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The influencing of Inquiry-Based Learning on Science Conceptual Understanding in Terms of Primary School's Self-Efficacy

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Abstract

The purpose of learning science in primary school is to provide students the chance to authentically develop their curiosity, to learn how to ask questions and look for explanations to natural occurrences based on evidence, and to think scientifically. The study's objective was to examine how the inquiry-based learning model and the direct learning model affected the self-efficacy of primary school students to understand science courses. This study is a quasi-experimental one with a 2x2 factorial design. In this inquiry, the first phase in the data analysis method was the normality and homogeneity tests. A two-way ANOVA analytic technique is then used to test data that is homogeneous and regularly distributed. The research was conducted at Pondok Benda Primary School in South Tangerang, Banten, was the site of the study. The sample was made up of 111 pupils in the fourth-grade primary school (aged between 10 and 11). Two-way variance data analysis method was followed by the Tukey test at a significance level of 0.05. should use the Lilliefors test to determine whether the data are normal, and the Bartlett results to determine whether the data are homogeneous.

Keywords: *inquiry-based learning, science, meaningful understanding, self-efficacy.*

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Introduction

Understanding the concept is a skill in receiving, absorbing, and understanding material or information to take in process and comprehend knowledge that has been acquired through a series of experiences or events that may be directly viewed or seen and then afterwards used in daily life. As Having the ability to comprehend the meaning of the subject matter being studied, the degree to which students are able to learn, retain, and comprehend the lessons that are imparted to them, or the degree to which students are able to comprehend are all examples of conceptual understanding, according to (Harlen, 2014). what they read, observe, experience, or feel in the form of research findings or direct observations that they make or give a more thorough description of it in their own words, they will be able to understand it.

As mentioned by (Krajcik Joseph. S and Czerniak. Charlene M, 2018) as a body of commonly knowledge that takes the shape of a collection of observational and experimental facts, science is defined as knowledge that is systematic and regularly organized. Four essential components make up science: a mindset that fosters curiosity about things, natural occurrences, living beings, and causal links. This relates to self-efficacy, which is essentially the outcome of cognitive processes in the form of judgments,

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expectations, or beliefs regarding a person's assessment of his or her capacity to carry out particular tasks or take specific actions required to produce the intended results. Meanwhile, (Duchesne, 2016) stated that self-efficacy indicators are individual attitudes that are confident in their ability to overcome task difficulties, individuals who are diligent in completing tasks. Individuals who are able to face obstacles in achieving goals and individuals who are able to use life experiences as a step to achieve success. This is what is expected to support success in the process of understanding science concepts for elementary school students.

Children are natural from the moment they are born. Observers interested in the wider world. Science lesson offers discovery-oriented, vocabulary-rich games, ample opportunities for content and oral research language in which it is written. Inquiry-based scientific education classrooms primarily focus on teaching science about students' various learning styles and the natural world as they experience knowledge evolution (Evans, 2019). The most typical names for scientific methods used in inquiry-based learning (IBL) are: One of the best methods for doing this is currently acknowledged as inquiry-based scientific education (IBSE). Improve science education by focusing on other disciplines, such as computer science and mathematics, in addition to science. According to the Teacher Revolution is a gradual and frequently challenging process, and when instructors are involved, demand revolution in the latest efforts is reviewing and changing its evaluation practices (Firman et al., 2019).

Science is accepted knowledge that is systematically arranged, follows a predetermined pattern, and manifests as a body of observational and experimental evidence. Four essential components make up science: a mindset that fosters curiosity about things, natural occurrences, living beings, and causal links. This has to do with self-efficacy, which is basically the result of cognitive processes in the form of judgments, expectations, or beliefs regarding a person's assessment of his or her capacity to carry out particular tasks or take specific actions required to produce the intended results. Meanwhile, Duchesne and Anne (Duchesne, 2018) stated that self-efficacy indicators are individual attitudes that are confident in their ability to overcome task difficulties, individuals who are diligent in completing tasks. Individuals who are able to face obstacles in achieving goals and individuals who are able to use life experiences as a step to achieve success. This is what is expected to support success in the process of understanding science concepts for elementary school students. Teaching science makes us feel the joy of developing ourselves and the implementation of learning experiences that make it possible for the students discover how the world works (Almarode et al., 2019).

