International Journal of Finance and Managerial Accounting, Vol.11, No.43, Autumn 2026 IJFMA

Testing the effectiveness of teaching and learning methods in the field of auditing: Experimental research

Kamiyar Asadimehr
Department of Accounting, Firoozkooh Branch, Islamic Azad University, Firoozkooh, Iran.
asadimehrkamiyar@gmail.com

Mohammadhamed Khanmohammadi
Department of Accounting, Damavand Branch, Islamic Azad University, damavand, Iran
(Corresponding author)
dr.khanmohammadi@Damavand.ac.ir

Seyedeh Atefeh Hosseini
Department of Accounting, Firoozkooh Branch, Islamic Azad University, Firoozkooh, Iran.
Hosseini_accounting58@yahoo.com

Submit: 03/07/2024 Accept: 31/07/2024

ABSTRACT

The purpose of this study is to evaluate the effectiveness of teaching and learning methods in auditing field. Research method was to propound a semi-experiment with a three group Pre-test - Post-test. The statistical population includes all accounting and auditing students in the Islamic Azad Universities of Tehran province and the sampling method of availability. The independent variable is the education type and the dependent variable is the students' performance. In order to check the performance of the students, their audit course grades were taken at the end of the semester and the covariance test was used to analyze the data. The results showed that the teaching method used in the classroom was effective on the students' performance and according to the test statistics and ETA coefficient, 76.2% of the changes related to students' performance are explained by teaching methods. Also, a significant difference was observed between active and traditional teaching methods. Both the Activity-Based method (ABAL) and the Team-Based method (TBL) were more effective than the traditional method this way, while the Activity-Based teaching method was more effective than the team method. According to the results obtained from this study, it was estimated that the use of modern and accepted methods in accounting education can guarantee the learning and quality of accounting education in Iran.

Keywords:

team-based learning (TBL), activity-based learning (ABAL), traditional learning (lecture), audit.

1. Introduction

One of the most important issues in the education field in 21st century is to pay attention to the type of learning and then the academic performance. Choosing the appropriate teaching method depending on different educational contents is also one of the appropriate strategies to increase academic performance and ultimately the quality of education (Azadbakht, Haghighatdoost & Esmayilzadeh, 2010). Therefore, paying attention to the appropriate teaching method with the content and topic being taught can be one of the effective factors in increasing the students' performance, because it has been realized that the students' learning style can be adapted to the professor's teaching style (Nadjafi, Karimi & Jamshidi, 2009). The academic performance in any society represents the success of the educational system in the goal setting and paying attention to meeting individual needs fields, Therefore, the educational system can be considered efficient when the students' performance in different periods has the topmost and highest figures. Academic performance refers to the person's learnt or acquired abilities in educational subjects measured by standardized learning tests (Rezayi, Jahan & Rahimi, 2016). There are a lot of cognitive and emotional factors affecting students' performance. One of the most prominent and complete frameworks for academic performance perception, especially in educational and skill fields, is progress goals (Kaplan & Flum, 2010). It is considered an important structural theory of behavior perception in educational environments (Pintrich, 2000). This theory was presented by Dweck (1986) and Nicholls (1984), which include situation-specific orientations that indicate the desire to advance, grow, acquire knowledge, or demonstrate competence in a specific context. Ames (1992) considers progress goals to be a coherent pattern of a person's beliefs, through them will tend to situations in various manners, act in that context, and finally will provide an answer. From Dweck and Leggett (1988) opinion, the progress goals concept basically refers to students' reasons for doing homework (Kadivar, Farzad & Dasta, 2012).

