

How to Cite:

Khader, N. S. K. (2022). The extent to which mathematics teachers practice active learning strategies for the ninth grade in the directorate of education for major general Bani Kinana. *International Journal of Health Sciences*, 6(S4), 7611–7625.
<https://doi.org/10.53730/ijhs.v6nS4.10234>

The extent to which mathematics teachers practice active learning strategies for the ninth grade in the directorate of education for major general Bani Kinana

Dr. Nisreen Saleh Khader Khader

Assistance professor in Measurement and Evaluation / Yarmouk University
Head of the Educational Supervision Department - Directorate of Education for
Major General Bani Kinana Irbid / Jordan
Corresponding author email: Nisreen76kh@yahoo.com

Abstract---This study aimed to the extent to which mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in the Bani Kenana District. The study population consisted of all mathematics teachers in the Directorate of Education in the Bani Kinana District, which numbered (173), and the study sample consisted of (83) teachers of mathematics in the Director of Education in the Bani Kinana District. To collect the data, the descriptive-analytical method was used, and the study tool consisted of a questionnaire that measures the active learning strategies of mathematics teachers. The results of the study showed that the extent to which mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in Bani Kenana District came at a positive level, with an arithmetic mean (3.69) and a standard deviation (0.64). The study recommended working on rehabilitating mathematics teachers and developing the mechanism of training programs on different active learning strategies so that the mathematics teacher or teacher accepts them with self-motivation by providing them with material and moral incentives, and providing the necessary devices and equipment for such strategies in active learning, and the need for there to be Follow-up of the results of training programs through field visits by educational supervisors to teachers trained in their schools. And coordination between the Ministry of Education and the faculties of educational sciences in universities to organize training programs to meet the needs of mathematics teachers to learn about different active learning concepts and strategies.

Keywords---active learning strategies, mathematics teachers, learning strategies.

Introduction

The future of education development requires increasing attention to the learner and making him the center of the educational learning process, with the need to constantly search for precise mechanisms and procedures that achieve these goals on the academic ground to activate the teaching process and increase its effectiveness, through the use of teaching methods and methods that lead to the development of students' attitudes and improve their education. Motivate them, develop their cognitive and mental capabilities, and motivate them to participate positively through the availability of an educational environment rich in stimuli. Hence, the recent trend has been to active learning to improve the teaching and learning process, achieve quality in education, and work to transfer learning from traditional methods based on memorization and memorization. And indoctrination to more positive methods and strategies that depend on the effectiveness of the learner, and his involvement in the learning process itself, in order to develop aspects of his personality and abilities, expand the circle of choice for him, and enjoy a great deal of freedom and positive participation in various educational situations.

From this point of view, active learning has become one of the basics of the educational process for all academic levels and different subjects because it puts the learner in constant activity in the search for knowledge, its generation, understanding, summarizing, reformulating, and transferring it to others. Many of the vital components, so he acquires social and life skills, as well as acquire scientific skills such as problem-solving, brainstorming, and different thinking skills, as well as his self-learning skills, developed from research in various sources, comparison and rewind, and knowledge of reason and evidence, thus obtaining science and increasing the retention period of experiences for the longest possible period.

Saadeh, Aqel, Zamel, Shtayyeh, and Abu Arqoub (2006) indicated that active learning is characterized by a set of characteristics, the most important of which is its focus on the student's responsibility and initiatives in learning and acquiring skills, attention to activities and projects aimed at solving problems, and considering the teacher as a facilitator of learning rather than a source, and interest in learning Which includes realistic problems, relying on reliable assessment strategies, and the ability of this learning to build on previous learning experiences using methods that focus on cooperation and creativity, attention to feedback, and challenge based on high expectations of all learners, in addition to diversifying teaching methods for the success of active learning application procedures.

Active learning strategies are an imperative in the context of educational trends, which entail reconsidering the roles of the teacher and the student, so that the teacher is the facilitator of the experiments, directs the students to understand

the content, and manages their activities, while the student is responsible for the learning path through viewing, questioning, and discussion. (Urio et al., 2017)

The term active learning appeared in the last years of the twentieth century and increased interest in it with the beginning of the twenty-first century. The era of the knowledge revolution had a major role in supporting active learning as one of the contemporary educational and psychological trends with a significant positive impact on the learning process (Al-Shammari, 2012).

