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The Impact of Active Learning on Students' Academic Performance in Azerbaijani Higher
Educational Institutions

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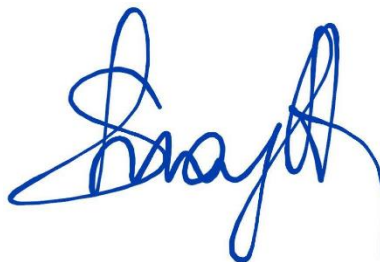
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Abstract

Active learning is one of the mostly utilized learning methods in educational institutions which engages students in the learning process actively. This study explored the impact of active learning strategies on students' academic performance in Azerbaijani higher educational institutions. A qualitative research with three research questions was conducted and the research encompassed 57 students and 11 faculty members as the target population (n=68), whose responses were obtained through web-based survey and interviews. The research also tended to include document review as a qualitative research method in order to identify the extent of effective usage of active learning strategies through analyzing instructors' lesson plans and students' academic transcripts. The definition of active learning by faculty members and students, the active learning strategies faculty members use and the overall impact of these strategies on students' academic performance were the main research questions through which the relationship between two study variables – active learning and students' academic performance were reached. The survey findings showed that all students had information about active learning and many of them noticed its positive influence on their academic performances. Group and pair work, discussions and brainstorming were found to be the most effective active learning strategies for students. The interview findings demonstrated that faculty members highly value active learning as they believe it increases student satisfaction, positive attitude towards the course and leads to better academic attainments. They stated that group discussions, student presentations, case studies and conceptual mapping to be the most effective strategies in active learning process in their experience. In its turn, the document review analysis revealed that not all instructors included active learning strategies to their lesson plans and traditional instructional methods were still used by them. Moreover, most of the students were observed to have better academic performances in active learning environment while some of them had difficulties in the adaptation due to being

accustomed to the traditional classroom environment. Overall, the study demonstrated that most of the students and instructors supported active learning methods and there was a positive correlation between effective use of active learning strategies and students' academic performances. Based on the study findings, the authors recommend an instructor manual, webinar and social media page to encourage the use of active learning strategies in Azerbaijani higher educational institutions.

***Key words:** active learning, Azerbaijani education, higher education, student academic performance, modern pedagogical strategies*

Chapter 1

Introduction

Statement of Problem

Modern researchers on learning processes provide strong evidence that active learning may have a constructive and positive influence on students' academic performances and achievements. It also positively affects their conceptual development, and their misconceptions are being kept at the lowest degree with the help of active learning strategies (Akinoglu & Tandogan, 2007). Contemporary educators identify active learning as an engagement of students in the learning process through activities, discussions by emphasizing higher order thinking abilities and encouraging for group activities (Prince, 2004). They believe active learning may provide new prospects and meaningful academic life for undergraduate and graduate students since it has a positive impact on their content knowledge, problem-solving skills, and critical thinking, it also increases their positive approach to learning in comparison with traditional ways of teaching (Anderson, et al., 2005). Fortunately, currently, in modern educational community, many educators prefer transition from a teaching-centered approach to learning-centered approach by recognizing the positive effect of active learning on students' academic performances (Kalem & Fer, 2003).

Today, with a rapid change in education, educators are aiming to investigate different types of instructional strategies for effective academic performance (Hazzan, et al., 2011). Since the educational strategies are in a constant growth and change, various instructional approaches are being tested to find out the insufficiencies in existing programs and teaching strategies for making the curriculum responsive to modern educational trends (McConnell, et al., 2003). Based on our experiences and observations as students at different universities in Azerbaijan, we observe that traditional approaches are widely used by faculty members while rejecting active learning strategies

which are the part of modern, student-centered learning. In Azerbaijani higher educational institutions students are not fully encouraged for active learning and some faculty members of Azerbaijani HEIs are completely unaware of the significance and actual value of the active learning and its strategies in education which may negatively affect their current and future academic life. This is the reason why in Azerbaijan students of higher educational institutions are less involved in the learning experiences, reflections and are more likely to shy away from voicing misunderstandings, opinions, and ideas. Additionally, it can be stated that faculty members in Azerbaijani HEIs have a tendency to put traditional methods of pedagogy over active learning strategies, mainly because it is easier to implement, and teach. Therefore, the traditional pedagogy has been recognized as one of the key rationales negatively impacting student commitment and motivation in academic life. Furthermore, it negatively affects their critical thinking, problem-solving and decision-making skills (Schunk & Mullen, 2012). This kind of learning situation fails to tap into students' knowledge and experience repertoire and misses out the vibrancy and liveliness of student opinions which impact their academic performance (Kalem & Fer, 2003). Consequently, based on our experience, we observed that traditional instructional approaches in Azerbaijani higher educational institutions in the undergraduate and graduate programs are resulting in ineffective outcomes leading to poor academic performance of students.

In this study, the authors aimed to look at the circumstances on active learning in Azerbaijani HEIs and intended to recognize the conceptual and methodological features of active learning in Azerbaijani HEIs and view its effects on student academic performance. Thus, the analysis went beyond the description of the active learning and identified various aspects of active learning, its conceptual contribution, highlighted its influences on student academic performance and educational outcomes as well as provided several ideas for improvement in Azerbaijani HEIs and for future development.

The Purpose of the Study

The major purposes of this study were to identify how active learning strategies are defined by faculty members and students in Azerbaijani HEIs, to reveal which active learning strategies are used in Azerbaijani HEIs and to analyze the influence of them on students' academic performances.

