JPPIPA 11(5) (2025)

Jurnal Penelitian Pendidikan IPA

http://jppipa.unram.ac.id/index.php/jppipa/index

Development of Doratoon Animation Video Learning Media to Improve IPAS Learning Outcomes of Grade V Students on Harmonious Ecosystem Material

Sinta Afifah Ramadhan[1*], Novi Setyasto[1]

Primary School Teacher Education, Universitas Negeri Semarang, Semarang, Indonesia

Received: January 22, 2025
Revised: March 07, 2025
Accepted: May 25, 2025
Published: May 31, 2025

Corresponding Author:
Sinta Afifah Ramadhan
shintaafira28@students.unnes.ac.id

DOI: 10.29303/jppipa.v11i5.10818

Abstract: The purpose of this study was to determine the feasibility, effectiveness, and practicality of Doratoon animated video learning media to improve student learning outcomes. The type of research used is research and development using the Borg and Gall model. The population used in this study involved 23 fifth grade students of SDN Wedarijaksa 03. Data collection techniques used test techniques (pretest - posttest) and non-tests in the form of interviews, questionnaires, observations, score lists, and documentation. The feasibility of the media is shown from the results of material and media expert validation which shows that the media is declared very feasible with an average score of 95%. The practicality of the learning media is shown from the results of teacher and student response questionnaires to the use of the media showing a "very positive" level of satisfaction, with an average score of 100% from teachers and 98.17% from students. The effectiveness of the learning media is evidenced by the small group N-Gain value of 0.67 and the large group of 0.69 classified in the "medium" category. The results showed that Doratoon animated learning media met the criteria of feasible, practical, and effective to improve students' social studies learning outcomes.

Keywords: Doratoon Animation Video; Learning Media; IPAS

Introduction

The basis for the implementation of this independent curricula is referred to the decision of the Menristek Dikti (Minister of Communication, Culture, Research and Technology) No. 56 of 2022 on the application guidelines of the curriculum in the context of learning recovery, namely the independent curriculum as a complements to the previous curriculum, which contains the independent curriculum structure, rules related to learning and assessment, projects to strengthen the Pancasila learners profile, and teacher workload (Kemendikbud, 2022). Thus, the successful implementation of the independent curriculum is also influenced by the role and creativity of teachers, because teachers are a crucial factor that has a major impact on students, even determining whether students succeed in learning (Siswanto et al., 2024)

The independent curriculum provides new updates to the curriculum in order to help students to learn much more calmly, innovatively, and enjoyably (Restu et al., 2022). The obstacles and challenges faced by teachers in implementing lessons are that they have difficulty in developing learning materials that are in accordance with the needs of students and the applicable curriculum (Wardani et al., 2024). The low creative thinking skills of students can be influenced by the lack of application of interesting learning media in the class (Sari et al., 2022).

How to Cite:
Ramadhan, S. A., & Setyasto, N. (2025). Development of Doratoon Animation Video Learning Media to Improve IPAS Learning Outcomes of Grade V Students on Harmonious Ecosystem Material. *Jurnal Penelitian Pendidikan IPA*, *11*(5), 821–831. https://doi.org/10.29303/jppipa.v11i5.10818

In the context of modern education, the use of technology and learning media has become a crucial issue. Throughout the world, teachers are trying to utilize these innovations to improve the quality of learning in the classroom (Purnasari & Sadewo, 2020). However, integrating the use of technology and learning materials is not an easy task. There are various challenges that arise in teachers' efforts to apply these technologies in the curriculum (Hulu, 2023).

Based on the results of observations, interviews, questionnaire questionnaires, student score lists, and documentation at SD Negeri Wedarijaksa 03, researchers found several obstacles in the learning process. Based on the data collection conducted by researchers, namely by distributing questionnaires to students to identify their needs for learning media and interviews with teachers. The data collection shows that the teacher and student books provided the illustration, but the number was limited and the content was less extensive. This is an obstacle because the ecosystem material is extensive. In addition, in the teaching and learning process, effective teachers have not maximized the use of learning media and technology that is available at school. Lessons have not used learning media that are varied and in accordance with the needs of students, the media used are only in the form of: pictures, items in the surrounding classroom, and transferring material from textbooks to Powerpoint displayed via LCD. Limited sources of learning, in learning only use student books and textbooks provided by the school, the coverage of material in teacher books and student books is less extensive. The use of less varied media causes the suboptimal learning process and students' lack of interest in IPAS learning. Limited instructional time is also a problem for teachers, moreover the material presented requires a lot of time so teachers need more efficient media in learning. As a result, the goal of increasing students' learning motivation and providing them with new learning experiences has not been achieved. Based on the questionnaire, it is known that 80% of students prefer learning by using learning media in the form of videos. Students also choose IPAS learning to be a difficult learning due to the large amount of extensive material and a lot of memorization. Therefore, it is necessary to develop digital learning media that is integrated with technology as a solution to overcome these shortcomings. The use of animated learning media allows teachers to access it easily, time efficiency, and presents an interesting learning experience for students.

