



My Indonesia is Rich in Culture: Problem-based Articulate Storyline on Social Sciences Lesson Content

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ABSTRAK

Ilmu pengetahuan alam dan ilmu sosial merupakan isi pelajaran yang memerlukan hafalan. Oleh karena itu dalam penyampaian materi perlu digunakan alat-alat yang dapat meningkatkan keberhasilan proses belajar mengajar. Articulate Storyline merupakan salah satu software e-learning yang populer dan memiliki beberapa keunggulan yang menjadikannya pilihan yang baik dalam mengembangkan konten pembelajaran interaktif. Alur cerita yang diartikulasikan memiliki antarmuka yang intuitif dan mudah digunakan, memungkinkan pengguna membuat konten pembelajaran interaktif tanpa memiliki latar belakang pemrograman atau desain grafis yang kuat. Hal ini membuatnya sangat cocok untuk guru, instruktur, dan perancang pembelajaran. Tujuan dari penelitian ini adalah untuk mengembangkan media Articulate Storyline berbasis pembelajaran berbasis masalah pada konten IPA Kelas IV. Metode penelitian yang digunakan adalah Research and Development (R&D) berdasarkan penelitian ADDIE. Teknik pengumpulan data yang digunakan adalah tes dan non tes. Sedangkan teknik analisis data yang digunakan adalah analisis data kualitatif dan kuantitatif. Hasil penelitian menunjukkan bahwa media Articulate Storyline sangat layak digunakan dengan persentase ahli materi sebesar 92% dan ahli media sebesar 91%. Sedangkan keefektifan penggunaan media Articulate Storyline dalam kegiatan pembelajaran dinyatakan cukup efektif berdasarkan peningkatan rata-rata (*n-gain*) hasil belajar siswa sebesar 0,61 dan peningkatan rata-rata skor pre-test dari 58 menjadi 84 selama pembelajaran. pasca-tes. Dari hasil tersebut dapat disimpulkan bahwa media Articulate Storyline berbasis masalah sangat layak dan cukup efektif untuk digunakan dalam pembelajaran IPA Kelas IV.

ABSTRACT

Natural and social science is content of lessons that require memorization. Therefore, in delivering material, it is necessary to use tools that can increase the success of the teaching and learning process. Articulate Storyline is one of the popular e-learning software and has several advantages that make it a good choice in developing interactive learning content. Articulate storyline has an intuitive and easy-to-use interface, enabling users to create interactive learning content without having a strong programming or graphic design background. This makes it very suitable for teachers, instructors, and learning designers. The aim of this study is to develop Articulate Storyline media based on problem-based learning in fourth grade in science content. The research method used is Research and Development (R&D) based on ADDIE research. The data collection techniques used are test and non-test. Meanwhile, the data analysis technique used is qualitative and quantitative data analysis. The research results show that the Articulate Storyline media is very suitable for use with a percentage of material experts of 92% and media experts of 91%. Meanwhile, the effectiveness of using Articulate Storyline media in learning activities was stated to be quite effective based on an average increase (*n-gain*) in student learning outcomes of 0.61 and an increase in the average pre-test score of 58 to 84 during the post-test. From these results, it can be concluded that problem-based learning-based Articulate Storyline media is very feasible and quite effective for use in fourth grade Science learning.

1. INTRODUCTION

Natural and Social Sciences are two major branches of knowledge that focus on understanding and researching different aspects of human life and the world around it. Natural Science is a branch of knowledge that is concerned with understanding, researching, and exploring natural phenomena, whether they occur in the universe, planet Earth, or on a microscopic scale. It covers fields such as physics, chemistry, biology, astronomy, geology, and more. Science seeks to understand the basic principles that govern nature and natural phenomena (Fet et al., 2022; Waisakanitri et al., 2023). Social Sciences is a branch of knowledge that focuses on understanding and researching social behavior, human interaction, and social dynamics in society. It covers a wide range of disciplines such as sociology, social psychology, anthropology, economics, politics, history, and human geography. Social science helps us understand how humans interact in groups, how society functions, and how social factors influence human behavior (Dwi et al., 2021; Safira et al., 2021).

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Both of these disciplines have an important role to play in developing our understanding of the world, providing solutions to complex problems, and driving innovation in various aspects of human life.

