



Analysis of Science Learning Based on the Experiential Learning Model: Literature Review

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Abstract: The purpose of this study was to review various articles that have been published so that it can be seen the various advantages and disadvantages of the model in terms of the method, which can be used as the right choice to be carried out as the next study. The method used in this study is the Systematic Literature Review (SLR) method with the data used is secondary data obtained indirectly using articles from several indexed journal databases. The steps of the literature review consist of: First the planning stage, at this stage is the formulation and determination of the problems raised in this research. Second, the review stage at this stage is a search for articles from various journal databases. Third, in the document documentation stage, the articles are then grouped according to the type of journal indexer. In this step, all existing articles are selected and then interpreted by analyzing 20 articles. The results obtained can be used as a guide for educators and readers to apply and develop experiential learning models by considering the various needs of each learner. Recommendations for further research in order to be able to examine the experiential learning model in terms of the method aspects associated with learning media.

Keywords: Experiential learning models; Literature review; Science learning

Introduction

In general, education is one measure of the progress of a country. Developed countries are characterized by their level of education and the ability of their people to keep up with developments in science and technology. School as a place of education for the community plays an important role in supporting the progress of the country. At school, people can learn many things, such as acquiring and improving their skills (Susilawati et al., 2021).

One of the subjects prepared by schools throughout Indonesia is Natural Sciences (IPA). As a natural science product, it means that a science that studies phenomena that occur in nature will produce theories, laws, principles and facts. The second part of IPA as a process means observing, carrying out experiments, interpreting and concluding a knowledge discovery. Third, IPA is a scientific attitude which includes curiosity, objectivity

and thoroughness in doing things (Fitriani et al., 2020; Hastuti et al., 2018).

Science learning is currently very important, meaning that learning success must be increased in the learning process. One possible effort is learning that can involve students through direct experience to improve students' current skills. The learning model that allows students to be directly and actively involved in making experience the basis for acquiring knowledge is the experiential learning model. Experiential learning is a learning model that uses experience as a learning tool, examines experience, concludes and changes experience through direct experiments.

One of the efforts in the field of education is to make various efforts to improve learning in schools. Among the efforts made are carrying out learning using various innovative learning models, the use of interactive media, and various other learning models (Walangadi & Umar, 2021).

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The application of the experiential learning model in science learning in particular shows a wide variety of results obtained. So the author reviews several articles aiming to review various articles that have been published so that the various advantages and disadvantages of the model can be seen in terms of the method, which can be used as the right choice to be carried out as the next study.

Method

The method used in this study is the Systematic Literature Review (SLR) method which aims to identify, review, and evaluate relevant research so as to answer research questions that have been determined (Triandini et al., 2019). This study consisted of several stages, namely problem formulation, literature search, inclusion and exclusion criteria determination, selection of articles obtained, data presentation, and drawing conclusions.

The data used is secondary data obtained indirectly using articles from several indexed journal databases. The steps of the literature review consist of: First the planning stage, at this stage is the formulation and determination of the problems raised in this research. Second, the review stage at this stage is a search for articles from various journal databases. Third, in the documentation stage, the articles are then grouped according to the type of journal indexer. In this step, all existing articles are selected and then interpreted.

Based on the findings, it can be used as a basis for answering research questions. A literature review is carried out by evaluating previous research with the

keywords experiential learning and experiential learning models. The article review criteria in this study are in Table 1.

Table 1. Article Review Criteria

Publication Type	Articles published in journals
Keywords	Model experiential learning, Experiential learning
Journal	International journal indexed by Scopus
Specifications	National Journal indexed by Sinta
Publication Year	2018-2023
Field	Natural sciences, Biology, Chemistry, Physics
Access	Open access
Number of articles	20

Result and Discussion

The research results in this literature review are in the form of analysis and summary of article data with various indexed journal database sources. Based on general search results, 20 articles were obtained which are presented in table 2.

Table 2. General Article Search Results

International Journal	10
National Journal	10

The research results in this literature review are in the form of analysis and summary of article data with various indexed journal database sources. Based on the specific search results, 20 articles were obtained which are presented in table 3.

Table 3. Specific Article Search Results

Index & Years of Publication	Journal Name	Article Title	Amount
Scopus/Q3/2019	Decision Sciences: Journal of Innovative Education	A Meta-Analysis of the Relationship Between Experiential Learning and Learning Outcomes	1
Scopus/Q3/2018	Bioscene: Journal of College Biology Teaching	The Value of Experiential Learning: a Case Study with an Interdisciplinary Study Abroad Course	1
Sinta 3/2019	Indonesian Journal of Conservation	Keefektifan Model Experiential Learning Terhadap Motivasi Dan Hasil Belajar IPA	1
Sinta 3/2019	Edu-Sains	The Development of e-Modules Based on Experiential Learning Models on Environmental Pollution Materials for Class VII Middle Schools	1
Sinta 3/2017	Jurnal Wahana Pendidikan Fisika	Penerapan Model Experiential Learning Untuk Meningkatkan Keterampilan Berpikir Kritis Siswa	1
Sinta 2/2022	NSER: Natural Science Educational Research	Implementasi Model Experiential Learning Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa	1
Sinta 3/2021	JPPIPA (Jurnal Penelitian Pendidikan IPA)	Peningkatan Keterampilan Proses Sains Siswa melalui Model Experiential Learning pada Materi Pencemaran Lingkungan	1
Scopus/Q4/2020	JAM: Jurnal Aplikasi Manajemen	The Effect Of Experiential Learning On Attitudes And Intention: An Experimental Design	1

