An Interactive Medium to Introduce Sasando Traditional Music Using Multimedia Development Life Cycle Method

Salam Irianto Nadeak[-1*)], Yusmar Ali[-2], Djaka Suryadi[-3]

[1,2] Design Grafis
Politeknik Negeri Media Kreatif
https://polimedia.ac.id/
salamirianto66@gmail.com, yusalim@gmail.com

[3]Islamic Economics
STAI Asy-Syukriyyah
https://asy-syukriyyah.ac.id/
djakasuryadi@asy-syukriyyah.ac.id

(*) Corresponding

Abstract

ActionScript-based programming is one of the software which includes applications that teachers widely use to create interactive learning media in the world of education. ActionScript-based programming technology is a type of graphic animation software that can create a graphic object that can be animated without using other supporting software. At present, there are many educational circles to expedite the process of learning activities, especially for students. Interactive learning media is one means of delivering subject matter that is very important to apply today. In implementing student learning at school, it is necessary to present a practical and theoretical learning system which is the main point in helping to develop student competence. One form of culture in Indonesia is the traditional musical instrument Sasando. Sasando belongs to the chordophone instrument because it is played by picking it. The form of Sasando itself is in the form of a guitar, violin or harp. The central part of the Sasando is in the form of a long bamboo tube. In the middle, rounded from top to bottom, there is a wedge to stretch the strings. Developing interactive learning media requires a software development method; one of the development methods used is the MDLC (Multimedia Development Life Cycle) method. Making the MDLC has five stages: Concept, Design, Material Collecting, Assembly, and Testing.

Keywords: Adobe Flash; Interaktive Media; Sasando; Graphic

Abstrak

Pemrograman yang berbasis ActionScript merupakan salah satu perangkat lunak yang didalamnya termasuk aplikasi yang banyak digunakan para guru untuk membuat media pembelajaran interaktif dalam dunia pendidikan. Teknologi pemrograman yang berbasis ActionScript ini adalah salah satu jenis software animasi grafis yang dapat membuat objek grafis yang dapat dianimasikan tanpa menggunakan software pendukung lainnya. Saat ini banyak kalangan pendidikan untuk memperlancar proses kegiatan pembelajaran, khususnya bagi siswa. Media pembelajaran interaktif merupakan salah satu sarana penyampaian materi pelajaran yang sangat penting untuk diterapkan saat ini. Dalam pelaksanaan pembelajaran siswa di sekolah, perlu dihadirkan sistem pembelajaran praktis dan teoritis yang menjadi poin utama dalam membantu mengembangkan kompetensi siswa. Salah satu bentuk budaya yang ada di Indonesia adalah alat musik tradisional sasando. Sasando termasuk ke dalam alat musik chordophone karena dimainkan dengan cara dipetik. Bentuk sasando sendiri berupa gitar, biola atau kecapi. Bagian tengah sasando berbentuk tabung bambu panjang. Di bagian tengah, membulat dari atas ke bawah, terdapat baji untuk meregangkan senar. Pengembangan media pembelajaran interaktif membutuhkan metode pengembangan perangkat lunak; salah satu metode pengembangan yang digunakan adalah metode MDLC (Multimedia Development Life Cycle). Dalam pembuatan MDLC terdapat lima tahapan yaitu Concept, Design, Material Collecting, Assembly, dan Testing.

Kata kunci: Adobe Flash; Media Interaktif; Sasando; Grafis

INTRODUCTION

The Indonesian nation has various cultures stretching from Sabang to Merauke. One of the cultures they have is traditional musical instruments. However, in fact, from time to time, people's interest, one of which is the youth of the current generation, is decreasing towards Indonesian culture, especially in traditional arts

Furthermore, today's younger generation is more interested in learning modern musical instruments than traditional ones (Julia et al., 2019). It is not strange if traditional musical instruments are only known by name, but how to play them and what the instrument sounds like is still being determined. The research will convey through interactive learning media about a traditional musical instrument originating from the island of Rote, East Nusa Tenggara, the Sasando, using the MDLC method (Astuti et al., 2019). Sasando has a varied sound, so it can be played in various genres, such as traditional music, pop, and other music that is not electric. In the Rote community, Sasando is often played to accompany dances, songs, poems, and other entertainment events (Francis, 2017).

