

The Role Of Pictures And Videos In The Learning Independence Of Elementary School Students

Juarni Siregar¹, Wa Ode Riniati², Firman Aziz³, Devin Mahendika⁴, Dahlan Abdullah⁵

¹Universitas Nusa Mandiri, Jl. Kramat Raya No.18, RW.7, Kwitang, Kec. Senen, Kota Jakarta Pusat, Daerah Khusus Ibukota Jakarta

²Universitas Muhammadiyah Buton, Batupoar, Jl. Betoambari No.36, Lanto, Kota Bau-Bau, Sulawesi Tenggara

³Universitas Pendidikan Indonesia, Jl. Dr. Setiabudi No.229, Isola, Kec. Sukasari, Kota Bandung, Jawa Barat

⁴Universitas Andalas, Limau Manis, Kec. Pauh, Kota Padang, Sumatera Barat

⁵Universitas Malikussaleh, Blang Pulo, Kec. Muara Satu, Kota Lhokseumawe, Aceh

juarni.jsr@nusamandiri.ac.id

Abstract

This study demonstrates that the advancement of technology has a significant impact on the use of images and videos as learning material, enhancing accessibility, interactivity, visual quality, and learning efficacy/efficiency. This study's objective is to examine the role of image and video elements in learning media that promote student independence. The research will give information on the effect of the utilization of images and videos on the independent learning of primary school children. Give information on how the usage of visuals and videos can boost the connection between information and elementary school students' comprehension. Utilizing the process of a literature review, the research gives recommendations on the use of images and videos to help students comprehend the subject matter, boost learning motivation, facilitate information storage, and foster creativity. Students' learning independence can be maximized by implementing techniques such as scaffolding, problem-based learning, inquiry-based learning, project-based learning, flipped classroom, and game-based learning. More research is required to analyze the efficacy of the use of images and videos, students' preferences for learning media, the adoption of optimization strategies, and the significance of images and videos in promoting primary school students' learning independence.

Keywords: Learning Independence, Images and Videos, Learning Media, Technology Development, Material Visualization

Abstrak

Penelitian ini menunjukkan bahwa perkembangan teknologi sangat mempengaruhi pemanfaatan gambar dan video sebagai media pembelajaran, meningkatkan aksesibilitas, interaktivitas, kualitas visual, dan efisiensi/efektivitas pembelajaran. Tujuan penelitian ini adalah untuk mengetahui peranan unsur gambar dan video dalam media pembelajaran yang dapat membantu kemandirian siswa dalam belajar. Manfaat penelitian yaitu memberikan informasi tentang peran penggunaan gambar dan video terhadap kemandirian belajar siswa sekolah dasar, Memberikan informasi tentang bagaimana penggunaan gambar dan video dapat membantu meningkatkan keterampilan siswa dalam memahami konsep yang rumit, Memberikan informasi tentang bagaimana penggunaan gambar dan video dapat membantu memperkuat hubungan antara informasi dan pemahaman siswa sekolah dasar. Menggunakan metode penelitian literatur study maka pada penelitian menghasilkan rekomendasi tentang pemanfaatan Gambar dan video juga membantu siswa memahami materi pelajaran, meningkatkan motivasi belajar, mempermudah penyimpanan informasi, dan menunjang kreativitas. Teknik-teknik yang dapat diimplementasikan seperti scaffolding, problem-based learning, inquiry-based learning, project-based learning, flipped classroom, dan game-based learning dapat memaksimalkan peran gambar dan video dalam kemandirian belajar siswa. Saran penelitian selanjutnya diperlukan untuk mengevaluasi efektivitas pemanfaatan gambar dan video, preferensi siswa terhadap media pembelajaran, implementasi teknik-teknik optimisasi, dan peran gambar dan video dalam mendukung kemandirian belajar siswa sekolah dasar.

