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The effectiveness of experiential learning on students' understanding of science and technology

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ABSTRACT

Learning through the experiential learning model encourages students to experiment dynamically and comprehensively. This research aims to see the effectiveness of the experiential learning learning model. This research uses a quantitative experimental research design as its methodology. The population of this study was fifth-grade students at Gugus Waru Elementary School, Parung District. Random sampling is the sampling strategy used in this research. Data collection techniques include tests, observation, and documentation. SPSS was used for data analysis. Validity, reliability, difficulty level of questions, and differentiation tests are tools used in research analysis. Furthermore, normality, homogeneity, hypothesis testing, N-Gain, and T-tests are prerequisite tests. The research results were concluded from the validation results of 88 material experts and received a very suitable category based on the evidence provided. Media expert validation scored 90 in the very appropriate category, while language validation obtained 64 in the appropriate category. The practical category is represented by the average of all validation findings, which is 80.6%. This makes this guidebook, which experts verified regarding content, language, and media, suitable for use.

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ABSTRAK

Pembelajaran melalui model experiential learning mendorong peserta didik untuk bereksperimen secara dinamis dan komprehensif. Tujuan penelitian ini adalah untuk melihat efektivitas model pembelajaran experiential learning. Penelitian ini menggunakan desain penelitian eksperimen kuantitatif sebagai metodologinya. Populasi penelitian ini adalah peserta didik kelas V SD Gugus Waru Kecamatan Parung. Random sampling merupakan strategi pengambilan sampel yang digunakan dalam penelitian ini. Teknik pengumpulan data menggunakan tes, observasi dan dokumentasi. SPSS digunakan untuk analisis data. Validitas, reliabilitas, tingkat kesukaran soal dan tes pembedaan soal merupakan alat yang digunakan dalam analisis penelitian. Selanjutnya uji normalitas, homogenitas, uji hipotesis, N-Gain, dan uji T merupakan uji prasyarat. Adapun hasil penelitian disimpulkan dari hasil validasi ahli materi sebanyak 88 orang dan mendapat kategori sangat sesuai berdasarkan bukti-bukti yang diberikan. Validasi ahli media memperoleh skor 90 dengan kategori sangat sesuai, sedangkan validasi bahasa memperoleh skor 64 dengan kategori sesuai. Kategori praktis diwakili oleh rata-rata seluruh temuan validasi yaitu sebesar 80,6%. Hal ini menjadikan buku pedoman yang telah diverifikasi oleh para ahli dari segi isi, bahasa dan media ini layak untuk digunakan.

Kata Kunci: *media audio visual; model experiential learning; pemahaman konsep IPAS*

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INTRODUCTION

Providing education requires synchronization, which guides or directs the learning activity process (Agustiana & Asshidiqi, 2021). Thus, the curriculum has a direct link to how education is implemented. The curriculum needs to be modified and improved over time to meet the demands and challenges of the modern world and support the achievement of educational goals. The success of a learning activity can be measured by how well an educational goal is achieved. Therefore, continuous learning exercises must be modified to align with learning objectives. Learning is the support teachers provide students to gain knowledge, develop skills and habits, and build attitudes and beliefs.

Even though they have the same name, social studies, and scientific courses are divided into several chapters. In elementary schools, science is often taught in odd semesters, and social studies in even semesters. The term "natural science" (IPA) refers to a methodical method of studying nature; it uses a discovery process in the form of conceptual understanding and a collection of facts. This shows how science teaching can help students develop their scientific thinking and mindset (Budiarso et al., 2020). Thus, students' science learning outcomes must show their level of knowledge and conceptual understanding (Kurniawan et al., 2020). Developing basic reading skills is a goal of science and technology at the elementary school level. It is a foundation for preparing students for advanced scientific and social science courses. When students study their environment, they perceive social and natural phenomena simultaneously, which helps them get used to paying attention and investigating. This is important as a foundation for students to understand more complex ideas in social studies and science classes.