Lack of knowledge about regional musical instruments is a problem that is currently being experienced.

In reality, not all people have the opportunity to learn and play this instrument due to limited tools and costs. Sasando belongs to the chordophone instrument because plucking the strings is how to play it. The form of Sasando itself is in the form of a guitar, violin or harp (Tukan et al., 2020). The central part of the Sasando is in the form of a long bamboo tube. They are rounded from top to bottom in the middle and have wedges for stretching the strings. What these wedges do is give each string a different sound effect. Then the Sasando tube is placed in a container of woven palm leaves like a fan (Magalhaes, 2022).

Learning media is a tool used to convey teaching material, and learning media has an essential role in supporting the quality of the teaching and learning process (Wahid et al., 2020). Media is anything that can be used to transmit messages and stimulate the mind, arouse enthusiasm, attention, and willingness of students so that it can encourage the learning process in students. Media can also make learning more exciting and fun. ActionScript-based programming is specifically designed by programmers and a professional standard authoring tool application program used to create attractive animations and bitmaps to develop interactive and dynamic websites. It is designed with the ability to create reliable and lightweight two-dimensional animations, so ActionScript-based is widely used to build and provide animation effects on websites and learning media. In addition, this application can also be used to create animations, logos, movies, games, navigation on websites, animated buttons, banners, interactive menus, form fields, e-cards, screen servers, and other web applications (Fadila et al., 2019). In addition to the community, it is necessary to take care of the traditional Sasando Music tools as part of cultural values through playing them; of course, the community wants the Sasando Music tool to be widely known throughout the world. Through the production of SMEs, Sasando is also sold as a source of income to support the economy of families in the community of East Nusa Tenggara. Promotion efforts carried out massively online have led Sasando sales to penetrate the international market, such as Germany, Australia, and Mexico. They were selling Sasando musical instruments at varying prices for electric versions with prices above 3,500,000 IDR and acoustic versions of around 600,000 - 1,500,000 IDR per unit (Muntasir, 2022). The sales value in one booking can penetrate up to tens of millions of rupiah. On various occasions, efforts to promote Sasando musical instruments continue to be carried out by displaying them at various events, such as meetings, festivals, and music concerts. Based on the description above, the research objective is to increase student interest in learning, especially in schools introducing the Sasando musical instrument.

RESEARCH METHODS

The research method created by the author uses a type of qualitative method that tends to be descriptive. The qualitative method is an investigative process that aims to understand a social situation and event (Sugiyono, 2022). The following are several stages in collecting data through qualitative methods. The interview was conducted by asking several questions to the relevant informant to obtain information, aiming to obtain data that could explain a research problem. After that, observations were carried out with systematic observation and recording of an object of remote observation using the Zoom application through the art teacher at the school for the incident being investigated (Creswell et al., 2011). The observation is carried out to know the conditions during the learning process. Furthermore, to complete the data needed, namely conducting a literature study, namely steps taken by searching

for data through reading literature and reference sources from journals that support and are related to the application of ActionScript-based technology as an interactive medium for the introduction of the traditional Sasando musical instrument using the MDLC model in schools that will be made, as a reference in collecting the necessary data in order to obtain a valid theoretical basis (Ahmad et al., 2021; Riswandari et al., 2021).

The software development implemented in this study uses the Multimedia Development Life Cycle (MDLC) methodology. The development of multimedia in interactive learning must carry out well-designed design stages and systematic arrangements to be used effectively in learning (Astiti et al., 2021; Purhita et al., 2021)
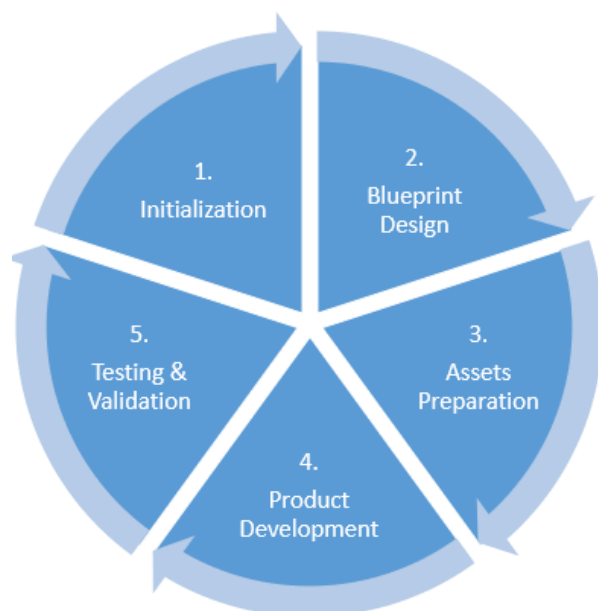