Kata Kunci : Kemandirian Belajar, Gambar dan Video, Media Pembelajaran, Perkembangan Teknologi, Visualisasi Materi

Copyright (c) 2023 Juarni Siregar, Wa Ode Riniati, Firman Aziz, Devin Mahendika, Dahlan Abdullah

Corresponding author: Juarni Siregar

Email Address: juarni.jsr@nusamandiri.ac.id (Jl. Betoambari No.36, Lanto, Kota Bau-Bau, Sulawesi Tenggara)

Received 18 March 2023, Accepted 24 March 2023, Published 24 March 2023

INTRODUCTION

Education is one of the most crucial factors in preparing children for the future. For this reason, the achievement of quality education is contingent upon the accuracy with which learning media are chosen (Abdullah, Poetri, et al., 2023; Faiz & Kurniawaty, 2022). In order to promote learning independence and the development of learning technology, students must get enough supervision, support, and opportunities to study and acquire skills they will need in their social lives (Kamaruddin et al., 2022; Maemunawati & Alif, 2020).

In this technological era, visual media such as images and videos are widely used in various ways, including in the learning process. Especially for elementary school students, who are still in the stage of developing their visual power and imagination, images and videos are very useful in helping to understand the subject matter (Abdullah, Sastraatmadja, et al., 2023; Fauzi et al., 2023).. The accuracy of learning media selection can support teachers in delivering material, as a result the learning and teaching process becomes more effective and the material explained can be understood thoroughly by students. As a result, students can receive learning material well so that learning outcomes can be maximized (Abidin et al., 2023; Arifin et al., 2023; Musa et al., 2023; Setiyawan, 2020).

Media Images have the ability to convey information and ideas easily and quickly. Pictures can help students understand abstract concepts and visualize ideas that are difficult to understand. By using pictures, students can visualize the process or concept being studied, thereby facilitating the learning process. In addition, pictures can also help students understand the interrelationships between subject matter and help them remember the material better (Agnesiana et al., 2023; W. Riniati, 2022). Meanwhile, video media also has an equally important role in the teaching and learning process (Siregar et al., 2019). Videos give students access to more lively and interactive visualizations of course material. Videos can help students understand complex processes and visualize difficult ideas (Aziz & Fathiyaturrizqi, 2016). In addition, videos can also help students understand concepts thoroughly and give them access to various sources of information such as practical demonstrations, presentations, and others.

The role of pictures and videos is very important in the process of independent student learning and helps students understand the subject matter better. Both of these media give students access to information and visualizations that are more lively and interactive, helping them understand abstract concepts and facilitating the self-learning process. Therefore, it is important for teachers and instructors to utilize images and videos in the learning process so that students can gain a better understanding and have more fun learning the subject matter. (Saryanto et al., 2023). Learning independence is an important part of the teaching and learning process (Livana et al., 2021; W. O. Riniati & Satriana, 2022; Sudipa et al., 2022). Independent learning helps students to understand the subject matter better and facilitates the independent learning process. By using pictures and videos in

the learning process, students can understand the subject matter better and facilitate the independent learning process. Images and videos can help students understand course material better and facilitate self-study by helping them visualize ideas that are difficult to understand.

By utilizing pictures and videos, students can gain a better understanding and have more fun learning the subject matter. This will help them achieve better results in studying and strengthen their motivation to continue learning (Lestari et al., 2023; Ni'mah et al., 2018; Udayana et al., 2022). In addition, by utilizing images and videos, teachers and instructors can also provide students with access to various sources of information and help them understand the subject matter better. So the purpose of this study was to determine the role of image and video elements in learning media that can help students' independence in learning. The benefits of the research are providing information about the role of the use of images and videos in the learning independence of elementary school students, providing information about how the use of images and videos can help improve students' skills in understanding complex concepts, providing information about how the use of images and videos can help strengthen the relationship between information and understanding of elementary school students.

METHODS

The research method uses literature study, which is a research method that collects and analyzes information from sources such as books, journals and other documents related to the role of pictures and videos in the independent learning of elementary school students. The initial process carried out an analysis of references related to the topic about the role of images and videos in supporting the independent learning of elementary school students, after that carried out data synthesis and made analysis conclusions. (Sudipa et al., 2023; Sugiyono, 2019; Sutrisno et al., 2023).

