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Developing Canva-Assisted Interactive Animated Video Media for Teaching the Water Cycle in Elementary Integrated Science

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Abstract:
The integration of technology into elementary education has enabled teachers to design more engaging and interactive learning media. This study developed Canva-assisted interactive animated video media for teaching the water cycle in elementary integrated science and evaluated its validity and practicality. A Research and Development (R&D) approach was employed, utilizing the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. Data collection involved expert validation questionnaires, student response questionnaires, and teacher response questionnaires. The media was assessed by two media experts and three subject-matter experts. Results showed that the interactive animated video media achieved validity scores of 95% from media experts and 94% from subject-matter experts, both categorized as very valid. During implementation, 30 fifth-grade students and one classroom teacher participated. Practicality evaluation indicated positive responses, with student and teacher response scores of 87% and 97%, respectively, both classified as very practical. These findings indicate that the developed media is user-friendly for both teachers and students, catching students' attention, enthusiasm, and active participation in classroom learning, and supports visualization of the abstract concept of the water cycle. Thus, Canva-assisted interactive animated video media constitutes a valid and practical learning resource for elementary integrated science instruction.

Keywords: Canva, Interactive Animated Video Media, Elementary Integrated Science, Water Cycle, Elementary School

INTRODUCTION

The Indonesian education system has undergone a significant transformation with the implementation of the Merdeka Curriculum, introduced to improve the previous curriculum and accommodate advances in science and technology as well as the evolving demands of society (Fadhilah & Maula, 2024; Rahmadhani et al., 2022). The Merdeka Curriculum emphasizes student-centered learning by providing students with opportunities to learn actively, creatively, and meaningfully. The implementation of this curriculum is expected to produce human resources who are capable of adapting to global developments. Therefore, beyond serving as a structural reform of the education system, the Merdeka Curriculum represents a strategic initiative to improve the quality of learning and to foster students' critical thinking, independence, and creativity in responding to the complexities of an ever-changing world.

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The implementation of the Merdeka Curriculum has also shifted the paradigm of classroom instruction. Teachers are no longer expected to serve as the primary source of information but rather as facilitators, mediators, and motivators who create creative, innovative, and interactive learning environments (Rinadevi et al., 2025). They are expected to provide students with opportunities to construct knowledge independently through contextual learning experiences. In addition, the Merdeka Curriculum offers greater flexibility by allowing schools and teachers to adapt instructional practices to students' needs and characteristics. Consequently, teachers are required to employ creative and innovative learning media that accommodate differences in students' interests, learning styles, and learning pace (Aristya et al., 2024; Rusmana & Pamela, 2025)

To support the implementation of student-centered learning, instructional media that facilitate students' active participation and independent learning are essential. The rapid advancement of technology and communication in the twenty-first century has created substantial opportunities for teachers to develop technology-enhanced learning media that are more engaging and interactive (Anam & Septiliana, 2023). Teachers are therefore expected to be more creative in designing technology-based instructional media to keep pace with technological developments. Such learning media should attract students' attention and enable them to actively explore ideas during the learning process (Elysia et al., 2025). Instructional media play an important role in facilitating the delivery of learning materials by serving as a bridge between teachers and students. The appropriate use of instructional media can improve the clarity of instructional content and help students understand difficult concepts more effectively (Manan, 2022). Therefore, selecting appropriate instructional media is crucial, as it contributes to meaningful, effective learning and increases the likelihood of achieving instructional objectives.

SD Negeri 1 Gondang is one of the elementary schools in Tulungagung Regency that has integrated instructional media into classroom learning. However, preliminary observations conducted on January 10, 2026, and interviews with the fifth-grade teacher revealed that YouTube videos were used to teach the water cycle topic in Elementary Integrated Science. Although these videos helped explain the learning materials, they did not actively engage students in the learning process. As a result, students tended to become passive viewers without being encouraged to think more deeply about the concepts presented in the videos. These findings indicate that the instructional media currently used have not fully provided students with opportunities to interact actively during learning. Furthermore, teachers' limited ability to modify YouTube videos to suit specific instructional contexts has widened the gap between existing video-based learning media and the need for instructional media that actively engage students and provide feedback on their understanding.

