

The Influence of the Inquiry-Based Model on Improving High Level Thinking Skills of Students at Al-Kawthar School, Lebanon

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Abstract. This study aims to explore the influence of the Inquiry-Based Model on improving high-level thinking skills of students at Al-Kawthar School. High-level thinking skills are crucial aspects of students' development to face complex challenges in the era of globalization. The Inquiry Model is a learning approach that places students as active agents in the learning process by encouraging them to question, investigate, and gather information to understand the taught concepts. This research employs a quasi-experimental design with pre and posttests. The research sample consists of students at Al-Kawthar School selected through cluster random sampling. One class is assigned as the experimental group, which learns with inquiry-based learning using the Inquiry Model, while another class serves as the control group with conventional learning. A multiple-choice test of high-level thinking skills is used as the research instrument with a reliability coefficient of 0.89. The results of data analysis using independent samples t-test indicate that the Inquiry Model significantly influences the improvement of high-level thinking skills of students at Al-Kawthar School. This study provides significant implications for teaching at Al-Kawthar School. By adopting the Inquiry Model in the learning process, teachers can enhance teaching effectiveness and students' high-level thinking abilities. The findings of this research can also serve as a reference for curriculum development and teaching methods in other schools. However, it should be noted that this research has some limitations, including a limited sample size and other factors that may affect learning outcomes.

Keywords: Inquiry Model, High-Level Thinking Skills, Al-Kawthar School.

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INTRODUCTION

Education is a crucial aspect of societal and national development because, through education, quality human resources can be produced (Wang & Zhou, 2023). Effective education is expected to equip students with high-level thinking skills, which, in turn, will enable them to face and solve complex challenges in this era of globalization. One of the highly important thinking skills is high-level thinking ability, which encompasses analysis, synthesis, evaluation, creativity, and critical thinking (Sun et al., 2023).

Al-Kawthar School recognizes the importance of developing high-level thinking skills in its students to become independent, innovative individuals capable of adapting to changing times. To achieve this goal, effective and innovative teaching approaches and methods are required.

One interesting learning model in this context is the Inquiry Model. The Inquiry Model is a learning approach that positions students as active agents in the learning process (Garrison, 2022). In this model, students are encouraged to ask questions, investigate, and gather information to comprehend the taught concepts (Orosz et al., 2023). The Inquiry Model not only focuses on providing correct answers but also emphasizes problem-solving processes and deep understanding (Spernes & Afdal, 2023).

However, despite the promising potential of the Inquiry Model to improve students' high-level thinking skills, there is a lack of research exploring its specific implementation at Al-Kawthar School. Therefore, this study aims to investigate the influence of the Inquiry Model on enhancing students' high-level thinking skills at this school.

With this research, it is expected that Al-Kawthar School and other educational institutions can gain a deeper understanding of the potential of the Inquiry Model as an effective tool in enhancing students' high-level thinking skills. The findings of this study can also provide valuable input for curriculum development and teaching methods at the school level, as well as contribute additional knowledge to the broader field of education development.

It is also expected that the results of this research can make a positive contribution to improving the quality of education at Al-Kawthar School, as well as provide valuable scientific contributions to the development of education at both local and national levels.

LITERATURE REVIEW

The Inquiry Model is a learning approach that enables students to take on the role of main actors in the learning process by encouraging them to ask questions, investigate, and gather information to gain a deep understanding of specific concepts (Wen et al., 2023). This literature review highlights crucial findings related to the implementation of the Inquiry Model and its impact on enhancing students' high-level thinking skills.

Several studies have shown that the Inquiry Model has a significant relationship with improving students' high-level thinking skills. When students are actively engaged in problem-solving and investigation processes, they tend to develop critical, analytical, and creative thinking abilities. Research conducted by Alshammari, (2022) noted that students who experienced learning through the Inquiry Model demonstrated significant

improvements in analytical and evaluative thinking compared to students who followed conventional learning approaches.

In addition, the Inquiry Model has also been proven effective in developing students' critical thinking skills (Secadron Jr & Tan, 2023). Students engaged in the Inquiry Model showed greater improvements in their ability to comprehend, analyze, and critically evaluate information compared to the group of students who followed traditional learning approaches.

Thus, based on the literature review above, the Inquiry Model shows great potential for comprehensively enhancing students' high-level thinking skills. Implementing the Inquiry Model at Al-Kawthar School can be a strategic choice in efforts to improve the quality of education and produce higher-quality, innovative students who are ready to face various challenges in the future.