Natural phenomena are discussed in science classes and arranged methodically based on human observations and experimental findings. Science education should aim to help students understand scientific ideas, not just memorize and retain facts without understanding them (Aen & Kuswendi, 2020). For students to be motivated to study science principles material, learning activities must give them a sense of the value and relevance of studying science. One of the elements that makes learning successful is conceptual understanding. In the cognitive realm of learning objectives, understanding concepts is one step above simply knowing or memorizing. Students' understanding of ideas about events and facts is obtained from their education and experience. Learning achievement is primarily determined by a person's ability to understand concepts. A common problem in science education is a lack of conceptual knowledge, which influences students' ideas and ultimately leads to conceptual cognitive conflicts. A learner must understand a concept in order to be able to combine thoughts, communicate effectively, and understand situations he encounters in everyday life. It will be difficult for students who have difficulty remembering concepts to remember the information they learn, hindering their assessment performance (Safitri et al., 2021).

According to this definition, one of the teaching methods that teachers can use to help students understand the concepts of the material being taught is by communicating the material directly to students and realizing active, student-centered learning (Hendawati & Kurniati, 2017). Students' interest in learning is essential to improve their understanding of the subject and learning effectiveness (Ghifari et al., 2022; Safitri et al., 2021). Their interest in learning determines students' motivation or passion for studying and understanding a subject. Teachers need the ability to produce meaningful and direct learning to increase students' interest in learning activities. Student learning will have greater meaning if it is integrated into enjoyable activities. In addition to engaged teaching, teachers must design active learning for their students to improve conceptual understanding.

Based on the findings of interviews conducted with several teachers in the Waru cluster, students still have difficulty understanding the ideas covered in scientific subjects, especially in terms of categorizing and providing examples of science content. Based on interview findings, teachers sometimes use visual aids

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such as PowerPoint presentations and images to demonstrate topics when carrying out lessons. Teachers also often use students' books as the only source of learning material. This makes it difficult for students to understand scientific concepts and prevents them from having direct experience in the learning process. According to instructors, they rarely apply models or strategies in learning activities that incorporate students' experiences; instead, they often use traditional methods. Students' understanding of science concepts is still relatively low. This is shown by the fact that when asked to explain science concepts in class IV, students are still unable to explain them in their language or with their understanding (Rahayu & Suryani, 2022). Therefore, students should read the book first to understand the subject matter and only regurgitate parts of it.

One aspect that significantly influences students' learning outcomes and understanding of concepts is teacher support during continuous learning (Rahayu & Suryani, 2022). As a result, teachers can use creativity in learning activities. One way to innovate learning activities is to use models that encourage active and interactive learning and increase student participation (Rosyiddin et al., 2023). Teachers can utilize the concept of experiential learning. The experiential learning paradigm involves students actively participating in the concepts they learn and acquiring content. During the learning process, experience is used to help students develop their skills and talents (Kularatne et al., 2022). Learning through the experiential learning model also aligns with 21st-century learning, encouraging students to experiment and explore while learning dynamically and comprehensively (Lone & Kour, 2024). Because the teacher's role in learning activities is to facilitate student observation, thinking, and participation in active learning activities, experiential learning helps make learning situations more meaningful. This is because students gain knowledge and understanding through activities directly related to their school experience.

Because learning is more than just mastering material, experience teaches students to be broader in problem-solving methods. This is because students face various learning problems in class that are part of their educational journey. Long-term experience is the learning process's true goal, not memorizing facts offered as information or learning material. It is hoped that students will find more relevant learning outcomes in this way. Starting with fun activities will increase the effectiveness of using experiential learning methodology. A fun and engaging learning approach will make it easier to achieve learning goals (Magdalena et al., 2021). Audio-visual materials can carry out learning activities that follow the experiential learning model to make students interested in learning. Using audio-visual learning materials influences students' conceptual understanding differently (Kurniawan et al., 2020). The application model can summarize learning through audio-visual material (Aisy & Jupri, 2022). Media use in education is expected to improve the process and be efficient in line with learning objectives.