In order for the vision to become clear, it is necessary to know the concept of active learning strategies as mentioned (Sulaiman, 2015), as he defines them as: Learning that focuses on the learner's positivity and effectiveness in the educational situation so that he is able to participate and dialogue, rich discussion, and conscious thinking, and the ability to solve the problems he faces and apply what he has learned in other life situations, provided that he assumes responsibility in teaching himself, occupying himself directly, and is active in the process of learning. learning."

Based on the importance of active learning, the school must provide appropriate learning environments that are fertile for creativity, that help the learner to learn on his own, and enable him to acquire the desired skills and trends and thus apply them in other educational and life situations; In addition to the theoretical information.

In view of the foregoing, active learning is one of the modern trends that enrich the educational process and helps the learner to know his role and what is required of him during the learning process in a manner commensurate with his nature, class time, and learning environment, and refine his skills and make learning meaningful in his life, and thus scientific education prevails In the community; Therefore, this research sought to reveal the reality of mathematics teachers' practice of active learning and the challenges they face in the Directorate of Education in the Bani Kenana District.

The study Problem

The current era is witnessing rapid growth in knowledge, especially after the advent of the Internet and various satellite channels. This rapid growth of knowledge posed a great challenge and raised many questions about the type of knowledge that should be provided to learners, how to address it in textbooks and the classroom, and the most appropriate methods for interacting with knowledge. It also assumes taking into account a number of experiences, the most important of which may be the need to find ways and methods that provoke the learner's thinking and enable the teacher and the learner to stay away from the indoctrination that eliminates thinking.

Given the successive development of educational thought and the great interest in educational processes, and the emergence of modern educational philosophies, new roles have emerged for the teacher and the student, so it is necessary to activate their roles in the learning and teaching processes so that the learner is the focus of the educational learning process in the classroom.

As educators compete to find modern and diversified ways and strategies to ensure the quality of educational outputs, given that educational results are not commensurate with their inputs. This is due to the usual teaching methods that focus on the scientific material and neglect the learner. Therefore, those concerned with education affairs should strive to develop aspects of the educational process, including curricula, books, methods, and teaching strategies.

The researcher noticed the weak background of the different categories of education, especially mathematics teachers, with active learning and its various components in general. This encouraged her to focus the study problem on the extent to which mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in the Bani Kenana District by answering the following question:

1. To what extent do the mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in Bani Kenana District?

The significance of the study

The significance of this study stems (theoretically and practically) as expected in the following:

1. It benefits mathematics teachers in employing active learning strategies in teaching and highlighting the effectiveness of developing active learning.
2. The increasing role of active learning strategies and the modification they lead to in the learner's behavior and the formation of new, developed, and modern trends to keep pace with the times.
3. It opens the way for researchers to conduct research on the effectiveness of employing active learning strategies in teaching mathematics
4. It helps those interested in the Ministry of Education and those responsible for developing curricula in employing the study's recommendations to enrich the reality of mathematics teaching.

Procedural definitions

Active learning

Active learning is defined as: Techniques that help students do more than just listening to a lecture or a direct presentation by the teacher to the students, as well as many mental skills such as critical thinking, metacognitive thinking, and basic scientific skills such as observation, interpretation, inference, and prediction, as well as skills Critical reading, summarizing, listening, and other skills and linking them to the reality of his life to be meaningful" (Al-Shammari, 2011: 23).

The researcher defines procedurally active learning as: Mathematics teachers and students practice activities and acquire educational experiences, which are measured through the study tool after verifying its validity and stability.

Math teachers

The researcher defines mathematics teachers procedurally as teachers who teach mathematics in government institutions in the Directorate of Education in the Bani Kenana District.

Study Limits

The study is limited to:

- Objective limits: the extent to which mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in Bani Kenana District.
- Human limits: a sample of mathematics teachers in the Bani Kenana District government schools.
- Spatial boundaries: government schools in the Directorate of Education in the Bani Kenana District.
- Time limits: the first semester of the 2021/2022 school year.