Learning approaches and strategies that support the development of conceptual understanding. This pedagogy supports concept-based teaching related to inquiry-based learning especially in science instruction, with real learning, dialogic debate, and flexible integrated assessment (Medwell et al., 2019). Inquiry-based instruction creates learning that is meaningful, deep understanding, and challenging. Practice learning by involving students directly to be able to provide important ideas and ideas on issues, and problems in real-life contexts. Critical and scientific thinking skills and their application in science learning are very important at the Elementary School Education level (Dávila, 2017). Conceptual understanding-based curriculum design focuses on students' learning experiences that are adapted to their understanding of concepts. This influences the development of attitudes and mentality in terms of students' self-efficacy toward beliefs about how something works based on previous experience and learning.

Inquiry-based learning practices (*Inquiry-based learning*) by connecting previous knowledge or prior knowledge of students in applying new knowledge and contextual understanding. Learn to understand patterns and examples to strengthen students' conceptual understanding knowledge, especially in science learning. Concept-Based Teaching and Learning (CBTL) is learning that focuses on conceptual understanding rather than just teaching facts it aims to introduce concept-based learning that supports understanding, ideas, transfer of knowledge, and critical thinking skills, and is reflective of the investigation of material scope in science (Medwell et al., 2019).The characteristics of the learning process affect the attitudes toward science learning at the elementary age level, both students and teachers (Long, 2019). Understanding the concept in learning adds depth to the investigation and thoroughness of students' thinking in exploring. As we know conventional learning focuses on two competencies, namely knowledge and skills. In contrast to concept-based learning in science, the characteristics of the curriculum design do not limit the breadth of knowledge and experience. In this case, students can access study material investigations following with the limits of inquiry material

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(lines of inquiry) and focus on learning objectives (learning outcomes) in elementary school- level science learning in certain phases (Loertscher, 2008). Building a deep conceptual understanding of more complex knowledge ideas by applying transdisciplinary or interdisciplinary learning to science learning.

Using an active learning strategy called inquiry-based learning (IBL), learning experiences, learning resources, and activities that support the research process are subjected to discovery, research, and investigation. In other words, inquiry-based learning is a teaching strategy that permits students to use the scientific process and encourages them to develop and evaluate their own hypotheses (Green et al., 2004). Question-based learning approaches include an open, student-centered learning environment. Colburn (Colburn, 2000) stated that learning activities should assist students in applying what they are learning to their everyday life (Tatar & Kuru, 2006). Through this method, students get the capacity to learn both individually and collectively (Gibson, 1998). Furthermore, inquiry-based learning promotes the development of skills like critical thinking.Problem-solving, decision-making, and analytical thinking are all necessary skills (Agrusti, 2013; Friedel et al., 2008). The goal of inquiry-based learning is to pique students' attention and curiosity. In conclusion, research shows that inquiry-based learning significantly enhances students' cognitive, affective, and skill dimensions.

In contrast to the expository learning paradigm frequently used in classrooms, scientific learning necessitates studies that are driven by problems and heavily incorporate students' critical thinking along with their mastery of learning topics. The expository learning model is direct learning to carry out investigations with learning characteristics that focus on knowledge facts, teacher-centered, less interactive, lecturing in nature, and less innovative in involving learning media. This affects the low positive attitude of students in the learning process. Less active learning processes and lack of student access to solving problems, drilling, lecturing, and doing repetition are general descriptions of the characteristics of the expository learning model (Heryadi & Sundari, 2020).