Teaching and learning methods are one of the important topics in the teaching of various educational fields, and lecture is currently the dominant method of teaching in humanities faculties. This method, which is one of the most common methods of knowledge transfer at different levels, although the professor transfers a large amount of scientific material to the student, but usually meaningful and deep learning is not created. This method has been somehow successful in training humanities students, but it has had shortcomings too, and it has weaker performance than the solving problem method (Azadbakht, Haghighatdoost & Esmayilzadeh, 2010). But today, reforms have been made in the revision of student educational programs and attention has been paid to student-oriented methods (Memariyan, 2011). In the traditional university education method, most of the class time is spent on the professor's lecture with students watching and listening. Students do the homework alone and teamwork is not applauded. On the other hand, the focus of activities in student-oriented methods is transferred from the teacher to the learner; In other words, in these methods, the organizing responsibility of what is necessary to learn is left to the student. The most important of these methods is: Active learning, in which students are effectively engaged in what they are learning, answering questions, posing questions themselves, entering discussions and explaining contents. In collaborative learning, students do assignments or projects in groups under conditions that convince both their effective teamwork and individual responsibilities. In problem-based learning, a problem is first proposed, and then, the necessary knowledge and skills to solve that problem are gradually provided to the student. Student-oriented methods have an obvious advantage over the traditional teacher-oriented method, which can be seen in cases such as faster and more lasting learning, deeper understanding of course materials, application of critical thinking or creative problem-solving skills, and creating positive attitude towards what is taught. One of the active learning techniques is group learning or team-based learning (TBL), which is rooted in the constructivism school (One of the learning schools), which is a student-oriented method, but the teacher is the leader who strengthens individual and team response of students in small groups to cooperate in answering questions. Compared to the lecture method that focuses on content coverage, this method focuses more on the knowledge application at high levels of influence, and this has caused TBL to be perceived as a better approach in compare of traditional method (Inuwa 2012, Namazi, 2023). Team-based learning (TBL) is an active learning strategy and small group teaching

that includes organizing learners into teams (5-7 persons per) to work together on various academic tasks and challenges and its main goal is to enhance the learning experience by promoting critical thinking, problem solving, collaboration and communication skills among learners (Emerson, Cloude, Azevedo & Lester, 2020). Among other active methods, educational method for activity (ABAL) can be mentioned. Iwasiw and Goldenberg (1993) believe that student-oriented methods are more effective than professor-oriented methods, because of calm and free of anxiety environment, discussion participation of all students, raising questions, generating knowledge and generating new information are among the cases that have been emphasized as positive consequences of active methods.

Based on this, the present study is looking for an answer to the question, what is the effect of active learning methods such as TBL and ABAL on the accounting students' academic performance in the auditing course? And how is their effectiveness in compare to the traditional method?

1. Theoretical foundations and research background

Role play teaching method:

In this method, one or more students choose roles according to their interests based on a scenario prepared by the teacher. Then, with the supervision of the teacher and the participation of other classmates, they perform the desired subject in a demonstration. One of the advantages of the role-play teaching method is that the learners immediately apply the subject they have learned in the real world and in different situations. The situation in which the learner is placed may be unfamiliar, complex, stressful or controversial, and this makes their emotions fully involved in learning. Engaging emotions will lead to deeper and more lasting learning (Huerta wong & Juan Enrique, 2010).

Group discussion teaching method

Another type of active teaching method, which is very similar to the "question and answer" teaching method, is the group discussion method. In this method, students discuss and exchange opinions about the subject of the lesson and share their opinions and experiences with each other. As mentioned, like other active teaching methods, in this method the teacher has the guiding role, so she/he must manage the discussion in such a way that it does not go astray and the students achieve the desired learning goals.

Problem solving teaching method

In the problem-solving teaching method, which is one of the types of active teaching methods, student learning happens by working on problems. This method helps students to learn new knowledge through problems that need to be solved. In the "problem solving teaching" method, students are expected to observe, understand and analyze, examine different solutions and finally choose the best possible solution to solve the problem.

The Brainstorming method

Brainstorming is one of the most well-known methods of holding consensus and consultation meetings and has universal application. In fact, a lot of other techniques are branched from this method. In this method, the students completely freely and immediately express all the ideas that comes to their minds about the subject and unconsciously and quickly use their previous findings and knowledge to present them to the class. Gradually, the students express a set of sentences and words, all of which together can provide a major part of the content related to the relevant chapter. This method means using the brain to raid a problem.

Performance-based learning

One of the issues we face in education is that there is always a difference between what a person knows and what she/ he uses in practice. During the learning process, learners acquire some information, skills and expand their working habits, and practice the application of these three items in the real world. Performance-based learning represents a group of strategies for acquiring and applying knowledge, skills and work habits by using meaningful tasks that are meaningful for students and are used.

Action-based learning creates a balance between the continuation of previously learned facts and the training of skills. This method is not a curriculum design. Performance-based learning shows a better way to deliver the curriculum. Based on this process, the use of contents will be more reliable and meaningful for learners (Johnson, Larkins & Wislocki 1996).

Activity-based learning method (ABAL): Is a subset of active learning approaches, which students' learning stages are divided into three activities:

a) Pre-class activities
b) In-class activities
c) After class activities

One of the main features of ABAL that differentiates it from other active learning methods is the multiple student reflections that help students learn while helping instructors to complete activities based on student performance (Dorodchi et al 2017).