RESULTS AND DISCUSSION

Literature Review Related to the Role of Images and Videos in Learning

On research by (Adliani & Wahab, 2019) explained that the learning media used is video which is everything that allows audio signals to be combined with sequential moving images. Video programs can be used in learning programs because they can provide unexpected experiences to students, besides that video programs can also be combined with animations and speed settings to demonstrate changes from time to time. Video's ability to visualize material is very effective in helping teachers convey dynamic material. Material that requires visualization that demonstrates things such as certain motor movements, facial expressions, or certain environmental conditions, the delivery of material will be better if it is presented through the use of video technology (Kartiko et al., 2022). If it is related to learning, learning videos are audiovisual media that help students understand

information conveyed by moving images followed by appropriate sound to achieve learning objectives.(Nurfadhillah et al., 2021).

The use of images and videos in the learning process can help students understand the subject matter better and strengthen their motivation to learn(Hanif, 2020). In this study, students were given assignments to learn material with the help of pictures and videos, and the results showed that students who used pictures and videos got better results than students who did not use pictures and videos.(Kamelia, 2019).

On research(Sundari, 2013)it was explained that image and video media are the most commonly used media, which are general topics that can be understood and enjoyed everywhere. Image media is a tool that can be used to deliver or convey messages in the form of knowledge to students so that learning objectives can be achieved.

Research by(Buyukalan & Altinay, 2018)shows that the use of video in the learning process can help students understand subject matter better and strengthen their independent learning. In research(Amzalag, 2021), students are given assignments to learn material with the help of videos, and the results show that students who use videos get better results than students who do not use videos.

Research by(Kalyani & Rajasekaran, 2018; Kartinah et al., 2018)demonstrated that visual aids can help students remember information better and strengthen their understanding of abstract concepts. Students can learn abstract concepts with the help of pictures and videos, and the results show that students who use visual media get better results than students who do not use visual media(Fahmi et al., 2019).

Research by(Shabiralyani et al., 2015)shows that the use of visual aids in the learning process can help improve students' skills in understanding complex concepts. Students can learn complex concepts with the help of pictures and videos so they can maximize learning outcomes(Mora et al., 2020).

The results from a review of previous research literature show that the use of images and videos in the learning process can help students understand subject matter better, strengthen their independent learning, and increase their motivation and skills in understanding complex concepts.

The relationship between learning media that utilizes images and videos with technological developments

Technological developments are very influential in learning media that utilize images and videos. Following are some of the links between technological developments and learning media that utilize images and videos:

1. Increased accessibility: Technological developments such as the internet and mobile devices make learning media that utilize images and videos more accessible to students, so they can study subject matter anytime and anywhere(Arfian et al., 2022; Prayitno et al., 2020).

2. Increased interactivity: Technological developments such as interactive learning software allow learning media that utilize images and videos to be more interactive and fun for students (Febriawan et al., 2018).
3. Improved visual quality: Technological developments such as cameras and video editing software make learning media that utilize images and videos more engaging and reinforce students' understanding.
4. Increasing efficiency and effectiveness: Technological developments such as learning software that integrates images and videos make learning media more efficient and effective in helping students understand subject matter.

Technological developments have a very important role in the development of learning media that utilize images and videos, so that students can take advantage of this learning media to understand subject matter better and strengthen their learning independence.

Utilization of Images and Videos as Visual Media for Learning Elementary School Students

Learning media that utilize images and videos have a close relationship with the visualization of material in the independent learning efforts of elementary school students. The following are some links between image and video learning media and material visualization in elementary school students' independent learning efforts: Improving understanding: Images and videos can help students visualize material and understand concepts better, so they can learn more independently (Kosilah et al., 2022). Increase motivation to learn: Interesting and interactive images and videos can increase students' motivation to learn, so that they are more interested in taking lessons and learning more independently. Make information retention easier: Pictures and videos can help students retain information and remember concepts better, so they can learn more independently (Bali et al., 2021). Supports creativity: The use of images and videos can help students explore their creativity and understand the material better, so they can learn more independently. Thus, learning media that utilize images and videos have a very important role in supporting the visualization of material and the independent learning efforts of elementary school students. This learning media can help students understand concepts better, increase their motivation and creativity, and make it easier to store information.