Table 1. Differences in the Characteristics of the Expository Learning Model and the Inquiry Learning Model

No.	Description	Expository Learning Model	Inquiry learning model
1.	Theoretical perspective	Cognitive Behaviorism	Cognitive constructivism
2.	teacher's role	Dominant/control role	Guiding and facilitating
3.	Knowledge	Limited level of knowledge	Develop knowledge
4.	Skills	Limited skills/lack of involving students	Develop skills/engage students
5.	Confidence	Low self-confidence	High level of confidence
6.	Motivation	Low motivation	High motivation
7.	performance	Low performance/direct teaching	High- performance/inquiry teaching
8.	Learning Results	Low learning outcomes	High learning outcomes

The table displays many traits that aid in conceptual understanding in scientific learning, which aims to boost self-efficacy at the elementary school level. Age-related development still prioritizes practical knowledge and experience. One of these is the 5E' learning strategy (Engage, Explore, Explain, Elaborate, and Evaluate), which focuses on providing science learning opportunities to raise students' self-efficacy (Singh & Yaduvanshi, 2015). Thus a deep understanding of concepts can increase high student self-efficacy by treating inquiry-based learning models. Conversely, the expository learning model with a less in-depth understanding of concepts affects students who have low efficacy (Rahmadani & Kurniawati, 2021).

Understanding the concept is information about the benefits that students will get after following the learning process. These benefits can be applied by students in everyday life. The characteristic form of understanding is meaningful: humans organize to solve problems and achieve goals. The indicators of understanding the concept corresponding to the revised Bloom's taxonomy level with good categories, namely interpreting, giving examples, classifying, drawing inferences, comparing, and explaining. Inquiry-based instructional learning according to Borovay et.al. (Borovay

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et al., 2019) is a learning model that has active learning characteristics, students can ask questions, can make decisions, authentic learning, subject-based (intra-curricular) or cross-disciplinary (interdisciplinary) learning materials according to student learning investigations (Borovay et al., 2019).

As a method of learning, improving process skills can be achieved through hands-on experience. A framework for instruction that encourages students to acquire a wider range of cognitive and scientific process abilities can be provided by inquiry learning. Students' learning and processing abilities can be greatly enhanced by the inquiry learning approach (Ergül et al., 2011). One of the many inquiry-based implementation models is described in the article (Jackson et al., 2020) by using literacy techniques (Kidman & Casinader, 2019) that can help students independently select books that are appropriate for each learning phase. As mentioned, that questions and problems are the centers of investigative investigations. Students continuously investigate questions and repeatedly explore opportunities and experiences in the construction of science learning. The science books that are presented are more authentic and interesting than traditional textbooks, this book is equipped with hints on questions and research problems.

Assessment of students' understanding of science concepts in providing ideas and ideas, one example of a student using a science note entry book. Students use learning modules with quizzes at the end of each module which will be cumulative in summative assessments as a form of application of science concepts stated in investigation (Lee & Glass, 2019). This allows teachers to build Inquiry with several levels of support allows students to select the right level for their growth and learning style at each stage (Llewellyn, 2010). Therefore, the investigation is a learning process with a focus on knowledge, skills, and attitude development based on active cognition students learn to explore independently (OLAGOKE & MOBOLAJI, 2014). It also seeks and finds solutions to the problems raised.

According to research, inquiry learning has the ability to boost students' motivation for, engagement with, and interest in science (Hong et al., 2014). A form of learning model that depends on the involvement of students and teachers is the use of the inquiry learning model. This learning paradigm is therefore specified in the student-centered inquiry learning model, according to Jungwon (2020). This paradigm is reliant on the student and the teacher's function as a facilitator of learning. In order to help students, become more adept at using an inquiry-based method, lessen the amount of direct or explicit advice, concentrate on questions, and employ more open-ended, unstructured issues.

Teaching effectiveness is a complicated topic, and a number of variables—including those relating to students, teachers, and schools—interact with one another and affect it (H. Lee et al., 2010). To accomplish the best goals and development, both personally and collectively, inquiry-based learning requires self-regulation, open inquiry, and critical thinking (Bennett, 2015). Self-efficacy is one of the internal variables in a person that might result in a strong belief that he is able to attain particular results, which can help a person succeed in learning. Self-efficacy is a factor that has a significant impact on motivation and success; it may or may not be related to true self-efficacy.