According to (Kemendikbudristek, 2022) in the independent curriculum which states that there is a merger of the learning content of Natural Sciences (IPA) and Social Sciences (IPS) which becomes IPAS. In the IPAS content, students are required to memorize and understand the material. In general, teachers use the lecture method in conveying information which makes students more easily bored in learning (Hastiwi et al., 2023). This is an obstacle to the lack of interest of students in the learning process which can ultimately affect the learning outcomes of students who are less than optimal. The learning outcomes of students can also be from several factors, starting from internal factors themselves and external factors from outside.

Appropriate teaching and learning media can help students significantly in the teaching and learning process. Learning media can help instructors in explaining the material to be taught. In addition, learning media also functions to help communication between communicators and recipients (Wulandari et al., 2023). Therefore, the existence of learning media can achieve learning objectives appropriately and efficiently (Yuriza et al., 2023). In addition, the use of learning media can also stimulate the way students think to raise questions and can provide a positive response to the learning process carried out by the teacher (Sari et al., 2024)

In this study, learning media is needed because it is a means of supporting the learning process to convey information in the form of material more easily and pleasantly. The existence of learning media can encourage success in achieving learning goals and can encourage students to be more active in learning (Asari et al., 2023). With the development of technology as it is today, it is hoped that learning media will make it easier for educators to carry out their duties to convey information on learning materials to students more actively, fun, and increase students' enthusiasm for learning (Sapriyah, 2019).

Participants can focus more on learning by using animated videos as learning media. This is a video animation media of a video or moving image accompanied by audio. The use of video media, such as an animated video, can provide a positive response from students (Irawan et al., 2023). Abstract concepts can be displayed visually and interactively by utilizing an animation model. Thus, students can more easily understand and remember the material taught. The animated videos produced can increase learning effectivity, motivate students, and help them understand the material more deeply. Therefore, this media is seen as a useful innovation to support the IPAS learning process (Nurhayati et al., 2020).

Doratoon is an entertaining animated video media that can be implemented by educators, which can be easily accessed via the internet. In addition, Doratoon has the advantage of having many features that are easy to use and many templates can be used to make learning more interesting (Maharani et al., 2024). Doratoon is one type of video animation media which offers the use of combined elements and the animation to be more interesting in one animated video (Latif & Dewi, 2022). The use of Doratoon media can be accessed both online and offline, with that students can learn according to their wishes both at school and outside school (Lestari, 2023). The use of transitions as well as animated cards is what attracts students to always see and study the material in the video (Syafriza et al., 2022). The development of Doratoon animated video media is based on research (Mardita Putri Fauziah, 2022; Marianto et al., 2024). Which argues that the use of Doratoon media is feasible to use and helps students in understanding the material. Doratoon-assisted learning media based on animated videos can be an alternative learning media and can help increase student learning motivation (Dimyati, Abdul Fatah, 2023; Rahma Binti Pageno & Salmilah, 2024).

Doratoon animated video learning media is a type of audio-visual media that uses website-based software. This media has a lot of features that can be used such as: animation, audio, transitions, adding text, and many more (AyuDia Melisa, 2023). Doratoon animation media can also be displayed in offline form, which can make it easier for users to access it. Doratoon animation media, which as the name implies is Audio-Visual media, combines being able to be seen and heard (Thifalia & Susanti, 2021).

The novelty of the media developed by researchers is an animated video that can be accessed online for grade V elementary school students, which contains harmonious ecosystem material using Doratoon animation videos. This aims to facilitate the comprehension of students in harmonious ecosystem material that is interesting and fun. The Doratoon animated learning video can be accessed by teachers and participants, besides that students can repeat the material taught by accessing the Youtube link easily. Thus, this animated video learning media can be implemented effectively in learning. This instructional media contains IPAS class V material about harmonious ecosystems. This material is often considered abstract by students because they cannot see examples of ecosystems directly. Through animated videos that are displayed using animations that are liked by students and have a more creative and attractive appearance so that students get a fun, active, and innovative learning experience in the material of harmonious ecosystems .

Based on this background, researchers conducted research to develop Doratoon learning video animations to improve student learning outcomes in the IPAS subject matter of harmonious ecosystems at SDN Wedarijaksa 03. The purpose of this research and development is to test the feasibility, practicality, and effectiveness of the products developed. This instructional media is expected to help students to understand harmonious ecosystem material more easily, so that it can support the teaching and learning process.

Method

This research is a Research and Development (R&D) study that aims to develop a learning product and test its effectiveness (Sugiyono, 2019). The focus of this research is the development of Doratoon animated video learning media in the IPAS subject of harmonious ecosystem material in grade V SD. The development model used in this research is the Borg and Gall model, which consists of 10 stages. However, in this study, the development was limited to the 8th stage due to time and cost constraints. The stages taken include: (1) potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product trial, (7) product revision, and (8) trial use (Sugiyono, 2019). A schematic overview of this research:

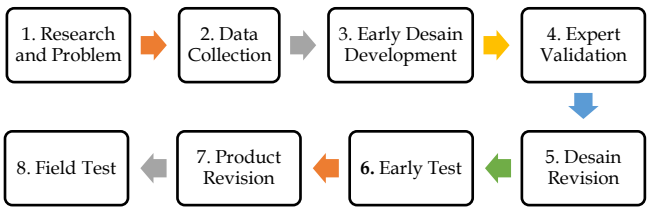

Figure 1. Modified from the Borg and Gall Model

The initial stage, the potential and problem stage was carried out by conducting observations, interviews, and data documentation in the form of learning outcomes of fifth grade students of SDN Wedarijaksa 03. Furthermore, at the stage of collecting data and information to plan the product to be developed to overcome the problems found by distributing questionnaires of the needs of students and teachers. After collecting the required data and information, the researcher then designs the product design, the researcher designs the product based on the analysis of the questionnaire data on the needs of students, taking into account the material, language and design aspects

of the product developed. This product planning is adjusted to the Learning Outcomes (CP) and Learning Objectives (TP) on harmonious ecosystem material in IPAS class V SD Phase C subjects. The learning focus includes balance in the ecosystem, disturbances in the ecosystem balance, and how to maintain harmony in the ecosystem. After doing product design, the next stage is the design validation stage to expert validators who are competent in their fields. The media that has been designed is validated by Semarang State University lecturers as validators, consisting of material experts and media experts by filling out a validation assessment sheet prepared by researchers in the form of a 1-4 Likert scale. The next stage is the design revision stage based on input from expert validators so that the product is ready to be tested on students.

After the product is revised, at the next stage the product is tested on students on a small scale on 9 students of class VI SDN Wedarijaksa 03 with the selection of students using purposive sampling method based on variations in the level of different cognitive abilities. At the product trial stage, learning was carried out using Doratoon animated video learning media on harmonious ecosystem material, learning was carried out using the Problem Based Learning (PBL) model. After the implementation of the learning, teachers and students were asked to fill out a response questionnaire on the use of Doratoon animated video learning media. The results of the teacher and learner response questionnaires will be analyzed and if there is input, it will be used as a basis for revising the products that have been tested. The last stage is the stage of testing the use of products on a large scale, involving 14 students in class V SDN Wedarijaksa 03 to determine the effectiveness of the products developed based on the learning outcomes obtained by students.

The type of data in this study is primary data. Primary data is data obtained from direct research results, the data consists of qualitative and quantitative. Qualitative data in this study were obtained through observations, questionnaires, and interviews with teachers and students at SDN Wedarijaksa 03. Meanwhile, quantitative data were obtained from the learning outcomes of grade V students in IPAS subjects, as well as from the results of pretest and posttest assessments. The research design used by researchers is a pre-experiment design with a one-group pretest-posttest design model, namely a pretest before treatment and a posttest after treatment. This aims to obtain more accurate treatment results by comparing conditions before and after treatment (Sugiyono, 2019). Data collection techniques in this study include test and non-test techniques. The test technique is in the form of 30 multiple choice questions that are the same to be used on the pretest and posttest. While non-test techniques include results from interviews, questionnaires, observations, score lists, and documentation (Kemuda & Yasa, 2024; Putri Ratu Gumy & Surti Kurniasih, 2024).

Assessment of product feasibility in learning is done through data analysis based on evaluation by material and media experts. The validation process was carried out by Semarang State University lecturers as validators, consisting of material and media experts using a Likert scale of 1-4. The practicality assessment of the product was used using data analysis from teacher and student response questionnaires on the use of Doratoon animated video learning media during the learning process with a guttman scale. Then for the assessment of product effectiveness in learning is done through data analysis of pretest and posttest results. The analysis process, N-Gain is used to measure the level of score improvement from pretest to posttest for product effectiveness based on changes in learner scores.

Result and Discussion

Potential and Problems

This first stage analyzes the needs by conducting observations and interviews in pre-observation activities conducted by both teachers and grade V students at SDN Wedarijaksa 03. Based on the results obtained by researchers after carrying out pre-observation activity, problems were found in the process of learning in the classroom which was still carried out classically, namely by using lecture, discussion and question and answer methods so that it did not motivate students to learn. Teachers still underutilize the use of laptops, projectors, and Wifi facilities. In addition, the IPAS learning outcomes of class V students are still many who have not met the standard criteria for achieving learning objectives (KKTP), namely with a minimum completeness value of 75 while from all total students only 4 students (30%) whose scores meet and 9 students (70%) have not met the standard criteria for achieving learning objectives (KKTP).

Initial data collection

Data was collected by the researcher by distributing questionnaires to students to identify their needs for learning media and interviews with the teacher. According to the data gathered, the teacher and student books provide illustrations, but the number is limited and the content is not extensive enough. This is an obstacle because the ecosystem material is extensive. In

addition, in the learning process, teachers still do not maximize the use of learning media and technology available at school. Teachers have not used learning media that are interesting and in accordance with the needs of students, the media used are only in the form of: pictures, objects around the classroom, and transferring material from textbooks to Powerpoint displayed via LCD. Learning resources are limited, teachers only use student books and teacher books provided by the school, the coverage of material in teacher books and student books is less extensive, but there are no other supporting learning resources. The use of less attractive media causes the learning process to be less than optimal and students are less interested in learning IPAS. Limited learning time is also a problem for teachers, especially since the material presented requires a lot of time so teachers need more efficient media in learning. As a result, the goal of increasing students' learning motivation and providing them with new learning experiences has not been achieved. Based on the questionnaire, it is known that 80% of students prefer learning by using video learning media. Students also choose IPAS learning to be difficult learning due to the large amount of extensive material and a lot of memorization. Therefore, it is necessary to develop digital learning media that is integrated with technology as a solution to overcome these shortcomings. The use of animated learning media that allows teachers and students to access easily, presents more interesting material, time efficiency, and presents an interesting learning experience for students.

