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Development of Interactive Media Based on Lectora Inspire Solar System (SITAYA) to Material to Increase Students Learning Motivation in Science

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Abstract: Success in learning is important, not only influenced by student intelligence, but also by learning environment factors, motivation, learning styles, methods, strategies and learning media, these factors greatly influence student learning outcomes. This study aims to develop and test the feasibility and effectiveness of interactive learning media based on Lectora Inspire, specifically SITAYA (Solar System), in order to enhance the motivation and learning outcomes of sixth-grade students at SDN 4 Honggosoco in the Natural and Social Sciences (IPAS) subject, focusing on the solar system. The method used in this study is research and development, utilising the ADDIE model, which is simplified into five distinct stages. The validation process was conducted by media experts and material experts, resulting in assessments of 80% and 83.92%, respectively. This is supported by the results of student and teacher responses, with a percentage of 88.88% and 96.66%, respectively. Based on the results of the learning motivation questionnaire, it can be concluded that the category is very good, with a percentage of 98.8%. The effectiveness test, conducted using a one-group pretest-posttest design, showed a significant increase in the average score of students, from 42.61 to 83.65. The results of the paired t-test showed a significance value of 0.000 (<0.05), indicating a statistically significant increase. The N-gain calculation of 0.71 indicates a high level of effectiveness. SITAYA media is declared feasible and effective in supporting interactive and meaningful science learning. Additionally, SITAYA media is also highly effective in increasing student motivation and learning outcomes. These findings support the use of Lectora Inspire technology as an innovative solution in science learning at the elementary school level.

Keywords: Interactive Media; Learning Motivation; Lectora Inspire; SITAYA.

Introduction

Education is a fundamental necessity for human life, as it is hoped that through the educational process, individuals can undergo a positive transformation in terms of knowledge, skills, and character. According to Government Regulation Number 57 of 2021, education is defined as a conscious and planned effort to create a learning environment and implement learning activities where students can actively develop their potential to possess spiritual and religious strength, self-control, personality, intelligence, and noble character, as well as the skills needed by society, the nation, and the state. In accordance with Regulation of the Minister of Education and Culture Number 12 of 2025, which regulates Content Standards for early childhood education, primary education, and secondary education, this regulation aims to ensure that the curriculum implemented in educational units meets the competency standards required to improve the quality of education in Indonesia.

Creating a comfortable learning environment is a crucial aspect that needs to be considered in supporting optimal student development during the learning process [1] . Comfort in the learning context encompasses not only physical aspects but also psychological and emotional dimensions, enabling students to actively participate in teaching and learning activities. When students feel comfortable in the school environment, their ability to absorb and understand learning materials is maximized. Thus, learning comfort is a fundamental factor that influences the effectiveness of knowledge transfer from teachers to students and determines the quality of learning outcomes [2] .

Student well-being is an ideal condition that every student hopes for in the learning process [3] . This includes the creation of a learning environment that supports students to feel physically and mentally comfortable, the growth of a sense of belonging to the school, and the provision of adequate space and opportunities for students to develop and demonstrate their potential, both in terms of interests, talents, and skills that they have [4] . Well-being plays a crucial role in laying the foundation for student development at the elementary school level. The aspect of well-being not only supports optimal physical and mental growth but also becomes an important catalyst in achieving academic success in school. Thus, well-being is a key component that connects student readiness to learn with achieving optimal learning outcomes. Student well-being greatly influences student learning motivation [5]. One crucial factor that supports successful learning is the presence of a learning spirit that is systematically managed and designed within students. As a basic principle and the first rule in every learning activity, motivation has a very important position in the educational process. However, in reality, student well-being is often not perceived by students, especially during learning activities. The lack of development of interactive learning media is one of the factors causing low student motivation and learning outcomes [6] .