Figure 1. Design Method MDLC (Roedavan et al., 2022)

The first stage, namely the concept, is the stage for determining the direction and objectives of the research. In addition, the concept also determines the type of application, such as presentations and other interactive. This aims to create an exciting and modern multimedia learning process by utilizing technology in the current era. It can increase interest in learning, especially cultural arts in Indonesia, one of which is to hone students' abilities to learn better to know the traditional musical instrument, the Sasando.

The second stage, namely designs, is an ongoing phase in developing specifications for program architecture, design, and supporting materials or materials used by the application to be made. The third stage of material collecting is the stage where collecting materials must match what is needed in making interactive media. These materials include images, photos, animation, video, audio, text and other complementary materials.

The fourth stage is assembly, which is the stage where all materials or interactive media objects that have been obtained are then assembled and arranged according to the design. This interactive learning media is processed and created using ActionScript-based software.

The last stage is testing, which is carried out to find out which interactive learning media that is designed has been completed according to the previous stages. Then a black box table verification test is carried out.

The research was conducted at one of the vocational schools in Jakarta by introducing the traditional Sasando musical instrument with an application as an interactive learning medium. Data and instrument data were obtained from the interviews, with various inputs obtained as material for consideration in the study. In general, using interactive media is constructive for students in introducing traditional Sasando music because, with interactive learning media, students understand more than just reading the material in the module.

So far, the learning process takes place when conveying the culture of traditional musical instruments using modules and delivery through the PowerPoint application as material the teacher presents. It triggers why many students are not interested in learning traditional musical instruments because of the coals of teaching or the way of learning that has been lived. Hopefully, this interactive application will further encourage students to understand and know more about traditional musical instruments, especially the Sasando musical instrument.

RESULTS AND DISCUSSION

From the results of interviews and interviews conducted at the school, information is obtained that so far, students can only get information from the teacher about this traditional musical tool from the submitted. This interactive media innovation allows students to understand existing material easily.

Initialization

The flowchart below in Figure 1 is the initial concept of interactive media applications that schools will use in introducing traditional musical instruments. The main menu consists of 4 menus: historical, material, video, and quiz. This menu can

be used to see the various overall kinds of traditional music, a traditional Sasando instrument, in this study. The application can also be known history and learning about the musical instrument. Applications can also play existing videos of how the sound is generated from the music device. The last menu is a quiz to find out how much understanding students are in knowing the Sasando music instrument that has been learned.
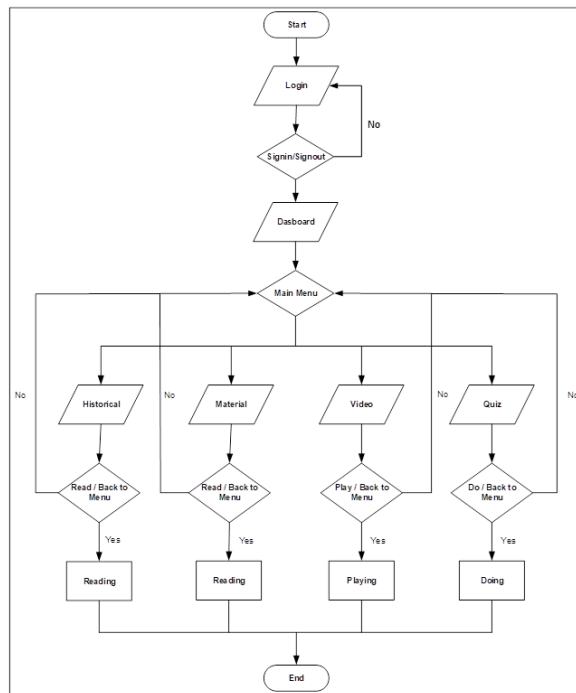

Figure 2. Flowchart Process

Design method MDLC is not only an evolution in software development but also revolutionizes the old software development methods. The design concept results provide information about the prototype to be developed, which will later become a product used in the school environment. Figure 2 above is the flowchart process design of the interactive learning media to introduce the traditional Sasando musical instrument.