Team-based learning method (TBL): Group learning or Team-based learning (TBL) is rooted in the school of constructivism (one of the schools of learning). TBL is a student-oriented but instructor-led method that enhances individual and team response in the form of small student groups to collaborate in answering questions (Rotgans, J. I., Rajalingam, P., Ferenczi, M. A., & Low-Beer, N. 2019).

Research background

Chiang, Wells & Xu (2021) designed and used an active learning task for 127 students in an accounting class at a New Zealand university. The four-step experiential learning model (Kolb, 1984) was used in designing the task. This assignment was a simulated audit experience and students completed this assignment outside of class in teams of four. After completing the task, the students completed the reflection forms. The coded answers showed 85, 48 and 57% positive comments for experiential learning, active learning and teamwork, respectively. Authors concluded that the task was a successful experimental learning exercise and students gained insight into professional auditing practice.

Akaaboun et al. (2020) investigated the effect of an active learning task on exam performance in a financial statement audit course. After the first of three tests, the experimental team performed an active learning task of data analysis using the software. For the experimental group, the score of tests 2 and 3 was significantly higher than the score of test 1, and for the control group, the score of tests 2 and 3 was significantly lower than the score of test 1. Using regression with test score 3 as dependent variable and several independent variables, it was determined that active learning task had an effect on performance (test score 3).

Ainsworth (2021) investigated the effect of team-based learning (TBL) on participation, accountability, and satisfaction in 40 students of a professional correspondence course at a university in the United States. Students were divided into teams of five and entered a seven-week team-based learning process with the structure introduced by Michelsen and Sweet (2008), At the end, the participants completed the Manning (2012) questionnaire related to learning assessment based on team. The results showed that the mentioned approach has led to the satisfaction improvement, communication skills, teamwork and problem solving (Ainsworth, 2021).

Shaver (2022) investigated the student collaboration effect on learning outcomes using accounting majors enrolled in an advanced accounting course at a US university. Two groups, traditional and collaborative, received training from a faculty member three days a week. The traditional group (58 persons) received public lectures on the first day. On the second and third day, students individually completed problems related to the lecture contents through an online learning management system. Quizzes (total of 12 times per semester) were held on the third day after class. The collaborative group (55 persons) must watch the pre-recorded lecture contents every week before the first day of class. Students completed chapter problems on the first and second day of class. On the third day, students completed an in-class group quiz. Students were allowed to choose their own collaborative group. Both groups participated in 12 quizzes and four tests. The results showed that the cooperative group had significantly higher quiz scores and the traditional group had remarkably higher exam scores.

Akaaboun et al. (2020) investigated the effect of an active learning task on exam performance in a financial statement audit course. After the first of three tests, the experimental group performed an active learning task of data analysis using software. For the experimental group, the score of tests 2 and 3 was significantly higher than the score of test 1, and for the control group, the score of tests 2 and 3 was significantly lower than the score of test 1. Using regression with exam score 3 as a dependent variable, and several independent variables, it was determined that the active learning task has effected on performance.

Research hypotheses

According to the theoretical foundations and background propounded the following hypothesis was proposed and tested in this research:

1) The team-based teaching and learning method (TBL) in accounting education improves students' performance compared to the lecture method (traditional).
2) The team-based teaching and learning method (TBL) in auditing education improves students' performance compared to the lecture method (traditional).
3) There is a difference between students' performance in audit learning resulting from active learning method (ABAL) and team-based method (TBL).

2. Research methodology

The research method was semi-experimental with a three group pre-test and post-test design. The target population includes all accounting students of Islamic Azad Universities in Tehran province, semi-experimental projects are completely designed based on actual experiments, such plans do not have the ability to control some internal validity criteria, their efficiency is less than experimental designs but more than quasi-experimental plans.

The criteria for entering the study is firstly, accounting students who have registered in the audit course in second semester of the academic year 2022-23 and the first semester of 2023-24. Exclusion criterion is absence of more than 3 sessions in the class and those students who have already passed this course but did not get a grade in any way.