The Role of Images and Videos in Supporting the Independent Learning of Elementary School Students

In reality, the elements of images and videos are very helpful as learning media, so that they become visualization media in learning. In practice students and teachers can benefit from the learning process, namely Helping to understand the subject matter: Pictures and videos can help students understand the subject matter better because they can visualize concepts and reinforce their understanding. Increase motivation to learn: Images and videos can help increase students' motivation to learn because they are more fun and engaging than text alone (I. N. A. S. Putra, 2021; Setiawan et

al., 2021; Studi et al., 2022). Help remember information: Pictures and videos can help students remember information better because they reinforce the link between information and understanding. Increase independent learning: Images and videos can help students learn independently because they can help students understand the subject matter better and strengthen their motivation to learn (Adnyana et al., 2019; I. N. T. A. Putra et al., 2021). Help understand abstract concepts: Pictures and videos can help students understand abstract concepts better because they help visualize complex concepts. Improve complex concept comprehension skills: Images and videos can help students understand complex concepts better and improve their skills in understanding complex concepts.

Techniques or methods that can be used to optimize the role of images and videos in the independent learning of elementary school students

This research can recommend techniques that can be applied to elementary schools in maximizing the use of images and videos in supporting student learning independence in elementary schools.

1. Scaffolding: This technique involves using pictures and videos to help students understand new concepts and make transitions from simpler to more complex concepts.
2. Problem-based learning: This technique involves using pictures and videos to help students solve problems and understand concepts through problem solving (Kartini & Putra, 2021; Sutrisno et al., 2017).
3. Inquiry-based learning: This technique involves using pictures and videos to help students find and explore information and understand concepts through discovery and exploration.
4. Project-based learning: This technique involves using pictures and videos to help students understand and practice concepts through hands-on projects.
5. Flipped classroom: This technique involves using pictures and videos to help students study course material before class and discuss concepts and solve problems in class (Chen Hsieh et al., 2017).
6. Game-based learning: This technique involves using pictures and videos to help students understand and practice concepts through interactive games (Natalia et al., 2019).

By incorporating these strategies into the learning process, students can utilize visuals and videos to gain a deeper comprehension of the material, increase their motivation and learning independence, and enhance their ability to comprehend complex ideas.

CONCLUSION

The conclusion of the study is that technological advancement has a significant impact on the use of images and videos as learning material. Technological advances improve accessibility, engagement, visual quality, and learning efficiency/effectiveness. Pictures and videos help students comprehend the topic, enhance their drive to learn, facilitate information retention, and foster their creativity. Techniques such as scaffolding, problem-based learning, inquiry-based learning, project-based learning, flipped classroom, and game-based learning can optimize the role of images and

videos in the learning independence of primary school pupils. There are several suggestions for future research on the role of images and videos in the learning independence of elementary school students, including evaluating the effectiveness of the use of images and videos in learning by comparing the learning outcomes of students who use images- and video-based learning media with those of students who do not use these media.