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Based on field observations at SD Negeri 4 Honggosoco, there are issues related to student well-being that affect student learning motivation. The observation results indicate that student interest and motivation in learning Natural and Social Sciences (IPAS) in grade VI of SD Negeri 4 Honggosoco are still relatively low. Interviews with the sixth-grade homeroom teacher revealed that the problems faced in learning IPAS in this class are related to the breadth of the learning material and the limited time available, which prevents the material from being delivered comprehensively to students. Additionally, teachers often employ lecture methods and occasionally hold discussions. This situation results in the learning process being monotonous and failing to reach optimal levels, which in turn reduces student motivation and enthusiasm for learning. This statement is supported by the results of the questionnaire, which showed that 18 of 23 sixth-grade students were not interested in learning IPAS, and 20 of 23 students expressed unhappiness about participating in the learning. The results of the student needs questionnaire indicate that student motivation in learning IPAS in grade VI of SD Negeri 4 Honggosoco falls into the low category. This low learning motivation has a negative impact on the learning outcomes of sixth-grade students at SD Negeri 4 Honggosoco.

The results of preliminary research conducted by researchers in class VI of SD Negeri 4 Honggosoco showed that in learning activities, teachers are still limited to the use of teaching materials such as teacher books, student books, Student Worksheets (LKS), and learning media such as pictures and text in student books, as well as simple aids available around the school environment. However, in practice, teachers have not developed technology-based media, especially interactive ones, due to time constraints and limited expertise in creating IT-based learning media. The lack of innovation in learning media use can cause students to feel bored and tired, which has a negative impact on their motivation to learn.

Furthermore, the role of instructional media in elementary schools is crucial in supporting the success of the learning process and achieving desired learning objectives. Learning methods also influence student well-being. Learning methods that prioritize active student participation, adequate learning facilities, the availability of diverse learning resources, and the use of engaging media aim to motivate students to make learning more enjoyable. The availability of diverse learning resources creates an engaging and enjoyable learning environment for students. One key component of this is the use of instructional media.

The use of modern technology can be used as an aid in the educational process in the classroom. Learning media is a tool that functions to assist students and increase learning motivation [7] . In addition, learning media encompass various elements that can be utilised by students, including objects and the environment around them, which support the learning process. Given the differences in classroom characteristics, teachers must be cautious in selecting and using engaging media to ensure effective learning. This is crucial for enabling students to concentrate and understand the existing content. By selecting appropriate media, it is hoped that students can obtain information more effectively and easily, thereby improving their understanding and memory of lessons. One form of learning media that can be used is interactive learning media. Lectora Inspire is a software application designed to create interactive learning media for use in the educational process. Lectora Inspire is a multimedia creation program that is suitable for beginners [8] . This software is designed to be easily understood by beginners who want to create interactive media. Therefore, it is not surprising that Lectora Inspire remains functional and continues to release the latest version to date. Interactive learning media produced by Lectora Inspire is available in various formats to suit your needs, such as .exe, HTML, and others. Various levels of education, especially vocational high schools, can utilize Lectora Inspire as a tool for creating interactive learning media.

Previous research that supports this research entitled "Development of Lectora Inspire Based Learning Media to Improve Learning Outcomes of Light and Its Properties" shows that the level of media feasibility based on media expert assessment is in the very feasible category with a score of 91.66%, while based on material expert assessment it is in the very feasible category with a score of 88.46%. The level of significance obtained is 0.004 on a small scale and 0.00 on a large scale, indicating a statistically significant difference. Meanwhile, the level of effectiveness obtained on a small scale is 70%, and on a large scale, it is 62%, which means the media falls into the fairly effective category. Therefore, the Lectora Inspire learning media is very suitable and quite effective for use in learning science, light and its properties. [9]

The study, entitled "Development of Lectora Inspire Multimedia to Improve Critical Thinking Skills in Solving Spatial Story Problems," shows that the assessment results from media experts obtained a score of 82.50%, while the assessment from material experts reached 80.64%, both meeting the good criteria. The assessment of the practicality of Lectora Inspire media yielded an index of ≥ 62.50%, indicating a good category. The results of this study also highlighted a significant increase in critical thinking test scores, which showed that on a small scale, 81% of tests achieved a result of 84% or higher, and on a large scale, this increased to 90%. Based on the results of this study, it can be concluded that the application of Lectora Inspire multimedia is appropriate, easy to implement, and efficient in supporting the mathematics learning process [10]

Based on previous research, interactive learning media developed using Lectora Inspire have demonstrated a positive impact on increasing student learning motivation in learning materials. Therefore, the application of this interactive learning media has great potential to be developed as a learning tool to increase student motivation in the solar system (SITAYA) material for grade VI students at SDN 4 Honggosoco Kudus.

