International Journal of Teaching and Learning (INJOTEL) e-ISSN: 3025-8308
Vol. 2 No. 2, 2024, pages: 2000~2011

THE EFFECTIVENESS OF THE WEBSITE-BASED INQUIRY LEARNING MODEL ASSISTED BY VIDEO MEDIA IN ELEMENTARY SCHOOLS

Nilna Mayang Kencana Sirait *[1]
STAI Panca Budi Medan, Indonesia
E-mail: ninla87mayang.kencana.sirait13@gmail.com

MZ Muttaqien H. Lagala
FAI Universitas Alkhairaat, Indonesia
E-mail: muttaqienbasya@yahoo.com

Maftuhah Dewi
Universitas Islam Bunga Bangsa Cirebon, Indonesia
E-mail: maftuhahdewi@bungabangsacirebon@ac.id

Abstract

The Inquiry Learning Model has the advantage in its application, namely that meaningful learning occurs. Students who learn to complete an invention will maximize all the knowledge they have and find out what knowledge to use. Learning using the inquiry learning model will have more meaning when teachers are able to expand the level of educator knowledge to the basics of theory and concepts. A media will be tried to be applied in the development of learning media, namely in the form of learning videos presented in Microsoft Powerpoint which aims to make learning more effective, interesting and fun so that it can improve students' learning outcomes and understanding of concepts. The inquiry model-based learning video media that has been developed has a design using the ADDIE development model which includes five stages, namely analysis, design, development, implementation and evaluation. Overall, this model shows great potential in improving students' critical thinking skills and is worthy of consideration for implementation in the basic education curriculum.

Keywords: Learning Model, Inquiry, Website, Video Media

INTRODUCTION

Education is a way to develop and improve the quality of life. Through education, we can help realize innovative technological advances so that we can create development. Education is a conscious, planned effort to create a learning environment and learning process so that students are active in developing their own potential, to achieve optimal learning outcomes so that

[1] Correspondence author

students have spiritual skills, personality, insight, intelligence, self-control and have noble morals and other abilities that are needed by himself, his family, society, nation and state (Liando et al., 2023). One of the main elements in the education system is the curriculum.

National Education states that the Curriculum is a set of plans and arrangements regarding objectives, content and learning materials as well as methods used as guidelines for implementing learning activities to achieve educational goals. The government consistently makes curriculum adjustments in line with developments in science and technology and the challenges of human resource qualification needs in the future. Since the publication of Minister of Education and Culture Decree No. 56 of 2022 concerning Guidelines for Implementing Curriculum in the Context of Learning Recovery (Independent Curriculum) as a complement to the previous curriculum, with the enactment of this letter the Independent Curriculum will be implemented (Dairu & Bano, 2023).

The Merdeka Curriculum provides flexibility for schools to design learning that is student-centered and oriented towards developing character and 21st century competencies, including critical thinking skills (Center for Curriculum and Books, 2022). With various efforts made by the government and various parties, it is hoped that students' critical thinking abilities in Indonesia can continue to improve. Strong critical thinking skills will equip students with the knowledge and skills they need to become successful individuals and contribute positively to the nation and state (Trisnantari et al., 2024).

One learning model that has been proven effective in improving students' critical thinking skills is the guided inquiry learning model. This learning model encourages students to be actively involved in the learning process through investigation, problem solving, and discussion (Apatiga & Vu, 2022).

Meta-analysis is a research method that combines and analyzes the results of various studies on the same topic (Ikawati & Pohan, 2023). Meta-analysis allows researchers to obtain stronger and generalizable conclusions compared to single studies (Sukma & Setyasto, 2024a). This research uses a meta-analysis approach to test the effectiveness of the guided inquiry learning model on elementary school students' critical thinking abilities. Meta-analysis was carried out by systematically reviewing research results that have been published on official, nationally accredited sites relating to the use of the

guided inquiry learning model on students' critical thinking abilities in elementary schools.