Students' active participation in classroom learning reflects the extent to which they pay attention to, understand, and master the learning materials (Nurisma et al., 2024; Vriyanti et al., 2023). Based on the results of the observations and interviews, it can be concluded that there is a need to develop interactive instructional video media. Interactive media enable two-way communication between students and the learning media, thereby optimizing students' active engagement throughout the learning process (Satria & Janattaka, 2025).

One potential solution is the development of interactive animated video media. Animated videos can attract students' attention by presenting learning materials in a detailed and visually appealing manner, thereby helping students understand complex concepts more easily (Suryanida & Suyantiningsih, 2022). In addition, animated videos present instructional content systematically, making the water cycle easier for students to understand (Apriansyah, 2020). Animated videos have also been shown to encourage students to participate actively during classroom instruction (Widyaningsih, 2017). The interactive animated video developed in this study not only presents instructional materials on the water cycle but also incorporates interactive elements such as quizzes. Compared with conventional instructional videos, interactive animated videos with embedded quizzes are more effective in promoting students' active participation during learning. According to the Cognitive Theory of Multimedia Learning, animated videos help students visualize abstract concepts such as the water cycle more clearly,

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while quizzes reduce passive learning by encouraging students to think, analyze, and integrate the information presented (Mayer& Moreno, 2003). Therefore, the quizzes embedded in the animated videos serve two important functions: reinforcing students' understanding of the water cycle and encouraging their active participation throughout the learning process.

The use of Canva as a web-based graphic design platform provides an effective alternative for developing engaging interactive animated video media that support students' understanding (Amin et al., 2024). Canva can also support the implementation of the Merdeka Curriculum by enabling teachers to develop learning media tailored to students' characteristics (Arikarani, 2024). As a web-based platform, Canva allows users to create instructional media without installing additional software (Fajrina et al., 2025). It was selected in this study because it offers high flexibility, enabling rapid editing without requiring advanced technical skills. Furthermore, interactive animated videos created in Canva can be tailored to students' developmental characteristics by incorporating simple illustrations, appealing background music, and engaging visual elements.

Previous studies have shown that animated videos improve students' understanding of abstract concepts and enhance their motivation to learn science (Apriyani et al., 2024; Kristiari & Cahyadi, 2023; Novita et al., 2024). Furthermore, Sinta et al. (2024) reported that animated videos developed using Canva were practical for teachers, facilitated students' learning, were valid and aligned with the curriculum, and effectively improved students' understanding. Similarly, Cristina et al. (2025) found that Canva-assisted animated videos were appropriate for classroom instruction. Fadillah(2025) also demonstrated that Canva-assisted animated videos were both feasible and effective as instructional media.

Although animated videos have been developed for various subjects and educational levels using Canva, previous studies have primarily focused on other subjects or on science instruction that has not yet been integrated. Consequently, research on Canva-assisted animated videos for Elementary Integrated Science remains limited. In addition, existing animated videos for teaching the water cycle in fifth-grade elementary classrooms have generally not incorporated quizzes. Therefore, this study addresses these gaps by integrating interactive quizzes into the animated video to promote students' active participation throughout the learning process.

Based on the foregoing discussion, this study focuses on developing Canva-assisted interactive animated video media to teach the water cycle in Elementary Integrated Science for fifth-grade students. The developed media are expected to promote students' active engagement and facilitate their understanding of abstract scientific concepts through systematic, well-structured visual presentations. The purposes of this study are: (1) To develop interactive animated video media assisted by Canva for IPAS learning on the water cycle material. (2) To find out the validity of interactive animated video media assisted by Canva for IPAS learning on the water cycle material. (3) To find out the practicality of interactive animated video media assisted by Canva for IPAS learning on the water cycle material.

