

The Usage of Active Learning and Non-Formal Educational Methodologies in Armenian  
Educational System

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## Abstract

This paper explores the integration of non-formal and active learning methodologies to improve the classroom experience and address contemporary educational challenges.

By examining the historical foundations of non-formal education, as well as comparing it with traditional formal learning, the study highlights the structured yet flexible nature of non-formal and active learning methodologies. Additionally, the paper highlights the potential of active learning in enhancing student engagement, critical thinking, and collaborative learning, offering insights into its practical implementation and effectiveness in various educational settings, specifically in two schools located in Yerevan: AYB school and Mkhitar Sebastaci Educational Complex.

**Keywords:** Non-formal education; classroom learning; active learning; traditional learning practices; education; effective learning

## **The Usage of Active Learning and Non-Formal Educational Methodologies in Armenian Educational System**

The learning process of a human being can be explained with the following statement- "Learning is a complex set of ongoing practices through which people change their understanding of themselves and the world in ways that facilitate a change of action" (Drotner 2013, 39). Currently, many countries have started to use innovative teaching systems in order to have more educated youth in the country. In Armenia, there have been some attempts to create innovative educational institutions for students; moreover, in the whole country, there are only several schools, and all of them operate in the country's capital city.

The paper aims to discuss how non-formal and active learning methods are used in the classroom. The research attempts to specifically examine the educational methodologies used at two Armenian schools: AYB school and Mkhitar Sebastaci Educational Complex. Simultaneously, discover in what ways the traditional learning ( or Soviet-style learning methods) are too old to impact the educational system in Armenia.

There are three types of learning methodologies that are used in the classrooms in Armenia: the most common one is traditional learning (which can also be referred to as Soviet-style learning), following two other styles of learning that are extremely interconnected with each other: active learning and non-formal learning methodologies. All of the mentioned methodologies will be discussed to find out which works better for enhancing the high school students' learning objectives based on the example of the two schools: AYB School and Mkhitar

Sebastaci Educational Complex. The first one, AYB School, is a private school located in the capital city; on the contrary, the Mkhitar Sebastaci Educational Complex is a semi-private school with a tuition support program so the school can be affordable for all the social structure members of the country.

Moving to the three types of learning systems typically used in Armenian educational institutions are formal learning (or Soviet-style learning), active learning, and non-formal educational learning methodologies. To understand what each of these learning styles means, here is an informative description for each of them:

- Traditional learning is a conventional educational approach centered on teacher-led instruction, standardized curriculum, and passive student engagement, where students typically receive information through lectures, textbooks, and homework or exam assessments. This method often lacks interactivity, critical thinking opportunities, and individualized learning paths. Meanwhile, the learning method concentrates more on memorization of the material. Currently, experts argue that traditional learning fails to prepare students for the demands of a rapidly changing world. Although gaining knowledge is fundamental, currently, students' skills are also what the job market looks at.
- Active learning is a teaching and learning strategy emphasizing student engagement, participation, critical thinking, and collaborative study. It involves learners actively participating in the learning process through discussions, problem-solving, group work, and hands-on experiences. In active learning environments, students are encouraged to take responsibility for their learning and are often provided with opportunities to explore concepts, ask questions, and make connections between ideas. This approach gives the

students more freedom to choose what they want to concentrate on and organize their learning techniques.

- Non-formal learning is an educational approach outside traditional formal schooling, often characterized by flexibility, practical workshops, and project-based learning. Unlike formal education, non-formal learning is not typically provided by established institutions and does not lead to formal certification. Instead, it is structured to meet specific learning objectives while allowing individualized pacing, content, and methods. Non-formal learning can occur in various settings, including community centers, workshops, and online platforms, and it often helps to address the learners' specific interests and needs. This approach is very similar to the active learning methodology, although it concentrates more on collaborative learning and group work.