Natural and Social Sciences are sciences that study living things and non-living things in the universe and their interactions. Natural and Social Sciences have a role in realizing the Pancasila Student Profile, Natural and Social Sciences help students grow their curiosity about phenomena that occur around them (Anshori, 2014; Ayurachmawati, 2018). However, the implementation is still not optimally realized. However, there were several problems experienced by teachers and students of IV Class in the learning process. The main problem is the use of less varied learning media, teachers tend to use worksheets and learning videos suggested by the teacher's manual.

The lack of variety in the use of learning media results in students being less enthusiastic in participating in learning, especially in learning Natural and Social Sciences. Natural and Social Sciences are known as rote learning content, considering that the objects of study are broad and comprehensive, and related to each other. The delivery of material requires tools that can support the success of the teaching and learning process. This also causes learning Natural and Social Sciences students low. The lack of variety in media, models and learning methods in Natural and Social Sciences content has an impact on student learning outcomes. Student learning outcomes in Natural and Social Sciences content are still low.

Based on data from the results of the End of Semester Assessment carried out shows that 18 students (72%) out of 25 students have not reached the Learning Goal Achievement Criteria. The independent curriculum prioritizes understanding concepts with the teacher teaching simpler material and deepening the material. However, in its application, passive students just follow, while active students dominate. The teacher also feels that the media used is not effective because the material for Natural and Social Sciences is quite broad and complex. The teacher uses the Jigsaw model, where students are divided into several groups and then asked to complete tasks according to their division. So, the implementation learning lack of Natural and Social Sciences effective and difficult conveyed to students.

From the problems found, it is necessary to use interesting and innovative learning media so that students are interested and participate actively in learning. Learning media is an intermediary between the source of the message and the recipient of the message, stimulating thoughts, feelings, attention and will so that they are encouraged and involved in the learning process (Aditya Dharma, 2019; Rambe, 2018). Thus, the choice of learning media greatly influences the effectiveness of the teaching and learning process and the delivery of the content and message of the lesson.

There are various kinds of software for creating interactive learning media, one of which is Articulate Storyline. Articulate Storyline is software that can be used as a media presentation where templates can be made by yourself or you can even make presentations with templates that have been provided and can adjust to the desired character (Simbolon et al., 2023; Suhailah et al., 2021). This software is also easy to learn by beginners, including teachers who are still unfamiliar with science based media knowledge and technology because the Articulate Storyline feature is almost the same as the features in Microsoft Power Point (Sari et al., 2021; Sukmawati, 2013). Articulate Storyline has several advantages, including the design features similar to Microsoft Powerpoint, making it easily accessible for beginners. In addition, it makes the design and operation process easier during learning, later deepen students' understanding through the insertion of material using relevant text, sound and video features, require the ability of teachers and students to operate electronic devices, increase teacher creativity in designing interactive and communicative learning media, and increase student motivation and learning achievement (Dwi et al., 2021; Safira et al., 2021).

Study about Articulate Storyline has Lots done. Response results student to the learning media that has been made showing mark amounting to 83.6% with category very positive response. This thing can concluded that learning media interactive based on Articulate Storyline can be an effective learning media for used by students (Juhaeni et al., 2021; Lestari et al., 2022). Apart from that, in fact whole thematic multimedia learning integrative on sub themes diversity biology and plants for class four school effective For used For increase understanding in students about material learning. This thing proven with the whole calculation the gain score is obtained mark average by 0.62 in 30 students, with "medium" category (Saubari & I Gde Wawan Sudatha, 2023). Others study also mention learning media Amulet using a valid and practical articulate storyline as well as fulfil the minimum criteria set (Juniary & Son, 2021).

An advantage of Articulate Storyline can be downloaded via the Articulate 360 platform and offer a variety of outputs, making it easier for teachers to choose the option that suits their needs and that of their students. One convenient output is a website (Annuuru et al., 2017; Rahmayati & Prastowo, 2023). Therefore, this study aims to develop Articulate Storyline learning media based on problem-based learning which emphasizes the process of involving students to always think critically and be skilled in solving a problem. Research objectives this is for developing Articulate Storyline media based on problem-based learning for fourth grade on Natural and Social Science content elementary school.

2. METHODS

The research method used is research and development (R&D), Research and Development is the research method used is research and development, which aims to produce special products and test their effectiveness (Dharma, 2019; Rambe, 2018). While the development model in this study adapts the ADDIE model which consists of 5 steps, namely analysis, design, development, implementation, and evaluation (Dharma, 2019; Rambe, 2018). The subjects of this research were Fourth gradestudents in semester 2. Data was obtained through interviews with class teachers, observation, filling out questionnaires, and documentation. The learning media developed is Articulate Storyline based on problem-based learning which has been tested for its suitability by material experts and media experts who are experts in knowledge Primary teacher education. The material expert and media expert assessment instrument grids can be seen in Table 1, and Table 2.