Blue Print Design

Blueprint design in MDLC refers to the process of designing schematic designs and details related to the multimedia production to be made. At this stage, the multimedia designer will collect information about the needs, goals, and target users, then design the multimedia structure and interface and create a sketch or storyboard about the multimedia content to be produced. In the blueprint design, the multimedia designer will also make

visual designs, layouts and layouts that match the themes and multimedia concepts produced.

Assessment Preparation

In MDLC, asset preparation is an essential stage in multimedia development because the quality and completeness of multimedia assets will affect the quality of the final product. If multimedia assets are not properly prepared, the final product will not look professional and may not meet user expectations. Asset preparation involves collecting, editing and storing all the multimedia assets used in the final product. The multimedia development will also determine each asset's format, size, resolution and quality to ensure that everything conforms to predetermined needs and specifications.

Product Development

Product development refers to the multimedia product development stage, which is the last stage of the development cycle. At this stage, multimedia products planned, designed, and prepared for assets will be developed into a final product that can be implemented and distributed to users. At the product development stage, the team will integrate all previously prepared multimedia assets into a complete multimedia product. This involves the process of developing an application or website, incorporating audio, video and graphics, as well as the integration of interactive elements such as buttons, menus and animations.

a. Main menu

This design image is the main menu display page from several menu buttons, among others, in the form of history buttons, material, video, and quizzes, as shown in Figure 3.
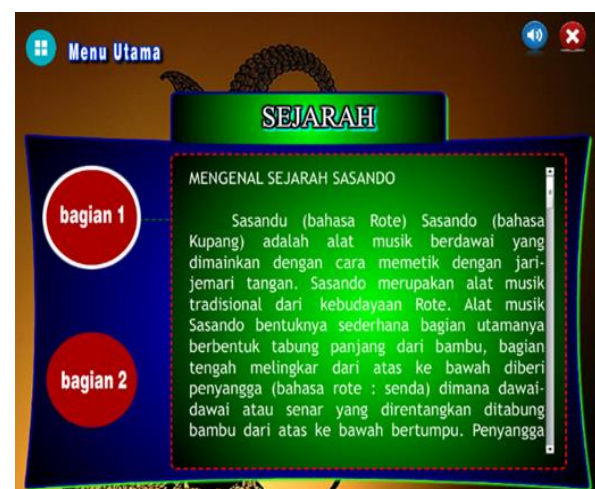

Figure 3. Main menu

b. Historical menu

Figure 4 provides information about the historical page and displays two buttons, section 1 and section 2. The button functions to display the history of the traditional Sasando musical instrument

Figure 4. Historical menu

c. Material menu

The material pages are designed neatly and interactively to make it easier for users to get the necessary information. The material display of this menu displays six buttons for discussion of the traditional Sasando musical instrument, as shown in Figure 5.

Figure 5. Material menu

d. Menu videos

Figure 6 is a video page display with two buttons to play educational videos about the traditional Sasando musical instrument. Button 1 is video 1, a video in .flv, .mkv, .mp4, .m4p, .mpeg format, while the second button is video 2 in .avi, .gif, .wmf, .3gp format.