Based on this context, the researcher wishes to develop media through research and development (R&D). This research is entitled “Development of Interactive Media Based on Lectora Inspire Solar System (SITAYA) to Material to Increase Students' Learning Motivation in Science”.

Research Methods

This research employed both qualitative and quantitative methods. The qualitative approach involved interviews, observations, and analysis of needs surveys and

responses to the development of interactive media based on Lectora Inspire. The quantitative approach was used to assess the effectiveness of implementing interactive media based on Lectora Inspire.

The development model used in this study is based on the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The developed learning media were then validated by experts in their respective fields of study and pilot-tested.

The ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) can be applied to the development of learning materials across the cognitive, psychomotor, and affective domains, making it highly relevant for creating learning media.

This research was conducted at SD Negeri 4 Honggosoco in the even semester of the 2024/2025 academic year. The research subjects consisted of two groups: a product trial group and a usage trial group. The product trial group consisted of nine sixth-grade students, selected using a purposive sampling technique. Meanwhile, the usage trial group consisted of 23 additional sixth-grade students from the first group.

Data collection was conducted using test and non-test methods. Test instruments were used to measure improvements in student learning outcomes by comparing pretest and posttest scores. Meanwhile, non-test techniques, including observation, interviews, documentation, and questionnaires, were used to gather supporting information related to the process and reactions to the developed media.

Data analysis was conducted on three main aspects: the feasibility of Lectora Inspire-based interactive media, teacher and student responses, and the effectiveness of the media in increasing learning motivation. Data on feasibility and responses were analyzed descriptively and quantitatively using a percentage approach, using the following formula:

$$\mathrm{NP} = \frac{\mathrm{R}}{\mathrm{SM}} \times 100 \quad [11]$$

Information:
NP = percentage value sought or expected
R = raw score obtained
SM = ideal maximum score of the test in question

The results of the percentage of eligibility and response data are then interpreted into certain categories as follows.

Table 1. Media Eligibility Categories

Presentation	Criteria
76%-100%	Very worthy
51%-75%	Worthy
26%-50%	Quite Decent
0%-25%	Less than worthy

[12]

To test the effectiveness of Lectora Inspire-based interactive media, a normality test was conducted using the Shapiro-Wilk formula, while the comparison of pretest and posttest results was analyzed using a paired sample t-test. Furthermore, improvements in learning outcomes were also analyzed using the N-Gain calculation to measure the extent to which Lectora Inspire-based interactive media contributed to improving students' understanding of the solar system material.

Results and Discussion

This section presents the results of developing interactive learning media based on Lectora Inspire, which include a feasibility test of the designed media and an evaluation of the media's effectiveness in increasing the learning motivation of grade VI students at SDN 4 Honggosoco regarding the solar system. Details of the research results are presented in the following description.

SITAYA Media Development Results

The process of Natural and Social Sciences (IPAS) in grade VI of SDN 4 Honggosoco is still dominated by conventional methods, such as lectures and discussions, with limited use of media in textbooks, Student Worksheets (LKS), and static images. Although teachers occasionally use learning videos from the internet, the content used is often not entirely relevant to the material being taught, especially on the abstract nature of the solar system, causing students to tend to be passive, less motivated, and have difficulty in understanding the concepts of Natural and Social Sciences (IPAS) due to the lack of interactive media that are appropriate to the characteristics of the material.

This condition is exacerbated by teachers' limited time and expertise in developing technology-based and interactive media. However, the use of media that integrates technology, such as Lectora Inspire, has great potential to enhance student well-being, which in turn has a positive impact on learning motivation. In response to this problem, researchers developed an interactive media platform called SITAYA (Solar System), designed to increase students' motivation to learn about Natural and Social Sciences (IPAS). The development of SITAYA media adapts a research and development (R&D) model based on the ADDIE Model, which can be applied in the development of learning materials in the cognitive, psychomotor, and affective domains, making it highly relevant for the development of learning media.

