The impact of Implementing active learning strategies to enhance Islamic education concepts and deductive thinking skills among students with learning difficulties

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Abstract

This study attempted to explore the effect of active learning strategies on improving academic achievement and deductive thinking among students with learning disabilities at the elementary stage. The study used the experimental design to achieve its objectives. The number of students was 80 students selected from fourth-grade male students with learning disabilities in the Abha Schools during the academic year 2023-2024. The students were divided into two groups and each group had 40 students. This study includes the following instruments, lessons based on active learning (these are lessons in Islamic education for the fourth grade), the achievement test that was prepared for this study, and the Deductive thinking skills test. The results indicated that there is an effectiveness of active learning strategies in improving academic achievement. Active learning strategies help students to integrate into educational tasks and participate in various classroom activities, instead of being passive and only receiving information, so that they practice and participate, ask questions, and solve problems. The findings showed a statistically significant difference between the average performance of students in the experimental and control groups on the deductive thinking test attributed to the use of active learning strategies. The use of an active learning strategy increased self-confidence among students as a result of their sense of their abilities and positive roles in learning and as a result of their sense of responsibility towards their learning and their active participation in the strategies used under the guidance of the teacher to achieve the highest possible performance.

Keywords: active learning, deductive thinking, Islamic Education, students with learning disabilities.

1. Introduction

For several decades, the world has witnessed rapid progress in various aspects that affect human life. This progress has resulted in a tremendous cognitive boom unprecedented in human history. Despite the cognitive and technological developments that the world is full of these days, it has been observed by a group of scientists and researchers in the field of education that real practices in the classroom have not witnessed much progress toward moving away from traditional educational methods that focus on the teacher most of the time (Rosyad, 2019). Students are still content with a passive role limited to listening, writing down information, memorizing it, and reproducing it when the teacher requests it. Educational systems in the world, like other societal components, have sought to benefit from these changes to develop their educational system to improve the outcomes of the learning and teaching processes that are organized and supervised by educational institutions in society, most notably the school (Harris & Bacon, 2019).

In this context, a new term emerged at the end of the last century, which those interested in learning and teaching theories called "active learning." Interest in this term increased with the growth of scientific, cognitive, and technical development and progress in the first years of the third millennium (Mahdi et al., 2020). It became one of the important topics and contemporary trends that educators hope will contribute effectively to improving learning and teaching strategies, whether in the classroom or outside it because it aims to activate the role of the student and make him a positive participant in the learning process instead of the traditional negative role (Mansir & Karim, 2020). Proponents of active learning also point out that, among its many benefits, it encourages students to actively participate in class by reducing their reliance on passive learning strategies like note-taking and listening attentively (Mustakim, 2021). If active learning is necessary and important for the student, it is also for the teacher, as it helps him choose the outcomes and questions from varying levels of difficulty to take into account the individual differences among learners, and provides them with help, advice, and guidance at the appropriate time (Imron & Rohman, 2018).

Active learning also represents for both the student and the teacher a field of entertainment and enjoyment in work and thinking and keeps them away from boredom and monotony in their daily activities (Active Learning) (Behzadi & Momennasab, 2023). The term active learning has received great attention from scholars and researchers who have provided different definitions of this term. These definitions have varied in terms of the meanings they include, and in terms of the accuracy of the details they include, but they agree in many aspects that express the essence of this term (Ismail et al., 2022). Active learning is anything a learner performs in the classroom other than passively listening to the teacher during the explanation process. Instead, it includes active listening that helps students understand what they are hearing, taking notes on the most important ideas in the lesson, actively participating in asking and commenting on questions, and dealing with activities and exercises in a cooperative manner that helps solve problems in different life situations (Al-Tamimi et al., 2023).

1.1. Problem Statement

Given the significance of active learning, the present study's significance stems from the issue it investigates; academics are still preoccupied with finding an efficient teaching approach. The teaching method is the basic pillar that relies on to make the educational process successful, as the method is appropriate to the educational situation, the desired educational goals are achieved, and thus affects solving problems related to applying the curriculum, low student achievement, and solving other problems that may hinder the teacher. Its importance also derives from the fact that it may help fill a gap in studies related to active learning for this age group due to the scarcity of studies on it. The majority of today's teachers believe that instilling in their pupils the habit of continuous learning—the ability to seek out new knowledge and abilities on their own—is the primary goal of education. As a result of modern trends in education, students are expected to take responsibility of their own learning. By doing so, they can improve their memory recall, track their progress, and identify areas for improvement. This, in turn, helps students become more actively involved in their own education. The researchers noticed through their experience in teaching and supervision that there is a weakness in students' achievement that may be attributed to the methods

and strategies used by the teacher, which are based on indoctrinating knowledge without paying attention to developing thinking, research, investigation, motivating students and encouraging them to learn. Active learning is also one of the basic processes that the teacher must focus on and seek to develop and support, to enable the individual to face the challenges of today's world, and to develop his ability to adapt to rapid and successive changes.