The experiential learning model increases students' knowledge, understanding, and skills in science subjects. As long as the learning process begins, students become more effective, active, creative, and responsible in learning (Asmahasanah et al., 2023). Furthermore, the experiential learning model can improve student learning outcomes in science subjects, as evidenced by increased scores that reach the KKM. It can be concluded that using the experiential learning model can improve student learning outcomes (Alokafani et al., 2022). The experiential learning model also improves motivation to study physics in high school (Sahlan et al., 2021). Based on the analysis of this research, there is a similarity between variables. Then, the difference lies in the dependent variable, which, in previous research, used learning motivation, while in subsequent research, it used conceptual understanding and learning outcomes in elementary school students. The experiential learning model increases students' learning activeness in science subjects (Wadu et al., 2024). The research results show an influence on student activity in science learning in experimental classes that use the experiential learning model.

Based on the analysis of previous research that the researcher has presented, the researcher will use an experiential learning model assisted by audio-visual media to understand concepts and student learning outcomes in science subjects. The difference between this research and previous research is that this

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research will apply an experiential learning model to science learning using audio-visual media. The dependent variables in this research are understanding concepts and learning outcomes in the cognitive domain of elementary school students. Then, this research will be carried out on the science and science subjects in class V of the independent curriculum. In its implementation, the research method used is a quantitative experimental method with a control class that will apply an experiential learning model without the help of audio-visual media. In the experimental class, an experiential learning model will be applied with the help of audio-visual media. Referring to several previous research results, this research will also examine the impact of an experiential learning approach supported by audio-visual material on understanding science and scientific ideas in class V students at the State Elementary School level, based on a description of the background of the problem.

LITERATURE REVIEW

Experiential Learning

Experiential Learning is learning that is a reflection of students' direct experiences. Experiential Learning focuses on the learning process experienced by each student individually. Experiential Learning is a student-centered learning model with the idea that the best way to learn starts from experience. Experience in learning will be practical if the learning stages, starting from objectives, observation, experimentation, and planning with action, have been implemented. If the process is done well, students will gain new skills, attitudes, and thinking methods to understand learning. In the Experiential Learning model, students learn from actual experience, including thinking and doing. If students are active in it, they will be better at following the learning process because, in this case, students will think actively about what they have learned and how to apply it in real situations, about what they have learned (Hakima, 2020).

The experiential learning model provides insight into the knowledge of concepts, builds skills through actual assignments, and provides feedback and evaluation between the implementation results and what should be done. In the experiential learning model, learning occurs naturally in student work and experience activities, not a transfer of knowledge from teacher to student. Therefore, learning models can be studied that activate students in learning activities and help students gain meaningful learning through authentic experiences such as Experiential Learning (Sagitarini, 2020).

Audio-Visual Media Learning

Audio-visual media is a tool that can present moving images and colors and be accompanied by explanations in the form of writing and sound. Using audio-visual media in the learning process is one of the plans teachers must prepare to produce a more engaging learning process that can motivate students to learn. According to the Big Indonesian Dictionary, audio-visual means things that can be heard and seen, a means of hearing (Serungke et al., 2023).

Audio-visual media combines audio and visuals, referred to as hearing media. This audio-visual will provide an engaging presentation if you use complete and optimal teaching materials for students. Sanjaya believes that audio-visual media provides sound and image elements that can be seen through the five senses, such as video recordings, films, sound slides, etc. Using audio-visual media is one way of learning that can be used in the learning process through absorbing material involving the senses of hearing and sight (Ichsan et al., 2021).

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Understanding Science and Technology Concepts for Elementary School Students

Science and technology are important fields of knowledge in developing the modern world. As a foundation for societal progress, science helps us understand nature and the phenomena around us, while technology helps build practical solutions to various challenges humans face (Tanjung & Mansyur, 2021). Elementary school students must learn science and technology (IPTEK) and basic skills to participate in an advanced, knowledge-based society. Technological developments in the modern era may help teachers learn about a collaborative learning environment (Obielodan et al., 2022).

