not in harmony with the celebrations of Islamic holidays. Sultan Agung wanted these celebrations to be at the same time. For this reason, a new calendar system was created which is a combination of the Saka calendar and the Hijri calendar (Kraton Ngayogyakarta Hadiningrat, 2021). 2) Ruwahan tradition, Ruwahan for the Malay community is defined as a tradition to give alms to pray for ancestors, parents, family, Muslim brothers who have died. This activity is carried out in the month of Syakban often also called the month of ruwah (Choirunnuswah, 2018). 3) Architecture of the Great Mosque of Palembang The Great Mosque of Sultan Mahmud Badaruddin I Jayo Wikramo commonly called the Great Mosque of Palembang is the largest mosque in Palembang City, South Sumatra. This mosque was founded in the 18th century by Sultan Mahmud Badaruddin I Jayo Wikramo. Currently, the Great Mosque of Palembang has become a regional mosque in the ASEAN region. This mosque has Islamic and Malay acculturation architecture (Kemenag RI, 2021). 4) The tradition of completing the Qur'an in the teachings of Islam there is a custom to carry out a ceremonial process for children which is part of the life cycle of people's lives, namely the Khatam Quran ceremony, a ceremony for children who have succeeded in reading the Koran well and fluently. In this case, for the people of

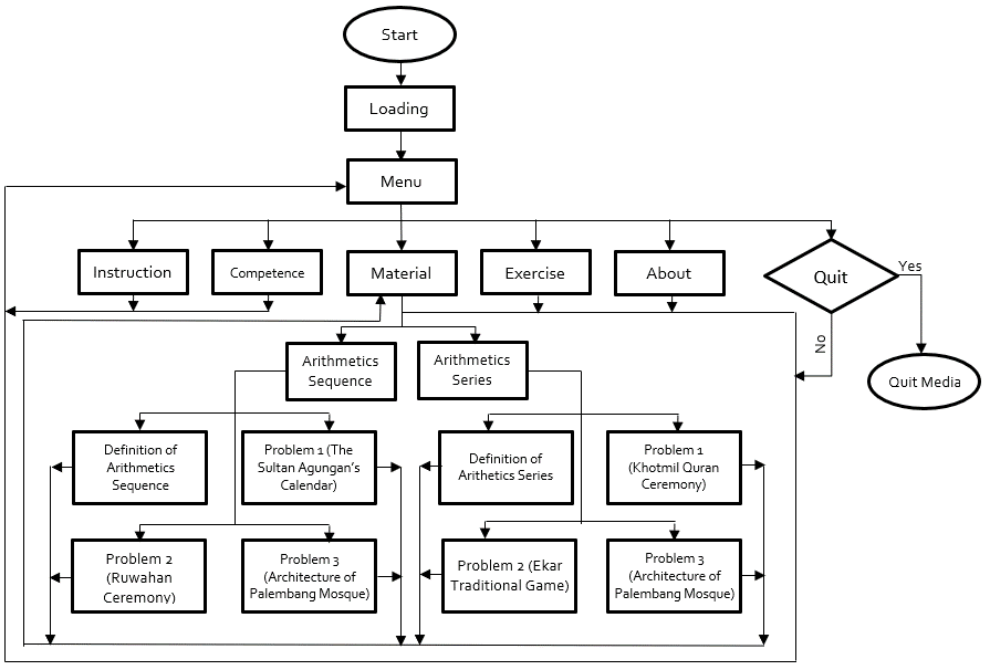


Figure 2. Flowchart of learning media

West Sumatra, the tradition of the khatam Quran is part of the life cycle of the people of South Sumatra. Khatam al Quran, which is also known as the completion of the Koran, is a ceremony that rewards and marks a child's ability to learn the Koran. In this ceremony, the participants consist of children who have been able to read the Koran with tajwid / Maharaj or the rules of reading the Koran correctly. This ceremony was lively and held with a series of traditional events (Wirdanengsih, 2019). 5) Ekar is a traditional game that is usually played by Malay Muslim children in the Palembang area, other names are marbles, gundu, or stin. Ekar is one of the various traditional games in the Palembang area, this game is usually played by at least 2 children. The more children who play ekar, the more exciting and fun the game will be (Noviza & Kassim, 2018). The design phase of the learning media flowchart researcher, the flowchart can be seen in Figure 2.