The initial step in developing this media was a needs analysis and problem identification, conducted through observations and interviews with sixth-grade teachers. The analysis revealed that the learning process was still focused on a teacher-dominated approach, and the media used was not yet able to optimally support conceptual understanding.

Based on these findings, researchers designed SITAYA, a technology-based media with interactive features to explain the characteristics of the solar system. This media was developed for digital access, providing flexibility for use both in school and at home, using digital devices such as laptops and smartphones. The display of SITAYA media is as follows in Figures 1, 2, 3, 4, and 5.

The validation stage was conducted by experts, including specialists in media and materials. The suggestions and input provided by the experts will be used to refine the SITAYA media design. After revisions were made, this media was trialled with teachers and ten students to obtain initial feedback. Based on the results of the product trial, both teachers and students gave positive responses to the appearance, interactivity, and integration of the content in

the SITAYA media. The results of the responses from teachers showed a percentage of 96.66%, while students gave a percentage of 88.88%, indicating that the SITAYA media was very suitable for trial use.

Figure 1. SITAYA Media Cover

Figure 2. Menu Page

Figure 3. Material Page

Figure 4. Quiz

Figure 5. SITAYA Media Developer Profile

Next, a trial was conducted using a single-group pretest-posttest design to assess the media's effectiveness in increasing learning motivation. Analysis showed a significant increase in student learning achievement after using SITAYA media. Furthermore, students were more enthusiastic, engaged, and interested in participating in the learning process.

Thus, the development of SITAYA media has been proven to meet the criteria of feasibility and effectiveness in increasing the motivation to learn Natural and Social Sciences (IPAS) related to the solar system material for grade VI students of SDN 4 Honggosoco. It is hoped that this media can provide more innovative, fun, and meaningful learning solutions in supporting the achievement of learning objectives. The feasibility test of media and materials has been made by researchers, containing aspects that are guided by the criteria for selecting learning media based on expert sources: 1) Suitability Aspect; 2) Feasibility Aspect; 3) Completeness Aspect; 4) Development Aspect [13] .

SITAYA Media Feasibility Test Results

Lectora Inspire-based interactive media containing solar system material in Natural and Social Sciences (IPAS) learning was evaluated by material and media experts. The purpose of this test was to evaluate and ensure the media's feasibility for effective use in the learning process. A media feasibility assessment tool for material and media validators was designed and validated by the supervising lecturer. Furthermore, this validation instrument can be used as a reference for assessing the feasibility of media under development.

Validation of the feasibility of the material on interactive media based on Lectora Inspire with the solar system material in science learning was carried out by material expert lecturer Dr. Ipin Aripin, S.Pd.I., M.Pd. The validation results from the material expert lecturer showed a percentage of 84%, indicating that the media is very suitable for use in learning.

The media feasibility component of Lectora Inspire - based interactive media that focuses on the solar system material in Natural and Social Sciences (IPAS) learning has been validated by a media expert, namely Mr Abtadi Tris Hamdani, S.Pd., M.Pd. The validation results from the media expert lecturer showed a percentage of 80%, indicating that Lectora Inspire-based interactive media is highly suitable for educational use.

Table 2. Assessment Results by Material Experts

Rated aspect	Score Maximum	Score obtained	Percentation (%)	Criteria
Suitability Aspect	12	9	75	Worthy
Eligibility Aspect	12	10	83.3	Very Worthy
Eligibility Aspect	20	18	90	Very Worthy
Media Development Aspects	12	11	91.67	Very Worthy
Score	56	47	83.92	Very Worthy

Table 3. Assessment Results by Media Experts

Rated aspect	Score maximum	Score obtained	Presentation (%)	Criteria
Aspect of Suitability	12	9	75	Worthy
Usage Aspects	20	17	85	Very Worthy
Technical Quality Aspects	20	15	75	Worthy
Aspects of Excellence	16	14	87.5	Very Worthy
Total Score	68	55	80	Very Worthy

Based on the validation results from material experts and media experts collectively, this interactive media has met the high eligibility criteria as an effective learning tool for use.