Further development of understanding of self-efficacy (Seneviratne et al., 2019) as self-assessment about the ability to organize and take the necessary actions in dealing with situations. In other words, self-efficacy is self-confidence, every student's belief in doing tasks competently (Engin, 2020). As well as establishing himself significantly to self-regulate and be able to behave instructional. The implication of implementing teacher self-efficacy can create a dynamic and student-centered learning environment so that taking can form student agency.

In learning activities, students visualize positive or negative scenarios about problem-solving activities in science learning, which will then adapt. These scenarios have an impact on students' initial perceptions of themselves, which in turn has an impact on their understanding of learning concepts and learning outcomes. The more complicated the problem, the higher the competence in solving problems, for students with low efficacy, they can provide competence in real world problems with high self-efficacy. Because the effects of different modes of thinking on discovering and examining solutions will vary across students with low and high self-efficacy (Schukajlow et al., 2019).

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When combined with specified goals and an appreciation of achievement, self-efficacy is "an important personal variable that will determine future behavior." In this situation, a person's success as measured by his or her accomplishments is greatly influenced by self-efficacy. Self-efficacy refers to a student's confidence in his or her capacity to complete a task successfully, taking into account factors such as task magnitude (degree of difficulty), task strength, and generality (view of the scope of the behavioral area generally). The following are indicators of magnitude (degree of task difficulty): 1) Confidence in capacity to complete challenging tasks, and 2) Confidence in ability to work harder to succeed.

Strong points include 1). Standing firmly, 2). able to grow one's own potential and generalizability indicators (view of the breadth of the behavioral field as a whole comprises 1). Accept the challenge, then move on. embracing change. Respondents to a questionnaire test designed by researchers to collect data on self-efficacy instrument factors evaluated their level of self-efficacy.Thus, researchers and educators identify the positive influence of inquiry-based learning (IBL) on science learning students both at the affective and cognitive levels. Authentic inquiry skills are expected of students were able; to identify problems, ask research questions, design and conduct investigations, formulate, communicate, and conduct hypotheses, design models, and communicate. This is regardless of how the inquiry learning model was conceptualized over the past 50 years. However, research consistently shows that inquiry-based learning in the classroom has effects on conceptual understanding rather than expository.

An illustration of a fourth-grade elementary school's learning accomplishments in science with a focus on energy-related material. The study focuses on energy sources, energy shifts, and how energy is used and processed in daily living. This research attempts to compare the conceptual understanding of a group of students who use the Inquiry-Based Learning paradigm to that of a control group are treated with the expository model and its effect on student self-efficacy (students' learning confidence in doing certain tasks). Based on research on "Effective Inquiry Learning Approaches in Understanding Concepts" that in order to build a correct understanding of concepts, students can make associations between their previous concepts. Scientifically correct explanations require a learning environment that encourages students to ask questions, form hypotheses, and collect data. In this case, the inquiry approach is very useful for supporting learning (Senyigit et al., 2021), the challenge currently being faced is stated that (Damopolii et al., 2019) science learning in Indonesia tends to focus on memorizing facts or lesson concepts whereas, the teacher dominates all processes. The teacher explains all the material while the students take notes on every important material from the teacher. In addition, several studies have revealed that conventional or direct lecture-based learning has some drawbacks. Thus, the need to change the learning paradigm from direct/conventional learning to creative and innovative learning.

In science teaching practice, the goal is for all students to understand the science concepts being studied. Every student can understand the concept of science and can explain its relationship in real life, not only understanding science. According to McDonald (2019), active learning is a method of instruction that uses students' questions to demonstrate their understanding of the material being covered in class. Besides that, it is discussed in the inquiry learning model (Buyukbayraktar, 2023) that science education has been studied for many years, there are differences of opinion on the definition of asking and how it forms in the classroom. In the inquiry learning model is a form of active learning where students are given a sequence of tasks arranged with stages of the process of investigating, solving, understanding, and working individually or in groups. In this inquiry learning model, we see the process of each syntax/cycle in relation to how people learn. In general, the inquiry learning model framework is defined as follows: orientation, conceptualization, investigation, conclusion, and discussion.