Furthermore, the researchers made the Design Interface of learning media. The first page when opening the application is the front page. The front page consists of the title of the material, class, exit button, music button, image design associated with the context of Malay Islam, and menu options used to explore this application, namely competence, material, evaluation, and about the creator. The front page can be seen in Figure 3.

Figure 3. Display of the front page of learning media

The second page of this application is the competence page. The competency page contains core competencies, basic competencies, indicators, and learning objectives. Here is a display of the competence page.

Figure 4. Competency page display

The third page is the material page for arithmetic sequences and series. This page contains a selection of material that can be studied by students. These materials can be directly accessed by students on the application. The material is related to the context of Malay Islam. There is an introduction to the context first, which is then followed by the material.

Figure 5. Menu material for arithmetic sequences and series

The fourth page is an evaluation page that contains ten multiple-choice questions that have been linked to the context of Malay Islam. The following is a display of the evaluation page that has been developed.

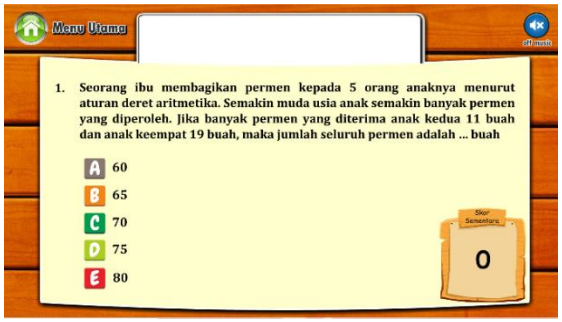


Figure 6. Evaluation page

The last page is the page about the creator. The page about the creator contains information from the developer of learning media. Here's a screenshot of the creator's page.

Figure 7. About the creator

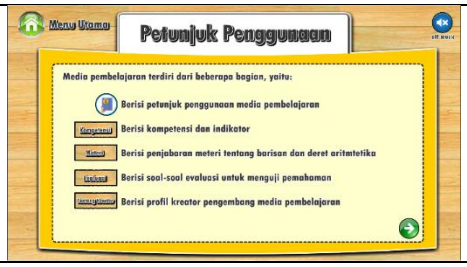
After the Preliminary Stage is complete, the resulting media is the initial prototype.

Prototyping Stage

After the initial prototype is complete, the learning media prototype is evaluated using the Tessmer flow. In the self-evaluation stage, five revisions were obtained which were assessed from the obvious error aspect. The results of the revision can be seen in Table 2.

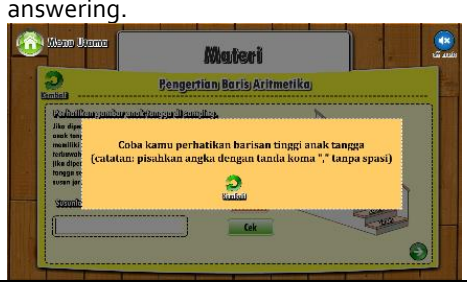
Table 2. the results of the revision of the self-evaluations stage

No.	Evaluation result
1.	Provide instructions for using learning media.

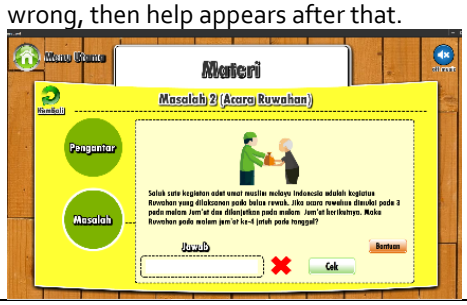


2. The front page makes it more interesting.

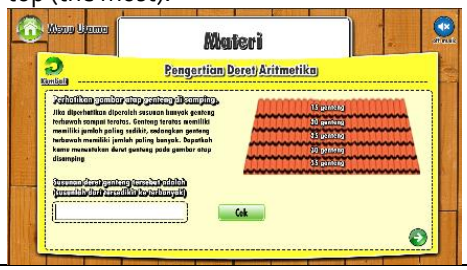
3. Adding student instructions in the line understanding section not to use spaces when answering.