Assessment criteria are based on a theory that emphasizes the importance of adapting learning materials to student characteristics [14] . This is primarily related to the development of students' thinking skills, which aims to make the material easier to understand and apply. Thus, assessment does not only focus on the final result, but also on the learning process that is appropriate to the needs and abilities of individual students.

Previous research that supports this research is a study entitled "Development of Learning Media Using Interactive Media Application Lectora Inspire to Increase Student Learning Motivation" The Lectora Inspire-based media developed showed positive results, with a feasibility score of 81.12%. Validation from material experts yielded a score of 79.62%, indicating a very high level of validity. Meanwhile, the results of the student response questionnaire showed a percentage of 73.67% with an interesting category and an average total percentage of student observation techniques in the affective domain of 80.37, with an A- (very good) predicate and the psychomotor domain of 82.89, with an A- (very good) predicate. Based on the results of the study, it can be concluded that the Lectora Inspire application learning media can increase student learning motivation [14] .

The research entitled "Development of Lectora Inspire-Based Learning Media in Science Subjects to Increase Learning Motivation of Grade VI Students of Hippindo Elementary School, Banjarmasin". The results of the research at the development stage yielded an assessment from media experts with an average score of 94%, placing it in the very feasible category, and from material experts with an average score of 91%, also placing it in the very feasible category. The results of measuring the increase in student learning motivation with the n-gain test obtained 0.36% which can be categorized as moderate. Thus, it can be concluded that Lectora inspire-based learning media in science subjects for grade VI at Hippindo Elementary School, Banjarmasin, is feasible to use and can increase student learning motivation [16] .

Based on previous research conducted by several experts, the media is said to be valid and can be used in the learning process [17] .

SITAYA Media Effectiveness Test Results

The effectiveness of using interactive media based on Lectora Inspire (SITAYA) can be measured through student learning outcomes as reflected in pretest and posttest scores. This research was conducted with sixth-grade students of SDN 4 Honggosoco, comprising a total of 23 students. Pretest scores were obtained before students used interactive media (SITAYA), while posttest scores were collected after students utilized the media in the learning process.

Figure 6. Viewing Learning Videos on SITAYA media

Figure 7. Explanation of Material

Figure 8 . Quiz

Implementing SITAYA media can improve student learning comfort. Student learning comfort, which is influenced by student well-being, is a crucial factor in improving motivation and learning outcomes. The implementation of SITAYA Media is illustrated in Figures 6 and 7. And 8.

The data obtained show that the average pretest score for students was 42.61, while the average posttest score increased significantly to 83.65. This increase indicates a development in students' cognitive abilities after the use of SITAYA media in the learning process. Furthermore, there was also an increase in the number of students who successfully completed their learning. Before the use of the media, no students received satisfactory scores; after the implementation of SITAYA media, the number of students who achieved satisfactory scores increased to 18.

The learning outcomes obtained were then tested for normality using the Shapiro-Wilk test. Pretest and posttest data were declared normally distributed if the significance value was greater than 0.050; conversely, if the significance value was less than 0.050, the data were declared non-normally distributed.

Table 4. Results of the Pretest and Posttest Normality Test

Test of Normality

	Kolmogorov-Smirnov [a]			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Pretest	.106	23	.200*	.980	23	.898
Posttest	.170	23	.083	.925	23	.085

Table 5. Test of Differences in Pretest and Posttest Means

Paired Samples Test

		Pired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	STd. Error Mean	Lowe	Upper			
Pair 1	Pretest Posttest	-41,043	8,921	1,860	-44,901	-37,186	-22,064	22	.000

Table 6. N-Gain Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	23	.35	.92	.7180	.15001
Gain_Percent	23	34.78	92.00	71.7962	15.00101
Valid N (listwise)	23				

Based on the results of the normality test, a significance value of 0.898 was obtained for the pretest data and 0.085 for the posttest data. Because both values are above the significance threshold of 0.05, it can be concluded that the pretest and posttest data are normally distributed. This normal distribution condition serves as the basis for researchers to use parametric statistical analysis, namely by applying a paired sample t-test to test the difference in means.