Theoretical framework

Scientific, cognitive, and technical changes and developments in the last years of the twentieth century and the first decade of the twenty-first century have led to the addition of new tasks and duties to the teacher's roles that are constantly renewed and to provide the learner with educational experiences that develop his skills, which leads to an increase in his achievement and academic excellence. Mathematics education aims from the beginning of the educational stage to empower the student with the scientific and mathematical skills by providing him with basic skills and helping him to acquire the practices of the mathematical process in the correct ways and its positive trends, which helps in developing these skills throughout the educational stages so that the student reaches the end of these The stage is to a level that enables him to use mathematical arithmetic skills in a way that helps him to continue studying in the advanced educational stages. There have been repeated calls to diversify and develop teaching methods, which focus on involving the learner in the teaching and learning process, and making him the main axis in that; Let us get to learning active activities that the learners urge to use skills that think about us, the assignment of a group of skills, knowledge, directions, and values, and their interference from independence in learning, and the ability to solve life problems, make the decisions, and make the decisions, and do not fulfill teaching and learning, and they are the main focus of discussion, analysis, thinking and deduction because they are an active and effective element. Abu Hadaf (11:2008). The current era is characterized by technical and scientific changes in various fields, and accordingly, teaching methods have developed that work to advance the educational process and which make the learner the focus and basis of the educational process.

The term active learning is not a modern term, as it appeared in the last years of the twentieth century, and interest in it increased dramatically with the beginning of the twenty-first century, as it is one of the contemporary educational and

psychological trends that have a significant positive impact on the learning process inside and outside the classroom. (Saada et al., 2018).

Active learning is: “that learning based on the learner’s effort and active and active participation during the educational situation, and active learning has been associated with every activity directed towards the students’ involvement in doing something inside or outside the classroom and then thinking about what they do” (Said and Eid, 2006: 112).).

Through the above, the philosophy of active learning is evident in: It focuses on that learning must be related to the lives of learners, their needs, and interests, and this is done through the interaction of learners with their environment and surroundings, and this is done in places where the learner practices his daily activities such as home, school, and neighborhood (Jamal, 2018). Based on the above, it is clear that active learning plays a significant role in activating the role of the learner in order to achieve the desired educational goals and advance the educational process and its outputs.

The significance of active learning

Many who are interested in active learning believe that not investing in active learning in different educational situations may make the learner not exceed the stage of knowledge in education, and therefore his relationship with the course content and its various topics is often weak, as active learning focuses on the learner during the learning process and makes him a more active participant, and vitality in-class discussion (Al-Rusa, 2007). In this context, the importance of active learning can be defined in terms of: It represents a challenge for the teacher in terms of his ability to choose the appropriate activities and help create a positive interaction between learners and develop social relations between them. It develops realism in mastering work and deepens self-confidence and expression of opinion. So that, through active learning, learners come up with meaningful solutions to the problems they face. Thus, learners receive sufficient reinforcements about their understanding of new knowledge, which expands students' perceptions and imaginations and makes them able to assume responsibilities, face difficulties, and solve problems. Active learning increases the effectiveness of motivation for learners. Pupils in this type of learning are seen as positive and not passive recipients of information in the educational process.

The significance of active learning, as mentioned by (Rifai, 2012; Saadeh et al., 2018), is shown in the following: It helps learners to follow work rules, build social relationships, and respect teamwork. It also encourages learners to appreciate themselves, gains experience, expresses their opinions and suggestions, increases their motivation towards learning, encourages initiative, commitment, and responsibility, and promotes positive learning. It also depends on educational activities. This reduces passive listening and taking notes throughout the class time, and this requires diversification in the levels of questions asked to consider the individual differences among learners. From this point of view, the importance of active learning becomes clear in making the learner an active and active focus of the educational process, capable of taking

responsibility for his learning and applying the experiences provided to him in various areas of his daily life.

Active Learning Strategies

The role of the teacher is to use active learning strategies; Through the following (Rifai, 2012; Al-Mohammadi, 2018; Abdelkader and Kulaibi, 2017):

Lesson planning stage

- Determine the appropriate strategies for the objectives of the lesson.
- Appropriate strategies to the level of students.
- Appropriate strategies for class time.
- Taking into account the strategies for the potential and ability of the teacher.

Lesson implementation stage

- Use of many individual and group learning situations and activities during learning.
- Focusing on the behavioral aspects during learning and teaching.
- Provide opportunities for student discussions during active learning.
- Training students to manage discussions and negotiate in various societal issues.
- Supporting social relations and positive attitudes among students. calendar stage
- Diversification of evaluation methods, such as oral, written, and note tests.
- Comprehensive calendar.
- Investing in the evaluation results for development in improving the educational process.