4. Students must answer the question first, if wrong, then help appears after that.



5. In terms of the meaning of the series of tile images, it has been adjusted to the number of tiles from the bottom (the least) to the top (the most).



The results of the revision at the self-evaluation stage are called prototype 1, which is then continued at the expert review and one-to-one stages. The expert review stage of prototype 1 was assessed

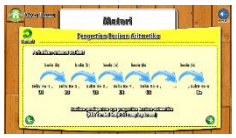
by six experts, namely three material experts and three media experts. Material experts judge in terms of the material and language used and media experts judge in terms of design, appearance, and animation. The description of the assessed aspects can be seen in Table 3.

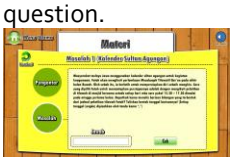
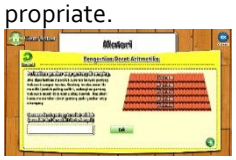
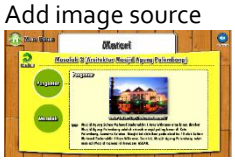
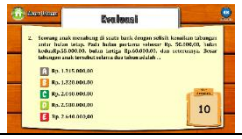
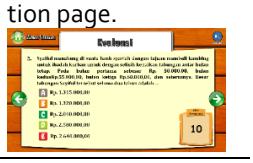
Table 3. Aspects assessed at the expert review stage

Expert	Aspect	Statement
Material Expert	Material Content	The suitability of the material content with the KD and Indicators to be achieved
		Material equipment
		Content accuracy (all information displayed is correct)
		Projecting the attractiveness of learning media on the material of arithmetic sequences and series to students
		The sentences contained in the learning media are easy to understand for high school students
		Evaluation of questions that are in accordance with the material
Media Expert	Desain	Making interesting learning media
		Attractive use of graphics and buttons
	Technical Quality	Animation and evaluation program (practice questions)

The validation results from material experts got an average percentage of 90% very good with valid decisions with revisions and validation results from media experts got an average percentage of 97.78% very good with valid decisions with revisions. The results of the revision of prototype 1 can be seen in Table 4.

Table 4. The results of the revision of the expert review stage

No.	Before Revision	After Revision
1.	The initial intro animation is a bit long	The first intro is fps fast  
2.	The main menu page does not contain the word IPA/IPS (to confirm the appropriate major for learning media) 	Added the word IPA/IPS 
3.	The material on the meaning of arithmetic sequences does not contain the meaning of arithmetic sequences. (there is no understanding page on the material)	The meaning of arithmetic sequences is added in the form of animations and then students make their conclusions. 
4.	The material for understanding arithmetic sequences does not contain features to conclude students' opinions about the meaning of arithmetic sequences. Then the media will respond to students' answers by displaying statements about arithmetic sequences which students will then compare with their opinions.	Added a feature so students can express their opinions about understanding arithmetic sequences. If students have input their opinions, then the media will respond by displaying statements about arithmetic rows  If students have input their opinions, then the media will respond by displaying statements about arithmetic rows.

		
5.	The material on the meaning of an arithmetic series does not contain the meaning of an arithmetic series.	Added the understanding of arithmetic series in the form of animation and then students make their conclusions. 
6.	The material for understanding arithmetic series does not contain features to conclude students' opinions about the meaning of arithmetic series.	Added a feature so students can express their opinions about understanding arithmetic series.  If students have input their opinions, then the media will respond by displaying statements about arithmetic series 
7.	Problem 1 of the calendar of the great sultan is less related to the context of the calendar in the question. 	Fixed issue 1 with linking sultan Agung's calendar 
8.	Problem 1 The calendar of Sultan Agung Assistance is wrong and does not match the problem. 	Help questions have been adjusted to the questions 
9.	The material understanding of the arithmetic series of tile images is not appropriate. 	Replacing the tile vector. 
10.	Problem 2 The arithmetic series of the traditional game ekar is inconsistent in the use of the words ekar and marbles so that it confuses students. 	The word ekar is replaced with the word marbles. 
11.	Images used on media are not listed 	Add image source 
12.	Not all evaluation questions are not related to the context of Malay Islam. 	All questions are related to the context of Malay Islam 
13.	The evaluation menu is inconsistent in the use of the word evaluation and exercise. 	Replace each practiced word with an evaluation word. 
14.	The evaluation question page does not have a back and continue button. 	Added back and continue buttons on the evaluation question page. 