The Inquiry Learning Model has the advantage in its application, namely that meaningful learning occurs. Students who learn to complete an invention will maximize all the knowledge they have and find out what knowledge to use. Learning using the inquiry learning model will have more meaning when teachers are able to expand the level of educator knowledge to the basics of theory and concepts. However, Inquiry Learning also has a fundamental weakness, namely that there is no initial understanding stage in Inquiry Learning, making students who do not understand it increasingly difficult to understand the meaning of the learning process (Permadi & Oktariana, 2022). Thus, if the knowledge possessed by students at the beginning of learning is low, it will have an impact on the process of completing the discoveries provided by the teacher. Therefore, there needs to be a stimulant so that students want to look for a wide range of learning resources.

RESEARCH METHOD

The study in this research is qualitative with literature. The literature study research method is a research approach that involves the analysis and synthesis of information from various literature sources that are relevant to a particular research topic. Documents taken from literature research are journals, books and references related to the discussion you want to research (Earley, M.A. 2014; Snyder, H. 2019).

RESULT AND DISCUSSION

Inquiry Learning Model

A. Definition and Characteristics of Inquiry Learning

Inquiry comes from the English word "inquiry", which literally means investigation. Carin and Sund (Safitri, 2023) stated that inquiry is the process of investigating a problem. Piaget stated that the inquiry method is a method that prepares students in situations to carry out their own experiments extensively in order to see what is happening, want to do something, ask questions, and look for their own answers, as well as connecting one discovery with another discovery. compare what they find with what other students find.

Inquiry learning is a series of learning activities that emphasize the process of thinking and analyzing to search for and find answers to a

problem in question. The thinking process itself is usually carried out through question and answer between the teacher and students (Jeon, 2023). This learning strategy is often also called a heuristic strategy, which comes from the Greek, namely heuriskein, which means I find.

B. Principles for Using Inquiry Learning Strategies

The inquiry learning strategy is a strategy that emphasizes children's intellectual development. According to Piaget, mental (intellectual) development is influenced by 4 factors, namely maturation, physical experience, social experience, and equilibration.

1. Maturation is a process of physiological and anatomical changes, namely the process of physical growth, which includes body growth, brain growth and nervous system growth.
2. Physical experience is the physical actions carried out by individuals on objects in the surrounding environment. Actions or physical actions carried out by individuals make it possible to develop activity or thinking power. The physical movements carried out will ultimately be transferred into thoughts or ideas. Therefore, a pure learning process will not occur without experiences.
3. Social experience is an activity in connecting with other people. Through social experiences, children are not only required to consider or listen to other people's views, but they will also grow aware that there are other rules besides their own.
4. Equilibration is the process of adjusting existing knowledge with new knowledge discovered. There are times when children are required to update the knowledge that has been formed after discovering new information that is not appropriate (Sari & Paidi, 2023).

Guided Inquiry Learning Model

Guided inquiry is a learning model that is structured to convey concepts and the relationship between one concept and another. When implementing the guided inquiry model, the teacher will act as an educator, teaching examples to students, and providing conclusions at the end when the students are able to accept and describe the material that has been presented by the teacher (Putri & Fakhriyana, 2023).

According to Moh. Amien Guided (Nisa & Astriani, 2022) Inquiry is a learning model in which an educator provides sufficient guidance for students. The guided inquiry learning model requires students to answer questions given by the teacher, students will carry out experiments, while the teacher

directs and guides them to solve problems. Skills in guiding students really need to be possessed by a teacher, teachers must be able to diagnose the difficulties experienced by students and provide guidance to them when they have difficulty solving problems.

The guided inquiry approach is an approach where the teacher guides students in carrying out activities by giving initial questions and leading to a discussion and the teacher can also provide necessary explanations when students carry out experiments. Teachers have an active role in determining problems and the stages of solving them. In its implementation, most of the planning is made by teachers and students do not formulate problems (Wu, 2024).