Characteristics of Active Learning

Saadeh (2006:65) and Al-Shammari (15:2011) believe that the characteristics of active learning are as follows:

1. Learning is directed to the learner's benefit and focuses on the student's responsibility to acquire new knowledge and acquire different skills.
2. Focus on the principle of feasible challenge with appropriate support and high achievements, and focus on learner creativity.
3. Paying attention to the feedback derived from the educational experiences gained.
4. Paying attention to useful activities and exercises, especially those that focus on solving problems and taking into account individual differences among learners to achieve desirable and valuable educational goals.
5. Pay attention to the student's physical, emotional, and mental fields.
6. Students' performances and assignments help improve oral communication skills.

Obstacles to active learning and how to overcome them:

Despite the effectiveness of active learning and its many benefits, there are several obstacles that prevent its application in the educational process, mentioned by (Saada and Al-Awaidah, 2017; Jamal, 2018; Saadeh et al., 2018), which are as follows:

1. The decrease in the number of teachers in some schools.
2. Lack of material capabilities that help in the application of active learning strategies.
3. Short time for lessons.
4. The teacher's preference for and familiarity with traditional teaching methods.
5. The teacher's lack of understanding of his roles and what his work requires.
6. Exceeding the teacher's quorum for more than twenty lessons.
7. Many teachers do not have the skills and experiences of active learning that are required to be high, which prevents the application of active learning.

These obstacles are among the things that prevent the application of active learning in the educational field, which leads to weak educational outcomes and the failure to achieve the desired educational goals. These obstacles inspired researchers and those interested in the educational field to find solutions that help reduce these obstacles, apply active learning, and benefit from it effectively. More than that, which reflects positively on the teaching-learning process and thus achieves the desired educational goals; and these proposals include:

1. Creating a sound educational atmosphere, including the organization and distribution of roles.
2. Urging learners and increasing their motivation to participate in various active learning activities.
3. Familiarity with the teacher's basics of active learning, its objectives, and the elements it contains through training.
4. Advance planning for active learning facilitates the effective achievement of the goals and activities of the school curriculum.
5. Informing the teacher of everything related to active learning research and its publications to acquire skills and experiences that will assist him when applying active learning.
6. Preparing model classes that contain an appropriate number of learners makes learning more efficient.

We conclude from the above the importance of active learning and its role in advancing the educational process of learners, meeting their needs, and taking into account their interests, which helps in the comprehensive development of the learners' personalities in all aspects, and thus they employ it in their daily lives and find appropriate solutions to the problems they may face.

The literature review

A study (Sibona and Pourreza, 2018) aimed to study the difference between active learning and lecture in teaching scrum project management in the university environment in the United States of America. The study was applied to a sample

of 155 students through an online survey over two semesters. Out of five semesters, the results showed that students perceived that they learned more through active learning than through lecture, and they preferred active learning to lecture and found it more attractive.

A study (Khan et al., 2017) aimed to reveal the effectiveness of active learning on students' academic achievement in physics at the secondary school level in Pakistan. The study was applied to a sample of 80 students studying physics in the ninth grade, who were divided. The results showed that the performance of the experimental group was significantly better at all levels of focused learning (knowledge, understanding, application, problem-solving, observation and thinking) and the general academic achievement of students compared to the control group.

And the study (Demirci, 2017) aimed to determine whether there is a difference in the mean scores of the attitude scale toward science using active learning and the traditional method of teaching science. The city of Eskisehir they were distributed into two groups, an experimental group that studied using active learning and a control group that studied using the traditional method, and the results showed a significant difference between the experimental and control groups in favor of the experimental group that studied using active learning.

However, the study (Hyun and Ediger, and Lee, 2017) examined the effect of student satisfaction with the learning process through active learning and traditional classrooms in a sample of 16 classrooms in a private liberal arts university, taught by seven different members of the faculty, showed. The results showed that student satisfaction was positively affected with the individual and group learning process through educational active learning activities at the undergraduate and graduate levels and that active learning activities positively affected student satisfaction in coursework at the graduate level, and was an important factor in positively influencing the Student satisfaction with individual and group learning processes in both active learning and traditional classrooms.

Furthermore, Ahmed's study (2015) aimed to identify the effectiveness of using some active learning strategies in the achievement of science and the development of some lifelong learning skills and the trend towards active learning among sixth-grade primary students in the Kingdom of Saudi Arabia. The study was applied to a sample of sixth-grade students and proved. The results showed that the active learning strategies used increased the learners' achievement and led to the development of lifelong learning skills (scientific communication, inference, the use of numbers) and a positive attitude towards active learning in science learning.