METODE

This investigation adopted a Research and Development (R&D) approach to produce an interactive animated video on the water cycle topic in Elementary Integrated Science and to assess its educational quality prior to classroom use. Consistent with Sugiyono (2022), the R&D approach emphasizes the systematic creation, revision, and evaluation of educational products to ensure that they are appropriate for instructional practice. To guide the development process, this study employed the ADDIE instructional design framework because it provides a logical sequence from identifying instructional needs to evaluating the final product.

The development procedures were adapted from Rayanto and Sugianti (2020). Initially, information related to classroom conditions was gathered through direct observation and interviews with the classroom teacher. These activities aimed to identify existing instructional challenges, explore students' learning needs, and determine the specifications required for the instructional media. Based on the information collected during the preliminary investigation, an instructional plan was prepared. At

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this stage, the learning objectives were formulated according to the curriculum, the instructional content was organized, interactive quizzes were designed, and a storyboard was developed to determine the sequence of explanations, animations, narration, and learning activities. Instruments for expert validation and user responses were also prepared during this phase.

The media production was carried out using Canva. Various multimedia components, including illustrations, animated objects, transition effects, AI-generated narration, background music, and embedded quizzes, were integrated into a single learning resource. After the prototype was completed, its quality was reviewed by experts in instructional media and subject matter. Their recommendations served as the basis for revising the product before it was introduced in the classroom. The revised media were then implemented in a fifth-grade Elementary Integrated Science class to examine their practicality during actual instruction. Students participated in the learning activities using the developed media, while the classroom teacher observed their implementation and subsequently completed the practicality questionnaire. Throughout the development process, revisions were continuously made in accordance with expert recommendations. Here's the revision from the experts:

Table 1 Revision of Interactive Animated Video Media

Before Revision	After Revision
	
The image above shows learning objectives that haven't been aligned with the learning outcomes	The learning objectives have been adjusted to the learning outcomes and use operational verbs.
	
The image above shows only the evaporation process in the sea. The narrative text is too big, so the evaporation process is not clearly visible.	The image of the evaporation process is adjusted to match the narrative text. The narrative text is made smaller and the evaporation process is shown clearly.

A final evaluation was conducted after classroom implementation by analyzing responses from students and the teacher to assess the practicality of the developed media.

The participants consisted of 30 fifth-grade students along with their class teacher from SD Negeri 1 Gondang, Tulungagung, Indonesia. After the interactive animated video was developed, the product was tested on 2 media experts, who were 2 lecturers from Universitas Bhinneka PGRI. The criteria for selecting media expert validators were having knowledge of educational technology or learning media design, having experience in creating and evaluating technology-based learning media, and understanding the basics of multimedia design. The material experts consisted of 3 specialists, namely 2 lecturers from Universitas Bhinneka PGRI and 1 fifth-grade teacher from SD Negeri 1 Gondang. The criteria for selecting material expert validators included having an educational background and expertise in teaching science (IPAS) at the elementary level and understanding the Merdeka Curriculum, so they could assess the material presented in the developed animated video media.

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Data was collected using four structured questionnaires that covered media validation, subject matter validation, student responses, and teacher responses. The indicators for media experts included a few aspects: 1) Technical 2) Display. For subject matter experts, the indicators were: 1) Curriculum 2) Content 3) Language 4) Evaluation. For student responses, the indicators were: 1) Display 2) Content 3) Technical 4) Interest. For teacher responses, the indicators were: 1) Curriculum 2) Content 3) Language 4) Technical 5) Display. The development of the indicators was based on theoretical studies about interactive animation video learning media in natural and social science learning and relevant previous research. The indicators were then adjusted to the characteristics of the media being developed and the assessment needs of media experts, subject matter experts, student responses, and teacher responses. Each instrument used a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). After the validators give their scores, the data collected is analyzed by calculating the percentage of the scores to determine the validity level of the questionnaire used. Once the percentage is obtained, the validity level of the questionnaire can be determined through these criteria: not valid (0–20%), less valid (21–40%), fairly valid (41–60%), valid (61–80%), and very valid (81–100%). Different assessment indicators are used depending on the respondents. Media experts assess technical performance and visual appearance, while subject matter experts evaluate curriculum suitability, content accuracy, language quality, and assessment components. Student responses focus on learning interest, content presentation, technical quality, and visual appearance, whereas the teacher questionnaire also includes curriculum suitability.