Examining prior and contemporary studies, the research emphasizes the efficacy and advantages of active learning and non-formal educational methodologies in fostering conducive learning environments. These approaches are practical, easily implementable, and engaging for participants. While the focus is primarily on projects conducted outside the traditional classroom setting—such as youth exchanges, seminars, and themed sessions—the research highlights the importance of employing non-formal educational methodologies and active learning methodologies within the Armenian educational system. It is important to note that the latter-mentioned fact is particularly relevant in regional and rural areas in Armenia, where around 150 NGOs are doing the job of educating the students with non-formal educational methodologies (Gevorgyan, 2017). As Gevorgyan stated in his research on the NGO sector of Armenia; currently, all the non-formal educational and active learning methodology sessions are being carried out by the local NGOs and youth initiatives. Consequently, the research shows that

traditional (Soviet style) learning is no longer enjoyable for high school students; the methodologies teachers are using might be one of the primary reasons. Therefore, students are more keen on participating in youth initiatives and projects than studying for their classes at school (Gevorgyan, 2017).

A study reveals that over the past several decades, non-formal methodologies have become more demanding, depending on the fact that the educational system has changed gradually (Colardyn, 2004). One of the most influential factors is globalization and the constant changes that happen in the academic sphere, where educators need to quickly change their style of teaching and communication techniques with the students because the needs and demands of students change as well, "the formal dimension of education, carried out in the school organization, is extremely important, but it is not enough to guarantee a rapid adaptation of the current social dynamics" (Colardyn, 2004). The study also concentrated on the fact that from the very beginning of the formation of educational institutions, people were taught to study by reading materials and completing written tasks; later, human nature was trained to sit still and listen to lecture-based classes. Moreover, a rapid change in educational institutions created a better learning environment after globalization. Although some of the fields of study still require traditional style learning, such as physics, biology, geography, etc., the learning methodologies can still be adapted to active learning methods so that high school students will have more opportunities to discover new topics and enjoy the process of learning (Hmelo-Silver, 2004).

Concentrating more on the ongoing challenges in the field of education in Armenia, a set of challenges in the high school educational system has been identified. Based on the prior and current research on the field, one of the primary challenges within the learning methods of high school students in Armenia is that students get tired and distracted from the study material very

quickly, which results in fewer straight-A students in high school classrooms, compared to what are the results in the middle school classrooms (Karakhanyan, 2018). In order to identify the root of the issue, a range of focus groups, interviews, and online data were combined.

It is essential to state that none of the mentioned challenges in the educational system of Armenia can be improved over a day or a week; this is an ongoing process that needs to be trusted and, most importantly- tested.

## Literature Review

Active learning, non-formal educational methodologies, and formal learning techniques have been analyzed and researched by various authors to determine which works best in different academic settings. To understand the shortcomings of the Armenian educational system, it is crucial first to discuss what other researchers think about non-formal and active learning methodologies. There are two primary sources that talk about the differences between active learning and formal learning techniques, highlighting the importance of each aspect. Two of the most valuable resources on this topic are Rogers's (2014) and La Belle's (1982) research papers about the differences in teaching techniques and methodologies. Both authors go deep into understanding the actual concepts of these learning methodologies and the key aspects of their differences. In the research "Interactions between Informal Learning and Formal/Non-Formal Learning," Rogers mainly discusses the basis of non-formal education and how it has been involved throughout the last several years, especially the evolution of education in the early

1990s and after the 2000s. As Roger's paper was published in 2014, the data is relatively old compared to the studies based on the current educational system, but his insights about traditional and active learning are very impactful. Therefore, the author explains non-formal education with this statement: "Non-formal learning is not provided by an education or training institution and typically does not lead to certification. It is, however, structured (in terms of learning objectives, learning time, or learning support). Non-formal learning is intentional from the learner's perspective" (Rogers, 2004)". Roger states that non-formal education can become part of active learning methods, and it can be used in educational institutions, especially in high school, where students are old enough to work on their learning ethics and behavior.

Meanwhile, non-formal educational methodologies are pretty quickly adaptable to the learning environment. As Roger states, plenty of non-formal educational or active learning activities can be used for all school subjects; for example, activities designed for environmental topics can be easily changed, adapted, and used in history or geography classes. The specific case of activities being used for learning different subjects at school has been discussed by other researchers, too, and their opinions about non-formal educational or active learning methodologies being used in high schools for various subjects are the same. For example, in ANNEX 1, specifically, activities 1,3,4,5,6, and others can be used for teaching various subjects as they are easy to implement and engaging for the students.