Saadeh (2013) conducted a study to identify the degree to which kindergarten teachers in Kuwait apply the elements of active learning. A purposeful sample of (250) kindergarten teachers was selected. To achieve this purpose, the researcher developed a note card that consisted in its final form of (40) paragraphs. The results resulted in the degree of application of the active learning elements by the teachers was a high degree on all aspects. There were no statistically significant differences in the degree of application of the details of kindergarten teachers to

the elements. Active learning according to the difference in academic qualification and the presence of statistically significant differences in the degree of application of kindergarten teachers in the State of Kuwait to the field of active learning elements (reading, writing) according to the variable years of experience, as well as the total score of all areas of active learning elements in favor of three years and less of experience.

Al-Zamil (2011) conducted a study to identify the views of the lower basic stage and female teachers in UNRWA schools towards their active learning practices with its various components in the governorates of Ramallah and Nablus. The sample consisted of (75) male and female teachers, and a questionnaire consisting of (30) items was distributed to them. The results showed that there were statistically significant differences in the views of the teachers of the lower basic stage and female teachers in UNRWA schools in favor of female teachers, with no statistically significant differences in the teachers' views towards their active learning according to the variable of academic qualification, governorate, number of years of experience, and the grade taught. As well as the absence of statistically significant differences in the views of female teachers towards their active learning, according to the educational qualification, governorate, and years of experience.

Study Methodology

To answer the study questions and achieve its objectives, the researcher used the descriptive analytical approach; It fits with the nature of this study, which aims to reveal the extent to which mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in Bani Kenana District.

Study population and sample

The study population consists of all 173 mathematics teachers affiliated with the Directorate of Education in the public schools in Bani Kinana District for the year (2021/2022). The study sample consisted of (83) male and female teachers, who were chosen randomly, and Table No. (1)) shows the division of the study sample.

Table 1. Describe the characteristics of the study sample

Variable	Variable class	No. of sample	Percentage
Gender	Male	36	% 43.37
	Female	47	% 56.63
Qualification	Bachelor	56	% 67.47
	Master's	17	% 20.48
	PhD	10	% 12.05
Job experience	less than 5 years	19	% 22.89
	5- 10 years	38	% 45.78

	11 years and above	26	% 31.33
Total		83	100.0

Study tool

Many scientific research tools are used in collecting information and data and based on the nature of the data to be collected and on the approach followed in the study, it appeared that the most appropriate tool to achieve its objectives is: the questionnaire, which was designed after reviewing the literature, scientific research methods, and relevant field studies with relevance to the subject of the study.

The tool consisted of (14) paragraphs concerned with knowing the extent to which mathematics teachers practice active learning strategies from their point of view, and each paragraph has five alternatives, which are: (always, often, sometimes, rarely, never), and the following scores were given in order (5, 4, 3, 2, 1) respectively, the scale was divided into five categories, namely: (high negative, its score (1-1.8), negative and its score (1.81-2.60), neutral and its score (2.61-3.40), positive and its score (3.41). -4.20), and finally high positive and its score (4.21-5).

Validity of the study tool

The tool was presented to (8) experienced and specialized arbitrators; To find out their opinions about the consistency, clarity, and comprehensiveness of the questionnaire, including the affiliation of the paragraphs to the scale as a whole. The questions were modified and formulated based on the arbitrators' recommendations. In light of the arbitrators' proposals for modification, the modifications agreed upon by the arbitrators were made, and in light of that, they are amending and deleting a number of them, in addition to reformulating some paragraphs to indicate directly and briefly what the paragraph aims for, which achieved its apparent validity.

Reliability of the study

To verify the reliability of the internal consistency of the tool, the Cronbach's Alpha coefficient was calculated on an exploratory sample similar to the study sample consisting of (18) male and female teachers. It is an appropriate value for study purposes.

Results and Discussion

Results related to answering the question: To what extent do mathematics teachers practice active learning strategies for the ninth grade in the Directorate of Education in Bani Kenana District? To answer this question, the means and standard deviations of the responses of the sample members were calculated, and Table (2) shows the results.