Table 1. Material Expert Assessment Instrument Grid

No.	Aspect	Indicator
1	Competence	Conformity of the material content of Natural and Social Sciences with Learning Outcomes
2	Suitability	Suitability of the content of Natural and Social Sciences with Articulate Storyline media Suitability of the material content of Natural and Social Sciences with learning evaluation
3	Language	Clarity of language

Table 2. Media Expert Assessment Instrument Grid

No.	Aspect	Indicator
1	Suitability	Media according to the topic of learning
2	Appearance	Attractive appearance design The quality or display quality of the media
3	Usage	Media is easy to use by students and teachers
4	Superiority	Media understandable to users

The data analysis technique used in this research is qualitative and quantitative data analysis. Qualitative data was obtained from interviews and observations, while quantitative data was obtained from the results of media feasibility tests, filling out questionnaires, and pre-test and post-test results. Data were analyzed with the help of the SPSS 24 for Windows program.

3. RESULT AND DISCUSSION

Results

Articulate Storyline media to present an interactive and interesting learning experience, by combining visual, audio and quiz elements to help students understand concepts in more depth. As for the learning model, the researcher chose problem-based learning because it can encourage students to be actively involved, starting from identifying problems, analyzing, to evaluating problems, which also involves a process of critical thinking.

Analysis Needs Stage

The first stage is identifying the problem or learning need. This could be an analysis of business or educational needs, or a concrete problem that needs to be solved through training or learning. Analysis need done with do interview with guardian class and students. Based on the results of interviews with homeroom teachers, it can be concluded that fourth grade elementary school students need interactive learning media that can help strengthen student understanding, activate participation, and make it easier to convey complex Indonesiaku Kaya Budaya material.

Design Stage

At the design stage or planning researcher develop a learning material framework, including curriculum development, teaching structure, and teaching methods to be used. In addition, researchers also plan tool evaluation media effectiveness. The results of this study can be seen at each stage of the research conducted. Achievements of fourth grade science science learning is show in Table 3.

Table 3. Achievements of Fourth Grade Science Science Learning

No.	Element	Learning Outcomes
1	Understanding Natural and Social Sciences	Students describe biodiversity, cultural diversity, local wisdom, and conservation efforts. 1. Observe 2. Question and predict 3. Plan and conduct investigations
2	Process Skills	4. Processing and analyzing data and information 5. Evaluate and reflect 6. Communicating results

Based on [Table 3](#), namely learning outcomes which are the basis for media design, the material contained in the media is My Indonesia is Rich in Culture, sub-material 'The Uniqueness of the Habits of the People Around Me' and connecting it with local wisdom in various regions of Indonesia, especially Pekalongan. Media Articulate Storyline has 6 main menus, namely learning achievements, materials, let's play, 4 developer information, user instructions, and reference list. To make the learning process easier, researchers have also developed learning modules that integrate problem-based learning syntax namely orienting students to problems, organizing students to learn, assisting with independent and group investigations, developing and presenting work results and exhibiting them, and analyzing and evaluating the problem solving process.

Development Stage

Next, researchers developed Articulate Storyline media using Articulate Storyline 3 and Canva software to design backgrounds and animations. Articulate Storyline media can be accessed via smartphones and laptops/chromebooks, making it easier for students to study flexibly without limitations of place and time. Articulate Storyline's media content is executed in HTML5 format which is integrated with the website via a web hosting service. The media that has been developed is tested by material experts and media experts through a validation questionnaire to determine the suitability of the media before use. Table of media feasibility test results can be seen in [Table 4](#).

Table 4. Table of Media Feasibility Test

Respondent	Percentage	Information
Materials Expert	92%	Very Worth it
Media Expert	91%	Very Worth it

The data in [Table 4](#) shows the results of validation carried out by material and media experts. The material validation stage was carried out once with a score of 92%, categorized as "very feasible." The assessment by material experts confirmed that competence, suitability, and language in Articulate Storyline media were very feasible to try out. The media validation stage was also carried out once and obtained a score of 91% with the "very feasible" criteria. Validation from media experts showed that the aspects of suitability, appearance, usage, and superiority were considered very feasible for testing with the suggestion that the font on the media be changed, not using a serif type font. Cover view is before revision is show in [Figure 1](#). Cover view after revision is show in [Figure 2](#).