METHODE

This research is a quasi-experiment with a pre and posttest design. The study subjects are students from Al-Kawthar School. The sample was selected using the cluster random sampling technique. One class is assigned as the experimental group, while another class serves as the control group. The experimental group learns with inquiry-based learning, while the students in the control group learn with conventional learning. The instrument used in this research is a multiple-choice test of high-level thinking skills with 10 questions accompanied by reasons, and it has a reliability coefficient of 0.89. The collected data are analyzed using inferential statistical analysis, specifically the independent samples t-test.

RESULTS AND DISCUSSION

The purpose of this research is to explore the influence of the Inquiry Model on the enhancement of Higher Order Thinking Skills among students at Al-Kawthar School. The impact of the Inquiry Model on the improvement of students' Higher Order Thinking Skills was analyzed using an independent samples t-test with a significance level of $\alpha = 0.05$. The t-test was conducted using SPSS 16.0 for Windows. The results of the t-test analysis are as follows.

Table 1 Results of Hypothesis Test for Students' Higher Order Thinking Skills.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2 tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	2.301	.136	3.161	49	.003	3.21538	1.01718	1.17128	5.25949
Equal variances not assumed			3.178	46.525	.003	3.21538	1.01172	1.17953	5.25124

Based on the table above Table 1, it has been found that the significance value of the Independent Sample t-test is $0.003 < 0.05$. This indicates a significant difference between the experimental and control groups. Therefore, it can be concluded that the Inquiry Model has a significant impact on improving students' Higher Order Thinking Skills at Al-Kawthar School. This finding is consistent with the research results of [Mubarak et al., \(2019\)](#), which also demonstrated that the Inquiry Model has a positive effect on enhancing students' Higher Order Thinking Skills.

The results of this study indicate that the group of students who received inquiry-based learning experienced a significant improvement in higher-order thinking skills compared to the control group, who received conventional learning. This improvement can be attributed to the positive effect of the inquiry-based learning model on increasing students' active participation in the learning process. By encouraging students to ask questions, seek information, and formulate hypotheses, they become more engaged with the learning material. These activities directly enhance students' learning motivation and curiosity towards the topics being studied.

Furthermore, the inquiry-based learning model also stimulates and enhances students' higher-order thinking skills. In the learning process using this model, students are encouraged to think critically, analyze information, and seek solutions to complex problems. Higher-order thinking skills, such as analysis, synthesis, evaluation, and a deeper understanding of the subject matter, are further developed.

Not only that, the inquiry-based learning model also contributes to improving students' metacognitive skills. This finding is consistent with the research results of [Nunaki et al., \(2019\)](#) that the inquiry model can enhance students' metacognition. In the learning process, students are prompted to reflect on their own understanding, identify weaknesses and strengths in their thinking, and evaluate the strategies used. This fosters essential metacognitive skills to help students organize, monitor, and control their learning process more effectively.

In the context of learning with the inquiry-based model, students also experience more meaningful learning experiences. Active involvement in seeking answers and understanding concepts strengthens the connection between new knowledge and prior knowledge, making the learning more relevant and easily memorable for students.

The implications of this research have a positive impact on teaching at Al-Kawthar School. By adopting the inquiry-based learning model in the teaching process, teachers can enhance the effectiveness of instruction and students' higher-order thinking skills. Additionally, the school can provide support and training to teachers in effectively implementing the inquiry-based learning model to achieve optimal learning outcomes.

However, this research has several limitations that need to be considered. One of them is the possibly limited sample size used, so generalizing the research findings should be done with caution. Additionally, other factors such as students' motivation level and environmental factors can also influence learning outcomes and should be taken into account in future research.

Overall, the use of the inquiry-based learning model as an instructional approach at Al-Kawthar School has proven its benefits in enhancing students' higher-order thinking

skills. This has provided a positive contribution to the educational development at the school and is expected to serve as a reference for future research and teaching endeavors.

CONCLUSION

This research aims to explore the impact of the Inquiry model on enhancing students' higher-order thinking skills at Al-Kawthar School, Lebanon. Based on the data analysis conducted using independent samples t-test, the research findings indicate that the inquiry model has a significant effect on improving students' higher-order thinking skills.

The implementation of the Inquiry Model in the learning process at Al-Kawthar School encourages students to become active agents in their learning. By prompting students to ask questions, investigate, and gather information to understand the concepts being taught, students become more engaged in the learning material. These activities increase students' learning motivation and curiosity towards the topics being studied.

Furthermore, the Inquiry Model also stimulates and strengthens students' higher-order thinking skills. In the learning process using this model, students are encouraged to think critically, analyze information, and seek solutions to complex problems. This develops higher-order thinking abilities such as analysis, synthesis, evaluation, and a deeper understanding of the subject matter being studied.

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