The guided inquiry learning model is an alternative model that can be applied to overcome learning outcomes problems because according to several previous studies regarding the use of the guided inquiry learning model by other research also conducted by Wijayatni (Aras & Mahmud, 2022) which shows that students' cognitive learning outcomes experienced an increase in average and the fulfillment of student learning completeness after implementing the guided inquiry learning model. This is because students are more active in acquiring knowledge through direct experience, and not just hearing and receiving knowledge or information from what the teacher says, so that it influences students' learning outcomes.

The aim of guided inquiry learning is to be able to expand students' knowledge and skills independently through various sources that have been collected, these sources can come from outside the environment or within the school environment (Hongphanut, 2023). The teacher's role in the guided inquiry learning model is selecting material, preparing material and questions, but students are required to be able to design experiments, analyze experimental data, and conclude the results they obtain.

Learning Video Media

Media that can be combined with the guided inquiry learning model is video media. Video media is a learning medium that can attract students' interest in learning, because the presentation is in the form of films or moving images accompanied by sound. The contextual-based video learning media used is to display natural events related to the physics concepts to be studied, so that students are trained to review problems related to the material to be studied and can link the concepts studied with reality in everyday life. students (Hogue, 2022).

The learning media used in schools are generally in the form of textbooks, Student Worksheets (LKS) (Wulandari, 2022), but students' reading interest in textbooks, especially physics subjects, is still very low. The development of science and technology from year to year, along with the times, is increasingly encouraging reform efforts in the use of technological results in the learning process (Tastury* et al., 2024). A media will be tried to be applied in developing learning media, namely in the form of learning videos presented in Microsoft Powerpoint which aims to make learning more effective, interesting and fun (Chobthamdee & Sukwan, 2022) so that it can improve students' learning outcomes and understanding of concepts. As is the opinion of Syarifah Hafizah (Shofiyyah & Qohar, 2022) who stated that the use of videos in learning effectively improves student learning outcomes and encourages students to be active in learning.

Inquiry Model Based Learning Video Media

This guided inquiry model-based learning video media has a design developed in accordance with the ADDIE development model which consists of five stages, namely analysis, design, development, implementation and evaluation (Sukma & Setyasto, 2024b). The first stage carried out is the analysis stage. The analysis carried out is analysis of student needs, analysis of learning facilities, content analysis, analysis of learning objectives and outcomes. Interesting and fun learning media can raise enthusiasm for participating in learning activities and learning outcomes. Apart from that, during the learning process students also experience difficulties in understanding the material provided in elementary school subjects. Supporting media such as learning media are not utilized optimally to help teachers and students in the learning process. The learning facilities provided at school are in the form of learning books and cellphones that can be used by students at home. Content analysis is carried out with the aim of selecting material that is appropriate to the product being developed and adapted to the analysis of students' needs in the class. The material chosen for this guided inquiry model-based interactive learning video media is material in elementary school subjects (Shabrina & Hikmah, 2023). As well as analysis of the learning objectives and achievements of the independent curriculum in accordance with the subject matter in elementary schools.

At the product design stage, things that are carried out include creating a design including flowcharts and media storyboards, arranging materials, media components including appearance, video creation process, designing

CD covers, storing video media, and at this stage also preparing teaching modules (Mendrova, 2022). Next, at the development stage, all components of the content and display design of learning video media in elementary schools, which have been designed, are developed and arranged into one unit. Add moving images, include instructions for using the media and add simple trial/experiment activities. Then proceed by adding guided inquiry model learning activities, changing media links into QR codes and preparing product assessment instruments.

Apart from that, at this stage of product development, validity tests were carried out by learning material experts and learning media experts, practicality tests were carried out by 3 teachers and 6 students. At the implementation stage, implementation of learning video media products includes conducting a pre-test (before using the media) and post-test (after using the media. At the final stage, namely the evaluation stage, namely collecting data on improving and refining the product that has been developed. At the evaluation stage This uses formative and summative evaluation. Formative evaluation is carried out during the product development process (jayanti, 2022).