The importance of introducing science and technology to students at primary school age cannot be overstated. Education at this level lays the foundation for a deeper understanding of the world around them. Primary school students have great potential to absorb new knowledge quickly and enthusiastically, so giving them positive experiences with science and technology at an early stage will influence their interest in these fields in the future (Barlia, 2008; Barus, 2022; Turrayyan, 2021). Educational programs that integrate science and technology in elementary schools are not just about teaching specific facts and theories but also teaching students how to think critically, observe, and experiment. Students can develop high imagination and curiosity levels through an interactive and discovery-based approach. In an era where technology continues to develop rapidly, students need to recognize technology as a tool, not just entertainment. Innovative and responsible use of technology can help increase efficiency and productivity in various aspects of life.

METHODS

This research uses a quantitative experimental research design as its methodology. In controlled settings, an experimental research approach is used to determine how specific therapies affect others, as stated by Sugiyono in a book titled *"Metode Penelitian: Kuantitatif, Kualitatif, dan R&D"*. The following is an explanation of the selected research design.

Table 1. Research Design

	Pre-Test	Treatment	Post-Test
E	O^1	X^1	O^2
K	O^3	X^2	O^4

Source: Abdullah et al., in book "Metodologi Penelitian Kuantitatif"

Information:
E : Experiment Class
K : Control Class
O1 : Initial test before treatment in the experimental class
O2 : The final test after the treatment was given to the experimental class
O3 : Initial test before treatment in the control class
O4 : The final test after treatment was given to the control class
X1 : Treat using an experiential learning model assisted by audio-visual media
X2 : The treatment uses an experiential learning model

An object with specific attributes relevant to research is called a population. The research population was fifth-grade students at SD Cluster 2, comprising six schools in the Sawangan area. Random sampling is a sampling strategy used in this research, namely by selecting participants randomly from the population without considering population strata. Based on the findings of determining the research sample, four research schools were identified and divided into two groups: the experimental group at SDN Waru 1 and the experimental group at SDN Waru 5. The second group served as the control group at SDN Waru Jaya and SDN Waru 3. There were 126 samples from these four institutions for this investigation. Test,

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observation, and documentation methods are the techniques used to collect data in this research. Tests function as a tool to collect information about a person's knowledge and abilities. This research uses a description exam format for the test questions. This type of explanation is used in the question selection process to assess students' understanding of the lesson material.

This test tool is used for the pretest and posttest, and the questions in each test have the same format. In this case, the experimental class received an experiential learning model assisted by audiovisual learning materials, while the control class received an experiential learning model. The first test, the pretest, is given before both groups receive treatment. After the experimental and control classes received treatment, a second test (posttest) was given.

The following data collection tools were used in this study.

1. Concept Understanding Test. Students' understanding of scientific concepts is assessed using concept understanding tests, assignments, or questions they must complete.
2. Documentation. Researchers use documentation, both written and visual notes, to capture every action during the research process.

After the question instrument is created, its validity and reliability are tested using reliable and valid data collection tools. The findings of this research are expected to be reliable. SPSS was used for data analysis. Validity, reliability, question difficulty, and question differentiation tests are tools used in research analysis. Furthermore, normality, homogeneity, hypothesis tests, normalized N-Gain, and T-test (Independent Sample T-test) are prerequisite analysis test components.

RESULTS AND DISCUSSION

This research was carried out in class V of SD Gugus Waru, consisting of four sample schools: SDN Waru 1, SDN Waru 3, SDN Waru 5, and SDN Waru Jaya. Based on the school, they were then divided into two groups, namely the experimental group and the control group. Meanwhile, the experimental classes in this research were SDN Waru 1 and SDN Waru 5. Then, the control classes in this research were SDN Waru 3 and SDN Waru Jaya. This research activity was carried out in seven meetings in each group. The pre-test was carried out at the first meeting between the experimental and control classes. Furthermore, in sessions two to six, the experimental and control classes each applied the experiential learning paradigm with the help of audio-visual materials. Apart from that, the experimental and control classes received post-test questions at the last meeting, namely the seventh meeting. With the help of audio-visual materials, this study tried to test how well fifth-grade elementary school students understand science and ideas related to science.