**Figure 1.** Cover View before Revision**Figure 2.** Cover View after Revision

Implementation Stage

The next step is implementation, which includes testing the effectiveness and feasibility of problem-based learning based Articulate Storyline media. The assessment can be seen from the results of the pre-test and post-test. The pre-test was carried out before the use of Articulate Storyline media in learning, while the post-test was carried out after the use of Articulate Storyline media. The following are the results of student learning in a large group trial involving 25 Fourth gradestudents at SD Muhammadiyah Legokkalong. Study results cognitive group big can be seen in [Table 5](#).

Table 5. Large Group Cognitive Learning Outcomes

Action	Average	The highest score	Lowest Value	Average Difference
Pre-test	58	85	35	26
Post-test	84	95	75	

Referring to [Table 5](#), it can be seen that there was an average increase in student learning outcomes by 26. This shows the difference between the conditions before and after students used Articulate Storyline media. Meanwhile, the results of the N-gain test from Articulate Storyline media are problem-based learning.

Evaluation Stage

During or after implementation, do evaluation formative for gather input and feed feedback from participants, instructors, or educator. Stage evaluation carried out educator is with test the media and see n-gain value. N-gain test results from Articulate Storyline media based on problem - based learning seen in [Table 6](#).

Table 6. N-gain Test Results

Learning outcomes	Average	Average Difference	N-gain	Category
Pre-test	58	26	0.61	Effective enough
Post-test	84			

Problem-based learning- based Articulate Storyline media is quite effective in increasing student understanding. In order to strengthen the achievement of goals in the development of problem-based learning- based Articulate Storyline media, researchers collected response data from students through the use of response questionnaires in the product trial stage that had been implemented. Questionnaire results and responses student can see there is [Table 7](#).

From [Table 7](#) shows that students' positive responses to the Articulate Storyline media based on problem-based learning in the Natural and Social Sciences material "My Indonesia is Rich in Culture" with the sub-material "The Uniqueness of the Habits of the People Around Me" reached 86% of the total score of 100%. From these results, it can be concluded that the use of problem-based learning- based Articulate Storyline media is effective to be applied in learning.

Table 7. Student Response Questionnaire Results

No.	Statement	Percentage
1	Articulate Storyline media is interesting	88%
2	The entire Articulate Storyline media component is clearly visible	92%
3	Media Articulate Storyline can be studied in small groups	80%
4	The size and type of letters used in the Articulate Storyline media are legible	96%
5	Media Articulate Storyline motivates students to learn	92%
6	Media Articulate Storyline creates a fun learning atmosphere	96%
7	Material in <i>Articulate Storyline media</i> covers about My Indonesia is Rich in Culture	100%
8	Material in <i>Articulate Storyline media</i> easy to understand	84%
9	The material presented in Articulate Storyline media adds insight and knowledge to students on the subject matter.	88%
Total		90%

Discussion

Articulate Storyline is one of the popular e-learning software and has several advantages that make it a good choice in developing interactive learning content. Articulate storyline has an intuitive and easy-to-use interface, enabling users to create interactive learning content without having a strong programming or graphic design background. This makes it a perfect fit for teachers, instructors and learning designers. Then, the articulate storyline offers a variety of interactive elements, such as quizzes, simulations, navigation buttons, multilevel slides, and more. Educator can easily create engaging and inviting content and increase student participation (Ketut Sinta et al., 2021; Ratnathatmaja & Sujana, 2022).

The content created with Articulate Storyline can be accessed on a variety of devices, including computers, tablets and mobile phones. This allows flexibility in student use and access. Apart from that, articulate storyline is easy to integrate with many Learning Management Systems, such as Moodle, Blackboard, and others. This allows for better reporting of student learning outcomes and progress tracking (Alqahtani & Rajkhan, 2020; F et al., 2022). We can record sound and video directly in the storyline or import existing multimedia files. This allows educators to create more engaging learning materials. The Educators can create simulations and scenarios that simulate real situations, which is useful for practical skills training.

Articulate has an active community and abundant online resources, including tutorials, user forums, and online training. This helps users understand and maximize the use of the software. Articulate continues to develop and update its software, including the addition of new features and performance improvements. This ensures that users always have access to the latest technology. Articulate Storyline can generate detailed reports on student progress, quiz results, and engagement levels. It helps teachers and content creators to evaluate the effectiveness of learning materials. Content created with Articulate Storyline can be set to be responsive, so it will fit different screens of different devices without the need for complex changes. Content created with Articulate Storyline can easily be shared over the internet or integrated into live presentations or training (Pratiwi et al., 2023; Waisakanitri et al., 2023).