Product design

Doratoon Animation video learning media is designed in accordance with the Learning Outcomes (CP) and Learning Objectives (TP) to be achieved in a harmonious ecosystem. Doratoon animated video is developed with a concept consisting of images, animation, writing, and audio that matches the characteristics of students so that it can be easily understood by students and can increase student learning motivation. the first step is to prepare material, design, animation, images, and audio. The final product of this learning media is an online Doratoon learning video through a Youtube link that can be accessed through the internet network. The steps in designing the product include: (1) preparation of materials, images, animations, customized material design formats; (2) making product designs; (3) applying Doratoon in making animated videos. The parts of this Doratoon animation video consist of:

Figure 1. Title display

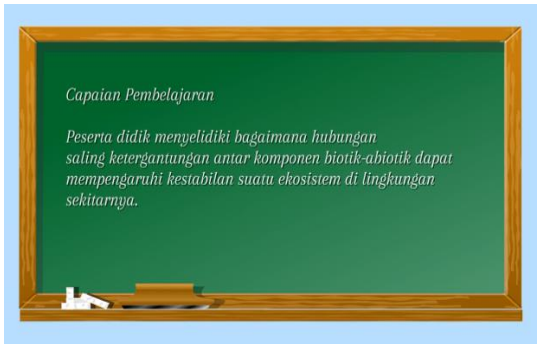

Figure 2. learning outcomes

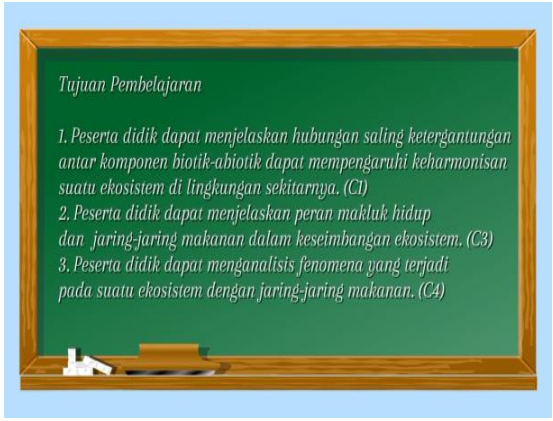

Figure 3. learning objectives

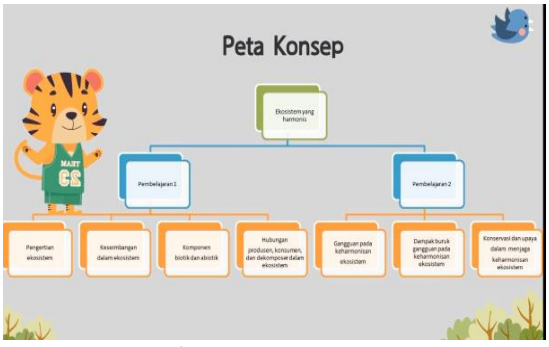

Figure 4. concept map

Figure 5. view of the core section

Figure 6. Display of Acknowledgements

Figure 7. reference list view

Figure 8. development data 1

Figure 9. development data 2

Validation of Doratoon animated video Learning Media Design

At this stage, researchers will validate the products developed to competent media expert validators, namely lecturers of learning media courses and material experts, namely lecturers of science courses in school teacher education study programs to test the feasibility of media. After conducting validation, there will be suggestions and input related to the products that researchers have developed so that researchers can make revisions to the products that have been developed. Learning media will be included in very feasible criteria if it gets a score of 81% - 100%, feasible criteria if it gets a score of 61% - 80%, quite feasible criteria if it gets a score of 41% - 60%, less feasible criteria if it gets a score of 21% - 40%, and very unfit criteria if it gets a score of less than 21%.

Table 1. Results of Expert Validator Assessment of Doratoon Animation Learning Video

Trial Subject	Validity Result %	Description
Media expert test	97.22%	Very Feasible
Material expert test	93.42%	Very Feasible

The first assessment with media experts, namely media validation with a value of 97.22, is in the category of very feasible to use on harmonious ecosystem material. The assessment of the Doratoon animated video learning media was carried out with the material validator of the Elementary School Teacher Education lecturer, Moh. Fathurrahman, S.Pd., M.Sn.. Furthermore, the validation of the material with a score of 93.42 is also in the category of very feasible to use, this assessment was also examined by a lecturer in Elementary Teacher Education, namely Dewi Nilam Tyas, S.Pd., M.Pd.. From these results, it can be said that the Doratoon animated video learning media on harmonious ecosystem material is suitable for use in the

learning process in the fifth grade of Wedarijaksa 03 State Elementary School.