REFERENSI

- Abdullah, D., Poetri, A. L., Saputra, N., & Al Haddar, G. (2023). The role of parent-teacher communication for improving children's achievement. *Cendikia: Media Jurnal Ilmiah Pendidikan*, 13(3), 482–488.
- Abdullah, D., Sastraatmadja, A. H. M., Lestari, N. C., Saputra, N., & Al Haddar, G. (2023). Implementation of youtube as a learning media in the new normal era. *Cendikia: Media Jurnal Ilmiah Pendidikan*, 13(3), 476–481.
- Abidin, D., Mayasari, N., Muamar, A., Satria, E., & Aziz, F. (2023). DEVELOPMENT OF ANDROID-BASED INTERACTIVE MOBILE LEARNING TO LEARN 2D ANIMATION PRACTICE. *Jurnal Scientia*, 12(01), 138–142.
- Adliani, S., & Wahab, W. S. A. (2019). Pemanfaatan video untuk meningkatkan keterampilan berbicara siswa sekolah dasar. *Prosiding Seminar Nasional Pendidikan Bahasa Dan Sastra Indonesia II*, 2, 141–145.
- Adnyana, I. N. W., Suharsono, N., & Warpala, I. W. S. (2019). Pengembangan Multimedia Interaktif Berbasis Self Regulated Learning untuk Mata Kuliah Videography dan Broadcasting di STMIK STIKOM Indonesia. *Jurnal Teknologi Pembelajaran Indonesia*, 7.
- Agnesiana, B., Susanto, S., Mahendika, D., Rumfot, S., & Sukmawati, E. (2023). The Analysis of Teacher Efforts to Developing Students Interpersonal and Intrapersonal Intelligence in Learning Activities. *Journal on Education*, 5(4), 11661–11666.
- Amzalag, M. (2021). Parent attitudes towards the integration of digital learning games as an alternative to traditional homework. *International Journal of Information and Communication Technology Education (IJICTE)*, 17(3), 151–167.
- Arfian, A., Mustomi, D., & Siregar, J. (2022). ANALYSIS OF INFORMATION SERVICES FOR TEACHERS AND STUDENTS DENGAN MODEL Delone and McLean. *Technologia: Jurnal Ilmiah*, 13(3), 250–258.
- Arifin, A., Mashuri, M. T., Lestari, N. C., Satria, E., & Dewantara, R. (2023). Application of Interactive Learning Games in Stimulating Knowledge About Object Recognition in Early Childhood. *Educenter: Jurnal Ilmiah Pendidikan*, 2(1).
- Aziz, F., & Fathiyaturrizqi, F. (2016). Using Movie to Improve Students' Narrative Writing Skill. *Ninth International Conference on Applied Linguistics (CONAPLIN 9)*, 207–210.
- Bali, M. M. E. I., Musthofa, B., Sulistiani, I. R., Dewi, M. S., Baharun, H., & Abdullah, D. (2021).

- The Effect of Quipper School Assisted Blended Learning (QSBL) on Student Motivation and Interest in Learning. *Journal of Physics: Conference Series*, 1899(1), 12154.
- Buyukalan, S. F., & Altinay, Y. B. (2018). Views of Primary Teachers about Homework (A Qualitative Analysis). *Journal of Education and Training Studies*, 6(9), 152–162.
- Chen Hsieh, J. S., Wu, W.-C. V., & Marek, M. W. (2017). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning*, 30(1–2), 1–21.
- Fahmi, F., Setiadi, I., Elmawati, D., & Sunardi, S. (2019). Discovery learning method for training critical thinking skills of students. *European Journal of Education Studies*.
- Faiz, A., & Kurniawaty, I. (2022). Urgensi Pendidikan Nilai di Era Globalisasi. *Jurnal Basicedu*, 6(3).
- Fauzi, A. A., Kom, S., Kom, M., Budi Harto, S. E., MM, P. I. A., Mulyanto, M. E., Dulame, I. M., Pramuditha, P., Sudipa, I. G. I., & Kom, S. (2023). *PEMANFAATAN TEKNOLOGI INFORMASI DI BERBAGAI SEKTOR PADA MASA SOCIETY 5.0*. PT. Sonpedia Publishing Indonesia.
- Febriawan, A. C., Siregar, J., & Cahyadi, C. (2018). Program Animasi Interaktif Pengenalan Kebudayaan Indonesia. *IV* (2), 119–124.
- Hanif, M. (2020). The Development and Effectiveness of Motion Graphic Animation Videos to Improve Primary School Students' Sciences Learning Outcomes. *International Journal of Instruction*, 13(3), 247–266.
- Kalyani, D., & Rajasekaran, K. (2018). Innovative teaching and learning. *Journal of Applied and Advanced Research*, 3(1), 23–25.
- Kamaruddin, I., Hapsari, S., Yunarti, S., Sarumaha, Y. A., Lestari, N. C., & Aji, S. P. (2022). *Pengantar dan Konsep Ilmu Pendidikan*. CV Rey Media Grafika.
- Kamelia, K. (2019). Using video as media of teaching in English language classroom: expressing congratulation and hopes. *Utamax: Journal of Ultimate Research and Trends in Education*, 1(1), 34–38.
- Kartiko, A., Sya'roni, M., Karim, A., Siregar, J., Dharmawan, D., Zuana, M. M. M., & Agustina, S. (2022). The Effect of Organizational Commitment and Organizational Citizenship Behavior (OCB) on Teacher Job Satisfaction at SMAN 1 Bangsal Mojokerto. *Resmilitaris*, 12(4), 156–171.
- Kartinah, K., Prasetyowati, D., Sutrisno, S., & Haryan, E. (2018). Analysis of Mathematical Communication Ability of Junior High School Students in Learning using Three-Dimensional Teaching Materials. *International Journal of Innovative Science and Modern Engineering (IJISME)*, 5(9), 7–11.
- Kartini, K. S., & Putra, I. N. T. A. (2021). Pengembangan Media Pembelajaran Interaktif Berbasis Android Pada Materi Hidrokarbon. *Jurnal Pendidikan Kimia Undiksha*, 5(1), 37–43.
- Kosilah, K., Neeke, A., Akbar, A., & Riniati, W. O. (2022). MENINGKATKAN PEMAHAMAN MEMBACA TEKS MENGGUNAKAN MEDIA CERITA BERGAMBAR PADA SISWA