According to the limitations and conditions mentioned and other considerations, and teaching conditions, a total of 3 classes in the audit course (2) in Damavand, North Tehran and South Tehran were considered for teaching, and training was implemented in these 3 classes, activity-based active learning method (ABAL) was used for one class, the same lesson was used under team-based learning method (TBL) for another class, and traditional teaching (lecture) was used for the third class. Amongst the available classes, a number of students were eliminated for various reasons, including a late course drop, absence of more than 3 sessions, and other cases, and ultimately, a total number of 90 remained students in the final sample of the research were from three universities (Damavand, North Tehran, and Tehran South), they were purposefully assigned in three groups of 30 persons. According to the principle of equality of groups in experimental methods, it should be noted that because one of the classes had 30 students, the other two classes were considered to have 30 persons and this assignment was done randomly.

For all the students who had taken the audit course (2) in the first semester of 2023-24, an initial evaluation (in audit course 1) was done and the students' scores were considered as pre-test scores this way, Then, the Damavand University students were trained based on the activity-based active learning method (ABAL), the North Tehran University students were trained based on the team-based active learning method (TBL), and the South Tehran University students were trained using the traditional teaching method (lecture). At the end of the sessions (15 sessions), students were given the end-of-semester audit course exam and the scores obtained were considered as the post-test ones.

The experimental and control groups in this study were considered as follows:

First group (experiment 1): Students who were trained in the active learning method based on activity.
Second group (experiment 2): Students who were trained by team-based learning method.
Third group (control): Students who were taught in a lecture-based (traditional) method.

Dependent variable: students' performance

In this research, considering that the dependent variable is academic performance and the end-of-semester score is considered to measure academic performance, the end-of-semester questions were mostly four-choice questions, and after designing the questions, both face and content validities were used with quantitative method to confirm the validity of the test, both qualitative and quantitative methods were used to determine face validity. In the qualitative part, the difficulty level and inadequacy and ambiguity degree were examined and corrected, and in the last step, the item impact quantitative method was used to reduce and eliminate inappropriate items and determine the importance of each item, this way.

Also, to check the content validity according to the content validity ratio (CVR), the questions appropriateness was checked by five expert lecturers with at least 5 years of teaching experience in the auditing course (2) and the questions were approved after revision, and the teachers' answer agreement coefficient was estimated to be higher than 0.7.

The independent variable

for both Team-based learning method (TBL) and Activity-based learning method (ABAL), is traditional method.

Table (1) is related to the Activity-based education method (ABAL) implementation stages. According to the table above, this method is implemented in four stages.

Table (2) is related to the Team-based training method (TBL) implementation stages. According to the table above, this method is implemented in three stages.

Table 1. Implementation steps of Activity-based learning method (ABAL)

Stage	Purpose	Content
1st	Educational content Preparation for reading before class	The educational content was prepared in the form of videos with educational articles and briefly addressed the general and basic points of the educational topics.
2nd	Exam preparation to ensure of educational resources study	Asking oral questions at the beginning of each session and applying points for it was considered. Of course, another method was to hold a test with a small number of questions, sure it can be conducted using online systems in the classroom. But it was conducted orally in this study.
3rd	Preparing tasks for class and post-class homework	As well as in-class activity tasks, it was needed to prepare homework for after class for students to do it individually.
4th	student reflection forms preparation	Students completed the reflection forms in three periods of time after pre-class activities, after in-class tasks and after out-of-class assignments.

Table 2. Implementation steps of Team-based training (TBL)

Stage	Purpose	Content
1st	Preparation: Individual preparation before the session to discuss and test in the class.	At this stage, after being taught by the professor, the students studied the assigned contents individually after the class in order to master the subject. They trained their minds and prepared for the exam after completing each chapter.
2nd	Assurance of preparation: Evaluation of the knowledge obtained from the first stage through the test.	At this stage, students were asked to answer the questions through a graded exam after each chapter, and after each exam, the teacher took over the papers and corrected them. It should be noted that the validity of these exams was first checked with 3 accounting and audit professors' approval.
3rd	Concepts of the course application: Separation of class students into small groups to solve the problem.	At this stage, students were divided into 7 teams of up to 5 members in a purposeful manner (in each team there was at least one of the students who got a high score in the confidence stage of preparation) and the students were asked to answer the same problem as before (examination question in the group exam stage) to solve with each other's help and deliver their solution report to the teacher.

3. Data analysis

In table (3), some statistical description concepts of variables including mean and standard deviation as central indicators, minimum, maximum, skewness and kurtosis as dispersion indicators in pre-test and post-

test scores of students' academic performance are reported.