Guide to the Learning Process with the Experiential Learning Model Assisted by Audio Visual Media

The appropriate method to use based on the existing problem description is the Experiential learning method assisted by audiovisual media. Experiential Learning Theory (ELT) was developed by David Kolb around the early 1980s, which emphasized a holistic learning model in the learning process. In experiential learning, experience has a central role in the learning process. In experiential learning theory, learning is a process where knowledge is created through experience transformation. Experiential learning means learning from experienced activities and reflecting on what has been learned. Experiential is not just listening but more about gathering real-life situations, for example, field trips, role-playing, and participating in games. Experiential learning involves the body, thoughts, feelings, and actions (Darmayoga, 2023).

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An experiential learning paradigm supported by audio-visual material and a prepared guidebook is used to conduct research. Magnetism, electricity, and technology in everyday life are all covered in the class V science and technology learning materials in the learning manual, which includes the stages of implementing learning in fifth-grade elementary school using the syntax of the experiential learning model assisted by audiovisual materials and includes formative evaluation. Professionals have approved this guide to the learning process through an experiential learning model using audio-visual materials. Experts have validated the content, language, and media in the guidebook. The validator of this research material is Dr. Azmi Al Bahij, M.Si., lecturer at Muhammadiyah University, Jakarta. The media validator in this guidebook is Kukuh Setiawan, M.Pd., a postgraduate media expert at Muhammadiyah University, Jakarta, and the language validator in this research is Rifa Nurafia, S.Pd., M.Hum, lecturer at Satya Negara, University of Indonesia. The results of material, language, and media validation tests by experts are presented in **Table 2**.

Table 2. Validation Results by Experts

No	Validation Category	Mark
1	Material	88
2	Media	90
3	Language	64
	Average	80,6%

Source: Research (2024)

The expert guidebook eligibility categories are presented as follows.

Table 3. Feasibility Interpretation

Mark	Category
0%-20%	Not Feasible
21-40%	Not Worth It
41%-60%	Decent Enough
61%-80%	Worthy
81%-100%	Very Worth It

Source: Research (2024)

According to the data in **Table 2**, the material expert validation results were 88 and included in the very appropriate category. Language validation scored 64 in the appropriate category, while media validation carried out by experts received a 90 in the very suitable category. The practical category is represented by the average of all validation findings, which is 80.6% based on **Table 3**. This makes this manual, which experts verified regarding content, language, and media, suitable for use.

The Effectiveness of the Experiential Learning Model Assisted by Audio Visual Media in Understanding Science Concepts

Experimental and control group assessments measured students' conceptual understanding skills. Both before and after therapy, each study group was evaluated. The research findings can be explained as follows:

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Descriptive Statistical Test

In this research, descriptive statistical testing provides an overview of each group for the pre-test and post-test, which serves as evidence for further discussion. The overall picture will show the results of the initial and final conditions after treatment for the experimental and control groups. The results of descriptive statistical testing are presented in **Table 4** as follows.

Table 4. Descriptive Statistics

	N	Minimum	Maximum	Mean
PreTest Eksperimen	67	40	74	53.73
PostTest Eksperimen	67	85	96	90.91
PreTest Kontrol	59	40	72	56.13
PostTest Kontrol	59	79	92	86.57

Source: Research (2024)

Based on **Table 4**, the experimental class got an average score on the pre-test of 53.73, with a minimum score of 40 and a maximum score of 74. Then, with a minimum score of 40 and a maximum score of 72, the control class got an average score of 40 and a maximum score of 72. The group got an average score of 56.13 on the pre-test. After being given treatment in both groups, the post-test score for the experimental class was an average of 90.61, with a minimum score of 85 and a maximum score of 96. The average score was 86.57, with a minimum score of 79, and a maximum score of 92 was achieved in the control class post-test. This shows that the scores before and after the test of the two groups are different from each other.

NGain Test

After students receive treatment, the success of increasing their understanding is assessed using the N-Gain test. The N-Gain test results are presented in **Table 5**.