The inquiry-based learning paradigm, which incorporates features that push students to "learn how to learn" and collaborate in groups to find solutions to issues in the real world, as a way to improve conceptual comprehension. Based on the findings of the study of selected journals, a synthesis was

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produced that offers a summary of the research and can follow up on earlier research, namely the impact of IBL on elementary school students' grasp of science topics in terms of self-efficacy. The findings of the journal synthesis indicate that there are few research findings connecting IBL with characteristics related to conceptual understanding. This is a hole that may be filled with additional research on primary schools.. The research's findings are intended to be creative and inventive in order to be more useful, meaningful, and contextual in elementary schools. This is because the self-efficacy variable is a trait of attitudes in science.

Method

Experimental methodology is being used in this study. The two-way analysis of variance (ANOVA) is used for hypothesis testing. With SPSS 24, the data were processed using descriptive analysis and analysis of variance. The expository approach and the inquiry method were the independent variables. The experimental class and the control class were each given a group of subjects. The study had a total of 41 students, who were split into two classes (class A and class B), with class A having 20 students and class B having 21 students each. The experimental design method was employed. Treatment levels two times. The dependent variable (meaningful understanding) and the independent variable (learning method) are the variables in this study. (A) includes two forms: the inquiry learning method (A1) a characteristic variable called self-efficacy. The inquiry learning technique (A1) and the expository learning method (A2) are both parts of the learning method (A). There are two levels of self-efficacy (B), high (B1) and low (B2). Four groups were tested: the guided inquiry method group and students with high self-efficacy (A2B1), the inquiry group and students with low self-efficacy (A1B2), and the inquiry group and students with high self-efficacy in the inquiry learning group (A1B1). The treatment table 1 design is as follows, with the learning designed as follows:

Table 1.Design Treatment by level

Self-efficacy (B)	Learning Method (A)	
	Inquiry (A1)	Expository (A2)
Height (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

All students in the Pamulang sub-district's elementary schools made up the research sample. An approach known as random sampling was used to choose the sample. For this study, two classes are chosen as sampling sources. The subjects were split into two classes, the experimental class and the control class, and the researcher attempted both the inquiry approach and the expository method. While the variable qualities were divided into high and low self-efficacy, the experimental class (Class IV A) was taught using the inquiry technique and the control class (Class IV C) was taught using the expository approach. This technique involves administering various treatments to each experimental group in order to determine whether an effect is present.The normality test was carried out to test the significance of normality (Liliefors) as a whole. The test results show that the variables of conceptual understanding and self-efficacy have a significance value of > 0.05, namely 0.372 and 0.452. Therefore, research data can be expressed in a normal distribution. The results can be seen in table 2 below:

Table 2. Testing Normality

		Self- efficacy	Meaningful Understanding
N		14	14
Normal Parameters, b	Means	78.07	74.29

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	Std. Deviation	11,750	14.123
Most Extreme Differences	absolute,		230,245
	positive,		226,245
	Negative	-, 230	-, 157
Kolmogorov-Smirnov		Z,859,	915
asymp. Sig.(2-tailed),			452,372
a. Test distribution is Normal.			
b. Calculated from data.			

The homogeneity of variance test was carried out on the conceptual understanding and efficacy variables. These variables must fulfill the assumption that the variance is homogeneous so that tests can be carried out on each treatment. The homogeneity of the data was tested using the Bartlett test with the results of the Barlett test at α = 0.05. The results of homogeneity calculations can be seen in Table 3 below:

Table 3. Test Results for Homogeneity Data

Variables	X2count	X2tables (α = 0.05)	Conclusion
A1 A2	0.317	3.84	Homogeneous
A1B1 A1B2 A2B1 A2B2	0.963	7.82	Homogeneous

The results of the X test show that the calculated X value is smaller than the X table value so it can be concluded that the group data examined from the sample variance is homogeneous.Validity test using content validity and construct validity. Construct validity was tested by expert judgment. Content validity was analyzed with reference to the elementary school curriculum. The multiple- choice questionnaire uses a formula based on biserial point dichotomy. The validity of each questionnaire was determined by comparing the correlation coefficient (r-value) with the biserial correlation number (r-table) based on a 5% significance level, as follows: 1) if r-item > r-table and α = 0.05, then the item is considered valid; 2) if r-item≤ r-table and α = 0.05, then the item is considered invalid. Based on these calculations, 20 multiple choice test questions have r-phi values > 0, and a significant level of α = 0.05. Testing the validity of the essay test based on the product moment formula shows that the entire test (7 questions) has a value of r value > r-table (0, 355) and a significance level α = 0.05. To determine the reliability of the instrument used the Hoyt formula.