Index & Years of Publication	Journal Name	Article Title	Amount
Sinta 4/2019	Jurnal Pijar MIPA	Penerapan Model Experiential Learning untuk Meningkatkan Hasil Belajar IPA Tema Panas dan Perpindahannya di Sekolah Dasar	1
Sinta 2/2021	Jurnal Penelitian Pendidikan IPA	Implementation of STEM-Based Experiential Learning to Improve Critical Thinking Skills on Ecosystem Materials.	1
Scopus/Q2/2020	Journal for the Education of Gifted Young Scientists	The Effect of Experiential Learning Models on High School Students Learning Scores and Disaster Countermeasures Education Abilities.	1
Scopus/Q3/2021	Hindawi: Education Research International	Virtual Reality as Pedagogical Tool to Enhance Experiential Learning: A Systematic Literature Review.	1
Scopus/Q4/2021	International Journal of Progressive Sciences and Technologies (IJPSAT)	Usefulness of E-module Based on Experiential Learning in Physics Learning.	1
Scopus/Q2/2018	Journal of Turkish Science Education	Applying an Experiential Learning Cycle with the Aid of Finite Element Analysis in Engineering Education.	1
Scopus/Q2/2021	Education sciences	Mechatronics: Experiential Learning and the Stimulation of Thinking Skills	1
Scopus/Q3/2019	International Journal of Evaluation and Research in Education (IJERE)	Effectiveness of experiential learning-based teaching material in Mathematics	1
Scopus/Q2/2020	International Journal of Instruction	The Effect of Experiential Learning and Adversity Quotient on Problem Solving Ability	1
Sinta 3/2020	Jurnal Ilmiah Pendidikan dan Pembelajaran	Model Experiential Learning Berbantuan Media Konkret Berpengaruh Terhadap Kompetensi Pengetahuan IPA	1
Sinta 3/2019	Indonesian Journal of Curriculum and Educational Technology Studies	Comparing Problem-based Learning and Experiential Learning on Civil Servant Training Program	1
Sinta 2/2021	Jurnal Pendidikan Indonesia	LCL Model Experiential Learning based Training Model Development to Improve Teacher Competence in Designing Learning	1
Total			20

Learning IPA with Models Experiential Learning

Model *experiential learning* used in science learning can activate students in constructing or compiling knowledge, skills, and values through direct experience so that learning becomes meaningful (Fadieny & Fauzi, 2021).

Learning that uses models *experiential learning* in a module produces positive initial reactions with enthusiasm from students, but the drawback is that there are several student characters who have not been able to balance the learning process using this model (Widiastuti & Budiyanto, 2018).

Learning by using *experiential learning* produce students' ability to solve problems with high and low adversity intelligence (Hulaikah et al., 2020). Differences in intelligence are also part of the results obtained by using various learning models, it is sought that learning models can have a positive impact on all students.

Research that applies model steps Experiential Learning, improve science learning outcomes consisting of planning, implementation, observation, and reflection stages. The results show an increase in learning outcomes however, there are several obstacles to using

this model, namely students who are less active in answering questions, have difficulty understanding the material, are embarrassed to show the results of discussions, lack of focus in learning, and have difficulty expressing opinions in clear language so the solution is applied to students who are active and who can provide more supervision during discussions (Haryanti et al., 2019).

The effectiveness of science learning by using models experiential learning can also increase student motivation while in class in learning that provides direct experience (Zuhryzal & Fatimah, 2019).

Judging from the various advantages and disadvantages of the learning model experiential learning that have been studied based on the conclusions of the review results can be used as a guide for educators and readers to apply and develop learning model *sexperiential learning* taking into account the various needs of each learner. The method in this learning model is able to develop the potential that exists in students by providing direct experience to be able to solve a problem that is around them through natural science material.

Conclusion

Learning IPA using models experiential learning with several steps of real experience that can improve the affective, psychomotor and cognitive abilities of students. Producing learning that is more effective and meaningful, based on the results of the literature review can be used as a guide for teachers and also readers who can provide references to the use of learning models experiential learning. Recommendations for further research in order to be able to review the model experiential learning viewed from the aspect of the method associated with learning media.

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Author Contributions

The authors in this research are divided into executor and advisor.

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Conflicts of Interest

The author declares no conflict of interest in this research.

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