Table 2. The mean and standard deviation of the responses of the sample members toward active learning strategies

Sr.	paragraphs	Mean	SD	Level
1	I direct the students to participate in setting the objectives of the lesson.	1.01	2.99	Neutral
2	I am good at designing teaching aids and activities to promote active learning strategies.	1.22	3.33	Neutral
3	I feel that using active learning strategies increases my motivation to teach mathematics.	1.11	3.63	Positive
4	I regularly follow courses on active learning strategies.	1.23	3.25	Neutral
5	I use the small group method to discuss different topics in the educational context.	1.26	3.72	Positive
6	Motivate students when they use active learning strategies.	1.28	3.53	Positive
7	I believe that active learning strategies are one of the most important and good alternatives to developing education.	0.97	4.09	Positive
8	Use active learning strategies consistently and regularly.	1.03	3.86	Positive
9	I believe that the use of active science strategies contributes to the dissemination of science and knowledge.	0.99	4.11	Positive
10	I assign students scientific and practical assignments using active science strategies.	1.12	3.98	Positive
11	Use interactive and creative learning strategies that motivate students for the educational process.	0.98	3.86	Positive
12	Allow sufficient time to use active learning strategies and discuss the results.	1.16	3.94	Positive
13	I find active learning strategies stressful and tiring when teaching mathematics.	0.87	4.03	Positive
14	I encourage the use of active learning strategies and their use in teaching mathematics	1.12	3.49	Positive
Total		0.64	3.69	Positive

Table (2) shows that the mean of the answers of the study sample members to the extent to which mathematics teachers practice active learning strategies ranged between the positive and neutral levels, with the mean ranging between (2.99 - 4.09), and the total score of the tool came at the positive level, with a mean (3.69), And with a standard deviation (0.64), where the highest was for the paragraph "I believe that active learning strategies are one of the most important good alternatives for the development of education" with a mean (4.09) and a deviation (1.12), while the paragraph "I direct students to participate in determining the objectives of the lesson" got the lowest mean (2.99), and with a deviation (1.01).

The current study agrees with the study of (Sibona and Pourreza, 2018, (Khan et al, 2017), (Demirci), (2017), Hyun and Ediger and Lee, Ahmed (2015), Saadeh (2013), and Al Zamel (2011), which showed a positive level towards the use of active learning strategies, which showed a high positive degree. The results showed that the extent to which mathematics teachers practice active learning strategies came at a positive level. The researcher attributes the result: to the teachers' awareness of the requirements for teaching mathematics using active learning strategies. Their experience in this field facilitates the learning and teaching process, indicating agreement and a (positive) degree on the importance of active learning strategies. Active learning strategies in mathematics teaching.

Recommendations

In light of the study results and conclusions, the researcher recommends the following:

1. Work to rehabilitate mathematics teachers and develop the mechanism of training programs on various active learning strategies so that the mathematics teacher or teacher accepts them with self-motivation by providing them with material and moral incentives and providing the necessary devices and equipment for such strategies in active learning, and the need for there to be Follow-up of the results of training programs through field visits by educational supervisors to teachers trained in their schools.
2. Coordination between the Ministry of Education and the faculties of educational sciences in universities to organize training programs to meet the needs of mathematics teachers to identify the different concepts and strategies of active learning.
3. That mathematics teachers prepare their teaching plans according to the active learning approach to achieve different learning outcomes, develop students' thinking and acquire positive attitudes toward active learning.

References

1. Abdel Qader, Mohsen Mustafa; Kulaibbi, Rasha Abdullah (2017). The reality of using the language of science in the teaching of science. Journal of the Whole in Psychological Studies and Educational Sciences, 1 (6), 38-66.
2. Abu Hadaf, Somaya. (2008). The effect of the active learning method on the achievement of the fourth-grade female students of some scientific concepts in general science and their inclinations towards science in the Gaza Governorate. Unpublished Master's Thesis, Al-Azhar University, Gaza, Palestine.
3. Ahmed, Amal Saad Sayed (2015). The effectiveness of using some active learning strategies in the acquisition of science, the development of some lifelong learning skills, and the trend towards active learning among sixth-graders in the Kingdom of Saudi Arabia. Education Journal for Educational, Psychological and Social Research, Al-Azhar University - College of Education, 162 (3), 119-172

