



Need Analysis for Development of Articulate Storyline-Based Interactive Learning Media During the Covid-19 Pandemic

Febblina Daryanes^(✉), Darmadi, and Elya Febrita

Biology Education, Riau University, Riau, Indonesia

{febblina.daryanes, darmadi, elya.febrita}@lecturer.unri.ac.id

Abstract. The Covid-19 pandemic has caused learning to be carried out online. Based on observations, it appears that students find it difficult to understand the concept of material when learning online. One of the efforts that can be done by lecturers is to design an interactive learning media that suits the needs of students. This study aims to analyze student needs for the development of interactive learning media based on Articulate Storyline. This research is a qualitative descriptive study, research subjects consist of 78 students of Biology Education, University of Riau. The data collection technique was done by triangulation. Data were obtained based on questionnaires, interviews and observations. Data were analyzed through data collection, data reduction, data presentation, and data verification. The results showed that 93% of students said the obstacles to online learning were networks and quotas, 94% of students said the material provided was difficult to understand, 84% of students said online learning had not been effective because of disjointed material explanations, 81% of students said the material provided was given that it is not interactive, 91% of students say that interactive learning media can help understanding the material, 90% of students say that the solution in optimizing online learning is to provide interactive media-based materials. It can be concluded that it is necessary to develop interactive learning media based on Articulate Storyline when online learning is seen from the needs of students to optimize online learning.

Keywords: need analysis · articulate storyline · interactive learning media · covid-19 pandemic

1 Introduction

This Corona Virus Disease or often referred to as Covid-19 is an infectious disease caused by acute respiratory syndrome. The disease was first identified in December 2019 and has since spread globally resulting in the Covid-19 pandemic. This virus mainly spreads during close contact, so since this virus entered Indonesia, the Government has begun to decide not to carry out activities in crowds and implement physical distancing. The impact caused by the spread of the Corona Virus affects all aspects, ranging from health, economy, worship, and education. The education sector is certainly one of the concerns

because education is the spearhead of human life. The learning system that is usually done face-to-face is now switching to distance learning and is done online. Students who usually conduct lectures on campus are now carried out from home with minimal direct interaction with lecturers.

Based on the observations made, it appears that students find it difficult to understand the concept of material when doing online learning. In addition, based on the results of interviews, students said that they found it difficult to focus on reading the material provided because it was only in the form of a word or pdf file which incidentally only consisted of writing and did not facilitate independent learning, they were also less enthusiastic in reading lecture material.. Students also said that the cost of buying internet data packages and the difficulty of analyzing the concept of material during lectures was always done via video conference without being given any material.

This distance learning situation makes educators have to be able to innovate through the use of technology so that students can still understand the concept of the material even through distance learning, as stated by Reference [1] and Reference [2], Covid-19 requires educators to innovate and also transform in carrying out online learning. One of the efforts that can be done by lecturers is to design an interactive learning media. Based on research conducted by Reference. [3], that students need learning media that are mobile, interactive and support independent learning, one of the interactive learning media that helps students to learn independently and can be accessed anytime and anywhere, namely interactive media based on the Articulate Storyline application. Therefore, it is necessary to conduct a needs analysis as a first step for the development of interactive learning media based on Articulate Storyline as a forum for distributing information and learning materials from lecturers to students. According to Reference [4] and Reference [5], needs analysis is the first step to direct lecturers to find the needs of students when conditions are being faced by students, this is important to be input in developing a certain product. Needs analysis activities have a major role as providers of important data to assist educators in tracing the learning needs of students. According to Reference [2], through needs analysis can serve as; 1) help describe the current situation, 2) explain how a product or program can meet needs, 3) explain the impact of implementing a product or program.

The Articulate Storyline application is an interactive multimedia that looks like a powerpoint consisting of scenes, slides, and layers and has the advantage of being able to present presentations more creatively [6]. Some of the features available in the Articulate Storyline application include characters, quizzes, timeline, picture, movie, animation that can be combined with one another to create interactive media. The results of the media that have been developed can be published on a web-based basis (html5) which can be run through various devices such as laptops, cellphones, tablets, notebooks and so on as long as they are connected to the internet [7].