The effectiveness of interactive media based on Lectora Inspire (SITAYA) on solar system material was analyzed by comparing the average scores between the pretest and posttest results. The paired sample t-test was conducted by the researcher using the SPSS version 25 application, yielding a significant result (2-tailed) of p = 0.000. Referring to the test provisions, if the significance value (2-tailed) is below 0.05, then this indicates a significant difference between learning outcomes before and after treatment (pretest and posttest). Conversely, if the significance value exceeds 0.05, then there is no significant difference between the two data groups [17].

The results of the t-test calculations indicate a significant difference between learning outcomes before and after using interactive media based on Lectora Inspire (SITAYA), suggesting that this media is effective for learning purposes.

Thus, learning comfort is a fundamental factor influencing the effectiveness of knowledge transfer from teacher to student and determining the quality of learning outcomes. Student well-being has a significant impact on student motivation to learn. The results of a motivation questionnaire can provide insight into students' levels of motivation to learn. Based on the results of the learning motivation questionnaire, it can be concluded that learning motivation falls into the very good category, with a percentage of 98.8%. Therefore, the use of learning media, such as interactive media, is one solution to increase learning motivation in students.

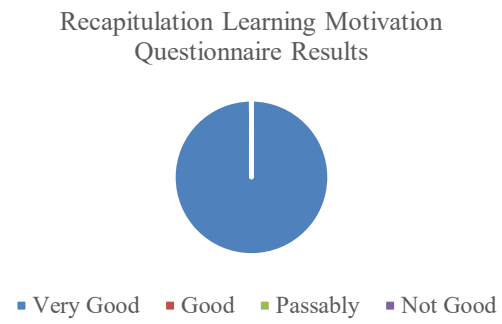

Figure 9 Recapitulation Learning Motivation Questionnaire Results

The Mean (Ngain_Score) value can be seen in the Descriptive Statistics column, with a value of 0.7180. Therefore, the score falls into the High category (see the bottom column). The Ngain_Percentage value indicates that the large group falls into the Fairly Effective category, as its value is 71%.

The next step taken by the researcher was to calculate the normalized gain (n-gain) value based on the pretest and posttest data. The n-gain calculation at the large-scale trial stage revealed an increase in learning outcomes for 23 students at SDN 4 Honggosoco, with an n-gain value of 0.71. The effectiveness of interactive media based on Lectora Inspire (SITAYA) was known based on the increase in student learning outcomes, which were categorized as high, in accordance with the theory [18].

Relevant research that supports the research entitled "Development of Learning Media Based on Lectora Inspire in Science Subjects to Increase Learning Motivation of Grade VI Students of Hippindo Elementary School, Banjarmasin" Based on the results of the study, testing the effectiveness of the media through the t test shows that the significance value (2-tailed) is 0.000, which is below the threshold of 0.05. This indicates a significant difference between the average learning outcomes before and after the application of the media [16] .

Similar research, titled "Development of Interactive Learning Media Using Lectora Inspire to Increase Achievement Motivation of Fourth Grade Students of SD Inpres Oeba 1 Kupang," yielded results showing an average increase calculated using the N-gain test, which produced an N-gain of 83% in the 'effective' category. Based on the analysis of learning outcomes, it can be concluded that the academic performance of all students has increased, which shows that the use of interactive learning media Lectora Inspire is effectively able to increase student motivation to achieve [19] .

The results of the research also support the theory that multimedia can be used as an effective learning medium. According to Mayer in [21] , the use of Lectora Inspire makes it easier to design media from various elements (video, images, animation, text and audio) that suit the needs so that learning is more interesting and effective. In addition, it also provides new experiences in learning and motivates students more [22]. So, it can increase learning interest, student understanding, and minimize students' cognitive load.

This statement is proven by previous research conducted by [23] The use of multimedia as a learning medium has been proven to improve student achievement, learning motivation, and learning outcomes. Based on the study's findings, this is a learning media interactive Lectora Inspire, which has been proven to yield increased results.