4. Al-Mohammadi, Iman Saed (2018). The reality of mathematics teachers' use of active learning strategies in teaching mathematics at the intermediate stage. *The Specialized International Educational Journal*, 7(2), 55-80.
5. Alruassa Tahani, (2007). The effectiveness of a proposed program in developing active learning practices and modifying beliefs towards it among female student teachers at the College of Education (Scientific Departments in Riyadh). Unpublished Ph.D. thesis, University of Riyadh, Riyadh.
6. Al-Shammari, Mashi Mohammed (2012). A strategy in active learning. Riyadh: Al-Humaidhi Press.
7. Al-Shammari, Mashi. (2011). Active learning strategy. Hail: Ministry of Education.
8. Al-Zamil, Mohammed. (2011). "The perspectives of the teachers of the lower basic stage and its female teachers in UNRWA schools towards their active learning practice in the governorates of Iram Allah and Nablus." *The Student's Teacher Journal*, No. 1, 3-24.
9. Demirci, C,. (2017). The Effect of Active Learning Approach on Attitudes of 7th Grade Students. *International Journal of Instruction*, 10 (4),129- 144.
10. Hyun, J., Ediger, R., & Lee, D. (2017). Students' Satisfaction on Their Learning Process in Active Learning and Traditional Classrooms, *International Journal of Teaching and Learning in Higher Education*, 29, (1),108- 118.
11. Jamal, Mohamed Jihad (2018). Active learning (its nature, objectives, patterns, management, measurement, and evaluation). United Arab Emirates - Lebanese Republic, Al Ain: University Book House.
12. Khan, K., & Majoka, M. I., & Khurshid, K., & Shah, S. M. H. (2017). Impact of Active Learning Method on Students Academic Achievement in Physics at Secondary School Level in Pakistan. *Journal of Education & Social Sciences*. 5(2): 134- 151
13. Mukhtar, A. U. S., Budu, B., Sanusi B, Y., Mappawere, N. A., & Azniah, A. (2022). The effect of reproductive health education with multimedia video learning on the improvement of fluor albus prevention behavior young woman pathologist. *International Journal of Health & Medical Sciences*, 5(1), 75-79. <https://doi.org/10.21744/ijhms.v5n1.1841>
14. Rifai, Aqeel Mahmoud (2012). Active learning concept, strategies, and assessment of learning outcomes. Alexandria: University House.
15. Rifai, Aqeel Mahmoud (2012). Active learning concept, strategies, and assessment of learning outcomes. Alexandria: University House.
16. Saadeh, and others. (2006). Active learning between theory and practice, 1st Edition. Dar Al-Shorouk for Publishing and Distribution, Amman, Jordan.
17. Saadeh, Jawdat (2013). "The degree of kindergarten teachers' application of the elements of active learning in the State of Kuwait." *Dirasat Journal, Educational Sciences Series*, 40 (4), 1177-1161
18. Saadeh, Jawdat Ahmed; Akl, Fawaz; Zamel, Magdy; winter, beautiful; and Abu Arqoub, Huda (2018). Active learning between theory and practice. Jordan, Amman: Dar Al-Shorouk for Publishing and Distribution.
19. Saadeh, Jawdat Ahmed; and Al-Awaidah, Rakan Haider Saleh (2017). Difficulties of applying active learning in secondary schools from the point of view of teachers in Madaba Governorate. *Dirasat - Educational Sciences - Jordan*, 44 Supplements, 87-100.

20. Said, Atef Mohamed; Waid, Raja Ahmed Mohamed (2006). The effect of using some active learning strategies in teaching social studies on achievement and developing problem-solving skills for preparatory stage students. *Studies in Curricula and Teaching Methods*, Egyptian Association for Curricula and Teaching Methods. 111, 100-141
21. Sibona, C., Pourreza, S. (2018). The Impact of Teaching Approaches and Ordering on IT Project Management: Active Learning vs. Lecturing. *Information Systems Education Journal*, 16 (5).
22. Suleiman, Samiha Muhammad (2015). Active learning, its philosophy, its strategies, its applications, and its evaluation of its results. Riyadh: Qasr Al-Sabil.
23. Urio, A., Fabiana, Angelica, Z., Claudio, F., Vanilla, E., & Jeane, S. (2017). Challenges in the use of active learning strategies with students in a public school. *English/ Portuguese*, 11(12), 4866-4874
24. Widana, I.K., Sumetri, N.W., Sutapa, I.K., Suryasa, W. (2021). Anthropometric measures for better cardiovascular and musculoskeletal health. *Computer Applications in Engineering Education*, 29(3), 550–561. <https://doi.org/10.1002/cae.22202>