15.	At the end of the evaluation there is no name and class. 	Add the name and class at the end of the evaluation. 

The one-to-one prototype 1 stage was tested on six students with different abilities. The description of the aspects assessed at the one-to-one stage can be seen in table 5.

Table 5. Aspects assessed at the one-to-one stage

Aspect	Statement
Clarity	The material contained in the learning media is clear and easy to understand
	Practice questions can be done
	Easy to use
Attractiveness	The text, menu placement, and animations contained in the learning media are clear and neat.

The results of the one-to-one student practicality questionnaire got an average of 87% very good. One-to-one stage revision is to add each button for on and off the music on each page.

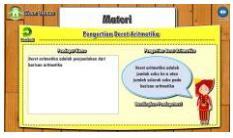
The revised results from the expert review and one-to-one stages are called prototype 2. Next, the small group media prototype 2 stage will be tested in small groups. There are three groups with each group of five people. At this stage, the practicality of the media is assessed from the aspects of effectiveness, attractiveness, and applicability. A description of the aspects assessed at the small group stage can be seen in Table 6.

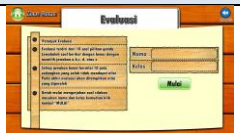
Table 6. Aspects assessed at the small group stage

Aspect	Pernyataan
Effectiveness	The material contained in the learning media for arithmetic sequences and series is clear and easy to understand
	Practice questions can be done
	Can be used easily.
Implementation Attractiveness	The text, menu placement, and animations contained in the learning media are clear and neat.

The results of the practicality questionnaire of the small group stage students got an average of 86.22% very good. The revision of the small group stage can be seen in Table 7.

Table 7. The results of the revision at the small group stage

No.	Before Revision	After Revision
1.	The material menu selection section does not contain characters and explanations. 	Added character and description to the selection of the material menu. 
2.	In the understanding of arithmetic sequences there are no characters, animations, and the layout is rather monotonous. 	Added characters, animations, and layouts to the arithmetic sequence definition section. 
3.	In the understanding of arithmetic series there are no characters and the layout is rather monotonous. 	Adding characters and arranging layouts in the understanding of arithmetic series. 
4.	The evaluation section does not contain the character of people and words of motivation to do the evaluation.	Adding people characters, managing layouts, and giving the words "Cheers and Happy Working"

No.	Before Revision	After Revision
		

The result of the revision of the small group stage is called prototype 3. The last stage is the field test, this stage prototype 3 is tested on 25 students. At this stage, practicality is assessed in terms of user acceptance and applicability. A description of the aspects assessed at the field test stage can be seen in table 8.

Table 8. Aspects assessed at the field test stage

Aspect	Statement
User Acceptance	Interest in using computer-based learning media in understanding arithmetic sequences and series material
	Learning media makes learning fun
	Easy to use
Applicability	Can understand the material and can complete the evaluation of arithmetic sequences and series using learning media

The results of the practicality questionnaire of students in the field test stage got an average of 97% very good without revision. From testing the learning media on students from these stages, the learning media for arithmetic sequences and series with the context of Malay Islam is said to be practical.

Discussion

Based on the validation results at the expert review stage, the learning media developed is valid. The validity of the media is based on the results of the validation of material experts and media experts. The validation of media experts and material experts showed that the average percentage was above 85% with a very good category.

Furthermore, the results of the practicality of learning media by students at the one-to-one, small group, and field test stages were declared practical. The practicality of the media is based on the results of student questionnaires which show the average percentage is above 85% with a very good category. These results are reinforced by research by Zahroh et al (2019) showing that at the user trial stage for 10 students, the average result was 3.8 with a scale of 5 with good and practical categories.