1.2. Questions of the study

Based on the above, the study attempts to answer the following main question: What is the effect of active learning strategies on improving academic achievement and deductive thinking among students with learning disabilities at the elementary stage?

To answer the main question of the study, two sub-questions were formed as follows:

1- Does the average accomplishment test performance of the experimental group, which was exposed to active learning methodologies, vary statistically significantly from the average achievement test performance of the control group?
2- Does the average deductive reasoning scale performance of the experimental group—which was exposed to active learning strategies—differ statistically significantly from the average performance of the control group?

1.3. Significance of the study

This study aims to determine the effect of active learning using questioning, discussion, cooperative learning, role-playing and problem-solving strategies on the achievement level and academic self-concept of students. It is agreed upon among educators, regardless of the psychological or intellectual schools to which they belong, that learning has acquired contemporary frameworks in which the learner has become its main focus, and the roles of the teacher and the learner and the traditional view of the teaching-learning process with its various poles have changed. In this context, teachers have adopted their new roles, as have students.

Its importance is derived from the interest of human societies in the tremendous technological developments in various fields of human development and the emergence of the concepts of thinking, creativity, knowledge economy, student-centred learning, and other trends that have made active learning the focus of researchers and educators. This study also derives its importance from an attempt to understand the relationship between academic achievement and active learning at a time when complaints are escalating about the low level of student achievement in general, especially in the early stages of learning, which constitutes the cornerstone of educational treatment and reform programs. Without attention to this stage, all these attempts remain out of touch with reality, and this requires searching for new teaching methods that may help solve this problem.

1.4. Limitations

-This study was limited to fourth-grade students in schools affiliated with the Abha Education Directorate for the academic year 2023-2024.

- This study was limited to Islamic education lessons from the Ministry of Education curriculum for the fourth grade.

- The study relied on the academic self-concept scale and the achievement test and their psychometric implications, so the interpretation of the results depends on the validity of the measurement tool and the test, whose validity was verified by a group of arbitrators.

2. Literature Review

Active learning is a teaching methodology that aims to actively engage students in the learning process. Using this methodology, students must read, write, give part of the lesson, conduct an experiment, or do something specific during the lesson (Kholidah, 2022). In this way, they are participants in the learning process and not just passive learners listening to the teacher talk. There are many active learning strategies including learning through play, group exercises, implementing projects, and many others, but what distinguishes them all is that learning is focused on the learner and not the teacher (Alqasa & Afaneh, 2022). Instead of just listening to the teacher, students develop their ability to think by doing or saying something to guide their learning. In active learning, learning is not just about the delivery of content and the syllabus, but also about the learning process and the way of thinking (Nguyen et al., 2021). Active learning develops students' independence and ability to learn and gives them greater involvement and control over the learning process, which means that students are better able to continue learning once they leave school or university, in addition to developing their ability to think and criticize (Patiño et al., 2023).

Active learning is also seen as a process of engaging students actively and directly in the learning process, especially in terms of reading, writing, thinking, and contemplation, as they participate and apply rather than being limited to receiving information in its various forms (Zulhamdi et al., 2022). Active learning is defined as a teaching and learning approach in which students engage in highly effective exercises, projects, and dialogues with a rich and diverse structure that enables them to actively listen, participate in meaningful conversations, think critically and analytically, and reflect deeply on everything that has been read, written, or discussed in terms of topics, issues, or opinions. All of this occurs while a teacher guides and supports them in taking responsibility for their learning while closely monitoring and pushing them to meet learning objectives that centre on developing the learner's integrated and creative personality (Blaz, 2022; Khasawneh, 2023b).