- SEKOLAH DASAR. *Jurnal Cakrawala Ilmiah*, 2(1), 275–282.
- Lestari, N. C., Hidayah, Y., & Zannah, F. (2023). Penerapan Metode Pembelajaran Permainan Edukatif Terhadap Hasil Belajar IPA di SDN Sungai Miai 7 Banjarmasin. *Journal on Education*, 5(3), 7095–7103.
- Livana, P. H., Rokhmah, E. A., Rahayu, T. P., Camalin, D. K., Lestari, D., Basthomi, Y., Mubin, M. F., Aziz, F., & Hasanah, U. (2021). Anxiety Level of High School Students In Online Learning in Kendal, Central Java, Indonesia. *International Journal of Nursing Critical Care*, 7(1), 23–27.
- Maemunawati, S., & Alif, M. (2020). *Peran guru, orang tua, metode dan media pembelajaran: strategi kbm di masa pandemi covid-19*. 3M Media Karya.
- Mora, H., Signes-Pont, M. T., Fuster-Guilló, A., & Pertegal-Felices, M. L. (2020). A collaborative working model for enhancing the learning process of science & engineering students. *Computers in Human Behavior*, 103, 140–150.
- Musa, M., Arifin, A., Sukmawati, E., Zulkifli, Z., & Mahendika, D. (2023). The Relationship between Students' Spiritual and Emotional Intelligence with Subjects Learning Outcomes. *Journal on Education*, 5(4), 11729–11733.
- Natalia, S. A. M. K. D., Aditya, I. G. A., & Putra, I. N. A. S. (2019). EDUCATION GAME IN ENGLISH LEARNING CENTER OF ENGLISH IS EASY. *Jurnal Nawala Visual*, 1(2), 102–107.
- Ni'mah, S., Ulimaz, A., & Lestari, N. C. (2018). Penerapan Bahan Ajar Berbasis Inkuiri Terbimbing Terhadap Pemahaman Konsep Biologi Siswa SMP Di Banjarmasin Barat. *Jurnal Biotek*, 6(2), 120–130.
- Nurfadhillah, S., Cahyani, A. P., Haya, A. F., Ananda, P. S., & Widyastuti, T. (2021). Penerapan Media Audio Visual Berbasis Video Pembelajaran Pada Siswa Kelas Iv Di Sdn Cengklong 3. *PANDAWA*, 3(2), 396–418.
- Prayitno, E., Siregar, J., Dewi, Y. N., Bachri, C., Indriyani, L., & Ma'arif, S. (2020). Use Case Points (UCP) with 3 Point in Program Evaluation and Review Technique (PERT) to Estimate Effort Software. *Journal of Physics: Conference Series*, 1641(1), 12008.
- Putra, I. N. A. S. (2021). Perancangan Media Interaktif Pengenalan Gamelan Selonding Berbasis Android. *Jurnal Desain Komunikasi Visual Asia*, 4(1), 1–16.
- Putra, I. N. T. A., Kartini, K. S., Putra, P. S. U., Adnyana, I. N. W., & Pande, N. K. N. N. (2021). Design and Development of Interactive Media Application Based on Android Case Study of Hydrocarbon Chemical Lesson Materials. *2021 6th International Conference on New Media Studies (CONMEDIA)*, 113–117.
- Riniati, W. (2022). MENINGKATKAN KETERAMPILAN BERCERITA DENGAN MENGGUNAKAN MEDIA GAMBAR SISWA KELAS IV SEKOLAH DASAR. *TAKSONOMI: Jurnal Penelitian Pendidikan Dasar*, 2(1), 57–64.