Research Questions

1. How is active learning defined by faculty members and students in Azerbaijani HEIs?
2. What are the active learning strategies that faculty members utilize in Azerbaijani HEIs?
3. Does instruction with active learning strategies impact students' academic performance? If yes, how?

Definitions of the Key Terms

Justification of concepts has an undeniable role in intuitive judgement of processes and examining this kind of support on the claim in research (Mizhari & Buckwalter, 2014). Hence, the more clearly concepts are defined, the better they will be investigated. This study contains two main terms:

1. Active learning – provides different opportunities for students to both listen and talk actively and reflect on the content and various issues related to the academic subjects (Meyers & Jones, 1993). Active learning enables students to take active role in the learning process through active involvement and commitment and be responsible for their own learning (Bonwell & Eison, 1991).

2. Students' academic performance – it is determined with the extent of students' achieving educational goals and execute duties to meet academic standards (D'Mello, Monteiro, & Pinto, 2018).

Significance of the Study

In many higher education institutions abroad, faculty members prefer active learning in order to improve student engagement and competency through providing student-centered learning and help growth of necessary abilities (Killian & Bastas, 2015). The problem was important to address due to the fact that today's education requires students' active engagement with the course content and whether Azerbaijani higher education institutions actively implement active learning was a question that had to be answered. The continuity in students' passive role and instructors' active role by only conveying information and applying less innovativeness to activities leads to absence of critical thinking and decision making (Gifkins, 2015). These problems made it necessary to analyze and investigate the importance of active learning and its effect on student academic performance. This project may be beneficial for faculty members, novice teachers, tutors, supervisors, and they may find essential points from this project and use what they have learned in their future academic careers. Alternatively, HEIs in Azerbaijan may also benefit from this project. Knowing how effective and beneficial active learning is, may trigger executive bodies to convince educators in particular educational institutions use it. Moreover, with the help of this research, the authors were able to identify if Azerbaijani faculty members are aware of active learning and how they use it in their practice or if they even use it. The other advantages which point out the significance of the research context is the equal benefits that active learning brings with itself. One of the benefits is lower performing students' getting more advantages rather than higher performing students' as active learning provides deeper learning and greater engagement, as well as critical thinking (Lee, 2018). Another advantage is delivery methods of the active learning techniques supporting students with various learning styles (Edwards, 2015). Therefore, active learning enhances the learning process, helps to maintain concentration of students, and creates a circumstance where equity benefits are provided for effective learning (Gifkins, 2015).

Chapter 2

Review of Literature

According to Privitera and Ahlgrim-Delzell (2018), one of the objectives of a critical literature review is to reinforce the knowledge development in the field by examining the studies against a standard and highlighting issues to focus on investigation. This study was a critical review of active learning and its impact on student academic performances.

Characterizing Active Learning

Literature reveals a number of perceptions on the characterizations of active learning and its effect on student academic performance. Bonwel and Eison (1991) characterized active learning as an approach in which students become responsible for the arrangements in the learning process, understand and apply practice, evaluation with the help of individual and group reflections and discussions. Active learning is defined as the opposite of passive learning (Petress, 2008, p. 566). It is associated with learning activities involving technology (Laird and Kuh, 2005) and modern learning strategies such as experiential learning, learning by doing, peer tutoring, laboratory work, and the use of case studies (Chi, 2009). Another definition by Edwards (2015) indicates that active learning involves the process of eliminating the direct dependence from instructor and getting rid of the passive situation with the aim of transforming the role of the learner from a passive observer to an active participant. According to Harmer (2001), active learning strategies promote learner autonomy and allow students make their own decisions about tasks without being told what to do by an instructor. By applying active learning to teaching process, students develop decision making skills which is one of the most important skills for future academic and career life of students. Veysova (2007) emphasizes that newly and gradually implemented active learning strategies are directed to ensure students' moral and intellectual development. These learning methods and their gradual practice in educational environment help students express their ideas clearly and form high

level communication culture by ensuring to improve their creativeness and potential abilities. Powner and Allendoerfer (2008) argue that university students do not learn much just by sitting in sessions and listening to instructions, learning by heart the pre-packaged assignments, and uttering out the expected answers and for overcoming the challenges of passive participation, instructors should focus on active learning. Furthermore, O'Loughlin (1992) mentions that active learning is important since it "calls forth images of active, student-centered, participatory learning" (p. 792). According to Healey and Robberts (2004), active learning is a student-centered method which is the effective way to learn and improve student academic performance. Sivan et al. (2000) argue that beyond the increase of students' academic performance, active learning aids students to build sense of curiosity, have skill to apply knowledge, improve academic success and performance, create independent learning proficiencies and prepare them for future professions. Freeman (2014) states that active-learning engages learners in the process of learning through activities and discussions in class guiding them for superior academic performance by highlighting higher-order thinking, often involving team-works, innovative methods as opposed to passive participation in classes which negatively influence to academic performance of learners. Kuh et al. (2008) add that active learning may provide prospects for meaningful academic activities which may have positive impact not only on academic success of students, but also on their retention especially of 1st year university students. As the recognition of the positive impact of active-learning increases, classrooms are rapidly transitioning from a teaching-centered to a learning-centered environment. Appropriately structured activities with active learning features develop in-depth awareness of the important ideas to be learned among students. For applying appropriately structured activities which can be also named innovative tasks require adequately designed lesson plans, activities that are also designed around key learning outcomes and promote thoughtful commitment on the part of the learner. In an effective learning environment that incorporates active learning approaches,

“greater emphasis is placed on students’ exploration of their own meaning, attitudes, and values” (Bonwell & Eison, 1991, p. 78).