There are various kinds of software to create interactive learning media, one of which is Articulate Storyline. Articulate Storyline is software that can be used as a media presentation where templates can be made by yourself or you can even make presentations with templates that have been provided and can adjust to the desired character (Fatia & Ariani, 2020; Viola & Walidi, 2023). This software is also easy for beginners to learn, including teachers who are unfamiliar with IT-based media because the Articulate Storyline feature is almost the same as the features in Microsoft Power Point. Problem-based learning with Articulate Storyline learning media has been tested by media experts and material experts. This validity test is carried out to assess the extent to which the media is in accordance with the learning objectives and is used as a valuable contribution to the development of the media. In addition, this process also helps identify the suitability, weaknesses, and advantages of the media that have been developed by researchers (Heliawati et al., 2022; Suhailah et al., 2021). In assessing the feasibility of the material, there are three aspects that are assessed by material experts, namely aspects of competence, suitability, and language. Based on the validation results from material experts, problem-based learning on Articulate Storyline media on the material "My Indonesia is Rich in Culture" with the sub-material "Unique Habits of the People Around Me" obtained a total rating of 92%, and was considered very feasible to try out. In assessing media suitability, there are four aspects assessed by media experts, namely suitability, appearance, use and excellence. Based on the validation results from media experts, the Articulate Storyline media based on problem-based learning on the material "My Indonesia is Rich in Culture" with the sub-material "The Uniqueness of the Habits of the People Around Me" received an average percentage score of 91%, and is very suitable for testing by considering revisions. and suggestions given. The effectiveness of the Articulate Storyline media based on problem-based learning was measured through analysis of the results of pre-test and post-test scores which experienced an average increase (n-gain) of 0.61 which was considered quite effective. It is one distinguishing component study (Jubaerudin et al., 2021; Rohmah & Bukhori, 2020). This If compared to with study before.

Value has a role in measuring differences in the level of science process skills and cognitive learning achievements between before and after the learning process (Ariana et al., 2020; Arwanda et al., 2020). And through responses from questionnaires filled in by students which reached 90%, it can be concluded that problem-based learning- based Articulate Storyline media has proven to be effective in improving student learning outcomes. The results of student responses to the learning media that have been made show a value of 83.6% with a very positive response category. It can be concluded that interactive learning media based on Articulate Storyline can be an effective learning media for use by students (Hadza et al., 2020; Wijayanti et al., 2022). Apart from that, overall integrative thematic multimedia learning on the sub-theme of biodiversity and plants for grade four school base effective to use to increase students' understanding of learning material. This is proven by the overall calculation of the gain score value which obtained an average

value of 0.62 for 30 students, in the "medium" category (Ellyana & Tegeh, 2023; Khusnah et al., 2020). Other research also states that the JiMat learning media uses an articulate storyline that is valid and practical and meets the minimum criteria set (Nugroho & Arrosyad, 2020).

Articulate Storyline has several advantages, including design features similar to Microsoft Powerpoint, making it easily accessible for beginners. Apart from that, it simplifies the design and operation process during learning, then deepens students' understanding through inserting material using relevant text, sound and video features, demands the ability of teachers and students to operate electronic devices, increases teacher creativity in designing interactive and communicative learning media, and increase motivation and student achievement (Simbolon et al., 2023; Suhailah et al., 2021). Another advantage of Articulate Storyline is that it can be downloaded via the Articulate 360 platform and offers a variety of outputs, making it easier for teachers to choose an option that suits their needs and those of their students. One convenient output is a website. Therefore, researchers want to develop Articulate Storyline learning media based on problem-based learning which emphasizes the process of involving students to always think critically and be skilled in solving a problem.

4. CONCLUSION

Articulate Storyline media based on problem-based learning in the subject matter of Natural and Social Sciences as a whole was declared feasible and effective for use in the learning process after going through media feasibility tests by material experts and media from large group trials on fourth grade elementary school students. The interactive and multimedia content in Articulate Storyline can help students or training participants to better understand and remember the lesson material. Visualizations, audio, and interactions can help explain difficult concepts. Thus, the use of Articulate Storyline can help improve the quality of learning and training by providing a powerful tool for the development of interactive and student-oriented content (student centered learning).

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