Several previous studies that discussed the analysis of interactive media needs, including research conducted by Reference [6], showed that teachers had never used multimedia-based media. Reference [8], states that teaching teachers do not maximize existing technology, only use print media and never use interactive learning media. Research Reference [7], states that students like learning media that displays images, messages, audio, animation. Research conducted by Reference [9] said that teachers only

use blackboards and workbooks as learning media, the media used are not interesting so most students do not pay attention to the teacher's explanations. Previous research was usually carried out at the secondary school level. There is still little research that discusses the need for developing articulate storyline-based interactive learning media at the university level.

Based on the above review, it is important to conduct a needs analysis on the development of interactive learning media based on Articulate Storyline to determine the current condition of online learning and the needs of students in the learning process so that an interactive learning media product can be developed that is right on target and benefits students when undergoing online lectures. Amidst the Covid-19 Pandemic. The purpose of this study is to analyze student needs for the development of interactive learning media based on Articulate Storyline.

2 Literature Review

The development of the times requires humans to be able to take advantage of information and communication technology. The use of Information Technology plays a very important role in many things, including in the world of education. The emergence of the Covid-19 pandemic has made Information Technology much needed, both the ability to use computers, communication tools and social networks appropriately for the learning process [10]. The current learning system is an online learning system that requires educators and students to be able to use information technology. Educators must be able to create an effective online learning atmosphere, there is a need for innovation in the process of delivering learning materials and media.

The needs of students are seen as an important part of considering the design of appropriate learning media in the current situation. Students become targets in becoming the right source of information to develop appropriate products. The need here can be interpreted as a request from students for the target to function effectively so that it is important to do a Need Analysis [4]. Need Analysis is the first step in the form of a set of procedures to determine the parameters of a particular product development that determines what and how a product can be designed as well as possible. Need Analysis has four models recognized by several scholars; (1) Analysis of the target situation, focused on the needs of students at the end (2) Analysis of the current situation, showing the assumptions between the current situation and the target. (3) Hutchinson and Waters Model, showing a needs analysis model of the target situation and learning needs (4) Dudley-Evans & St John, providing personal information about learners [11].

The development of interactive learning media can minimize problems in online learning, so that learning can be done independently and produce a more meaningful learning process [3]. Interactive learning media utilize computers and are designed to be able to interact with users. Interactive learning media should be able to provide images, videos, audio, images, animations and so on. Learning media serves to attract the attention of students so that students become happy and motivated in participating in learning and understanding the material. The learning media used must be appropriate and commensurate with the needs of students so that they can stimulate students to learn more effectively and efficiently.

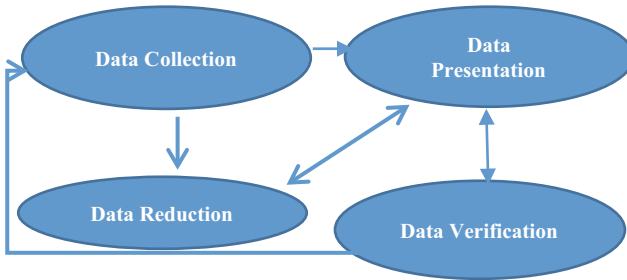


Fig. 1. Miles & Huberman's Interactive Analysis Model

Articulate Storyline is an application that displays a very creative and innovative form of presentation [7]. Producing a good presentation with Articulate Storyline certainly requires technical and artistic skills. Articulate Storyline, apart from being used as a presentation medium, can also be used as a communication medium to communicate interactively. Articulate Storyline is also still rarely used by educators when compared to the use of powerpoint media [12]. According to Reference [8] Articulate Storyline is a program that is supported by smart brainware with interactive tutorial procedures that can be published online or offline.

3 Method

This type of research is a qualitative research, namely the research method used to examine natural conditions where the researcher is the key instrument. The subjects in this study were 78 students of the Biology Education Study Program, University of Riau. Data collection techniques were carried out by triangulation, namely data collection techniques and existing data sources. Data were obtained based on questionnaires, interviews and observations. Data were analyzed through 4 stages, namely (Fig. 1 and Table 1):

- Data collection
- Data reduction
- Data presentation
- Data verification

4 Result and Discussion

A. Obstacles faced by students during online learning

Based on the results of the analysis of students' opinions regarding the obstacles faced by students during online learning that almost all students say the network and internet quota are obstacles when online learning is 93%. Many students are in remote areas whose internet networks are unstable and often lost. Some students also said that the area where they live often experience power cuts in turns. This certainly interferes with the learning process. In addition, if learning is done in a synchronous manner