This development research generally aims to develop learning video media based on a guided inquiry model on material to improve student learning outcomes in elementary schools. This learning video media has a design that uses the ADDIE development model which includes five stages, namely analysis, design, development, implementation and evaluation and the media was developed to facilitate students in the learning process, especially in understanding the learning material. The application of the guided inquiry model in learning media is able to explain material in a guided and student-centered manner so that students are more active in learning and learning becomes more enjoyable (Arifin & Wachidah, 2023). In the development of video learning media based on the guided inquiry model, it has also passed a series of validity tests, practicality tests and effectiveness tests.

In line with previous research conducted by (Nisa' & Efendi, 2023) stated that learning media for the sub-theme of the form of objects and their characteristics for fourth grade elementary school students is suitable for use in learning activities; research conducted by (Maulina & Wati, 2023) states that animated video-based learning media with a guided inquiry learning model is feasible and effective to use to increase students' motivation and learning outcomes; research conducted by (Pradana & Sunhaji, 2022) states that learning videos in class III science subjects to increase student learning

motivation are effectively used in learning activities; research conducted by (Mardiyah et al., 2022) stated that science learning videos to increase class VII students' interest in learning were declared feasible and able to increase students' interest in learning; And research conducted by (Cholifah & Untari, 2023) stated that the development of grade VI science learning videos at SD N 2 Banjar Bali in 2015/2016 was effectively used in improving student learning outcomes. Based on previous research, it has been proven that the development of social science learning video media based on a guided inquiry model on material on changes in the state of substances to improve the learning outcomes of fourth grade elementary school students is valid, practical and effective for use in learning activities.

The effectiveness of the guided inquiry learning model also depends on several factors, including the teacher's skills and readiness as well as a supportive learning environment. Teachers need to have a deep understanding of inquiry methods and be able to manage the class well to encourage active student participation. An adequate learning environment, including the availability of necessary resources and tools, is also important to support the implementation of inquiry learning. Overall, this model shows great potential in improving students' critical thinking skills and is worthy of consideration for implementation in the basic education curriculum (Rini et al., 2022).

CONCLUSION

Learning by applying the guided inquiry learning model is a learning process that is effectively used to improve students' activities and learning outcomes. Students are given a great opportunity to actively involve themselves directly in searching, finding and answering a problem. Apart from that, students will gain meaningful learning experiences that will have an impact on achieving maximum learning outcomes. This research shows that the guided inquiry learning model assisted by animated videos is effective for elementary school students' learning outcomes in daily life, both in the aspects of scientific attitudes, knowledge and science process skills. Therefore, it is recommended that guided inquiry learning models and animated videos can be used as alternatives to improve student learning outcomes, especially in elementary schools. This research can also be used as a reference for other research in implementing the guided inquiry learning model or developing animated videos.

REFERENCES

Apatiga, Y., & Vu, K.-P. L. (2022). Comparing the Effectiveness of Instructor-Led Versus Video-Based Learning Methods for Online Website Accessibility Training. *Lecture Notes in Computer Science*, *Query date: 2024-06-26 14:11:13*, 189–206. https://doi.org/10.1007/978-3-031-22131-6_14

Aras, L., & Mahmud, R. (2022). COMPARISON OF THE PROBLEM BASED LEARNING (PBL) MODEL WITH THE DISCOVERY-INQUIRY FOR THE STUDENT MATHEMATICS LEARNING MODEL AT SMPN 3 SINJAI. *Daya Matematis: Jurnal Inovasi Pendidikan Matematika*, *10*(1). https://doi.org/10.26858/jdm.v10i1.7619

Arifin, A. S., & Wachidah, K. (2023). *Effect Of Local Wisdom-based Video Learning Media On Social Studies Cognitive Learning Outcomes Of Elementary School Students*. *Query date: 2024-06-26 13:59:45*. https://doi.org/10.21070/ups.3247

Chobthamdee, B., & Sukwan, C. (2022). Creating Instructional Media through Video Learning on Social Media Platforms for Graduate Diploma in Teaching Profession Students. *2022 7th International STEM Education Conference (iSTEM-Ed)*, *Query date: 2024-06-26 13:59:45*. https://doi.org/10.1109/istem-ed55321.2022.9920793