The most important principle of active learning is that it encourages active interaction between the teacher and the learners. It has been shown such interaction, whether inside or outside the classroom, is an important factor in engaging and motivating learners to learn, and it also makes them think about their values and plans (Shirav & Nagai, 2022). It also encourages them to cooperate and enhances learning more when it is in a group form. Good teaching, like good work, requires participation and cooperation, not competition and isolation. It has been found that active learning encourages activity (Mohseni et al., 2020). Instead of listening and taking notes, students learn by discussing and writing about what they have learnt, applying it to their everyday lives, and making connections to prior knowledge. Because learners are better able to comprehend and

assess their own knowledge because they are aware of what they already know, active learning gives them rapid feedback. In order to concentrate intensely on the topic of learning, students must analyse what they have learnt, identify what they do not know, and reflect on what they have learnt and what they should learn (Khasawneh, 2023a).

One of the basic considerations in active learning is that it leads to a change in the role of the teacher who is considered the guide, advisor, and facilitator of learning (Rosyad, 2019). He does not control the educational situation but rather manages it intelligently so that he directs the learners towards its goal. This requires mastery of important skills related to asking questions, managing discussions, designing interesting and exciting educational situations, etc (Mahdi et al., 2020). The teacher's basic role lies in planning to guide the students and help them rediscover the facts, taking into account accepting the students' feelings and praising them if necessary, or praising their ideas and encouraging them.

A number of traits define active learning, the most significant of which are that it emphasises the student's accountability and initiative in learning and developing skills, interest in precise learning strategies and reflection on learning steps and metacognitive skills, interest in meaningful activities and projects and problem-solving, and recognition of the teacher as a facilitator rather than a source of knowledge. Additionally, the ability of this learning to build upon prior learning experiences through the use of methods that emphasise cooperation and creativity, as well as interest in feedback and challenge based on high expectations from all learners (Mustakim, 2021; Ismail et al., 2022).

Previous studies

Mansir et al. (2020) explored the use of active learning strategies in the study of fiqh in an Islamic boarding school was the focus of this research. The data for this study came from a qualitative technique, which relied on library research. Articles on active learning approaches constituted the major data set. To get this information, we combed through a mountain of literature on the topic of Islamic boarding schools (pesantren) and the study of fiqh (the study of Islamic law). Both inductive and deductive reasoning were used to examine the research findings. The findings suggested that the Islamic boarding school may benefit from using the Active Learning approach to teach the topic of Fiqh. For the Active Learning Method to be effective, the course content must be adapted. It was believed that the pupils of the Islamic boarding school would be interested in studying Fiqh by employing an active learning approach.

Al Arood et al. (2020) explored how an online learning program affected the growth of critical thinking abilities in Islamic education among students in the United Arab Emirates. The 94 tenth graders who made up the sample were split evenly between two groups: one that used a cloud-based learning application to study the course, and another that followed the standard procedure for studying the same material. The study's goals were met via the use of reflective thinking techniques, namely pre-and post-testing. Because of the different approaches to instruction, the experimental group had significantly higher levels of reflective thinking across the board. Additionally, there was no statistically significant difference in the post-test scores of the experimental group's pupils based on gender. This research showed that an educational program based on cloud-based learning, educational strategies in the Islamic educational curriculum, and instructional methods for teaching improved students' capacity for reflective thinking.

Warsah et al. (2021) investigated how collaborative learning affected students' ability to think critically about Islamic extremism and how well they were able to retain that knowledge. As a corollary, this research also sought to understand how students perceive CL. This study used a mixed-methods strategy. The experimental samples consisted of forty students—eighteen male and twenty-two female—from an Islamic education department at a university in Bengkulu, Indonesia; nine of these students were intentionally chosen to participate in a qualitative study. A combination of paired and independent sample t-tests was used to analyze the quantitative data, while an interactive model of analysis was used to examine the qualitative data. Students' critical thinking abilities were positively and significantly affected by CL, according to the results. CL helped them maintain the capacity for critical thinking as well. Afterwards, the students felt that CL helped them become more self-aware, motivated to study, intellectually developed, and tolerant of differences.

Jreisat (2023) evaluated a training program to help students become better deductive thinkers. Forty students, split evenly between experimental and control groups, from Albalqa Applied University were studied using a quasi-experimental design. Ten sessions made up the suggested training program, and the study scale included twenty-one questions. The study found that when comparing the pre-and post-test scores of students in the experimental group who followed the suggested training program, there was a significant difference in deductive reasoning skill levels. In contrast, the control group's pre-and post-test scores were not significantly different. Another interesting finding is that the experimental group's mean scores varied significantly from the control group's according to the suggested training program.