The learning media for arithmetic sequences and series with the Malay Islamic context that has been developed not only contains material for arithmetic sequences and series but also allows students to be actively involved when learning through the application of these learning media. In the media developed, it is combined with the context of Malay Islam to give an idea to students that the material can be applied to their lives. The addition of interesting vectors and animations makes students excited about learning to use learning media. this is in line with the research of Cholifah et al. (2021) which states that learning media can increase student interest and motivation in learning.

The learning media for arithmetic sequences and series with the context of Malay Islam also provides an evaluation in the form of ten multiple choice questions that have been linked to the context. Students can do the evaluation directly from the application of learning media. Evaluation questions not only make students interested in practicing arithmetic sequences and series questions, but also deepen students' understanding and ability to solve problems. This is because the evaluation questions contained in the learning media are designed so that students have a high learning experience.

In a previous study, Saniriati et al.,

(2021) in a student practicality questionnaire only included the results of the scores from the questionnaire without a student comment column, so students could not provide input on the resulting learning media. In this study, the researcher added a student comment column so that students could provide comments after using the learning media. Good responses were shown by students from questionnaire comments such as learning media providing new experiences in learning, practicing problem-solving skills, showing that mathematics exists in everyday life, and attractive displays and animations so that learning becomes fun.

In general, the advantages of learning media that have been developed are 1) the form of application publication files are exe and apk so that they can be accessed on laptops and smartphones, 2) attractive media display designs combined with animation, 3) have a variety of Malay Islamic contexts so that students can new experiences in learning, 4) students can directly interact with learning media so that students are active in using media, 5) evaluation of questions on learning media can train students' abilities in deepening material and problem-solving skills, 6) this learning media can be used at school or at home without being limited by space and time and can make students learn independently, 7) this media is able to arouse student interest and motivation.

However, this media also has several drawbacks, namely: 1) there is no voice actor to explain the material, 2) the evaluation section has not used a time limit in working on questions, 3) The results of students' scores on the evaluation cannot be stored in database form.

CONCLUSIONS

Learning media for arithmetic sequences and series with Malay Islamic context using Adobe Animate CC which has been developed is valid, practical, and able to motivate students in the learning process. This media is still limited in the material of arithmetic sequences and series and the context is only Malay Islam, therefore, future researchers can develop learning media on other mathematics materials with different contexts.

REFERENCES

Abdullah, F.S & Yunianta, TNH. (2018). Pengembangan Media Pembelajaran Matematika Trigo Fun Berbasis Game Edukasi Menggunakan Adobe Animate Pada Materi Trigonometri. *Jurnal Pendidikan Matematika FKIP Univ. Muhammadiyah Metro, 7* (3), 434-443.

Akker, J.; Bannan, B., Kelly, A. E., Nieveen, N., & Plomp, T. (2013). *When is design research appropirate? Educational Design Research*. Netherlands: international.slo.nl.

Alwi, S. (2017). Problematika Guru Dalam Mengembangkan media pembelajaran. *Jurnal ITQAN, 8* (3), 145-166

Cahyanindya, B. A., & Mampouw, H. L. (2020). Pengembangan Media Puppy Berbasis Adobe Flash CS6 Untuk Pembelajaran Teorema Pythagoras. *Jurnal Cendekia: Jurnal Pendidikan Matematika, 4*(1), 396–405.

Choirunniswah. (2018). Tradisi Ruwahan Masyarakat Melayu Palembang Dalam Perspektif Fenomenologis. *TAMADDUN: Jurnal Kebudayaan Dan Sastra Islam, 18*(2), 69–86.

Cholifah, S. N., Rahayu, W., & Meiliasari, M. (2021). Pengembangan Aplikasi Berbasis Android menggunakan Adobe Animate CC dengan Pendekatan Contextual Teaching and Learning (CTL) sebagai Media Pembelajaran pada Materi Bentuk Aljabar untuk Siswa SMP Kelas VII. *Jurnal Riset Pembelajaran Matematika Sekolah, 5*(1), 64–73.

Falahudin, I. (2014). Pemanfaatan Media Pembelajaran. *Jurnal Lingkaran Widyaiswara, 6*(2), 402–416.