The following research paper is by La Belle. The study "Formal, Non Formal and Informal Education: A Holistic Perspective on Lifelong Learning" analyzes mostly formal educational methodologies and how humanity needs to shift from traditional ways of learning to non-traditional ones. In the research, the author does not recommend entirely changing formal learning methods with a new and modern one. La Belle makes a great statement that states that in

the educational system, the shifts don't occur overnight; it is a long-lasting process that needs patience and hard work. She argues that everything can start with only a small step, such as changing some formal learning activities to active learning ones. For instance, instead of having one student solve a problem in front of the blackboard, they can divide the students into groups and work together to solve the problems with the teacher's guidance. The mentioned methodology will keep students active and energized; meanwhile, everyone will get the chance to participate in class activities and discussions. The study encourages teachers to start with small changes like the previously mentioned one and, over the years, master more active learning methodologies and continue implementing them, even if the schools are based entirely on traditional learning methods. In this way, you can change several students' perspectives on educational methodologies, and in the future, they might be the change makers of the system. Continuing to mention the formal type of learning (Soviet-style learning in Armenia's case), the author identifies that formal learning emerged decades ago. Therefore, it is deeply rooted in the educational system, and getting rid of it will be complex. The author beautifully describes the formal learning system: "Formal learning occurs as a result of experiences in an education or training institution, with structured learning objectives, learning time, and support, which leads to certification. Formal learning is intentional from the learner's perspective" (La Belle, 1982). Both of the mentioned sources had a considerable impact on the definition of learning systems that are described in this research.

Moreover, it is essential to note that the first source by Rogers was written in 2014 and contains recent data about the evolution of educational systems in the early 2010s. However, the other research paper by La Belle was published in 1982. Therefore, La Belle concentrated on the

disadvantages of the traditional educational system and what actions should be taken to remove it slightly.

In another chapter, Rogers mentioned: “Non-formal learning programs are more flexible in that each different group of student-learners can influence their timing, their length, and their location; in addition, through interaction between teacher and learner, in many cases (though not all) the content too will change to meet the intentions and aspirations of different learners, as for example in private music lessons” (2004). Moreover, in the research by La Belle, the topic of traditional education was analyzed more thoroughly, and how it can influence the educational system overall was discussed.

Several case studies prove the effectiveness of non-formal and active learning methodologies for in-class learning sessions. At the same time, there are two essential case studies by Rogers (2014) and Kicherova & Efimova (2020), which explore the main advantages of non-formal and active learning methodologies within the high school class system, highlighting what aspects may or may not work. In the study “The Impact of Non-formal Education on Human Capital: A Generational Approach,” the authors Kicherova and Efimova (2020) discussed a particular case study that was designed from scratch in order to identify the importance of innovative learning techniques in educational institutions. For conducting the case study, they collected 68 individuals who are actively participating in various non-formal training courses to gain knowledge or learn new skills. With those 68 people, they formed several random focus groups to discuss the topic of what the NFE/active learning changes in students’ academic life, such as what new skills they learn and to what extent, how deep the knowledge they are getting and can those activities be used in teaching high school students different subjects. As the authors mentioned: “Case materials were structured according to the levels of

educational goals in accordance with Bloom's classic taxonomy" (Kicherova & Efimova, 2020). According to the study, the majority of the responses about implementing the methodologies in the high school system were positive. The case study showed that many people are actually striving to learn new things through non-formal educational/ active learning methodologies. The main reason is that some of the participants mentioned that they are participating in various youth initiatives or projects that various NGOs had organized to gain new skills and learn about new topics. Additionally, case study participants proved that nowadays, many young people dedicate time to becoming members of an NGO or youth organization to benefit from non-formal/ active learning types of education. The second phase of the case study divided the participants into two groups and allowed them to participate in a project about media literacy. The first group of participants had their training in a traditional learning environment, meaning that they had only lecture-based speakers and materials to read. Moreover, the second group of participants had the chance to learn about media literacy through interactive, non-formal/active learning methods, discussions, and group projects. At the end of the research, all the participants had been asked to come together for one last focus group. Clearly, the participants of non-formal/active learning sessions were more enthusiastic about the topic: proportionally, most of them clearly understood the topics of the sessions. Meanwhile, the participants of formal workshops were bored and tired of the materials they discussed and would not recommend others to participate in the sessions. According to all the details provided by the case study, the non-formal/active learning methodologies are more appealing to everyone, and they can be considered a better way of learning or understanding a new topic.