Impact of Active Learning on Students’ Academic Performance

During the critical analysis and evaluation of previous research papers associated with the given topic, a number of findings were observed by the authors. Research by Aydede and Matyar (2009) shows that learning environments in which active learning approach is implemented should be designed according to individual and group curricula, instructors and students should be skilled and encouraged to utilize student-centered teaching. Overall, analysis of the qualitative data displayed that experimental group who were the students had positive attitudes for active learning approach after the teaching. Another research by Aji and Khan (2019) analyzes the comparison between the flipped active-learning classroom and traditional classroom and indicated that the active-learning pedagogy had a positive impact on the academic performance of students. Second finding reveals that students of the active-learning classroom had a higher academic achievement rate with 64% of the students achieving an A-grade as compared to 36% in the traditional classroom. Last finding indicates that flipped delivery active-learning in the lower-level courses in math and aerospace engineering not only resulted in increased success rates but also in higher academic performance of students. Results of another research which is by Stover and Ziswiler (2017) imply that instead of passively listening to instructor lectures, students who learn with active learning strategies become more responsible for their learning through interaction and collaborative learning activities. Likewise, instructional design of the class is more significant than the physical structure of the class since active learning design of class intensifies the level of partnership, collaboration, and active interaction. Lastly, results illustrate that active learning strategies boost students’ academic performance; nonetheless it may similarly result in the reduction of the presence and interaction of the instructor, therefore, instructors need to embrace

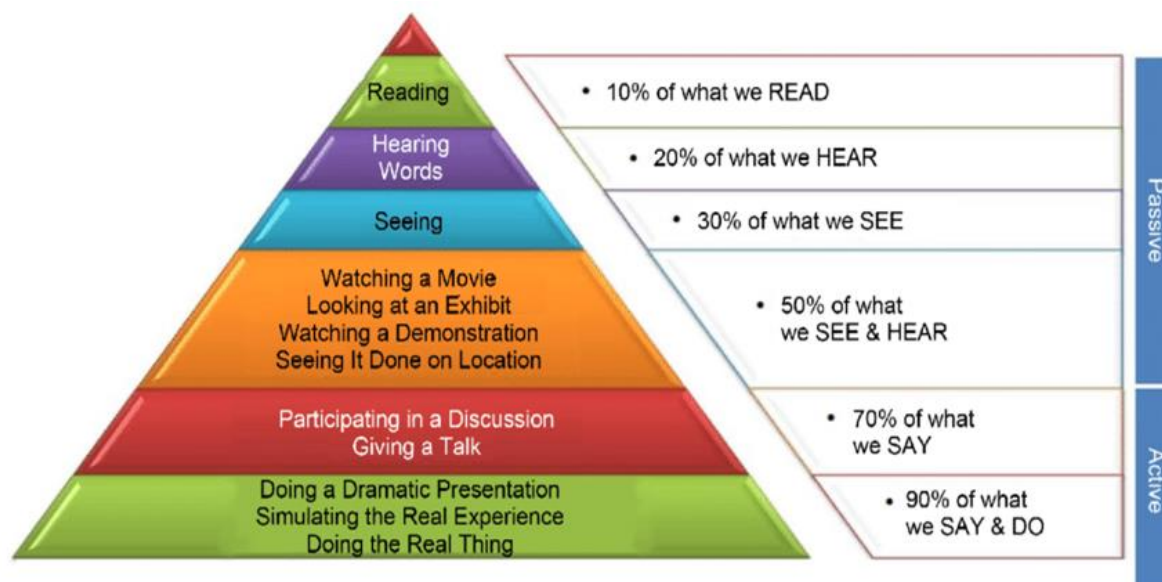
activities which are mini lectures and other modern instructional tutorials to assess students' skills. Veysova (2007) mentions that when active learning strategies are applied, students are more likely to show interest in the learning process, which also increases the quality and benefits of educational environment and develop students' creative thinking. Mocinic (2012) confirms the positive impact of active learning on students' academic performances and calls active learning as a process in which students make the learning experience enjoyable which increase the student motivation and accomplishment. Tedesco-Schneck (2013) expresses that active learning has an imperative impact in student academic performance since it is a path to critical thinking in promoting students' involvement in classes. She mentions that active learning allows direct and meaningful interaction among lecturers and students which students hardly do in standard passive learning sessions. Such learning promotes willingness to learn and discover among students, enhances communication skills, promotes respect to other people's opinions, motivates to research and understand more which increase the academic achievements of students. Further research which was conducted in the context of Thailand also exposes helpful insights on the given topic. Sanitchai and Thomas (2018) demonstrate that students prefer the use of active learning strategies in the classrooms. Secondly, active learning shifts perceptions towards learning and teaching optimistically which enhances student and instructor satisfaction. The authors argue that the association between active learning and academic achievement can be explained by the concept that students learn by doing or applying. Thus, they suggest that students who perceive that they are studying through action will often perceive their academic achievement in a more positive manner. Lastly, the authors state that active learning had a strong association with academic achievement that changed little with the addition of the control variables in the model.