Faruq, F., Dafik, Suharto, Fatahillah, A., & Murtikusuma, R. P. (2018). Pengembangan Media Pembelajaran Interaktif Onlie Pokok Bahasan Barisan Aritmetika Berbantuan Microsoft Visual Basic. *Kadikma, 9*(2), 89–97.

Huda, K. (2016). Islam Melayu Dalam Pusaran Sejarah Sebuah Transformasi Kebudayaan Melayu Nusantara. *Jurnal Toleransi: Media Komunikasi Umat Beragama, 8*(1), 26–34.

Kraton Ngayogyakarta Hadiningrat. (2021, Juli 5). *Karaton Ngayogyakarta Hadiningrat.* Diambil kembali dari Kalender Jawa Sultan Agungan: https://www.kratonjogja.id/ragam/21/kalender-jawa-sultan-agungan

Kemenag RI. (2021, Juli 5). *Simas Kemanag*. Diambil kembali dari Masjid Agung Palembang: https://simas.kemenag.go.id/index.php/profil/masjid/30/

Mendikbud. (2013). *Peraturan Menteri Pendidikan Dan Kebudayaan Republik Indonesia Nomor 65 Tahun 2013 Tentang Standar Proses Pendidikan Dasar Dan Menengah*, 2011, 1–13.

Murtikusuma, R. P., Fatahillah, A., Oktavianingtyas, E., Hussen, S., & Lailiya, N. (2019). The Development Of Interactive Mathematics Learning Media Based On Schoology And Visual Basic Through Industrial Revolution 4.0. *IOP Conference Series: Earth and Environmental Science, 243*(1), 0–6.

Noviza, N., & Kassim, A. H. bt M. (2018.). Model Permainan Tradisional Masyarakat Islam Melayu Sumatera Selatan Dalam Mereduksi Kecendrungan Anak Bermain "Skip Challengge". *Wardah, 19*(01), 103-121.

Nur, N., Rusli, & Dassa. (2018). Analisis Kesalahan Siswa dalam Menyelesaikan Soal Cerita Matematika pada Materi Barisan dan Deret Aritmatika. *Issues in Mathematics Education, 2*(1), 43–48.

Saniriati, D. M. D., Dafik, D., & Murtikusuma, R. P. (2021). Pengembangan Media Pembelajaran Adobe Animate Berbantuan Schoology Pada Materi Barisan dan Deret Aritmetika. *Jurnal Riset Pendidikan Dan Inovasi Pembelajaran Matematika (JRPIPM), 4*(2), 132.

Saputra, R., Thalia, S., & Gustiningsi, T. (2019). Pengembangan Media Pembelajaran Berbasis Komputer Dengan Adobe Flash Pro Cs6 Pada Materi Luas Bangun Datar. *Jurnal Pendidikan Matematika, 14*(1), 67–80.

Tessmer, M. (1993). *Planning and Conducting Formative Evaluations: Improving the Quality of Education and Training*. London: Kogan Page.

Ulfa, Yoshe Larissa, D. (2016). Pengembangan Media Pembelajaran Matematika Berbasis ICT pada Pokok Bahasan Lingkaran Untuk Siswa Kelas VIII SMP/MTS. *Jurnal Online Mahasiswa Fakultas Keguruan Dan Ilmu Pendidikan Universitas Riau, 3*(2), 1–10.

Wibawanto, W. (2017). *Desain dan Pemrograman Media Pembelajaran Interaktif.* Jawa Timur: Cerdas Ulet Kreatif.

Wirdanengsih, W. (2019). Makna Dan Tradisi-Tradisi Dalam Rangkaian Tradisi Khatam Quran Anak-Anak Di Nagari Balai Gurah Sumatera Barat. *Gender Equality: International Journal of Child and Gender Studies, 5*(1), 9

Zahroh, A., Abidin, Z., & Nursit, I. (2019). Pengembangan E-Modul Matematika Interaktif Berbasis Adobe Animate Cc Pada Materi Aritmetika Sosial Kelas VII SMP. *Jurnal Penelitian, Pendidikan, Dan Pembelajaran, 14*(7), 123–129.