Two forms of data were analyzed. Qualitative evidence consisted of written comments and recommendations provided by the validators during the review process. These suggestions were used to refine the instructional media before implementation. Quantitative evidence was obtained from all questionnaires and analyzed by converting the total scores into percentages. The validity interpretation was based on five categories: invalid (0–20%), less valid (21–40%), moderately valid (41–60%), valid (61–80%), and very valid (81–100%). Only products reaching at least the valid category were considered appropriate for classroom implementation. The same percentage procedure was applied to evaluate practicality, using the following criteria: not practical (0–20%), less practical (21–40%), moderately practical (41–60%), practical (61–80%), and very practical (81–100%).

RESULT

Analysis Stage

The analysis stage consisted of problem analysis and needs analysis. Based on classroom observations and interviews with the fifth-grade teacher at SD Negeri 1 Gondang, YouTube videos were commonly used as instructional media to teach the water cycle in Elementary Integrated Science. Although these videos facilitated the explanation of the learning materials, they did not actively engage students in the learning process. Consequently, students tended to become passive viewers without being encouraged to think critically about the concepts presented. These findings indicated the need for instructional media that could actively involve students during classroom learning. Therefore, interactive animated video media were developed to address this instructional need.

Design Stage

During the design stage, the interactive animated video media were systematically planned using Canva as the primary development platform. The instructional content was initially developed from the teacher's and students' textbooks for fifth-grade Elementary Integrated Science and was further enriched to provide comprehensive explanations of the water cycle and to align with the intended learning objectives. Interactive quizzes were subsequently designed to align with the expected learning outcomes and integrated into the instructional content to reinforce students' understanding. A storyboard was then prepared as the blueprint for the interactive animated video, outlining the sequence of instructional content, narration, animations, visual elements, and quizzes to ensure a systematic and well-organized

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development process. Finally, evaluation instruments were developed to assess the media's validity and practicality during the expert validation and classroom implementation stages.

Development Stage

During the development stage, the interactive animated video media were developed using Canva as the primary development platform. The development process began with designing presentation slides that integrated the instructional content, interactive quizzes, images, text, animations, and transition effects appropriate for fifth-grade elementary students. The completed presentation was then converted into a video format, enabling the media to be used more practically during classroom instruction without requiring manual navigation between slides. Subsequently, AI-generated voice-over narration was incorporated to provide clear, natural, and consistent explanations while simplifying the production process by eliminating the need for manual recording. Finally, background music was added to create an engaging learning atmosphere for elementary school students, with the audio volume carefully adjusted to ensure that it did not interfere with the clarity of the narration. Upon completion, the interactive animated video media were submitted to media and subject-matter experts for validation before classroom implementation. After the development process, the interactive animated video media were evaluated by two media experts and three subject-matter experts. The media experts, who were lecturers from Universitas Bhinneka PGRI, assigned an average validation score of 95%, indicating that the media were very valid. Meanwhile, the subject-matter experts, consisting of two lecturers from Universitas Bhinneka PGRI and one fifth-grade classroom teacher from SD Negeri 1 Gondang, awarded an average validation score of 94%, which was also classified as very valid.