Table 1. The results of the analysis of student answers to the need for developing interactive learning media based on Articulate Storyline

Question	Percentage of Student Answers
Constraints faced by students during online learning	93% Network and Internet Quota
	5% Devices such as laptops and cellphones that are not supported
	2% Schedule not suitable
Disadvantages of online learning	94% do not understand the material well when learning online
	6% Lectures are not according to schedule
Learning techniques carried out by lecturers during online learning	40% Video conference
	33% Giving material in google classroom and assignments
	27% Giving materials in the form of PPT without explanation
The effectiveness of online learning in delivering material	84% of students said it was not effective because of the disjointed explanation of the material
	16% of students said it was quite effective
Students' opinions on teaching materials provided by lecturers are they interactive or not?	81% not yet interactive
	19% have been and some have not been interactive
Student opinions regarding the provision of interactive media-based learning media can help in the online learning process	91% yes
	9% no
Solutions from students to help make online learning more optimal	90% Said providing interactive learning resources
	10% Don't use the lecture platform too much

through a video conference, it takes a lot of internet quota, especially for students who want to get a good network they must use a more expensive provider.

B. Lack of online learning

The results of the analysis showed that 93% of students said that the material could not be understood because the material delivered was too much and was not given the essence of the material, besides that there was no evaluation question to see the achievement of learning in the lectures carried out. Development of Articulate Storyline -based Learning Media will help students understand the material comprehensively because Articulate Storyline -based learning media is a media with the Asynchronous system so that students do not need to be afraid of missing learning material because they can repeat the material

they want to learn. In addition, Articulate Storyline is also equipped with features of making questions in the form of evaluation questions.

C. Technical learning carried out by lecturers during online learning

Students say as many as 40% of the learning process online is carried out through the video conference zoom meeting and Google Meeting. This synchronous learning process will spend more internet quota besides that if there is no network, students will miss the lesson. As many as 30% of students said that the learning process carried out by lecturers during online by providing material to google classroom and giving assignments. Therefore it is necessary to develop interactive learning media to be conveyed to students so that students easily understand learning and learning can be done asynchronous in order to save more student internet quota.

D. The effectiveness of online learning in delivering the material

As many as 84% of students said online learning that was carried out was less effective, this was because the explanation from the lecturer through the Conference Video Conference was sometimes often interrupted. Students say that if their internet network is disturbed during lectures through Zoom Meeting or Google Meet, they will miss the material. Networks that are not good will also interfere with the process of delivering material from lecturers to students, also resulting in the voices of lecturers dispersed so that students find it difficult to understand learning material comprehensively. In addition, the internet network that is not good also prevents students from grabbing assignments on time. Lack of interaction between lecturers and students, the material provided is too monotonous and does not provide material points, the absence of evaluation activities also makes students not serious in participating in learning. The development of articulate story-based learning media can answer the problem, with a media system that can stored so that it can be learned repeatedly by students to better understand learning, besides that the features of existing evaluation questions can be arranged whether they want to give a review of the correct answers to each question or not so that they can facilitate students to learn independently, because as stated by Mubai et al. [3] that students need learning media that allows students to learn independently.

E. The material given during online learning

Based on the results of the analysis that has been conducted that as many as 81% of students said that the material provided was not interactive. The material provided is usually only in the form of PDF files that are only text, or PPT containing lecture materials. 19% of students say some lecturers have provided interactive lecture materials while some have not provided materials in nature. Students say it is difficult to understand the material when the material given is only in the form of text, they also feel bored in learning the material. This shows the need for the development of interactive learning

media, which can motivate students, convey the essence or subject matter so that it is easily understood by students.

F. Student opinions regarding the provision of interactive media-based learning media can help in the online learning process

Almost all students say that the provision of interactive media -based material can help in the learning process online, as much as 91%. Articulate Storyline is a software that functions as an interesting and interactive presentation media [12].

G. Online learning optimization solutions

As many as 90% of students say that the solution in optimizing online learning is to provide interactive media -based material in the learning process, this in addition to saving internet quota use can also increase students' interest in learning lecture material. Interest is an important thing in the learning process as stated by Reference [13] that interest in learning is one of the things that supports the smooth teaching and learning process, students who have high interest in learning will be better in following the learning process.