Benefits of the Active Learning

In 1969, Edgar Dale proposed the Cone of Learning (Figure 1) and highlighted the importance of active learning by mentioning that active learning strategies assist students to recall what they have learnt for about 70% - 90%. This active learning involved strategies such as group discussions, presentations, simulations, and tutoring. He mentions that in contrast to active learning, students who are engaged in passive learning, for example, who learn by lectures, viewing graphs, maps, and read without involving in critical analysis, only maintain about 10% - 30% of what they had heard.

Figure 1.

The Cone of Learning by Edgar Dale



Note. Adapted from E. Dale, *Audio visual methods in teaching*, 1969, NY: Dryden press.

The use of active learning strategies enables students to develop clear goals, engage in collaborative and cooperative learning continuously and be present in learning environment actively, because dynamic learning environments are beneficial to achieve higher academic performance (Lee, 2018). Comparable to this idea, Hendriks and Maor (2004) indicate that

implementation of active learning in higher education is generally correlated with learning that requires interpersonal interaction among students and instructors. Students are at the center of an environment which allows them to engage in meaningful activities, and at the same time to be aware of the material and think about what they are doing. In contrast to traditional lectures where instructors are considered as the main actor who passively share information with students and helps solving problems, active learning creates more learning opportunities for students (Prince, 2004). Veysova (2007) implies that active learning is not only focused on enriching students' academic knowledge, it rather is inclined to regularly improve their thinking through which students take responsibility for their own learning, acquire, and comprehend the knowledge independently and develop necessary skills, abilities, and personal qualities. Quinton and Smallbone (2010) assert that when instructors apply active learning, students obtain the opportunities for the control of their learning. Similarly, Rae and Cochrane (2008) believe that active learning helps to increase the student thinking autonomy, self-regulation and power relationships which are the vital traits of student-directed learning. According to Romanow et al. (2020), using post-assignment discussions as a strategy is helpful for students to reflect on what they have learned, together with practical assignments which allow students to apply the concepts and skills in new concepts. Freeman et al. (2014) validate that implementation of active learning is more significant than thinking about how class time will be used or directed. They believe that active learning approaches give students various chances for making the sessions more interacting and engaging in which students learn without difficulty and analytically cooperate with each other. These active learning strategies assist students by forcing them to ask their own questions, to investigate new methods of learning, to collect relevant data by selecting the mostly applicable instruments (Romanow, et al., 2020).

Summary

Many recent studies have focused on the active learning, its strategies, and their impact on students' academic performance. Taking into consideration discussed articles, students need to adapt to newly implemented learning strategies in order to perform better. Active learning strategies facilitate learning, help students to learn from others' explanations and solutions to problems (Aji & Khan, 2019). Taking all above mentioned into account, implementing instructional methods that engage learners in the learning process and enrich their academic performance is the essential aspect of active learning. Furthermore, articles reveal that students' adjustment to traditional methods may cause student resistance due to the fact that active learning shifts the responsibility from instructors to students by requiring self-directed learning. Instructors' passive role in the learning environment causes frustration and resistance to suggest innovative learning techniques. Therefore, this situation necessitates a milder transfer to active learning environment where critical thinking and problem solving are taught through active learning activities. Instructors should be the ones who both implement new strategies and handle complexities, because students are ready to change their roles, to take responsibility for their own learning and become active learners when the appropriate environment and classroom dynamics are created for them. According to our reflections on literature, not only in 21st century, but also in 20th century, investigators focused on this issue and highlighted many aspects of this subject matter. While there has been much research on this topic, around the world since active learning is widely implemented and accepted as an effective learning activity (Aydede, 2006; Sivan et al., 2000; Wilke, 2003; Zavrak, 2003), in Azerbaijan, a few educators have chosen to conduct research on this same content. From our perspectives, active learning implementation means a learning environment of discussion, participation, and engagement which are correlated with having students with more positive perceptions of their ability to do well academically.

Chapter 3

Methodology

Research Design

The authors intended for the research conducted from pragmatic lenses. According to Maxcy (2003), pragmatism is a philosophy “rooted in common sense and dedicated to the transformation of culture, to the resolution of the conflicts that divide us” (p. 54). As pragmatists, the authors aimed to choose the most suitable method and avoid demanding a linear inquiry seeking for only one subsequent “truth.” This made the research more responsive, flexible, and variable to operate (Tashakkori & Teddlie, 2003). As this study aimed at critically reviewing active learning and its impact on student academic performances in Azerbaijani higher educational institutions, the authors preferred to use qualitative data analysis. This small-scale research included qualitative data analysis, comprising student web surveys, interviewing faculty members, and reviewing documents for data collection. The main objective of qualitative method is to deliver in-depth and explanatory data in order to understand the various aspects of the problem under the analysis (Ahlgrim-Delzell & Privitera, 2018). Moreover, the authors planned to spend less time on data analysis as possible since the time was eminently limited. Furthermore, the data obtained with qualitative method may be immediately analyzed until considered adequate results (Bowen, 2009). Therefore, there was no need for any additional time for waiting the start of analysis process which allowed the researchers save their time and focus on creating effective research products.

Sampling

Simple random sampling was chosen by the researchers and every participant had an even probability of being selected in the sample. Random sampling is one of the trustworthy probability techniques which enables saving time while obtaining data from every randomly chosen participant and allows calculating the sampling errors that helps diminishing selection bias

(Creswell, 2014). The easiest method was considered simple random sampling since participants took part in the sample based on a readiness and eagerness. It should be noted that although gained results might be valuable and effective, sometimes volunteers' variation, not indicating attributes, such as gender, age, or the name of affiliation that respondent present may cause substantial bias (Tashakkori & Teddlie, 1998).