Conclusion

Based on the results of the research carried out, it can be concluded that interactive media, developed using Lectora Inspire and called SITAYA, has been successfully developed to support the learning of solar system material in grade VI of SDN 4 Honggosoco Kudus. This media is designed to meet the needs of students and teachers, and features attractive elements such as images and quizzes, which can be accessed flexibly on smartphones and laptops. The results of the feasibility test show that SITAYA received a very decent assessment from media experts (80%), material experts (83.92%), teachers (96.66%), and students (88.88%). In addition to being feasible, this media has also proven effective in increasing learning motivation, as evidenced by the results of the paired t-test ($p < 0.05$) and an increase in the average score of 0.71 (in the high category). Thus, SITAYA is declared feasible and effective for use in science learning related to solar system materials.

Author's Contribution

Adinda Yaniar Triastika contributed to the product development process, analysis, and writing of the article from start to finish. Dewi Nilam Tyas served as the article writing supervisor. This research contributes to improving the quality of education through products developed specifically for the schools selected as research subjects. The researchers also hope that the findings of this study will benefit other educational institutions, allowing them to be applied as references or study materials for further or similar research.

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References

[1] A. Suhendra, F. Rahman, and S. Adi, “Teams games tournaments: A cooperative learning strategy to improve students’ performance.,” *J. Coop. Educ. Internships*, vol. 57, no. 1, pp. 78–98, 2023.

[2] Z. A. Oktaviani and V. Suprapti, “Pengaruh Psychological Well-Being terhadap Stres Akademik Siswa SMA di Masa Covid-19,” *Bul. Ris. Psikol. dan Kesehat. Ment.*, vol. 1, no. 1, pp. 965–975, 2021, doi: 10.20473/brpkm.v1i1.27667.

[3] R. A. Cahdriyana, R. Richardo, U. A. Dahlan, J. R. Selatan, U. A. Ata, and J. B. No, “Apakah konsep PROSPER dapat membangun kesejahteran siswa (

student well-being) di era pandemi Covid-19 ?," *J. Pembang. dan Pendidik. Fondasi dan Apl.*, vol. 9, no. 1, pp. 13–23, 2021, doi: 10.21831/jppfa.v9i1.38230

[4] Z. Amimah, I. Dwijayanti, J. Siswanto, and I. Ismartiningsih, "Efektifitas Pada Pembelajaran Berdiferensiasi Berbantu Multimedia Untuk Mewujudkan Class Well-Being," *Innov. J. Soc. Sci. Res.*, vol. 4, no. 3, pp. 10322–10334, 2024, doi: 10.31004/innovative.v4i3.10319

[5] M. Hasanah and S. Sutopo, "Pengaruh School Well-Being terhadap Motivasi Belajar Siswa di Madrasah Aliyah Ma'arif 7 Sunan Drajat Lamongan," *Ummul Qura J. Inst. Pesantren Sunan Drajat Lamongan*, vol. 15, no. 2, pp. 114–123, 2020, doi: 10.55352/uq.v15i2.163.

[6] P. A. Salzabila, F. Fakhriah, and N. Fajrie, "Development of Scratch-Based Srikandi Media for Indonesian Cultural Heritage in Elementary School: A Preliminary Study," *J. Pijar Mipa*, vol. 20, no. 2, pp. 212–217, 2025, doi: 10.29303/jpm.v20i2.8426.

[7] A. M. A. N. Ramadani, K. C. Kirana, U. Astuti, "Pengaruh Penggunaan Media Pembelajaran Terhadap Dunia Pendidikan (Studi Literatur," *J. Pendidik. Dasar Dan Sos. Hum.*, vol. 2, no. 6, pp. 749–756, 2023, doi: 10.53625/jpdsh.v2i6.5432

[8] R. Dalimunthe, "Development of Interactive Learning Media Based on Lectora Inspire on Excretion System Materials," vol. 8, no. 5, pp. 2159–2167, 2022, doi: 10.29303/jppipa.v8i5.2243.