Table 5. N-Gain Test

Class	N-Gain Average	Category
Eksperimen	80,39	Effective
Control	69,44	Quite Effective

Source: Research (2024)

According to the test results shown by the gain in Table 5, the experimental class obtained an average N-Gain of 80.39 in the effective category. The control group obtained an average N-Gain score of 69.44 in the very successful category.

Independent Sample T-Test

Differences or increases in study group means were ascertained using independent samples t-tests. The n-gain percent finding is the data used for the t-test. Before carrying out the t-test, it is necessary to check the normality of the research data. The normality test on this research data is presented in **Table 6**.

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Table 6. Normality Test

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Class	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
NGain_Persen	Eksperimen	.098	67	.188	.976	67	.213
	Control	.108	59	.087	.965	59	.089

Source: Research (2024)

Based on the n-gain percent normality test for the experimental class in **Table 6**, the Kolmogorov-Mirnov significance is 0.188. The significance value is more significant than 0.05, indicating that the scores are regularly distributed. Thus, the experimental class research data is normal because the significance value 0.188 is more significant than 0.05. The data was then considered normally distributed in the control class after reaching a significance value of 0.87, more significant than 0.05. After ensuring the data is normally distributed, an independent sample t-test must be conducted. The independent sample t-test is presented in **Table 7** as follows.

Table 7. Independent Sample T-Test

		F	**Sig.**	**t**	**df**	**Significance One-Sided p**	**Two-Sided p**
NGain_ Persen	Equal variances assumed	2.020	.158	10.674	124	<,001	<,001
	Equal variances are not assumed.			10.580	115.816	<,001	<,001

Source: Research (2024)

It is clear from **Table 7**, which displays the Independent Sample t-test findings, that the significance value is less than 0.001. At the decision-making level, the estimated t value is considered significant if the significance value is less than 0.05 ($p < 0.05$). Therefore, the t-test findings are significant, as 0.001 is less than 0.05. This may indicate that the way the experiential learning approach is applied in fifth-grade science learning, with the help of audio-visual materials, is significantly different.

The research locations were four elementary schools in Gugus Waru, Parung District, SDN Waru 1, SDN Waru 3, SDN Waru 5, and SDN Waru Jaya. This research aims to examine learning guides that use an experiential learning model with audio-visual materials and to assess how effective learning is when using this model. The research sample consisted of 126 fifth-grade elementary school students. The research was carried out in seven meetings. First, students do a pre-test. Furthermore, two to six students in both class groups received treatment at a meeting: the experimental group received treatment using an experiential learning model with the help of audio-visual media. In contrast, the control group received treatment using an experiential learning model without audio-visual media.

Professionals first verify guidebooks and audiovisual materials. The validation process includes the validation of media, language, and content. With the honorable category, the handbook's validation score has an overall average of 80.6%. Furthermore, the audiovisual material obtained a validation score of 81%, making it suitable for use as learning material in this research.

Before being verified using SPSS version 29, the pre-test and post-test questions were tested on 20 fifth-grade elementary school students. The results show that the question is considered valid. To find out whether the pre-test and post-test questions are consistent if evaluated repeatedly, a reliability test is then

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carried out. The reliability test findings on the pre-test questions on conceptual understanding were 0.944, which was in the very high-reliability category. For the post-test questions, the reliability results were 0.946, which were included in the same group.

The questions in the pre-test and post-test were then checked for difficulty level and ability to differentiate them. All pre-test and post-test question difficulty scores were in the medium range, ranging from 0.58 to 0.70. Eleven questions in the relatively good category were obtained from the differentiating power test in the post-test questions. In comparison, thirteen questions in the relatively good category and one in the good category were obtained from the pre-test questions. There were three questions in the good category. In this investigation, the homogeneity test yielded a significance level of 0.375. Because 0.375 is higher than 0.05, it is classified as homogeneous. Thus, the study population data can be considered entirely homogeneous.