The instrument for understanding scientific concepts is in the form of multiple choice of 25 questions. It consists of four choices in the form of letters (A), (B), (C), and (D). As for the scoring criteria, that is, if it is correct then it will get a point (1) and if it is wrong it will get a point (0). Student self-efficacy data was collected through a questionnaire instrument with a Likert scale. The instrument has been tested with a total of 35 items. Each statement from the scale of Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree.

Table 4. Indicator Understanding scientific concepts instrument

Variabel Y	Indicator
Understanding scientific concepts	1. Restate the concept that has been learned. 2. Give examples of the concepts that have been studied 3. Associating various concepts that have been studied

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Table 5 Indicator self-efficacy Instrument

Variabel X2	Indicator
Self-efficacy	1. Confidence in self-ability. 2. optimistic 3. objective

Result and Discussion

The purpose of this study was to examine the theory. The first premise establishes the distinction between explanatory and inquiry approaches. The interaction of the various learning strategies is the second supposition. The third hypothesis examined the differences between students who learned using the inquiry approach and those who learned using the expository technique for students who had high self-efficacy. The fourth hypothesis is being tested by comparing how well students who use the expository technique and those who use the inquiry method comprehend concepts. The computations for hypothesis testing, which are shown in Table 4, are summarized as follows:

Table 4. Summary of Test ANOVA

Source	Type II Sum of Squares	Df	MeanSquare	F	Sig.
Corrected Model	3431.250A	3	1143,750	46866,	000
Intercepts	155,258,036	1,	155,258,036	6361793	000
A,	3322321	1	3322321	136,134	000
B,	893	1,		893,037,	850
A*B		1	108036	4,427	108036
Error	585,714	24	24,405		
Total	159,275,000	28			
Corrected Total	4016964	27			
a. R Squared =.854 (Adjusted R Squared =.836)					

3.1 The results of the ANOVA analysis based on table 1 above can be described as follows:

3.1.1 The meaningful understanding of students who study with the Inquiry learning method for students who have low self-efficacy

Based on Table 1 above, the F-count is 136.134, which is greater than the F-table. At the real level α = 0.05 (F count > F table = 136.134 > 4.26). At level α = 0.01 (F count > F table = 136.134 > 7.82). In other words, students who study using the inquiry learning approach and students who study using the expository method have drastically different average scores on how well they comprehend the idea. Students who learn using the inquiry technique outperform those who learn using the expository method, according to the examination of the average score for grasping the idea.

The results of the research that has been done show that learning with IBL is higher than learning with expository learning. This happens because IBL learning is better able to stimulate students to align the concepts learned with real practice contextually so that they are more meaningful. This is in accordance with the opinion of Bennett, M. (2015), Jongwon, L.E.E. (2020). The Inquiry-Based Learning Model's Benefits 1) It can help pupils create and develop a "self-concept" so they can comprehend fundamental ideas and concepts more fully. 2) Help with memory retention and application to fresh learning circumstances.

3.1.2 Interaction learning methods and self-efficacy and meaningful understanding

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Based on Table 2, it is obtained that the F-count is 4.427 which is greater than the F-table. At the real level α = 0.05 (F-count > F-table = 4.427 > 4.26). At level α = 0.01 (F count > F table = 4.427 > 7.82). That is, there is a very significant influence interaction between learning methods and self-efficacy on students' understanding of concepts. The average understanding of the concept in the inquiry method has a high self-efficacy of 87.14 and a low self-efficacy of 61.42. For the average understanding of the concept in the expository learning method which has a high self-efficacy of 83.57 and the average of which has low self-efficacy of 65.71. This shows that to group students' understanding of concepts with the inquiry method and self-efficacy in meaningful understanding, the scores of conceptual understandings tend to be higher.