Cholifah, C., & Untari, R. S. (2023). *Influence of Web-Based Animated Video Media on Learning Achievement in Elementary School Pancasila Education Subjects*. *Query date: 2024-06-26 13:59:45*. https://doi.org/10.21070/ups.2071

Dairu, M. R. S., & Bano, V. O. (2023). Application of Inquiry Based Learning Model Assisted by Media Pictures to Improve Student Learning Outcomes at SMP Negeri 5 Waibakul. *Formosa Journal of Multidisciplinary Research*, *2*(5), 1027–1046. https://doi.org/10.55927/fjmr.v2i5.4125

Earley, M. A. (2014). A synthesis of the literature on research methods education. Teaching in Higher Education, 19(3), 242-253.

Hogue, M. D. (2022). A quantitative data analysis of video-based instruction in an asynchronous online mathematics methods class for teacher certification. *E-Learning and Digital Media*, *19*(4), 380–395. https://doi.org/10.1177/20427530221092866

Hongphanut, R.-. (2023). *Development of Learning Community Through Virsual Inquiry Model with Historical Methods to Be Historical Innovators in Digital Age*. *Query date: 2024-06-26 13:53:53*. https://doi.org/10.2139/ssrn.4532318

Ikawati, E., & Pohan, J. (2023). Developing Problem-Based Inquiry Model in Indonesian Learning in General High Schools. *Journal of Languages and Language Teaching*, *11*(4), 834–834. https://doi.org/10.33394/jollt.v11i4.8978

jayanti, A. D. (2022). Development of Mathematics Learning Media Based on Video Learning to Improve Distance Learning for Class VII Junior High School Students Material Numbers. *EduMatika: Jurnal MIPA*, *2*(1), 15–22. https://doi.org/10.56495/emju.v2i1.161

Jeon, O. (2023). A Study on the Development of Learning Model and Learning Types Based on Appreciative Inquiry 4D Process. *The Journal of Future Education*, *13*(2), 23–47. https://doi.org/10.26734/jfe.2023.13.02.02

Liando, M. R., Pangkey, R., & Kandio, F. (2023). Analysis of Learning Culture and the Effectiveness of Interactive Powerpoint Media in Improving Learning Outcomes in Elementary Schools. *INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS*, *6*(11). https://doi.org/10.47191/ijmra/v6-i11-02

Mardiyah, A., Rahmi, T., Gistituati, N., & Bentri, A. (2022). Implementation of Pancasila and Civics Learning Using Video Media in Shaping the Profile of Pancasila Students in Merdeka Curriculum in Elementary School. *Proceedings of the 4th International Conference on Innovation in Education*, *Query date: 2024-06-26 13:59:45*. https://doi.org/10.5220/0012200700003738

Maulina, W., & Wati, T. L. (2023). *Effectiveness of Video Media on Learning Outcomes of Elementary School Students*. *Query date: 2024-06-26 13:59:45*. https://doi.org/10.21070/ups.1858

Mendrova, N. R. (2022). DEVELOPMENT OF LEARNING VIDEO MEDIA ON BUILDING CONSTRUCTION BASIC LESSONS. *Jurnal PenSil*, *11*(1), 56–64. https://doi.org/10.21009/jpensil.v11i1.17584

Nisa, C. C., & Astriani, D. (2022). Application of the guided inquiry learning model to increase student learning motivation. *Jurnal Pijar Mipa*, *17*(4), 475–479. https://doi.org/10.29303/jpm.v17i4.3664

Nisa', L. R., & Efendi, N. (2023). *Effect of Video Animated Video Media on the Cognitive Learning Outcomes of Grade V Student in Elemantary School*. *Query date: 2024-06-26 13:59:45*. https://doi.org/10.21070/ups.1875

Permadi, A. S., & Oktariana, D. (2022). Efektivitas Pembelajaran Menggunakan Model Problem Based Learning Berbantuan Powerpoint. *Bitnet: Jurnal Pendidikan Teknologi Informasi*, *7*(2), 19–23. https://doi.org/10.33084/bitnet.v7i2.4059