Design Revision

Researchers revised the design according to suggestions from media and material experts. Suggestions given by media expert validators are in the form of adding slides of instructions for using the media and adding segments to animated videos that have been uploaded on Youtube. Suggestions given by material expert validators in the form of adjusting learning objectives and learning scenarios in syntax, adjusting grids and questions, adjusting sentences on producer examples in the media and explaining decomposers in learning materials.

Figure 10. *No Product Usage Guidelines yet*

Figure 11. *Product usage instructions sheet*

Figure 12. *No Producer material before revision Yet*

Figure 13. *Producer material after revision*

Figure 14. *No Decomposer material before revised Figure yet*

Figure 15. *Decomposer material after revised*

Practicality of Doratoon animated video learning media (Product Trial)

The next stage is the product trial stage on a small scale involving 9 students of grade VI SDN Wedarijaksa 03. Learners are selected heterogeneously based on ability levels, consisting of 3 students with high levels of understanding, 3 students with moderate levels of understanding, and 3 students with low levels of understanding. After learning using Doratoon animated video learning media is complete, teachers and students are given a response questionnaire related to the use of Doratoon animated videos, each questionnaire contains 13 questions. The 13 questions in each questionnaire cover three aspects which include media quality, material quality, language quality with a guttman scale based on their experience when using the product that has been developed by the researcher. This response questionnaire will be included in very positive criteria if it scores 76% - 100%, positive criteria if it scores 51% - 75%, negative if it scores 26% - 50%, and very negative criteria if it scores less than 25%.

Table 3. Results of Teacher and Learner Responses to the Use of Doratoon animated video learning media Small Scale Trial.

Respondent	Information	Assessment
Teachers	100%	very positive
learners	97.77%%	very positive

Table 3. shows that the responses of teachers and students in the small-scale test were very positive towards the use of Doratoon animated video media because they scored above 76%. So that Doratoon animated learning media can be used practically in learning activities in the classroom.

Table 4. Results of Teacher and Learner Responses to the Use of Doratoon animated video learning media Large Scale Trial.

Respondent	Information	Assessment
Teachers	100%	very positive
learners	98.57%	very positive

From the data shown in Table 4, it shows that the responses of teachers and students in large-scale classes are very positive towards the use of Doratoon animated learning media because they score above 76%. Based on the data above, it is known that the average teacher response score is 100% and students are 98.17%. Doratoon animated learning media is declared practical based on 13 questions. Thus, Doratoon learning media can be used practically in learning activities.

Effectiveness of Doratoon animated video learning media

Furthermore, to determine the effectiveness of the media and the suitability of learning media whether it is in accordance with the material taught to improve student learning outcomes in harmonious ecosystem material. First, a pretest test was conducted without the use of learning media first on a small or large scale, the

posttest test was conducted using Doratoon animation media (Rambe et al., 2023). To see the results of the pretest test and posttest test can be seen from table 5 below:

Table 5. Product effectiveness test result

Trial Subject	Pretest	Postest	average difference
Small Group	48,22	83.33	35
Large Group	56.21	86.14	30

Based on the table above that on a small scale the pretest gets a score of 48.22 for the postest test results with an average of 83.33. Then for the large scale the results obtained in the pretest test with an average of 56.21 and the postest test results with an average of 86.14. With an average difference of 35 small-scale tests and 30 large-scale tests. It can be stated that the presence of Doratoon animated video media can improve students' cognitive learning outcomes.

Furthermore, the N-Gain test. This test aims to measure the effectiveness of the product developed whether it has an impact on improving learning outcomes or not. These results can be seen in the following table 6.

Table 6. N-Gain test result

Class	Average		N-gain	Criteria
	Pre	Post		
Small group	48	85	0.65	medium
Large group	56	86	0.69	medium

From the results of the N-Gain test, the presence of Doratoon animated video media is quite effective in the learning process of harmonious ecosystem material in the fifth grade of Wedarijaksa 03 State Elementary School.

Disscusion

The atmosphere of learning in the classroom is needed, therefore educators need to think about how to make learning effective, fun and can also improve student learning. One of them is by using learning media, with the existence of learning media can help educators in channeling and communicating about the material to be taught, and with the existence of learning media can provide different learning by only using the lecture method. It is the learning media that can motivate students to be more active in learning and get satisfactory learning results (Lestari, 2023; Noviska & Anastasia, 2023). Nowadays, technological development is very rapid, this also requires teachers or educators to grow and develop by adjusting between learning media and changing times (Hennessy et al., 2022; Uzorka et al., 2023). Video learning media serves as a tool to convey learning material through projected moving images with similar characteristics to the original object. Audio visual media is one of the media that can attract attention and provide real experiences to students (Alawiyah & Setyasto, 2024).

Currently, there are many kinds and forms of learning media, ranging from audio, visual, and also audio visual (Marpanaji et al., 2018). The media developed at this time is learning media in the form of Doratoon animation videos which are included in the audio-visual media category. This animated video media is assisted by the Doratoon web. Doratoon is a web or platform that makes it easy for creators to be creative because the supply of various animation elements can provide opportunities for many people to be creative, especially for educators in making learning media (Mikaelisa Aditya Rehdaya, 2024).