There were 68 participants in this research; 11 of them were faculty members who work, and 57 of them were students who study at different Azerbaijani higher educational institutions. Participation was voluntary and before the research, each participant was asked and informed about the complete comprehension of the objectives of the study before being allowed to join. Participants were able to reject answering any question and were able to withdraw their participation at any point of the research.

Instrumentation and Sources of Data

This research was conducted via three instruments:

1. Web-based survey – online survey [link¹](https://www.surveymonkey.com/survey/d/U3C4K8U7M5U5V8Z9S) was sent to responders via emails and WhatsApp and it aimed for finding out students' experiences on active learning, and for knowing the impressions on how these strategies impact their academic performances. As web surveys are concentrated on collecting data from sample size of respondents and much quicker to conduct, they contributed to collect data easily. Survey consisted of ten questions (eight close-ended, two open-ended) and it approximately took 20-25 minutes to complete. Survey was responded by 57 undergraduate and graduate students of different Azerbaijani higher educational organizations.

2. Interviews – interview protocols (Appendix A) consisted of 13 questions and interviews with faculty members approximately lasted for 35-45 minutes. Semi-structured interview was

¹ www.surveymonkey.com/survey/d/U3C4K8U7M5U5V8Z9S

selected together with funneling technique. Questions shifted from general opening questions to more specific and focused questions. Due to COVID-19, interviews were held online via ZOOM and Google Meet online platforms. Interviews were separately held by the four researchers with 11 faculty members in English and Azerbaijani language. Interviews produced vast amounts of data and provided the researchers with crucial information since it enabled to collect data directly from the target population as the major side of problem.

3. Document review – Document analysis was beneficial in qualitative data collection process because it provided supplementary data, tracked changes and development, hence, it is considered as one of the most effective means to collect data (Bowen, 2009). The researchers asked faculty members to provide them with the syllabus of the course or lesson plans for reviewing if there is any information about active learning or if the components of the lesson plans or course syllabi are aligned with active learning strategies. Alternatively, students were asked to provide their academic transcripts in order to help the researchers in the analysis of the impact of active learning strategies on different students who study with or without active learning strategies, and its impact on students' academic performance which may be reflected in their grades, GPAs on their academic transcripts.

Data Collection and Data Analysis

Privitera and Ahlgrim-DeLzell (2018) state that when data collection and analysis process follow a particular plan, study results profitably and provides reliable results to investigators and stakeholders. In this study, data was collected from multiple sources: 57 student web-surveys, 11 interviews, 14 student academic transcripts, seven lesson plans, and three course syllabi. Project's data analysis was held in three stages, according to a plan. In the first stage of the analysis, investigators worked on the collation stage. Collation process involved 1) reliability - in which investigation was examined if the source of the data was complete and reliable. Secondly, it

involved 2) reshaping - which implied ordering the chaotic data into standard usable format, thirdly, 3) reducing - which aimed to remove the “noise” that were irrelevant to the research. Lastly, collation required 4) transforming - which was about shifting data into a format that was easier to influence and renovate (Creswell, 2014). In the second stage, investigators assigned codes for simplifying and standardizing data for analytical purposes, next, they drew attention to what they considered to be the most important. While grouping the data, labelling was beneficial for investigators for the next step – selection. Investigators chose interesting, significant, and representative items for demonstrating major arguments. Thereafter, investigators summarized the arguments by choosing one or more examples as a synopsis of whole data set as the last step in the second stage. In the third stage, the researchers cleared the scopes for ensuring themselves that the format was suitable for the audience. Additionally, for examining the validity, investigators aimed to describe the potential bias, methods followed and subjective conclusions. In the final stage, the researchers reviewed the study, answered research questions, and suggested three final products.

Chapter 4

Findings

Survey results responded by students reveal that all participants have information about active learning and which active learning strategies have positive effects on their academic performance. Students attest that only some instructors prefer to use active learning strategies in their teaching practice. However, students imply that they are positive about modern strategies and have confidence in participating active learning process. The respondents believe that students who study with active learning strategies learn better than students who do not. Consequently, students consider that utilizing active learning strategies in every class is necessary and it helps students to reflect on their understanding by encouraging to engage in different innovative methods which make the course more colorful and interesting to attend. More than a half of the students believe that active learning strategies have positive impact on their academic performance. Interestingly, larger number of students stated that they measure their individual academic performance by observing their academic results, mainly term GPAs. Accordingly, after the application of active learning strategies, they believe their grades are higher and their GPAs raised. They interrelate this positive upturn with motivation and state that active learning helps them to get prepared for the lessons more enthusiastically which results in sharing their opinions and engaging in class discussions. Another promising finding obtained from the survey was about students' perceptions on active learning and its strategies. They shared several vital factors that progress together with active learning (Figure 2).

Figure 2.