Pradana, A. E. & Sunhaji. (2022). Electronic Media-Based Learning Media Design via WhatsApp Video Call on Tahfidz Learning at the Darul Qur'an Islamic Boarding School Karangtengah Baturraden. *International Journal of Scientific and Management Research*, *5*(3), 1–10. https://doi.org/10.37502/ijsmr.2022.5301

Putri, Y. I., & Fakhriyana, D. (2023). Application of Discovery Learning and Inquiry Learning Model in Improving Students' Mathematical Literacy Skills. *Jurnal Pendidikan Matematika (Kudus)*, *6*(2), 145–145. https://doi.org/10.21043/jpmk.v6i2.22001

Rini, D. R., Wisesa, A. M., & Wulandari, R. T. (2022). Optimization of Online Learning With the Development of Video Learning Media for Early Children's Education. *KnE Social Sciences*, *Query date: 2024-06-26 13:59:45*, 288–295. https://doi.org/10.18502/kss.v7i13.11673

Safitri, E. (2023). A Comprehensive of the Guided Inquiry Learning Model in Education: A Review. *JOURNAL OF DIGITAL LEARNING AND DISTANCE EDUCATION*, *2*(7). https://doi.org/10.56778/jdlde.v2i7.268

Sari, M. J. & Paidi. (2023). Analysis of Students' Learning Motivation Using Guided Inquiry Learning Model. *Jurnal Penelitian Pendidikan IPA*, *9*(8), 6265–6271. https://doi.org/10.29303/jppipa.v9i8.4366

Shabrina, A., & Hikmah, K. (2023). Development of Interactive Animation Video Learning Media in Nahwu Learning for Grade 8 Muhammadiyah 1 Sidoarjo Middle School. *Journal of Islamic and Muhammadiyah Studies*, *5*(Query date: 2024-06-26 13:59:45). https://doi.org/10.21070/jims.v5i0.1559

Shofiyyah, W., & Qohar, Abd. (2022). Developing Video-Based Learning Media with Problem-Based Learning Approach on Pythagorean Theorem Topic. *Edunesia: Jurnal Ilmiah Pendidikan*, *3*(3), 252–272. https://doi.org/10.51276/edu.v3i3.277

Snyder, H. (2019¬). Literature review as a research methodology: An overview and guidelines. Journal of business research, 104, 333-339.

Sukma, S. A., & Setyasto, N. (2024a). Development of E-Comic Learning Media Assisted by Video in Science Learning on Human Blood Circulation Material. *Jurnal Penelitian Pendidikan IPA*, *10*(5), 2322–2330. https://doi.org/10.29303/jppipa.v10i5.7023

Sukma, S. A., & Setyasto, N. (2024b). Development of E-Comic Learning Media Assisted by Video in Science Learning on Human Blood Circulation Material. *Jurnal Penelitian Pendidikan IPA*, *10*(5), 2322–2330. https://doi.org/10.29303/jppipa.v10i5.7023

Tastury*, N., Nurasiah, N., & Azis, A. (2024). Application of Video Based Learning Media to Increase Interest in Learning Social Sciences. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, *9*(1), 259–264. https://doi.org/10.24815/jimps.v9i1.29586

Trisnantari, H. E., Mutohar, P. M., & Rindrayani, S. R. (2024). The Effectiveness of Interactive Learning Media Based on Adobe Flash in Improving Learning Achievement at Primary Schools. *International Journal of Research and Innovation in Social Science*, *Query date: 2024-06-26 14:11:13*, 1539–1549. https://doi.org/10.47772/ijriss.2024.801114

Wu, H. (2024). Chinese university EFL learners' perceptions of a blended learning model featuring precision teaching. *Education Inquiry*, *Query date: 2024-06-26 13:53:53*, 1–19. https://doi.org/10.1080/20004508.2024.2361979

Wulandari, D. S. R. (2022). Analysis of Learning Media Needs for 2d Animation Video on Cube and Block Material in Grade V Elementary School. *International Journal of Social Science And Human Research*, 5(6). https://doi.org/10.47191/ijsshr/v5-i6-78