Doratoon animated video media users can make it as interesting as possible with animations and moving elements, interesting transitions and others. The results of this study which developed Doratoon animated video learning media can be proven to be quite feasible and effective in the learning process in the classroom, especially in class V of SD Negeri Wederijaksa 03. This is also supported by the advantages of animated videos that can balance the background, material content, colors, animation elements that are so contrasting (Isti et al., 2022; Shahbaznezhad et al., 2021). Therefore, the use of Doratoon animated videos has a good impact on improving student learning outcomes in the IPAS content of harmonious ecosystem material in class V of Wedarijaksa 03 State Elementary School, as evidenced by the feasibility results of media experts who give scores with an average of 97.22% and material experts with an average of 93.42%. The practicality of Doratoon animated video media is shown from the results of the questionnaire responses of teachers and students to the use of Doratoon animated video learning media showing a "very positive" level of satisfaction, with an average score above 76%, namely an average teacher response score of 100% and students of 97.17%. The effectiveness of Doratoon animated video learning media with data analysis on pretest and posttest scores of students has increased with an average difference between the small group average of 35 and the large group of 30, N-gain of 0.65 in the small group and 0.69 in the large group which is included in the medium criteria. These results indicate that the Doratoon animated learning animation video meets the criteria of

feasibility, practicality, and effectiveness to improve the learning outcomes of fifth grade students of Wedarijaksa 03 State Elementary School in the IPAS subject of harmonious ecosystem material.

Conclusion

The purpose of the researchers in developing Doratoon animated video learning media is to determine the effectiveness and feasibility of the media when used in the learning process. After noble testing from media experts, material experts, small and large scale tests prove that the results convince the use of Doratoon animated video media is feasible to use, especially in the IPAS content of harmonious ecosystem material in grade V of Wedarijaksa 03 public elementary school. The results obtained in this study that the Doratoon anisamdi media is very feasible to use with an average score of 95%. With this media also provides a level of satisfaction reaching 98.17% of 100%, which means that the effectiveness of Doratoon animation media is very effective in the IPAS content learning process.

Acknowledgments
I would like to thank Mr. Novi Setyasto, S.Pd., M.Pd. as the supervisor in conducting this research. Thank you to Mr. Moh. Faturrahman, S.Pd., M.Sn as the material validator in this study and Mrs. Dewi Nilam Tyas, S.Pd., M.Pd as the media validator lecturer in this study. I would also like to thank the Principal, Class V Teacher, Class VI Teacher, and students of class V and class VI of SD Negeri Wedarijaksa 03 for providing the opportunity to conduct research for the purposes of the S1 final project. The authors would like to thank the University of Mataram for facilitating the preparation of this article and the editors who have reviewed and scrutinized this article. The researcher would like to thank herself, parents, siblings, and friends for all their prayers and support so that the research and writing of this article can be completed properly.

Author Contributions
S. A. R who played a role in this research, who determined the research idea, who wrote the initial draft of the research, the methods used, the design of the developed media, data collection and analysis. N. S who was also in charge of controlling, scrutinizing, guiding and providing advice and input on this research.

Funding
This research was self-funded by the author.

Conflicts of Interest
The authors declare no conflict of interest in this research.

References

Alawiyah, M., & Setyasto, N. (2024). Pengembangan Media Powtoon Berbasis Kearifan Lokal Kendal Untuk Meningkatkan Hasil Belajar PPKN Sekolah Dasar. *Jurnal Ilmiah Kependidikan*, *5*(4), 254–268. https://doi.org/10.37478/jpm.v5i4.4148

Asari, A., Purba, S., Fitri, R., Genua, V., Herlina, E. S., Wijayanto, P. A., ... & Pratasik, S. (2023) *Media pembelajaran era digital.* CV. ISTANA AGENCY, Yogyakarta. Retrieved from https://repository.um.ac.id/3007/

AyuDia Melisa, & Fadlan, M. N. (2023). Pengembangan Video Animasi BerbantuanDoratoonpada Tema Makanan Sehat di Kelas V Sekolah Dasar. *EDUKASIA: Jurnal Pendidikan Dan Pembelajara*, *4*(2), 901–908. https://doi.org/10.62775/edukasia.v4i2.371

Dimyati, D., Fatah, A., & Sudiana, R. (2023). Pengembangan Media Pembelajaran Matematika Berbasis Video Animasi Berbantuan Doratoon. *Wilangan: Jurnal Inovasi Dan Riset Pendidikan Matematika*, *4*(3), 193–203. http://dx.doi.org/10.56704/jirpm.v4i3.20650

Hastiwi, F., Khasanah, U., & Wahyuningsih, S. (2023). Peningkatan Keaktifan dan Hasil Belajar IPAS Menggunakan Model Problem Based Learning Kelas IV SD Muhammadiyah Kleco 2 Tahun Ajaran 2022/2023. *Kalam Cendekia: Jurnal Ilmiah Kependidikan*, *11*(2). https://doi.org/10.20961/jkc.v11i2.75334