The table above is related to the central indicator (mean) descriptions and dispersion indicators (variance, standard deviation, skewness and kurtosis) of the students' performance in audit course from two time periods (pre-test and post-test). As can be seen, there is no significant difference between the average pre-test scores of audit course from two student groups, but in the post-test scores of the students who were trained with active methods, they have a higher average than the traditional method, and among the TBL and ABAL methods, the ABAL method has a somewhat higher average. Also, the amount of skewness and elongation is between ±3, which indicates the normality of the grades' distribution.

According to the table above, the "Z" coefficient for students' academic performance score at different times (before training and after training) in three audit classes is not significant at the alpha level of 5 percent because the significance level (p-value) is greater than 0.05, As a result, the null hypothesis is not rejected, in fact, the data follow the normal distribution, and parametric (covariance) tests can be used.

Also, the variances homogeneity was also examined using Levine's test, the test results showed that the "f" value calculated equal to (2.62) with an independence degree of 2 is not significant at the alpha level of 0.05, that is, the significance level (sig) is greater than 0.05, As a result, the variances equality null hypothesis is not rejected and the three groups' variance equality is established. The graph below is related to the slope of the regression line, the results indicate the data homogeneity in the three groups.

Table 3. Related to the dependent variable description in three educational student groups of auditing course (2)

	Time	Group	Average	Standard Deviation	Min	Max	Skew	kurtosis
Academic Performance	Pre-Test	ABAL	13.95	1.44	12	15	-0.642	-0.043
		TBL	13.90	1.44	12	15	-0.990	0.060
		Traditional	13.95	1.49	11	15	0.348	-0.411
	Post-Test	ABAL	15.70	1.37	13	17	-0.329	-0.502
		TBL	15.03	1.24	13	16	-0.965	-0.173
		Traditional	14.17	1.35	12	15	-0.075	-0.131

Diagram 1. Related to the visual display of the audit course (2) students' pre-test and post-test grades

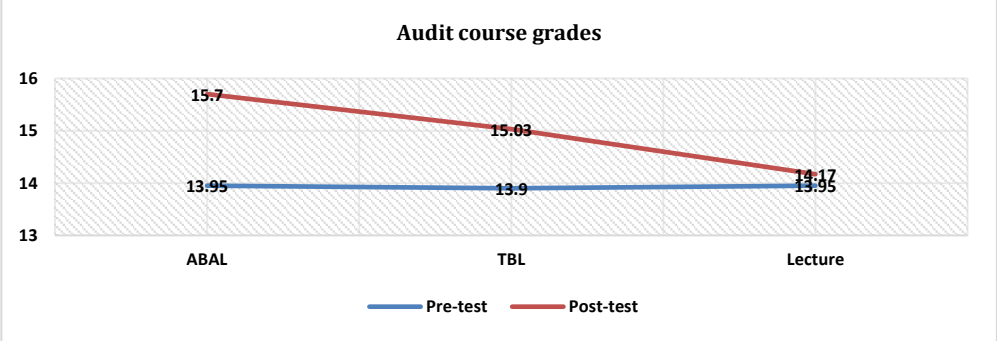

Table 4. Results related to the variables normality test (Kolmogorov-Smirnov test)

Audit Course Performance of Students	Time	Z Factor	Significance level
	Pre-Test	0.854	0.460
	Post-Test	0.997	0.273