Sukawati et al. (2023) explored how one junior high school in Palu City used the inquiry discovery learning approach to improve the academic performance of its Islamic religious education pupils. Direct observation, in-depth interviews, and document analysis were some of the data-gathering strategies employed in this qualitative research. Our study concludes that students' academic performance may be enhanced by the use of HOTS in Islamic religious education. Along with improved performance in studying Islamic religious knowledge, students also develop higher-order thinking skills that help them critically evaluate a range of topics covered in Islamic education classes. In addition, they can work well with others, communicate well, and cooperate when studying the material.

3. Methodology

The study used the experimental design to achieve its objectives by preparing a training program and developing lessons according to active learning strategies within the Ministry of Education curriculum.

3.1. Sampling

The study population consisted of fourth-grade male students with learning disabilities in the Abha Schools during the academic year 2023-2024. The number of these students was 300, distributed among five classes, according to the school formations. Two branches of the population were randomly selected, one branch was selected randomly as an experimental group and the other as a control group. The number of students was 80 students and each group had 40 students.

3.2. Instrumentation

This study includes the following instruments, lessons based on active learning (these are lessons in Islamic education for the fourth grade), the achievement test that was prepared for this study, and the Deductive thinking skills test.

3.2.1.   lessons based on active learning

The training material consisted of 20 educational plans and situations, then built based on the active learning strategies adopted in this study, after analyzing the study material in the Islamic subject determining the objectives and training procedures, and distributing the periods for the activities to be trained on. The material was prepared in cooperation with experts and teachers of the third primary grade in the school.

3.2.2.   the achievement test

An achievement test was prepared for the first semester of the year 2024. The test consisted of 40 paragraphs of the short answer type, and it was taken into account that the paragraphs represent Bloom's levels. The content and objectives of the study material were analysed and presented to a group of fourth-grade teachers to express their opinion on its suitability to the students' level and its measurement of the objectives and content required in the specifications table. The test paragraphs were modified based on the arbitration results, thus achieving content validity. The stability of the test was also verified by applying it to a sample from outside the study sample and from the community itself, as the test was applied to a sample of fourth-grade students numbering (43) female students, and Cronbach's alpha equation was used for internal consistency in terms of paragraph statistics to calculate the stability coefficient, and it reached 0.76, which is acceptable for the study.

3.2.3.   The deductive thinking skills test

It is an objective test consisting of 25 multiple-choice items with four alternatives, consisting of about the five basic skills and sub-skills of deductive thinking, where data was presented in each paragraph that included rules and axioms in well-known real-life issues, in the form of new and similar life situations and problems that can be measured against those whose rulings are agreed upon, and the student is tasked with arriving at a ruling, suggestion, or solution to the issue according to the specified data. The rest was submitted to several specialized arbitrators to consider the main skills of the tool, the extent of its connection with the concept of deductive thinking, the suitability of the relevant sub-behavioural indicators, and its suitability for fourth-grade students, and to suggest appropriate amendments. All of them expressed their approval of the main skills and sub-indicators, except for some minor amendments. Thus, the tool was approved in its final form, as explained in the theoretical framework above. The stability of the scale was also verified by applying it to a sample outside the study sample, but from the same study community, as it was applied to a sample of fourth-grade female students, numbering (30 female students. The Cronbach's alpha equation was used for internal consistency in terms of paragraph statistics to calculate the stability coefficient, and it reached 0.59), which is an acceptable value for this study.

3.3. Procedures

The study sample was selected conveniently, and one of the five fourth-grade classes in the school was randomly assigned as an experimental group and another as a control group.

- The marks of the students from the control and experimental groups on the first periodic test in Islamic education were monitored using the school grade record, to verify the equivalence of the two groups before conducting the study.

- The deductive thinking skill test was applied to the control and experimental groups as a pre-application.

4. Results and discussion

4.1. Results of the first question

To test the validity of the first hypothesis, the mean scores and standard deviations of the scores achieved by the students from the two groups on the post-achievement test in the Islamic education subject were extracted. The value of (t) was calculated for independent samples to reveal the significance of the differences between the means. Table 1 shows these results.