Hennessy, S., D'Angelo, S., McIntyre, N., Koomar, S., Kreimeia, A., Cao, L., Brugha, M., & Zubairi, A. (2022). Technology Use for Teacher Professional Development in Low- and Middle-Income Countries: A Systematic Review. *Computers and Education Open, 3,* 100080. https://doi.org/10.1016/j.caeo.2022.100080

Hulu, Y. (2023). Problematika Guru Dalam Pengembangan Teknologi Dan Media Pembelajaran. *Education and Learning Journal*, *2*(6), 840–846. https://doi.org/10.31004/anthor.v2i6.285

Irawan, T., Dahlan, T., & Fitrianisah, F. (2023). Analisis Penggunaan Media Video Animasi Terhadap Motivasi Belajar Siswa Di Sekolah Dasar. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, *7*(1), 212–225. https://doi.org/10.36989/didaktik.v7i01.738

Isti, L. A., Agustiningsih, A., & Wardoyo, A. A. (. (2022). Pengembangan Media Video Animasi Materi Sifat-Sifat Cahaya Untuk Siswa Kelas IV Sekolah Dasar. *EduStream: Jurnal Pendidikan Dasar*, *4*(1), 21–28.

https://doi.org/10.26740/eds.v4n1.p21-28

Kemendikbudristek. (2022). *Kurikulum Merdeka*. Republik Indonesia.

Kemuda, N. M. G. A. A., & Yasa, I. G. B. K. (2024). Persepsi Siswa Terhadap Penggunaan Video Animasi Berbasis Doratoon. *Prima Magistra: Jurnal Ilmiah Kependidikan*, *5*(1), 8–16. https://doi.org/10.37478/jpm.v5i1.3169

Latif, A., & Dewi, T. U. (2022). Pelatihan pembuatan video pembelajaran dengan Doratoon bagi guru untuk meningkatkan pemahaman siswa SMA. *El-Mujtama: Jurnal Pengabdian Masyarakat*, *3*(1), 56–62. https://doi.org/10.47467/elmujtama.v3i1.2241

Lestari, Y. D. (2023). Pentingnya Media Pembelajaran dalam Meningkatkan Hasil Belajar di Sekolah Dasar. *Lentera: Jurnal Ilmiah Kependidikan*, *16*(1), 633–641. https://doi.org/10.1080/0142159X.2022.2151884

Maharani, P., Eldes Dafrita, I., & Sari, M. (2024). Pengembangan Media Pembelajaran Video Animasi Berbasis Doratoon Terhadap Kemampuan Berpikir Kritis Siswa Pada Materi Sistem Pernapasan Manusia. *IJMS: Indonesian Journal of Mathematics and Natural Science*, *2*(1), 22–32. Retrieved from https://jurnal.academiacenter.org/index.php/IJMS

Mardita Putri Fauziah, M. N. (2022). Pengembangan Media Audio Visual (Video) Animasi Berbasis Doratoon Materi Hak dan Kewajiban Penggunaan Sumber Energi Mata Pelajaran PPKn di Sekolah Dasar. *Jurnal Basicedu*, *6*(4), 6505–6513. https://doi.org/10.31004/basicedu.v6i4.3257

Marianto, A., Simatupang, G. M., & Anwar, K. (2024). Pengembangan Media Pembelajaran Berbasis Video Animasi Menggunakan Aplikasi Doratoon Untuk Meningkatkan Minat Belajar Siswa Pada Materi Bentuk Aljabar Kelas Vii SMP. *Jurnal Ilmiah Matematika Realistik*, *5*(1), 55–63. https://doi.org/10.33365/ji-mr.v5i1

Marpanaji, E., Mahali, M. I., & Putra, R. A. S. (2018). Survey on How to Select and Develop Learning Media Conducted by Teacher Professional Education Participants. *Journal of Physics: Conference Series*, *1140*(1). https://doi.org/10.1088/1742-6596/1140/1/012014

Menteri Pendidikan Kebudayaan Riset dan Teknologi Republik Indonesia. (2022). *Salinan Keputusan Menteri Pendidikan, Kebudayaan, Riset dan Teknologi Republik Indonesia Nomor 56/M/2022 tentang Pedoman Penerapan Kurikulum dalam Rangka Pemulihan Pembelajaran*. Republik Indonesia.

Mikaelisa Aditya Rehdaya, D. N. T. (2024). Development of Doratoon-Based Animation Audio Visual Media to Improve Cognitive Learning Outcomes in Science Teaching Materials. *Jurnal Penelitian Pendidikan IPA*, *10*(9), 5843–6951. https://doi.org/10.29303/jppipa.v10i9.7528

Noviska, D. W., & Anastasia, F. (2023). Students' Learning Styles (VRAK Model) in Learning English. *Didaktika: Jurnal Kependidikan*, *17*(1), 58–70. https://doi.org/10.30863/didaktika.v17i1.4132

Nurhayati, H., & , Langlang Handayani, N. W. (2020). Keefektifan Model Project Based Learning untuk Meningkatkan Keaktifan Belajar Siswa pada Pelajaran IPS Sekolah Dasar. *JURNAL BASICEDU*, *7*(3), 1716–1723. https://doi.org/10.31004/basicedu.v7i3.5384