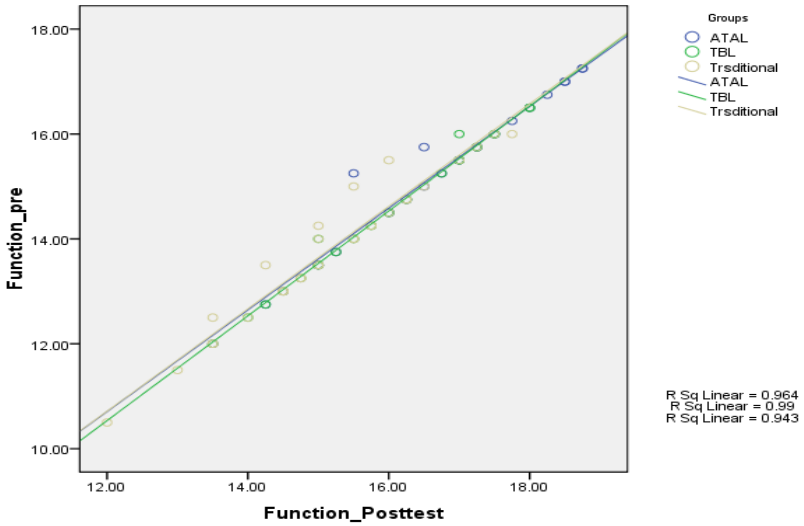

Diagram 2. Pre-test and Post-test regression line

Table 5. Covariance test related to the effect of intergroup factors

Changes Source	*Squares Sum*	*df*	*Squares Average*	*F*	*Significance level*	*Eta coefficient*
Corrected Model	52.62	5	10.52	6.57	0.001	0.216
Intercept	15.80	1	15.80	9.87	0.018	0.313
Performance	6.45	2	3.22	2.01	0.174	0.157
Groups	111.43	1	111.43	69.64	0.001	0.762
Groups × Pre-test Performance	6.10	2	3.05	1.90	0.191	0.078
Miscue	134.72	84	1.60			
Sum	23,140.43	90				

There is a modified model in the first row of table above, which shows the estimation of the squared errors sum without considering the value of the width from the origin. It seems a proper model because it is significant at the alpha level of 5 percent. On the other hand, if we do not consider the value of the width from the origin to be zero, the performance with the value of sig= 0 < 0.05 has an effect on the change of the dependent variable average. Also, there is a linear relationship between the group variable and performance, which means that when one increases, the other also increases. But on the other hand, there is no interaction between the agent variable (performance) and the intervening variable (pre-test) because the interaction between the group and the performance sig = 0.191 is greater than 5 percent, so the null hypothesis is not rejected and it seems that these two variables do not affect the dependent variable at the same time. Also, the group effect is significant with the value of F statistic coefficient (64.69) at the alpha level of 5 percent, which indicates the effect of the teaching method on students' performance. And the value of the effect according to the ETA statistic is equal to 0.762, that is, 76.2% of the changes related to the academic performance of accounting students is explained by the teaching method, which the averages' differences is shown in the table below.

The table above is related to the comparison of three groups of students in terms of performance in the audit course (1), as it can be seen that the average difference between the Traditional method and the Team-based method is 0.884 and the difference between the Traditional method and the Active method based on activity is 1.52. This amount of difference is statistically significant at the alpha level of 0.05 and

0.01, and the result indicates a higher effect of the Team-based method and the Active method based on the activity than the Traditional method, as a result, the fourth and fifth hypotheses are confirmed.

Also, the average difference between Team-based and active Activity-based training methods is equal to 0.633, which means that the difference between these two methods is significant, and according to the averages, it can be said that the Activity-based active method has a higher effect than the Team-based training method. As a result, the sixth assumption is confirmed.

Table 6. Related to the comparison of the auditing course (2) student groups

Groups			Averages Difference	Significance level	With 95% confidence	
					Low level	High level
ABAL	TBL	16.63	0.633*	0.001	0.227	1.038
	Traditional		1.517*	0.001	1.111	1.922
TBL	ABAL	15.02	-0.633*	0.001	-1.03	-0.227
	Traditional		0.884*	0.001	0.478	1.290
Traditional	TBL	14.13	-1.517*	0.001	-1.922	-1.111
	ABAL		0.884	0.001	-1.290	-0.478

4. Discussion and conclusion

As stated, the innovation of the current research is an experimental test of teaching and learning methods in the audit course, which has not been done in Iran so far. According to the latest scientific findings, each academic field and each subject needs its own teaching method. Considering the importance of the audit course and the auditor's behavioral and moral characteristics, which are of fundamental importance, this research was designed and implemented.

This research was conducted with the aim of determining the effectiveness of teaching and learning methods on students in audit course. The findings of this study showed that the active teaching method (The method of active learning based on activity (ABAL) and the method of teaching and learning based on team (TBL) in audit training) had a higher effect than the lecture (traditional) method. The difference is statistically significant and meaningful. It was shown in the hypothesis related to the comparison of the teaching method with the active activity-based learning method (ABAL) and the team-based teaching and learning method (TBL) that the activity-based method (ABAL) has had a higher effect than the team-based learning method (TBL). In fact, the active teaching methods of how to learn and the skills of how to learn are emphasized more than the transmission of facts and knowledge (Khajavi, 2019) at the same time, it is attempted that the learners, through engaging in diverse learning activities and experiences, will acquire a set of knowledge, skills and attitudes that they themselves have contributed to the formation of their production, because in this learning method sensory networks and the brain's cognitive functions are activated and when two processes play a role in learning, it helps to process and store information more. Indeed, the more we can engage the brain in different ways, the more we learn. Active teaching methods increase the desire, interest and motivation of the learner, because in these methods, the class gets out of the dry and usual state and becomes a happy and motivating scene, and a special mental freshness is created in the learner, which is very significant and important in learning.