[9] P. M. Sari and D. N. Tyas, "Development of Lectora Inspire Based Learning Media to Improve Learning Outcomes of Light and Its Properties," *J. Penelit. Pendidik. IPA*, vol. 10, no. 11, pp. 9200–9207, 2024, doi: 10.29303/jppipa.v10i11.7406.

[10] M. Z. Muttaqin, Y. E. S. Tataq, and A. Lukito, "Pengembangan Multimedia Lectora Inspire Untuk Meningkatkan Kemampuan Berpikir Kritis Dalam Menyelesaikan Soal Cerita Bangun Ruang," *J. Cendekia J. Pendidik. Mat.*, vol. 04, no. 02, pp. 495–511, 2020.

[11] A. E. Purwanto, *Metode Penelitian Kuantitatif*. Yogyakarta: Gava Media, 2017.

[12] E. P. Widoyoko, *Teknik Penyusunan Instrumen Penelitian*. Yogyakarta: Pustaka Belajar, 2016.

[13] A. Arsyad, *Media Pembelajaran*. 2011.

[14] A. Kristianto, *Buku Media Pembelajaran*. Surabaya: Bintang Surya, 2016.

[15] V. Aprianto, "Pengembangan Media Pembelajaran Menggunakan Media Interaktif Aplikasi Lectora Inspire Untuk Meningkatkan Motivasi Belajar Siswa," *Digit. Transform. Technol.*, vol. 3, no. 2, pp. 643–653, 2023, doi: 10.47709/digitech.v3i2.3191

[16] A. Rifki and A. H. Utama, "Pengembangan Media Pembelajaran Berbasis Lectora Inspire Pada Mata Pelajaran IPA untuk Meningkatkan Motivasi Belajar Peserta Didik Kelas VI SD Hippindo Banjarmasin," *J-INSTECH J. Instr. Technol.*, vol. 06, no. 01, pp. 73–80, 2025, doi: 10.20527/j-instech.v6i1.15213

[17] R. Kartikaningrum and P. K. Mulyani, "Development of UTAYA : Implementing Snakes and Ladders Media for Contextual Teaching and Learning of Forces in Physics Education," *J. Penelit. Pendidik. IPA*, vol. 10, no. 9, pp. 7018–7029, 2024, doi: 10.29303/jppipa.v10i9.8471.

[18] Nuryadi, T. D. Astutui, E. S. Utami, and M. Budiantara, *Dasar-dasar Statistik Penelitian*. Yogyakarta: Sibuku Media, 2017.

[19] G. Supriyadi, *Statistik Penelitian Pendidikan*. Yogyakarta: UNY Press, 2021.

[20] T. Y. N. Adoe and G. H. Manane, "Pengembangan Media Pembelajaran Interaktif Menggunakan Lectora Inspire Untuk Meningkatkan Motivasi Berprestasi Siswa Kelas IV SD Inpres Oeba 1 Kupang," *J. Pendidik. Teknol. Inf.*, vol. 5, no. 1, pp. 133–143, 2022.

[21] Ismail Rahman, Nurhadifah Amaliyah, Anni Mafruha Amaliyah, Musdalifa, and Dinda Claudia Risal Denggo, "Pengaruh Media Pembelajaran Digital Terhadap Motivasi Belajar Siswa: Kajian Studi Literatur," *J. Pendidik. Dasar Islam*, vol. 2, no. 2, pp. 77–86, 2024, doi: 10.58540/jurpendis.v2i2.818.

[22] F. A. N. P. Dewi, "Pengembangan Media Pembelajaran Interaktif Berbasis Android," *Pendas J. Ilm. Pendidik. Dasar,* vol. 10, no. 03, pp. 1–16, 2025, doi: 10.59562/metrik.v19i2.5441.

[23] Rohatul Fikriyah Safira and D. S. Nahdi, "Keragaman Perangkat Lunak Multimedia Interaktif Untuk Meningkatkan Kualitas Pembelajaran Ipa Sekolah Dasar," *J. MADINASIKA Manaj. Pendidik. dan Kegur.*, vol. 5, no. 2, pp. 68–77, 2024, doi: 10.31949/madinasika.v5i2.7812.