Implementation Stage

Following the development and validation processes, the Canva-assisted interactive animated video media were implemented with 30 fifth-grade students at SD Negeri 1 Gondang on May 2, 2026. During implementation, students responded positively to the learning media. Many students actively volunteered to answer the quizzes embedded in the interactive animated video by raising their hands, indicating high participation throughout the learning process. Following classroom implementation, the practicality of the developed media was evaluated based on responses from both students and the classroom teacher. Data were collected through questionnaires administered to all 30 students and one fifth-grade classroom teacher after the interactive animated video had been used during instruction. The purpose of this evaluation was to determine the practicality of the developed instructional media. The results of the practicality assessment are presented in Table 1.

Table 2. Practicality of the Canva-Assisted Interactive Animated Video Media

Respondent	Average Percentage	Category
Students	87%	Very Practical
Teacher	97%	Very Practical

Evaluation Stage

The evaluation stage consisted of formative and summative evaluations. The formative evaluation was conducted throughout the development process, based on comments and suggestions from media and subject-matter experts during the validation stage. Their feedback was used to revise and improve the interactive animated video before classroom implementation. The summative evaluation was conducted after the implementation of the Canva-assisted interactive animated video media through questionnaires administered to both students and the classroom teacher. The findings indicated that the developed media received positive responses from both groups. Most students selected either "strongly agree" or "agree" on the questionnaire items, reflecting their favorable perceptions of the media. The student response questionnaire yielded a practicality score of 87%, while the teacher response questionnaire produced a score of 97%. Both scores were categorized as very practical, indicating that the Canva-assisted interactive animated video media were highly practical and well accepted for use in fifth-grade Elementary Integrated Science instruction.

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DISCUSSION

The development process comprised five sequential stages: Analysis, Design, Development, Implementation, and Evaluation. Figure 1 illustrates the overall development process for the interactive animated video media, while the subsequent discussion explains how each stage contributes to the development of a valid and practical instructional medium.



Figure 1. Development Process of the Canva-Assisted Interactive Animated Video Media

Development Process of the Canva-Assisted Interactive Animated Video Media

The first stage, Analysis, identifies instructional problems and determines solutions prior to developing the educational product (Cahyadi, 2019). This stage involved both problem and needs analyses. Observations and interviews with the fifth-grade teacher at SD Negeri 1 Gondang on January 10, 2026, revealed that YouTube videos were used to teach the water cycle in the Elementary Integrated Science course. Although these videos supported instruction, they did not actively engage students, resulting in passive learning. The needs analysis indicated that existing media primarily facilitated one-way communication and limited student participation (Firdaus et al., 2023). To address these limitations, a Canva-assisted interactive animated video was developed to foster active engagement. This approach is consistent with the Cognitive Theory of Multimedia Learning, which posits that learners process information through both visual and verbal channels (Mayer & Moreno, 2003). The integration of visuals, narration, text, and animations supports students in constructing meaningful understanding. Therefore, the interactive animated video was deemed suitable for teaching the water cycle, as it combined visual and verbal elements with interactive features that engaged students throughout the learning process, in accordance with Apriyani et al. (2024).

The second stage, Design, involved systematically planning the instructional media to align with learning outcomes and address the needs of fifth-grade students. This process included organizing content, defining learning activities, and establishing a clear and engaging media layout prior to development (Cahyadi, 2019; Rayanto & Sugianti, 2020). Careful planning at this stage minimized errors and enhanced the quality of the final product (Rustandi & Rismayanti, 2021). The design stage comprised four main activities: developing water cycle content, preparing interactive quizzes, designing the storyboard, and creating evaluation instruments.

These steps established a clear framework for development and ensured alignment among objectives, materials, and assessments. The development process began with designing presentation slides in Canva, followed by organizing instructional content and integrating interactive quizzes. The finalized presentation was converted into a video format, and AI-generated voice-over narration was added to explain the instructional materials. Background music was incorporated to enhance engagement while preserving the clarity of narration (Amin et al., 2025). Following development, the interactive animated video media underwent validation by media experts and subject-matter experts. Expert validation is critical for identifying weaknesses and providing recommendations for improvement before classroom implementation, thereby ensuring the validity and quality of the developed media (Nababan, 2020; Rustandi & Rismayanti, 2021).