Figure 6. Video

e. Quiz menu

In the final display design, the quiz will display a main quiz page with the start button to work on the quiz, as shown in Figure 7
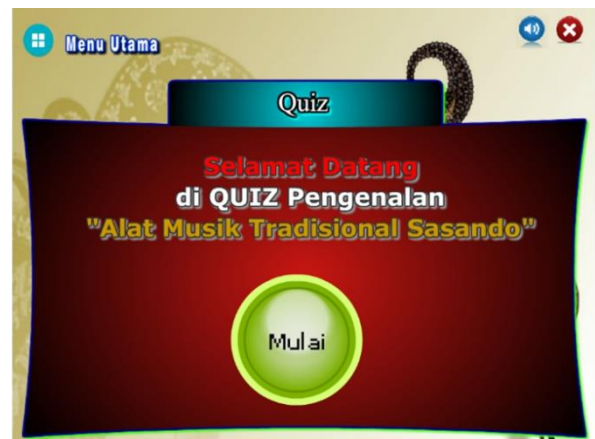

Figure 7. Quiz menu

The information in the materials related to the subject matter was obtained from interviews with teaching teachers and several related literature and sources regarding the traditional Sasando musical instrument.

This interactive learning media was made at the assembly stage using action script 3.0 programming on Adobe Flash Professional CS6 software. While making this interactive learning media, the developer makes scene after scene designed attractively to attract students' desires to learn traditional musical instruments.

After the assembly stage, the last stage is the testing stage. At the testing stage, the method used for testing is using a black box; this aims to find out whether, functionally, the processes in the application program are running according to purpose so that this interactive learning media can be used properly (Joosten, 2021). The overall results of assembly and testing produce application

5

tools that can be appropriately used in schools in lessons related to the traditional Sasando music instrument

Testing and Validation

The testing and validation involve testing aspects such as functionality, security, performance and compatibility. The testing will ensure all features and functionality work correctly per the multimedia product's needs and objectives. In addition, the testing will also perform performance tests to ensure that the multimedia product works well on all desired platforms and devices. Compatibility testing will also be carried out to ensure that multimedia products can run adequately on all desired operating systems, browsers and devices.

Table 1. Table Product Testing

No	Test	Scenario	Result	Decision
1	login user	fill in the username & password	system on dashboard	success
2	signout	signout button	system on dashboard	success
3	main menu	displays the main menu	the system can display the main menu	success
4	historical menu	displays the historical page	the system can display the history page	success
5	material menu	displays the material page	the system can display material page	success
6	menu videos	displays the videos page	the system can display a videos page	success
7	menu quiz	displays the menu quiz page	the system can display a videos page	success

CONCLUSIONS AND SUGGESTIONS

Conclusion

Based on the results of the research and discussion described above regarding interactive learning media for the introduction of the traditional Sasando musical instrument using the MDLC method, it can be concluded that the existence of this interactive learning media can increase understanding and knowledge of culture in Indonesia, one of which is the traditional Sasando musical instrument. The learning media has history, materials, videos, and quizzes. The test results show that interactive learning media can provide convenience to students in the learning process at school to understand better and know more about the traditional Sasando musical instrument. The experience of making this application is also the first step in developing subsequent applications, which can be developed into applications for other types of traditional musical instruments. This hope aligns with the music teacher's desire to continue teaching traditional musical instruments to students so that traditional music remains popular with students.

Suggestion

Application-based research will continue to develop in line with technological developments that rotate. This developed application uses Adobe Flash technology, which will likely be developed using other technologies such as Microsoft Silverlight, Ruffle or Photon Flash Player. Developing applications with this technology will increase the user's imagination, providing comfort to students studying it.

REFERENCE

Ahmad, I., Rahmanto, Y., Pratama, D., & Borman, R. I. (2021). Development of augmented reality application for introducing tangible cultural heritages at the lampung museum using the multimedia development life cycle. *ILKOM Jurnal Ilmiah*, *13*(2), 187–194. https://doi.org/10.33096/ilkom.v13i2.859.187-194

Astiti, S., Mooduto, K. R., Goran, P. K., & Ardilla, Y. (2021). Designing of 3-D Animation Videos in Arduino Assembly Learning with The Multimedia Development Life Cycle Method. *JUPITER (Jurnal Penelitian Ilmu Dan Teknik Komputer)*, *13*(2), 52–61. https://doi.org/10.5281/3575.JUPITER.2021.10

Astuti, D. P., Leonard, Bhakti, Y. B., & Astuti, I. A. D. (2019). Developing Adobe Flash-based mathematics learning media for 7th-grade students of junior high school. *Journal of Physics: Conference Series*, *1188*(1), 012098. https://doi.org/10.1088/1742-6596/1188/1/012098

Creswell, J. W., Luketić Sveučilište U Zadru, D., & Za Pedagogiju, O. (2011). Research Desing: Qualitative, Quantitative and Mixed Methods Approaches (3 rd Edition) (Nacrt istraživanja: kvalitativni, kvantitativni i mješoviti pristupi). *Acta Iadertina*, *8*, 107–110.