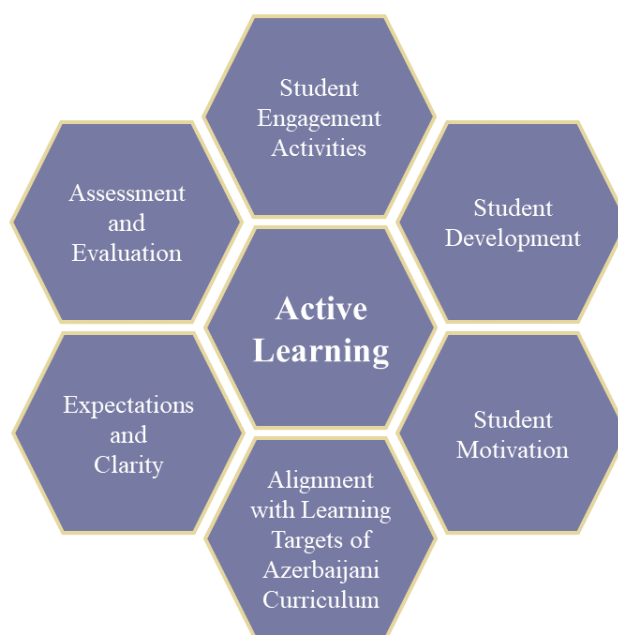
Students' widely shared perceptions on Active Learning.



During the interview when the faculty members were requested to define active learning, they linked it with different sections of the modern pedagogy (Figure 3).

Figure 3.

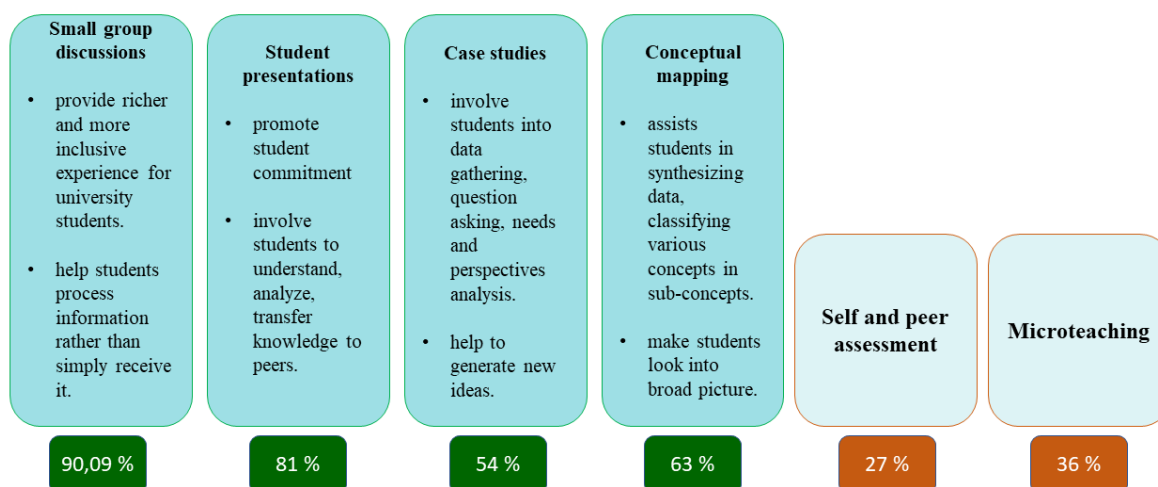
Educational Approaches that Faculty Members link Active Learning with.



Whilst a minority mentioned that active learning strategies are supported by all Azerbaijani faculty members in higher educational institutions, majority stated that in Azerbaijani traditional classrooms where there are only desks, chairs, whiteboard, and in some cases, a computer with projector, many instructors play facilitator role and utilize lecture formatted sessions avoiding active learning. Interviewed faculty members recommend active learning to their colleagues since they believe these strategies increase students' satisfaction with their learning processes. A common view amongst faculty members was that they consider active learning strategies as tools to unify a variety of learning styles, various steps of teaching–learning process for reaching the course's learning targets. All interviewed instructors were unanimous in the view that their instruction absolutely supports active learning, and their course syllabi contain assignments and other activities which are designed compatible to active learning. They mentioned strategies that they mainly prefer (Figure 4).

Figure 4.

Mainly used Active Learning Strategies that Faculty Members use in Azerbaijani HEIs.



A strong theme that emerged among participants was about substantial contrast after the application of active learning both in students' satisfaction and academic results. Nevertheless, a

few instructors claimed that since active learning requires active participation, apprehensive students in some cases become pessimistic and resistant towards active learning activities. This view was echoed by a few informants during the interview who said that this may happen due to the lack of confidence and a strong affiliation with the traditional teaching style of students who are in the belief of “but lecturers not learners should have the accountability to formulate and present the lecture.”

Results obtained from instructors’ lesson plans, course syllabi and the students’ academic transcripts demonstrate the extent of effective usage of active learning strategies in Azerbaijani higher educational institutions to ensure an active learning environment. An inclusion of more active learning strategies was observed in some instructors’ lesson plans during online class atmosphere which enabled setting guiding learning objectives prior to the class, preparing anticipatory material to relate to those learning objectives (presentations, lesson guidance notes, etc.). Engaging group works and projects, class discussions on case studies, hands-on activities, online presentations, and use of class reflection platforms encouraged teachers to include more of these opportunities into their lesson plans. Despite the fact that the interviewed instructors mentioned the provision of active learning activities in their classes, a very minor percentage of them included those specific strategies in their lesson plans. Moreover, instructional strategies in the form of traditional lectures were observed in majority of the instructors’ lesson plans in contrast to their positive notion about active learning.

Our analysis confirmed that most of the reviewed lesson plans did not contain assignments which faithfully measure student learning, instead, the instructors included the kind of assignments which led to the assessment of theoretical knowledge and concepts. A significant number of the instructors stated direct instruction methods in their lesson plans – asking questions related to daily class topics, encouraging individual or group works, assigning tasks for next classes – standard

instructional methods with minor creativity. In contrast to the instructors' preferences of active learning strategies – case studies, student presentations and concept mapping, a small number of these strategies were reflected on their lesson plans. This evidence lacks to confirm whether they truly use these activities in their classes.