The results of this study can be explained by the learning theory of David Kolb (1970). According to this theory, if the learners make discoveries and experiences instead of listening or studying theoretical material, their performance level will increase many times. This learning is somehow based on experience, experience based learning is a challenge and activity founded on the feedback taken from that experience, learning and growth. In other words, experience-based education plan is such that the learners learn from the consequences of their activities, mistakes and successes and its purpose is to increase knowledge, develop skills, clarify values and increase people's capacity of participation with others. So it can be said, active teaching methods increase the participation, activity and interaction of the learner with the teacher compared to the passive methods, and the higher the activity and participation, the higher the motivation to learn, and as a result, learning and performance also increase (Namazi et al, 2023).

Also, the extracted results can be explained by Piaget's cognitive theory, according to Piaget's

cognitive view, whenever we teach something to a child, we prevent him from discovering or inventing it himself. In short, it is perhaps the longest and deepest definition and concise explanation of the creative learning process in active education. The views and methods used in education and the atmosphere that governs them have a great influence on creative thinking. Active teaching methods make the learner acquire knowledge and learning skills and gradually gain positive attitudes towards science and science learning, attitudes such as being curious, having divergent thinking, and being open vision… all of these expand the learners' vision scope and make them out of the mold of thinking and acting and cultivate their creative power.

In comparison, the traditional teaching method compared to the active methods, as estimated from the statistical results, has had a lesser effect on students' performance, although the lecture method is the oldest teaching technique in academic settings, and since it was first used in Plato's Academy, the lecture has become an essential part of teaching in the college and university curriculum, but according to its shortcomings, cognitive psychologists have criticized its use singly in the academic system and they believe that the traditional speech-based formats need to be replaced by active approaches because these methods provide an opportunity for conversation, interaction, writing and reading through them (Omelicheva, 2008). According to the studies conducted, the majority of human learning (75%) is done through the use of the sight sense, and a total of 12% is done through the use of two smell and taste senses, which together make it 87%, However, in many cases, teachers and professors put a lot of emphasis on the use of 13% hearing sense (lecturing method) and due to the researches results and researches that have been carried out in the field of listening, approximately 60% of the learners' time in primary schools and 90% in secondary schools and universities are spent listening.

Finally, it is worth mentioning that according to the extracted results and previous studies, changing the education and learning system from the traditional method to active learning strategies can create significant gains in academic performance for accounting students and this itself will cause a new development in university education and from a point of view, training more efficient human resources. Finally, the deep learning process resulting from this active learning educational approach compared to the passive learning approach leads to higher learning, meaningful learning results and improved academic performance of students and it is expected that the results obtained in this research will lead to the improvement of effective accounting education and as a result, the gap between society needs and accountants' skills will be reduced. One of the limitations of this study is the geographical area under study because of available sampling, and the samples include students of Azad University in Tehran province, so the results generalization to other students, for example, students of public universities, non-traditional universities, and other students of Azad universities other than the studied community, should be done cautiously. On the other hand, according to the active teaching methods role in advancing educational goals has been determined in this research and previous researches, the following recommendations are suggested to all experts and thinkers in this field to persuade and prepare teachers to use the active method in teaching various subject , and the educational vice-chancellors of universities, while paying attention to the active methods determining role on students' learning and their all-round growth, try to create environments so that the possibility of using these methods becomes easier day by day.

Also, holding regional conferences and holding effective in-service courses and holding practical workshops in the field of active teaching methods can be a way forward, and it is recommended to the educational monitoring organization of universities to include the necessary arrangements in the annual evaluation of professors, selection of exemplary professors, etc., in order to encourage professors to use active methods. At the end, encourage students to do cooperative and active activities and on the other hand, peruse their active and cooperative activities results, and present them to students in order to motivate them more.

No conflicts of interest are declared by the authors.

References

Ainsworth, J. (2021). Team-based learning in professional writing courses for accounting graduates: Positive impacts on student engagement, accountability and satisfaction. Accounting Education, 30(3), 234–257.#

Akaaboune, O., Blix, L., Daigle, R., & Quarles, R. (2020). Data analytics in the financial statement audit: Assessing its active learning effects on student performance. The Accounting Educators' Journal, 30, 115–135.#

Azadbakht Leyla, Haghighatdoost Fahimeh, Esmayilzadeh Ahmad (2010); Comparison of teaching method based on problem solving and lecture in order to teach diet therapy course 1 to nutrition students; Iranian Journal of Education in Medical Science; 10 (5): 1093-1110

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. Journal of educational psychology, 84(3), 261.