Based on the results of the analysis of needs that have been made, it can be seen that the need for the development of interactive learning media that can optimize online learning. Articulate Storyline is an application that is similar to Power Point, but displays a more creative presentation and has many characters that can be entered into the media so that the message delivered is more interactive. Articulate Storyline is also a learning device that can combine various aspects, including text, images, videos, animations, characters, sounds, graphics of publish learning media based on articulate storyline in the form of web based HTML5 so that it can be used on various instruments such as smartphones, laptops, Tablet [7].

According to Reference [3] that the learning media needed by students is learning media that is able to meet learning needs as a practical tool wherever they are learning, of course, is a media whose technology can be used on cellular phones so that all students can use it. In addition, according to research conducted by Reference [2] that students really need interesting and fun learning media so that students are not bored and bored, learning media that can help them learn independently from home so they can determine their own time and place themselves They learn so that learning is more flexible, their smartphone will be more utilized for learning to have an educational function. Reference [14], stated that the limitations of learning resources can limit student learning ability so that learning media needs to be developed that can help students learn independently.

Reference [15] says that adopting and negating technology effectively in the context of formal education begins by identifying needs programs by analyzing needs. Research conducted by Reference [16] that 99% of teachers say the need to use interactive multimedia in the learning process. Research conducted by Reference [17] saying that through information technology-based learning media facilities make students very highly motivated especially when Covid Pandemic.

5 Conclusion

Conclusion From the research that has been conducted that the learning process does need to be done online as an alternative solution amidst Covid-19 Pandemic at this time to reduce direct contact and break the chain of the spread of the Corona virus. However, there are several obstacles faced in online including less good networks make learning often disturbed especially when lecturers do learning with a synchronous system through zoom meetings or google meetings, making it difficult for students to understand learning material comprehensively. In addition, the material provided is not interactive because it is usually only in the form of PDF files that are only text, and they also feel bored in learning the material. Almost all students suggest that the need for the development of interactive learning media, which can motivate students, convey the essence or subject matter so that students are easily understood to help the learning process online. Articulate Storyline is a software that functions as an interesting and interactive presentation media that can combine various aspects, including text, images, videos, animations, characters, sounds, graphs of publish learning media based on this articulate story in the form of web -based HTML5 so that it can used on various kinds of instruments such as smartphones, laptops, tablets. Therefore, it is necessary to develop interactive learning media based on Articulate Storyline during online learning.

Acknowledgment. The researcher would like to thank LPPM Riau University for the research funding assistance provided. The researcher also thanks the validators and students who have participated in the implementation of this research.

References

1. H. Darsono, A. N. Fitri, B. Rahardjo, M. Z. Imanuela. (2020). Efektivitas Pembelajaran Jarak Jauh Saat Pandemi Covid-19 (Kajian Di Politeknik Negeri Bandung). *Industrial Research Workshop and National Seminar*, 19, 26–27.
2. N. Apriyanti, M. S. N. Shaharom, S. S. A. Rahim, & R. A. Razak. (2020). Needs Analysis Of Infographic Media Using Technology For Learning Physics. *Malaysian Online Journal of Educational Technology*, 8(1), 48–62. <https://doi.org/10.17220/mojet.2020.01.004>
3. A. Mubai, K. Rukun, M. Giatman, & E. Edidas. (2020). Needs Analysis In Learning Media Development Based On Augmented Reality (AR) For Computer Network Installation Courses. *Jurnal Pendidikan Teknologi Kejuruan*, 3(1), 31–35. <https://doi.org/10.24036/jptk.v3i1.3723>
4. S. Menggo, I. M. Suastra, M. Budiarsa, & N. N. Padmadewi. (2019). Needs Analysis Of Academic-English Speaking Material In Promoting 21 St Century Skills. *International Journal Of Instruction*, 12(2), 739–754. <https://doi.org/10.29333/iji.2019.12247a>
5. Sutiman, A. Yudiantoko, A. Yudianto, M. Solikin, I. W. Adiyasa, N. M. Suaib, F. Sholichin, & D. A. Irawati. (2020). Needs Analysis For The Development Of Interactive Virtual Reality-Based Educational Media On Combustion Engine Mechanical Technology. *IOP Conference Series: Materials Science and Engineering*, 979(1), 012006. <https://doi.org/10.1088/1757-899x/979/1/012006>