The analysis of students' academic transcripts revealed that most of the students who reported to study in active learning environment performed better in the exams and graded assignments. Additionally, there were significant differences in the students' academic results after transition to online learning environment where they reported to practice more opportunities for active learning strategies. Their participation points showed a significant increase in relation with the applied active learning strategies encouraging student involvement in discussions and group works. Learning course-related concepts and knowledge during the classes increased student satisfaction as well, which showed itself in high percentage of student attendance in classes. Conversely, no significant positive effect was found in the academic performances of students who studied in traditional learning atmosphere.

The most noteworthy result to emerge from the analysis was the difference between the participation grades of students in reliance with the class environment they studied at; the students who learned through active learning strategies showed better academic performance compared to the students who did not have a chance to practice active learning techniques. This data also revealed that there is a positive correlation between the absence of active learning strategies in lesson plans and the academic results of students as traditional instructional strategies disable effective student assessment. The academic performances of the students in traditional learning environment were observed to remain constant in correlation with non-creative lesson plans and instructional strategies due to the adjustment of these students' to guided practice. Taking into

account interview, survey and document review data, analysis reveals that active learning has positive effects on student academic performance (Figure 5).

Figure 5.

Impact of Active Learning on Students' Academic Performance.



Final Products

This capstone project suggests three final products:

1. Manual for Faculty Members
2. Webinar for Faculty Members
3. Educational Blog on Instagram

1. Instructor Manual – The manual encompasses several aspects of active learning strategies.

This guidebook is available both in English² and Azerbaijani³. One of the main goals of this manual is to present higher educational institution instructors the essentials of active learning and benefits of active learning strategies. Another central aim of this manual is to introduce the most popular and beneficial active learning practices to the instructors and sharing quick tips that may help them to start implementing active learning strategies in their courses. Also, manual includes information

² <https://drive.google.com/file/d/19roxxaoPHx1CPKIQfDbFTBPvRwag0Zzb/view?usp=sharing>

³ <https://drive.google.com/file/d/1ZlW6u1d0BmtqLjfOnpSm40LI5WKiNHM4/view?usp=sharing>

about active learning techniques that may help successful application of active learning in online environment and demonstrates several ways of how to implement these practices. Furthermore, manual includes information about quick tips for getting started with active learning, active learning strategies, active learning implementation cycle, techniques for successful application of active learning strategies in higher education levels, introducing active learning for online teaching. Moreover, manual discusses what things instructor should keep in mind when implementing active learning strategies. Finally, manual introduces collaborative service: Webinar which invites instructors to join and learn more about active learning. The authors' major purpose of forming this manual is to encourage instructors to utilize active learning strategies and assist them throughout the implementation process. Manual also reveals this project's findings and introduces perceptions of Azerbaijani students who participated in web-surveys and instructors who participated in interviews. For example, the majority of students declared group and pair works, discussions which are based on daily topic and consist of correctly framed questions, doing brainstorming about particular topic and solving problems are beneficial active learning strategies for them; therefore, keys and tips about these practices have been included in this manual. On the other hand, faculty members affirmed that active learning strategies, such as student discussions, presentations, surveys, case studies, worksheets, hand on activities, project-based works positively contribute to the academic attainments of the students. Consequently, the authors attempted to focus on both these strategies for improving the way of implementation and other new activities that were not practiced yet by them.

Another reason of creating this manual is to share the best practices of active learning in online environment. Some instructors who were interviewed, alluded to the notion of "active learning in online teaching" which they think is more convenient than "active learning in traditional teaching." The key rationale behind this belief was that instructors think that

implementation of active learning strategies become easier in online environment since technology provides new and smooth active teaching and learning ways such as, students get actively engaged in online discussion boards, collaborate in breakout rooms on ZOOM/Microsoft Teams, discuss and evaluate each other's assignments on Google Doc Sheets and involve in peer-self assessments. This information helped the creators of this manual recognize the value of online education in the particular situation; therefore, the authors included a number of active learning strategies which may perfectly be implemented in online teaching and learning environment.

2. Webinar - This webinar (Appendix B) is going to be held in the beginning of new academic year, September 1st in 2021 on ZOOM at 19:00. This date has been chosen on purpose for the webinar since instructors may learn and apply what they have learnt from the webinar at the beginning of new educational year. This might be more beneficial for faculty members; they may learn new strategies for their classes, ask questions that they have in their minds, and discuss them in Q&A sessions at the end of the webinar. This will make the webinar much more engaging and productive. By this means, it will positively influence instructors' teaching and will give refreshing educational visions on active learning for the upcoming academic terms. Registration is going to be free, and session will be held in Azerbaijani language and will last approximately for 2 hours. The speakers of this webinar are going to be the authors of this capstone project. Participants will be people who were involved in the project, teachers and HEI students who are involved in the field of education. People who are interested in attending the webinar are asked to mail for confirming their participation. Also, participants will get the instructor manual in PDF form at the end of the webinar. Discussion will be held around several themes, but not limited to:

- Understanding what active learning and its importance is.
- Benefits and drawbacks of active learning.
- The most effective active learning methods to use.