The other source that contains valuable information about case studies in the sphere of educational systems is another edition of "The Base of the Iceberg: Informal Learning and Its

Impact on Formal and Non-formal Learning” by Rogers, published in 2014. In this edition, he discusses not only the methodologies that are used to boost non-formal educational methodologies in the sphere of education but also specific examples state that” knowledge and skills alone were not enough; without learning changes in understanding and especially in attitudes, these changes would not be brought into play in that area” (Rogers, 2015). With this research, the author argues that only knowledge is insufficient; in our contemporary world, skills are more valued. One of the examples that he noted was about the farmers in India who were assigned to attend special training courses about how to correctly plant their rice fields so the amount of the harvest would be twice as much as they normally have. Although the specialists held the training perfectly and gave the farmers basic knowledge about the new system, when the specialists came back after some time to see the results, they noticed that nothing had changed in the way the farmers were planting the rice fields. They started research to find out the reason because, based on their data, they conducted the training correctly, and all of the farmers understood how to use the new technology and methodology. Finally, the reason was identified: the specialists very clearly explained everything and even showed images on the presentation slides. Moreover, as they also conducted lecture-based training, the villagers didn’t understand anything they said and continued working as they had before. Therefore, more practical training was conducted next time.

Eventually, with the last case study, Roger concludes that non-formal education is needed in all the existing spheres, cultures, and institutions. As the author stated, “As the UNESCO definitions show, a common set of processes lies behind these different kinds of learning, but these take place in different cultural contexts of life – contexts which help to determine the approaches adopted towards promoting learning” (Rogers, 2015).

Socio-economic factors also play a huge role in the development of the educational system and, of course, the country. For instance, the Armenian educational system can not be compared to the educational system in the Netherlands, as Armenia is not as developed and economically secure as the Netherlands. Many researchers mentioned the socio-economic factors of a country while concentrating on the educational systems and learning methodologies used in different countries. The authors of the chapter “Validation of Formal, Non-Formal and Informal Learning: Policy and Practices in EU Member States” firmly state that the development of the NFL/active learning methodologies is mostly common in the EU countries because they decided to shift from the traditional ways of learning way earlier and had enough time for constructing the structure of the non-formal educational system. Therefore, the source argues that the economic condition and the ranking of the countries do matter if the country tries to adopt non-formal teaching techniques. As mentioned by Colardyn and Bjornavold, “Economic and institutional issues appear with less frequency but are hardly marginal. The competitiveness of the country and the improvement of its labor market define the economic issues. Greater flexibility in the functioning of the education and training institutions characterizes the institutional issues” (2004). Most of the papers mainly concentrate on the educational systems of the EU countries and the USA, as these countries started their journey much earlier than post-Soviet countries like Armenia.

Lastly, another study by Hopper also concentrates on countries’ socio-economic conditions and educational systems. In the paper “Non-Formal Education and Basic Education Reform: A Conceptual Review,” the author mainly focused on the socio-economic aspects of the countries adopting the non-formal educational system. The primary concern of the source is that “Economic and institutional issues appear with less frequency but are hardly marginal. The

competitiveness of the country and the improvement of its labor market define the economic issues. Greater flexibility in the functioning of the education and training institutions characterizes the institutional issues” (Romi, 2009). As mentioned earlier, the country’s economic situation can influence the development of its educational system. Therefore, as Armenia is considered not a socio-economically developed country, the system that is being used in the country has a long way to go in adding innovative nuances to the curriculum.

Soviet-style learning is used in Armenian educational institutions, and the systems used in the EU or other developed countries are entirely different in many aspects. The case for the Soviet-style learning system is that it didn’t evolve much during the past 20 years. Compared to the educational methodologies used decades ago, it is clear that most of the methods stayed the same, such as lecture-based learning, rough homework, and reading materials. Noticeably, the Soviet-style learning methods do not include group work or collaborative learning sessions. Therefore, there is a considerable gap in group work or group projects in the educational system, which not only helps the students enjoy their time and understand the material better but also creates a collaborative study space where peers interact with each other in the academic settings and learn from one another.