So, from the results of previous calculations it can be proven that the ability to understand science concepts of students who learn using the IBL strategy is higher than the Expository learning strategy. Conversely, students who have low self-efficacy show better results with expository strategies. From this discussion it can be concluded that there is an interaction effect between learning strategies and self-efficacy on understanding science concepts. The significance of the interaction will certainly have an important meaning when tested at each level of treatment. Based on the results of the research, the two lessons implemented have their respective influences in making learning more effective. Both for students who have high and low efficacy, meaning that both strategies have advantages and have a good influence on students' ability to understand science concepts. This condition is supported by the opinion of Joyce and Weil (2014) that learning strategies need to be used wisely and take into account the capacities and personalities of each learner. Furthermore, according to Duchesne S and McMaugh A (2018) teachers need to consider differentiating the potential of each child in teaching them.

3.1.3 Differences in understanding the concept of students who have high self-efficacy, namely learning with the inquiry method and learning with the expository method

Dunnet's t-test results show that t-0 = 8.115, p-value = 0.000 / 2 = 0 < t-tab = 0.05 or H0 is rejected. That is, the average score of students' understanding of the concept of learning with the inquiry method is higher than the expository method because of high self-efficacy. Testing the third hypothesis proved to be true. Thus, it can be concluded that the conceptual understanding of the group of students who studied with the inquiry method was higher than the group of students who studied with the expository method for students who had high self-efficacy. Thus, the learning method that is suitable for students who have high self-efficacy is the inquiry learning method.

3.1.4. Differences in conceptual understanding of students who have low self-efficacy in learning with the inquiry learning method and the expository learning method.

Dunnet's t- test results show that t-0 = -8.386, p-value = 0.000/2 = 0 < t-tab = 0.05 or H0 is rejected. That is, the average score of students' understanding of the concept of learning with the inquiry method is not lower than the expository method for low self-efficacy. Testing the fourth hypothesis is proven. Understanding on the concepts of students who learn with the inquiry method is not lower than the group of students who learn with the expository method for students who have low self-efficacy. It can be concluded that there is no influence of inquiry and expository learning methods on conceptual understanding of students who have low self-efficacy. The results of the research and statistical analysis show that using the inquiry learning method is effective for both high and low self-efficacy. These findings indicate that overall, there are differences in the results of students' understanding of concepts between groups of students who are taught by the inquiry learning method and the group of students who are taught by the expository learning method.

The use of various teaching techniques has an impact on how students interact with one another. disparities in pupils' meaningful comprehension are similarly impacted by disparities in self-efficacy. The first theory posits that this is so because the inquiry method stresses the use of analysis and critical thinking to investigate and identify solutions to the difficulties posed (Beni, 2012). To effectively follow the lecture, individuals need to possess traits of strong self-efficacy. In contrast to expository learning, which is almost always a learning activity that requires teacher supervision. The overall system is intended to result in a structured flow of events at educational institutions. because it allows pupils the chance to learn new concepts or methods of thinking, to express themselves clearly, and to back up their arguments

Conclusion

Based on data analysis, this study concluded that first, students who used the inquiry learning method were higher than the expository ones. Second, there is an interaction effect between learning methods and self-efficacy on elementary school students' conceptual understanding which depends on the level of self-efficacy. Third, students who have high self-efficacy and are given the inquiry method have a higher conceptual understanding than expository. The meaning of the findings of this study is that in studying the understanding of science concepts, teachers need to choose the right strategy such as IBL which has advantages in stimulating students to make connections between concepts that have been studied with real contextual practice and the importance of considering the characteristics of students in learning science. The implication of this research is that elementary school students can improve their understanding of science concepts through IBL strategies and the like and teachers need to consider the characteristics of self-efficacy students' self-efficacy in learning science. This research still has weaknesses such as questioning in depth the causes of the influence of the IBL strategy, so further research is needed with a different approach.

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