The fourth stage, Implementation, evaluated the media's practicality based on feedback from students and the classroom teacher (Alam & Patmaniar, 2023). Thirty fifth-grade students at SD Negeri

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1 Gondang participated on May 2, 2026. The interactive quizzes embedded in the video encouraged active participation, as many students responded when the teacher paused it to ask questions. These observations indicate that the media promoted engagement and attention rather than passive viewing. This finding aligns with research showing that animated learning media can encourage student participation and engagement (Apriyani et al., 2024; Sinta et al., 2024).

The final stage, Evaluation, comprised both formative and summative assessments. Formative evaluation utilized expert feedback during validation, which informed revisions and resulted in a product rated as highly valid prior to classroom use (Tessmer, 2013). Summative evaluation involved questionnaires completed by students and the teacher after implementation (Rayanto & Sugianti, 2020). Most respondents selected "strongly agree" or "agree," reflecting positive perceptions of the media. Consequently, the interactive animated video was classified as highly practical, demonstrating ease of use and suitability for teaching the water cycle in fifth-grade science. This finding supports Plomp (2013), who asserts that highly practical educational products are effective in real classrooms and well-received by users.

Validity of the Canva-Assisted Interactive Animated Video Media

The validity of the Canva-assisted interactive animated video media was confirmed through expert review by both media and subject-matter specialists. These validators were selected to evaluate the quality of the instructional media and the suitability of the water cycle content for Elementary Integrated Science. Unlike previous studies that included separate language experts (Nuraini et al., 2025), this study had subject-matter experts assess linguistic aspects alongside content. This approach ensured that the language was evaluated in the context of instructional content and the developmental needs of elementary students.

Media experts gave an average validation score of 95%, indicating that the developed media are highly valid for classroom implementation. This outcome demonstrates that the technical and visual quality of the interactive animated video meets established standards for educational media. Technically, the media are easy to access and operate, require no advanced skills, and can be used flexibly in classrooms. They also feature clear narration and appropriate video length. These qualities support practical classroom integration. Similar results were reported by Fadillah (2025), Nuraini et al. (2025), and Putri and Silalahi (2025), who found that animated instructional videos are user-friendly for teachers and students.

The high validation score also highlights the quality of the media's visual design. Media experts noted that the content is presented systematically, with harmonious color schemes, clear typography, relevant illustrations, and appropriate background music, creating an engaging learning environment. Effective visual design is essential in elementary education, as organized multimedia helps maintain students' attention and supports comprehension. This finding is consistent with Putri and Silalahi (2025), who emphasized the importance of usability, readable text, appealing visuals, and clear audio in animated instructional videos.

Subject-matter experts gave an average validation score of 94%, confirming the media's high validity. This indicates the content is appropriate for teaching the water cycle in fifth-grade Elementary Integrated Science. Experts agreed that the media align with learning outcomes and instructional objectives (Putri & Silalahi, 2025; Saputra et al., 2024; Sinta et al., 2024). The content was considered systematic, logically organized, and suitable for elementary students' cognitive development. Experts also found the materials easy to understand, free from misconceptions, relevant to students' daily experiences, and effective in helping students visualize the water cycle. These results support previous research showing that animated instructional videos help students grasp abstract scientific concepts through meaningful visual representation (Apriyani et al., 2024).

The interactive animated video content was clear, understandable, and suitable for elementary students. The evaluation component also received positive feedback, as the interactive quizzes aligned with learning objectives and content. The quizzes were easy for students to understand and allowed

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teachers to assess comprehension. Unlike Apriyani et al. (2024), whose media did not include embedded quizzes, this study integrated quizzes directly into the video. This approach allows for direct formative assessment, encourages student engagement, and helps teachers track learning progress during lessons.