Fadila, A., Dasari, R., Setiyaningsih, S., Septiana, R., Sari, R. M., & Rosyid, A. (2019). The Development of Electronic Flash Worksheet

Based on Adobe Flash Cs6 on Fraction Numbers in the Seventh Grade of Junior High School. *Journal of Physics: Conference Series*, *1155*(1), 012019. https://doi.org/10.1088/1742-6596/1155/1/012019

Francis, Y. S. (2017). *Transmisi Alat Musik Sasando Sebagai Media Seni Budaya Di Kabupaten Rote Ndao Provinsi Nusa Tenggara Timur* [Institut Seni Indonesia]. http://digilib.isi.ac.id/id/eprint/1745

Julia, J., Iswara, D., & Supriyadi, T. (2019). Redesigning and Implementing Traditional Musical Instrument in Integrated Technology… Redesigning and Implementing Traditional Musical Instrument in Integrated Technology Classroom. *International Journal of Emerging Technologies in Learning*, *14*(1), 75–87. https://doi.org/10.3991/ijet.v14i10.10197

Magalhaes, A. D. J. (2022). Sasando Dan Kehidupan Masyarakat Desa Oebou Kecamatan Rote Barat Daya Kabupaten Rote Ndao. *Education : Jurnal Sosial Humaniora Dan Pendidikan*, *2*(3), 17–30. https://doi.org/10.51903/EDUCATION.V2I3.223

Muntasir, C. D. H. E. (2022). *Inovasi Alat Musik Sasando Elektrik* (1st ed.). Rizmedia Pustaka Indonesia. https://books.google.co.id/books?id=BEFzEAAAQBAJ&dq=Edon,+C.+D.+H.+(2022).+Inovasi+alat+musik+sasando+elektrik:+Rizmedia+Pustaka+Indonesia.&lr=&source=gbs_navlinks_s

Purhita, E. J., Sediyono, E., & Iriani, A. (2021). Holistic Model for Guiding Good Design Quality in Learning Multimedia Design Development. *Proceedings of the 2nd Borobudur International Symposium on Science and Technology (BIS-STE 2020)*, *203*, 349–353. https://doi.org/10.2991/AER.K.210810.060

Riswandari, N., Yuwita, N., & Setiadi, G. (2021). Pengembangan E-Learning Menggunakan Adobe Animate Creative Cloud dengan Penerapan Metode Multimedia Development Life Cycle (MDLC). *Akademika: Jurnal Manajemen Pendidikan Islam*, *3*(1), 76–92. https://doi.org/10.51339/AKADEMIKA.V3I1.310

Roedavan, R., Pudjoatmodjo, B., & Sujana, A. P. (2022). *Multimedia Development Life Cycle (MDLC)* (pp. 1–6). researchgate.

Sugiyono. (2022). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. ALFABETA. https://cvalfabeta.com/product/metode-penelitian-kuantitatif-kualitatif-dan-rd-mpkk/

Tukan, M. K. A. C. S. D., Ceunfin, F., & Kian, M. (2020). Sasando Gaya Edon: Kajian Organologi dan Penyeteman. *Resital: Jurnal Seni Pertunjukan*, *21*(1), 28–40. https://doi.org/10.24821/resital.v21i1.3693

Wahid, A. H., Najiburrahman, Rahman, K., Faiz, Qodriyah, K., Hambali, El Iq Bali, M. M., Baharun, H., & Muali, C. (2020). Effectiveness of Android-Based Mathematics Learning Media Application on Student Learning Achievement. *Journal of Physics: Conference Series*, *1594*(1), 012047. https://doi.org/10.1088/1742-6596/1594/1/012047