- Riniati, W. O., & Satriana, S. (2022). Meningkatkan Hasil Belajar Membaca Menggunakan Media Papan Flanel Huruf Lambang Bunyi Vokal dan Konsonan Pada Siswa Sekolah Dasar. *EDUKATIF: JURNAL ILMU PENDIDIKAN*, 4(3), 3441–3446.
- Saryanto, S., Saadillah, A., Mutmainnah, M., Mahendika, D., & Astuti, E. D. (2023). The Analysis of Lecturers Information Literacy Skill to Support Competence in Teaching Learning Activities. *Journal on Education*, 5(4), 10754–10762.
- Setiawan, I. N. A. F., Adnyana, I. N. W., & Aditama, P. W. (2021). Design of Agricultural Motivation Media and Agricultural Industry in the Covid-19 Pandemic Period. *ADI Journal on Recent Innovation*, 2(2), 90–102.
- Setiyawan, H. (2020). Pemanfaatan Media Audio Visual dan Media Gambar Pada Siswa Kelas V. *Jurnal Prakarsa Paedagogia*, 3(2).
- Shabiralyani, G., Hasan, K. S., Hamad, N., & Iqbal, N. (2015). Impact of Visual Aids in Enhancing the Learning Process Case Research: District Dera Ghazi Khan. *Journal of Education and Practice*, 6(19), 226–233.
- Siregar, J., Rukiastiandari, S., & Suwito, B. J. (2019). PROGRAM ANIMASI INTERAKTIF PENGGOLONGAN HEWAN SEBAGAI MEDIA PEMBELAJARAN PADA SDN PENGASINAN IV BEKASI. *Jurnal Gaung Informatika*, 12(2).
- Studi, P., Informatika, T., Teknologi, F., & Informatika, D. A. N. (2022). *PERANCANGAN MEDIA PEMBELAJARAN AKSARA BALI MELALUI PENDEKATAN WANA KERTHI BERBASIS ANIMASI 2D*.
- Sudipa, I. G. I., Aditama, P. W., & Yanti, C. P. (2022). Developing Augmented Reality Lontar Prasi Bali as an E-learning Material to Preserve Balinese Culture. *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications (JoWUA)*, 13(4), 169–181. <https://doi.org/http://doi.org/10.58346/JOWUA.2022.I4.011>
- Sudipa, I. G. I., Udayana, I. P. A. E. D., Rizal, A. A., Kharisma, P. I., Indriyani, T., Asana, I. M. D. P., Ariana, A. A. G. B., & Rachman, A. (2023). *METODE PENELITIAN BIDANG ILMU INFORMATIKA (Teori & Referensi Berbasis Studi Kasus)*. PT. Sonpedia Publishing Indonesia.
- Sugiyono. (2019). *Metode Penelitian Pendidikan*. Penerbit Alfabeta.
- Sundari, N. (2013). Penggunaan media gambar dalam meningkatkan keaktifan siswa dalam pembelajaran pengetahuan sosial di sekolah dasar. *EduHumaniora/ Jurnal Pendidikan Dasar Kampus Cibiru*, 5(1).
- Sutrisno, S., Kartinah, K., & Prasetyowati, D. (2017). Mathematics 3-D Textbook to Improve Mathematical Communication Ability Students. *Proceeding of ICMSE*, 4(1), 197–201.
- Sutrisno, S., Leuhery, F., Sose, A. T., & Tuasela, A. (2023). Literature Review: Penerapan Sistem Job Satisfaction dan Job Rotation pada Karyawan Perusahaan. *COSTING: Journal of Economic, Business and Accounting*, 6(2), 1140–1153.

Udayana, I. P. A. E. D., Kherismawati, N. P. E., & Sudipa, I. G. I. (2022). Detection of Student Drowsiness Using Ensemble Regression Trees in Online Learning During a COVID-19 Pandemic. *Telematika: Jurnal Informatika Dan Teknologi Informasi*, 19(2), 229–244.