Evaluation of the Practicality of Canva-Assisted Interactive Animated Video Media

The practicality of Canva-assisted interactive animated video media was evaluated through student and teacher feedback. The media received practicality scores of 87% from students and 97% from the teacher, both of which were classified as very practical. According to Nieveen (1999), a product is practical when users can operate it easily, and its implementation matches the intended instructional design. In this study, both the teacher and students used the media without difficulty. Students also understood the instructional content and completed the embedded quizzes, demonstrating effective learning support. These results are consistent with those of Kristiari and Cahyadi (2023) and Meirani and Hasibuan (2025), who found that instructional animation videos are easy to use and help students understand the lesson material.

Student responses and engagement during class learning increasingly show the practicality of this learning media (Maulani & Alberida, 2024). Observations show that interactive animated videos encourage active participation. When the teacher pauses the video for inserted quizzes, many students are willing to answer. Students show higher confidence because the quiz questions are clear and directly related to the material. These observations indicate that interactive quizzes can maintain attention and encourage participation during lessons. These findings support previous research showing that animated learning videos boost participation and student engagement (Amin et al., 2025; Fadillah, 2025; Meirani & Hisbuan, 2025).

The interactive animated video also helped teachers explain the abstract concept of the water cycle using visual representations. Concepts such as evaporation, condensation, precipitation, and collection are often difficult for elementary students to understand through verbal explanations or static images alone. By using animations, narration, and interactive quizzes, the media allowed students to visualize these processes more clearly, improving conceptual understanding. This finding aligns with Made et al. (2021), who reported that animated instructional media enhance comprehension of abstract concepts through dynamic visuals. However, the media have some limitations. Their use depends on access to technology such as laptops, projectors, or smart televisions (Apriansyah, 2020; Ismawati & Mustika, 2021). Schools with limited technological infrastructure may face challenges in implementation. This was not an issue in the present study, as SD Negeri 1 Gondang had sufficient facilities, including smart televisions, to support proper use.

Developing interactive animated video media requires significant time, financial resources, and technical expertise (Tinova et al., 2023). As a result, not all teachers may be able to create similar media without proper training or support. Additionally, the media developed in this study focused specifically on the water cycle in fifth-grade Elementary Integrated Science, and their effectiveness for other science topics has not been tested. Future research should examine the use of Canva-assisted interactive animated videos across various topics and subject areas to assess their broader effectiveness.

The interactive animated video developed in this study was designed specifically for the water cycle topic in fifth-grade Elementary Integrated Science. Therefore, its use is limited to this content and cannot be generalized to other topics within Elementary Integrated Science (Laura & Sujana, 2022). This limitation highlights the need for future research to develop similar media for a wider range of science topics to support broader implementation in elementary classrooms.

CONCLUSION

A Canva-assisted interactive animated video was created to teach the water cycle in fifth-grade Elementary Integrated Science, following the ADDIE instructional design model. The process began by identifying instructional challenges, which showed that existing videos did not effectively encourage active student participation. To address this, the new media included animations, narration, and

interactive quizzes to create a more engaging, student-centered environment. The media achieved high validity, with validation scores of 95% from media experts and 94% from subject-matter experts, both rated as very valid. These results indicate that the media met standards for technical quality, visual design, instructional content, language, and evaluation, confirming their suitability for classroom use. The practicality evaluation produced highly positive results. Students rated the media at 87% practicality, while teachers rated it at 97%, indicating strong practicality. During classroom use, students showed greater enthusiasm and participation, particularly with the interactive quizzes. When used in the classroom, students show greater enthusiasm and participation, especially with interactive quizzes. This media also helps teachers explain the abstract concept of the water cycle through dynamic visuals. Although the results are positive, this media has some limitations. Its use depends on access to technology like laptops, projectors, or smart TVs, which may not be available in all schools. This media is also specifically for the water cycle topic, so its use is limited to other integrated science subjects in elementary school. Future research should develop similar interactive animated videos for a wider range of science topics and evaluate their effectiveness in various educational settings.

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