Based on the findings of the descriptive analysis, each indicator of conceptual understanding in the post-test has increased, and overall understanding of ideas has increased after treatment compared to before treatment in the pre-test. The reason is that this treatment uses an immersive learning paradigm with the help of audio-visual materials, which can involve students and give them direct experience in learning tasks. In addition, using audio-visual materials can help attract and focus students' attention when explaining information so that they understand it more efficiently and also support students and attract teachers to learn something new in order to conduct the efficiency and the effectiveness of learning (Aliyyah et al., 2021; Ramadhan et al., 2021).

The effectiveness of the experiential learning paradigm with audio-visual assistance was evaluated using the n-gain test. The n-gain test results for the experimental group showed an average of 80.39 in the effective category, while in the control group, the average was 69.44 in the quite effective category. This shows that using an experiential learning approach with audio-visual support, compared to an approach without audio-visual support, is more successful in increasing students' conceptual understanding. Using audiovisual media can increase students' understanding of a topic because it increases their interest in learning and prevents them from becoming disinterested quickly (Suhaemi et al., 2020).

In this study, differences or increases in study group means were ascertained using independent samples t-tests. Before revealing the t-test, the research data is first checked for normality. The results showed that the data was normally distributed, with a significance level of 0.087 in the control and 0.188 in the experimental classes. Meanwhile, the t-test results showed a significant difference between science learning for fifth-grade elementary school before and after implementing the experiential learning model assisted by audio-visual media, with a significance of <0.001, less than 0.05.

The presentation of these findings shows that the use of the audio-visual assisted experiential learning model has succeeded in increasing the understanding of science and science concepts in fifth-grade elementary school students, and there is an actual increase or difference between the application of the experiential learning model. Model and before and after. Influence of the experiential learning model on motivation and understanding of physics concepts. Their findings show that using the experiential learning model at the Jember Pharmacy Vocational School significantly increases understanding of physics concepts compared to the direct learning model (Wahyuningsih et al., 2021).

After implementing the experiential learning model with the help of audio-visual materials, students' understanding of a topic increases because this model provides direct experience in each lesson. Students can gain more talents, abilities, and increased thinking power from their educational experiences (Alokafani et al., 2022). An experiential learning paradigm can help students become more responsible for their learning activities and motivate them to think, investigate, ask questions, make decisions, and apply what they have learned (Mutmainah et al., 2019). These exercises significantly increase students' learning motivation (Kong, 2021).

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Students can better integrate new experiences with previous knowledge through direct learning activities, resulting in better learning outcomes (Presthold, 2018). Experimental learning can help students understand learning activities because, in the process, students directly integrate their intellectual abilities with their experiences to achieve improved learning outcomes (Nurunnabi et al., 2022). To create motivation and improve students' cognitive, emotional, and psychomotor outcomes, the experiential learning model uses stages that involve direct experience in the learning process (Prastawa et al., 2019). Student participation in a learning experience, reflective thinking, and direct application of learning concepts are important factors that improve learning outcomes when the experiential learning paradigm is applied (Adib, 2024).

To help students better understand the science information presented in the experimental class, audiovisual materials were used to help carry out this research. Audio-visual material can improve students' understanding of lessons and make learning content easier (Esposito et al., 2024). The use of audio media can not only make the teaching and learning process easier to understand but also more effective and practical. Audio-visual media devices can ensure the complexity of the material is revealed, while the media can be used as an intermediary to aid content ambiguity.

CONCLUSION

The following conclusions were obtained based on the results of the research that has been carried out. Professionals have approved this guide to the learning process through an experiential learning model using audio-visual materials. Experts have validated the content, language, and media in the guidebook. The validation results from material experts were categorized as appropriate based on the evidence provided. Media expert validation was a very appropriate category, while language validation was in the appropriate category. The average of all validation findings represents the practical category. This makes this manual, which experts verified regarding content, language, and media, suitable for use. Based on the findings of the descriptive analysis, each indicator of conceptual understanding in the post-test increased, and overall understanding of ideas increased after treatment compared to before treatment in the pre-test. The reason is that this treatment uses an immersive learning paradigm with the help of audio-visual materials, which can involve students and give them direct experience in learning tasks.

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