Table 1. Results of the t-test for the significance of the difference between the means of the two groups on the post-application of the achievement test

Group	Number	Mean score	Standard deviation	T value	Sig.
Experimental	40	21.65	2.34	4.88	0.00
Control	40	19.33	2.23		

Table 1 shows that there is a statistically significant difference (0.05) between the post-performance averages at the achievement test level between the experimental and control groups. The difference is in favor of the experimental group, which learnt using active learning strategies. This leads to rejecting the null hypothesis and accepting the alternative hypothesis, which indicates the effectiveness of active learning strategies in improving academic achievement.

This result can be attributed to the fact that active learning strategies help students to integrate into educational tasks and participate in various classroom activities, instead of being passive and only receiving information, so that they practice and participate, ask questions, and solve problems in a cooperative manner in which the student learner bears responsibility for learning and organizes experiences in a self-directed manner. This leads to effective learning through which learning objectives are achieved efficiently and effectively which improves the level of student achievement.

This result can also be attributed to the learner's habitual keenness in active learning to understand the overall meaning of the subject he is learning, without neglecting to learn the details, which makes him able to comprehend the subject better. One of the salient points in active learning is that the learner allocates sufficient time to think about the importance of what he is learning, and tries to link new ideas to life situations that can be applied to them. The learner links each new subject he studies to previous related subjects. All of the previous factors make learning meaningful and contribute to improving students' achievement (Mansir et al., 2020; Al Arood et al., 2020).

4.2. Results of the second question

The second hypothesis was verified by extracting the mean scores and standard deviations of the scores achieved by students from the control and experimental groups on the dimensional scale of

the deductive thinking test. Then the value of (t) was calculated for independent samples to reveal the significance of the differences between the means. Table 2 shows these results.

Table 2. Results of the t-test for the significance of the difference between the means of the two groups on the post-application of the deductive thinking test

Group	Number	Mean score	Standard deviation	T value	Sig.
Experimental	40	43.65	15.6	2.88	0.01
Control	40	35.33	17.48		

Table 2 shows that there is a statistically significant difference between the average performance of students in the experimental and control groups on the deductive thinking test attributed to the use of active learning strategies. The value of (t) for independent samples reached (2.298), which is a statistically significant value of 0.05. By examining the same table, it is noted that (the arithmetic mean of the experimental group members reached (43.65), while the average performance of the control group reached (35.33), which means that the differences between the averages were in favour of the experimental group that was exposed to active learning strategies.

This result can be attributed to the increase in self-confidence among students as a result of their sense of their abilities and positive roles in learning and as a result of their sense of responsibility towards their learning and their active participation in the strategies used under the guidance of the teacher to achieve the highest possible performance. This result can also be attributed to the fact that teachers reach meaningful solutions to problems during active learning because they link new knowledge or solutions to ideas and procedures that are familiar to them and do not use the solutions of other people.

Active learning also shows learners their ability to learn without the help of authority, which enhances their self-confidence and self-reliance. In addition, the task that the learner accomplishes himself, during active learning or participates in, is of greater value than the task that someone else accomplishes for him. All of these previous factors contribute to the development of the academic self-concept among students (Warsah et al., 2021; Jreisat, 2023).

5. Conclusion

This study attempted to explore the effect of active learning strategies on improving academic achievement and deductive thinking among students with learning disabilities at the elementary stage. Active learning is one of the basic processes that the teacher must focus on and seek to develop and support, to enable the individual to face the challenges of today's world, and to develop his ability to adapt to rapid and successive changes. The results indicated that there is an effectiveness of active learning strategies in improving academic achievement. Active learning strategies help students to integrate into educational tasks and participate in various classroom activities, instead of being passive and only receiving information, so that they practice and participate, ask questions, and solve problems. The findings showed a statistically significant difference between the average performance of students in the experimental and control groups on the deductive thinking test attributed to the use of active learning strategies. The use of an active

learning strategy increased self-confidence among students as a result of their sense of their abilities and positive roles in learning and as a result of their sense of responsibility towards their learning and their active participation in the strategies used under the guidance of the teacher to achieve the highest possible performance.

6. Recommendations

The study recommends emphasising the need to use active learning strategies in building curricula in science and other subjects. Building training programmes to provide teachers and other educational practitioners with the skill of planning, implementing, and evaluating learning situations using active learning strategies. It is important to encourage teachers at the different educational levels they deal with to employ active learning strategies, due to their positive effects. Providing a supportive and encouraging educational environment for teachers to use active learning strategies is also very important. The study also recommends conducting further research and studies to investigate the impact of active learning strategies at different school and university levels

Acknowledgments

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