Purnasari, P. D., and Sadewo, Y. D. (2020). Pemanfaatan Teknologi Dalam Pembelajaran Sebagai Upaya Peningkatan Kompetensi Pedagogik. *Publikasi Pendidikan*, *10*(3), 189. https://doi.org/10.26858/publikan.v10i3.15275

Putri Ratu Gumy, Kurniasih, S., & Gani, R. A. (2024). Pengembangan Media Video Animasi Menggunakan Doratoon Pada Tema 8 Praja Muda Karana Subtema 2 Aku Anak Mandiri. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, *9*(3). https://doi.org/10.23969/jp.v9i3.16333

Rahma Binti Pageno, Salmilah, A. W. (2024). Pengembangan Media Video Animasi Berbasis Doratoon pada Materi Ekosistem Siswa Kelas V SDN09 Mattekko. *REFLEKSI: Jurnal Pendidikan*, *12*(4), 241–254. Retrieved from https://p3i.my.id/index.php/refleksi/article/view/301

Restu, R., Iskandar, S., Abidin, Y. (2022). Inovasi Pembelajaran Abad 21 dan Penerapannya di Indonesia. *Jurnal Basicedu*, *6*(2), 2099–2104. https://doi.org/10.31004/basicedu.v6i2.2082

Sapriyah. (2019). MEDIA PEMBELAJARAN DALAM PROSES BELAJAR MENGAJAR. In *Prosiding Seminar Nasional Pendidikan FKIP*, *2*(1). Retrieved from https://jurnal.untirta.ac.id/index.php/psnp/issue/view/562

Sari, F. A., Pratiwi, U., & Fatmaryanti, S. D. (2022). Pengembangan Media Interaktif Berbasis Articulate Storyline untuk Meningkatakan Keterampilan Berpikir Kreatif Peserta Didik. *Jurnal Inovasi Pendidikan Sains (JIPS)*, *3*(1), 24–32. https://doi.org/10.37729/jips.v3i1.1146

Sari, K., Wibawa, I. M. C., & Sukmana, A. I. W. I. Y.

(2024). Media Video Animasi untuk Meningkatan Hasil Belajar Siswa pada Pembelajaran IPAS Kelas IV Sekolah Dasar. *Jurnal Penelitian Dan Pengembangan Sains Dan Humaniora*, *8*(2), 187–196. https://doi.org/10.23887/jppsh.v8i2.78479

Shahbaznezhad, H., Dolan, R., & Rashidirad, M. (2021). The Role of Social Media Content Format and Platform in Users' Engagement Behavior. *Journal of Interactive Marketing*, *53*, 47–65. https://doi.org/10.1016/j.intmar.2020.05.001

Siswanto, D. H., Samsinar, Alam, S. R., & Andriyani. (2024). Peran Kompetensi Guru dalam Menerapkan Kurikulum Merdeka. *Jurnal Pendidikan DIDAXEI*, *5*(1), 763–773. Retrieved from https://e-journal.iaknambon.ac.id/index.php/DX/article/view/1042

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Syafriza, A. A., Mustamid, M., & Kusumastutik, N. (2022). Pengembangan Video Interaktif Tema Selalu Berhemat Energi Untuk Mengetahui Kemampuan Literasi SD NU Sleman Yogyakarta. *Edukasi: Jurnal Penelitian Dan Artikel Pendidikan*, *14*(2), 121–132. https://doi.org/10.31603/edukasi.v14i2.8061

Thifalia, N., and Susanti, S. (2021). Produksi Konten Visual dan Audiovisual Media Sosial Lembaga Sensor Film. *Jurnal Common*, *5*(1), 39–55. https://doi.org/10.34010/common.v5i1.4799

Uzorka, A., Namara, S., & Olaniyan, A. O. (2023). Modern technology adoption and professional development of lecturers. *Education and Information Technologies*, *28*(11), 14693–14719. https://doi.org/10.1007/s10639-023-11790-w

Wardani, N. W., Kusumaningsih, W., & Kusniati, S. (2024). Analisis Penggunaan Media Pembelajaran terhadap Hasil Belajar Siswa Sekolah Dasar. *Jurnal Inovasi, Evaluasi Dan Pengembangan Pembelajaran (JIEPP)*, *4*(1), 134–140. https://doi.org/10.54371/jiepp.v4i1.389

Wulandari, Amelia Putri, Annisa Anastasia Salsabila, Karina Cahyani, Tsani Shofiah Nurazizah, Z. U. (2023). Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar. *Journal on Education*, *5*(2), 3928–3936. https://doi.org/10.31004/joe.v5i2.1074

Yuriza, D., Supriadi, S., Zakir, S., Efriyanti, L. (2023). Pengaruh Penggunaan Media Pembelajaran Berbasis Sparkol Videoscribe terhadap Motivasi Belajar Siswa pada Mata Pelajaran TIK Di SDS Jam'iyyatul Hujjaj Bukittinggi. *Jurnal Pendidikan Tambusai, 7*(3), 32187-32196. Retrieved from https://jptam.org/index.php/jptam/article/view/12260