6. C. H. Nabilah, A. Sesrita, & I. Suherman. (2020). Development Of Learning Media Based On Articulate Storyline. *Indonesian Journal of Applied Research (IJAR)*, 1(2), 80–85. <https://doi.org/10.30997/ijar.v1i2.54>
7. D. Sapitri, & A. Bentri. (2020). Pengembangan Media Pembelajaran Berbasis Aplikasi Articulate Storyline Pada Mata Pelajaran Ekonomi Kelas X. *Inovtech*, 02(01), 1–8. <https://doi.org/10.1007/XXXXXX-XX-0000-00>
8. F. N. Rohmah, & I. Bukhori. (2020). Pengembangan Media Pembelajaran Interaktif Mata Pelajaran Korespondensi Berbasis Android Menggunakan Articulate Storyline 3. *Ecoducation: Economic and Education Journal*, 2(2), 169–182.
9. A. S. B. Ningrum, & A. Ma'rifah. (2015). Developing An Articulate Storyline For Teaching English In MA Al-Manar Prambon Nganjuk Ary. In M. Z. A. Raihani, Syed Khairuddin Aljuneid (Ed.), *Proceedings International Conference of Islamic Education* (pp. 210–221). Proceeding International Conference of IsFaculty of Tarbiyah and Teaching Training, Maulana Malik Ibrahim State Islamic University, Malang. <http://library1.nida.ac.th/termpaper6/sd/2554/19755.pdf>
10. P. Thammasaeng, P. Papat, & S. Petchaboon. (2016). Needs Assessment Of Information And Communication Technology Literacy (ICT Literacy) Of Students In Secondary Educational Service Area. *International Journal of Emerging Technologies in Learning*, 11(12), 9–13. <https://doi.org/10.3991/ijet.v11i12.5798>
11. S. Diana, & M. Mansur. (2018). Need Analysis On English Teaching Materials For ICT Students. *ETERNAL (English Teaching Learning and Research Journal)*, 4(2), 209–218. <https://doi.org/10.24252/Eternal.V42.2018.A6>
12. R.A Pratama. (2018). Media Pembelajaran Berbasis Articulate Storyline 2 Pada Materi Menggambar Grafik Fungsi Di SMP Patra Dharma 2 Balikpapan. *Dimensi*, 7(1), 19–35. <https://jurnal.stiq-amuntai.ac.id/index.php/al-madrasah/article/view/331>
13. M. A. H. Berutu & M. I. H. Tambunan. (2018). Pengaruh Minat Dan Kebiasaan Belajar Terhadap Hasil Belajar Biologi Siswa Sma Se-Kota Stabat. *Jurnal Biolokus*, 1(2), 109. <https://doi.org/10.30821/biolokus.v1i2.351> Title of paper with only first word capitalized,”
14. Widyasari, Rasmitadila, H. M. Asri, R. R Aliyyah, A. A. Gaffar, & R. Rachmadtullah. (2019). Preliminary Study On The Development Of Blended Learning (BLM) Model: Based On Needs Analysis And Learning Independence. *Journal of Physics: Conference Series*, 1175(1). <https://doi.org/10.1088/1742-6596/1175/1/012207>
15. E. N. O'reilly. (2016). Developing Technology Needs Assessments For Educational Programs: An Analysis Of Eight Key Indicators. *International Journal of Education and Development Using Information and Communication Technology*, 12(1), 129–143.
16. M. I. Shofa, I. W. Redhana & P. P. Juniartina. (2020). Analisis Kebutuhan Pengembangan Media Pembelajaran IPA Berbasis Argument Mapping. *Jurnal Pendidikan Dan Pembelajaran Sains Indonesia*, 3(1), 31–40.
17. E. J. Wicaksana, P. Atmadja, W. Wikanso, L. N. Putri, & G. A. Muthia. (2020). Edmodo As A Solution To Enhance Student Learning Interest In High School Biodiversity During The COVID-19 Pandemic. *Biosfer*, 13(2), 216–229. <https://doi.org/10.21009/biosferjpb.v13n2.216-229>.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