Chiang, C., Wells, P. K., & Xu, G. (2021). How does experiential learning encourage active learning in auditing education? Journal of Accounting Education, 54, 100713

Dorodchi, M., & Dehbozorgi, N. (2017). Addressing the Paradox of Fun and Rigor in Learning Programming. In Proceedings of the 2017 ACM Conference on Innovation and Technology in Computer Science Education (pp. 370–370). New York, NY, USA: ACM.#

Elia, E. Hibbard, K. M., Honan, M., Johnson, D., Larkins, B., ... & Wislocki, J. A. (1996). *A teacher's guide to performance-based learning and assessment*. Association for Supervision and Curriculum Development (US)(ASCD).

Emerson, A., Cloude, E. B., Azevedo, R., & Lester, J. (2020). Multimodal learning analytics for game-based learning. *British Journal of Educational Technology*, *51*(5), 1505-1526.#

Goldenberg, D., & Iwasiw, C. (1993). Professional socialisation of nursing students as an outcome of a senior clinical preceptorship experience. Nurse Education Today, 13(1), 3-15.

Gustafson, L. P., Short, A. K., & Hamilton, N. W. (2022). Teaching and Assessing Active Listening as a Foundational Skill for Lawyers as Leaders, Counselors, Negotiators, and Advocates. Santa Clara L. Rev., 62, 1.

Huerta-Wong, J. E., & Schoech, R. (2010). Experiential learning and learning environments: The case of active listening skills. Journal of Social Work Education, 46(1), 85-101.

Inuwa, I. M. (2012). "Perceptions and attitudes of first-year medical students on a modified team-based learning (TBL) strategy in anatomy". Sultan Qaboos University Medical Journal, 12(3)

Kaplan, A., & Flum, H. (2010). Achievement goal orientations and identity formation styles. Educational Research Review, 5(1), 50-67.

Kein, John P. "Competing risks." Wiley Interdisciplinary Reviews: Computational Statistics 2.3 (2018): 333-339

Kadivar Parvin, Farzad Valiollah, Dasta Mahdi (2012); Investigating gender differences in the effectiveness of progress goals and self-regulation strategies in mathematics academic progress; Psychological studies of Al-Zahra University; Vol. 8, No.2

Khajavi Shokrollah (2020); Investigating the effect of Team-based learning (TBL) on accounting learning; Accounting and auditing research; 12 (45): 7-55

Kolb, D. A. (1984). Experiential learning: Experiences as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall

Liu, K., Zhao, Y., Li, M., Li, W., & Yang, Y. (2022). Parents' perception or children's perception? Parental involvement and student engagement in Chinese middle schools. Frontiers in Psychology, 13, 977678.

Lotfabadi Hassan (2005); Educational psychology; Tehran; Samt Publications

Namazi Mohammad, Rayisi Zohreh (2023); The impact of traditional teaching approaches and big data methods on the academic progress of accounting students; Financial Accounting and Audit Research Quarterly; Vol.15, No.60: 1-25

Memarian Hossein (2011); New student-oriented methods in engineering education; Iranian Engineering Education Quarterly; No.52

Nadjafi Koliyani Madjid, Karimi Shahnaz, Jamshidi Nahid (2009); Comparison of learning styles and preferred teaching methods of Fasa University of Medical Sciences students;

Journal of Arak University of Medical Sciences; 12 (4): 89-94

Omelicheva, M. Y., & Avdeyeva, O. (2008). Teaching with lecture or ebate? Testing the effectiveness of traditional versus active learning methods of instruction. *PS: Political Science & Politics*, *41*(3), 603-607.#

Pintrich, P. R. (2000). Multiple goals, multiple pathways: The role of goal orientation in learning and achievement. Journal of educational psychology, 92(3), 544.

Rotgans, J. I., Rajalingam, P., Ferenczi, M. A., & Low-Beer, N. (2019). A students' model of team-based learning. *Health Professions Education*, *5*(4), 294-302.#

Shaver, R. A. (2022). The Perceived Influence of Participation in Undergraduate International Service-Learning on Recent United States College Graduates' Post-College Readiness (Doctoral dissertation, Wilkes University).

Yousefi Behnam (2011); The relationship between reading skills and academic progress in mathematics and geography of fifth grade elementary students in Ooz region; Master's Thesis of Marvdasht Azad University.