- Ways of encouraging students to participate in active learning.
- Exploring considerations for incorporating active learning safely and equitable during the COVID-19 pandemic.
- Learning how to practice active learning and consider the ways to adapt these activities in different courses, majors, and settings (K-12 and HE).
- Assessment process in active learning environment.
- Sharing the findings and data of this capstone project with the audience and inviting them for discussions.
- Q&A session.

It should be noted that, all interviewed faculty members approved the positive impact of active learning strategies in students' academic performance. Interestingly, instructors shared the same perception, they stated that active learning makes students get more involved in the course topic, in this scenario, students think around what they are doing and how they are doing it which enhances students' academic accomplishments. Based on this finding, we consider the ideas and information we are going to share can positively trigger teachers to use these strategies in their own practice and we think they can benefit from it. Therefore, the main purposes of conducting this webinar are to share what we have discovered during the period of investigation and analysis, explain positive effect of active learning on students' academic performance and satisfaction.

3. Social media page – In 21st century, almost everyone has access to internet and social media platforms. Instructors, students search new pages, blogs, and websites for enhancing their knowledge in a particular area (Goldman, 2013). Especially, nowadays social media platforms are in tendency, and they contain a number of educational pages which share significant information and news about educational trends, teaching methods, and about other areas of education that enable subscribers to contribute to, as well as consume information. In modern world, social media

is no longer optional, it is an advantageous way to reach your audience, help them to gain valuable insights, and grow projects (Scott, 2011). Thus, Instagram page named aktiv_telim_layihesi⁴ was created by the authors for promoting active learning among instructors and students. The authors aim to gain attention of instructors and students whose majors are teaching and education for explaining them the importance of active learning and its benefits over instructional process. The authors share 8-10 posts each month and the language of the page is both in Azerbaijani and English. Project's findings, purposes, the level of significance were also shared with the audience. Also, followers may download the PDF of the instructor manual by visiting the link in profile. Furthermore, they may register for the webinar and see info about the webinar's program. Posts on Instagram share crucial evidence about active learning; they give information about the role of the instructor and student in active learning process, highlight the significance of motivation, discuss three main types of active learning. For making the info more consistent to Azerbaijani context, given posts mainly focus on active learning in Azerbaijan. In many points, shared descriptions go beyond the narrow focus on active learning and reveal more specific aspects of active learning and its relationship with other pedagogical issues. For example, the interrelation of interactive education and active learning, shared perceptions of active learning and constructivism theories are communicated with the audience. Furthermore, the authors share worldwide experiences on active learning, narrow down the active learning for examining it as a modern educational technology, and show the distinctiveness of active learning in education by the statements of international scholars.

⁴ www.instagram.com/aktiv_telim_layihesi/

Research Limitations

This study has limitations that need to be acknowledged. Several major limitations have influenced the efficiency of this study. Firstly, the number of participants was rather small, some of the respondents of the surveys submitted the survey unfinished which made their responses invalid. Consequently, only 57 students and 11 instructors were reliably participated in this study. Secondly, there is a chance of biases in the categorization of data and some key points might be lost while data analysis and interpretation by the authors. Thirdly, some of the students rejected to provide the researchers with their academic transcripts and a few faculty members failed to share their lesson plans and course syllabi, thus, the researchers lacked data that could be obtained from document review instrument. Finally, it should be noted that this study examined only several active learning strategies, consequently, results cannot be generalized to all active learning methods. Hence, the authors acknowledge that this study's result may not be reproduced in other studies which compare other active learning strategies, such as brainstorming, triad-groups, forum theater, think-pair-share, or inquiry learning.

Chapter 5

Conclusion

To sum up, as active learning is one of the most widely used learning strategies in educational institutions which involves students in the learning process, the authors of this study aimed at critically analyzing this topic in the context of Azerbaijani HEIs. The authors focused on identifying how faculty members and students in Azerbaijani HEIs define active learning strategies, revealing which active learning strategies are used by faculty members and analyzing the impact of those strategies on students' academic performances. Previous literature on this topic indicates that since active learning strategies have strong associations with academic achievement and as those strategies increase students' success rates and academic performance students and faculty members prefer the use of active learning strategies in the classroom. In order to analyze the topic in the context of Azerbaijani HEIs, the authors preferred using qualitative data analysis that included web-based survey, interviews, and document review. Key findings of this capstone project reveal that the majority of the Azerbaijani students who study in Azerbaijani higher educational institutions and Azerbaijani faculty members who work at Azerbaijani higher educational institutions are favored active learning and are strong advocates of putting into effect of active learning approaches. Faculty members define active learning as a tool to combine a variety of learning styles, various steps of teaching-learning process for reaching course's learning targets. Furthermore, the study reveals that small group discussions, student presentations, conceptual mapping and case studies are among mostly used active learning strategies in Azerbaijani HEIs. Findings also imply the positive impact of active learning on students' academic performance and learning. Almost all of the participants in research indicated that they believe utilizing active learning strategies help students to reflect on their understanding by engaging them in different methods that make the courses more interesting. At the end, the authors provide three

products for this study such as manual, webinar and social media page which are going to make this research more powerful and help both students and instructors to easily engage in this issue.

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Appendix B

Webinar announcement



Vebinar

Təhsildə Aktiv Təlim

Firuzə Həsənova
Lalə Şirinzadə
Nərmin Abullayeva
Ayşən İsmayılova

01.09.2021 saat 19:00
ZOOM

İştirak etmək üçün ad, soyad və email adressinizi
weactivelyteachinazerbaijan@outlook.com
mailinə göndərin.

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Telegram kanal: [Aktiv Təlim Layihəsi](#)