Based on the prior research on the usage of non-formal/active learning educational methodologies in the high school curriculum, depending on the country, there is still room for development. Moreover, as this research is specifically concentrated on the high school educational system in Armenia, there was a lack of information and research on the field. Therefore, case studies and examples of non-formal/active learning educational systems were analyzed in order to get more information about the topic. After the scholarly research, a set of

interviews, focus groups, and classroom management sessions were conducted in order to identify the shortcomings of the educational system, specifically in the Armenian context.

## Research Question

The research explored the effects of non-formal and active learning educational methodologies on the learning process of students aged 16 to 18 in Armenian high schools. More specifically, the research is centered around the idea of learning methodologies, such as - non-formal/active learning and formal learning methods that can also be used for in-class learning purposes. For instance, the activities that you can see in Appendix A and Appendix B are great examples of non-formal/active learning methodologies.

Therefore, the research questions of the capstone are:

- How can learning methodologies from NFE/active learning be adopted for use in more traditional classroom settings?
- In what way are these teaching techniques used in Armenian high schools, and what impact do they have on the students and the society?

The first research question primarily concentrated on the usage of non-formal/active learning educational methodologies, but it didn't include anything about educational institutions in Armenia. The primary reason for not mentioning the Armenian educational system there is

that the effectiveness of non-formal/active learning methodologies is discussed in the beginning, and it is followed by the research and findings about the Armenian educational system.

The second research question concentrated on high school students in Armenia and how they see non-formal educational methodologies as a means of developing new skills and knowledge. Consequently, the research will also identify what high school students think about the usage of non-formal/active learning educational methodologies in the educational system.

## **Methodology**

Based on the above-mentioned research questions, which have been identified to meet the gaps in the research, qualitative and quantitative research methodologies were used in order to continue the collection of data about the topic. There were two periods of data collection for the research.

In the first period of data collection, scholarly research was done in order to identify and thoroughly research the main aspects of the capstone, such as the origins, the historical background, common non-formal/active learning educational methodologies, and the activities that have been effectively used before. For scholarly research purposes, active learning/non-formal educational activities were found, which have been designed by professionals in the field and have already been used in numerous classrooms. The activities in the ANNEX 1 and ANNEX 2, alongside already designed questions, helped to carry out the focus groups.

The second part of data collection was from interviews, focus groups, and class observations.

During the past two months, I interviewed six people overall. One teacher from Sebastatsi Educational Complex, one teacher from AYB School, two students from Sebastaci Educational Complex, two students from AYB School, a teacher and a student from Alashkert Secondary School located in the village Alashkert, region Armavir. All the mentioned interviews gave me a clear picture of the educational curriculum used in the mentioned schools.

Simultaneously, two focus groups have been conducted in two different schools. The first school is the Sebastaci Educational Complex, and the second one is the AYB. The first focus group at Sebastatsi Educational Complex was formed with students from the 11th grade. The main aim of the focus group is to discuss the project-based learning system in the Sebastatsi Educational Complex. The second focus group was conducted at AYB School with the teachers for various subjects: history teacher, biology teacher, Armenian language teacher, geography and physics. Two of the focus groups were successfully completed and provided valuable insights into the research.

Class observations were also part of the research process. In total, I have observed two classrooms for 12 graders in history and geography classes at Sebastatsi Educational Complex. Both teachers were very welcoming and, even after the classes, stayed to talk about the experience children are having during the classes with active learning methodologies. The teachers also shared their ideas about what works in high school classrooms, as the needs of these students are completely different from those of middle school children.

Interviews with teachers and students, two class observations and two focus groups helped to shape the research findings and analysis by providing valuable insights and

information about non-formal/active learning methodologies in the Armenian high school system.

## Research Findings and Analysis

In order to thoroughly investigate the research question, interviews, focus groups, and class observations were undertaken to explore the importance of active learning and non-formal education (NFE) methodologies in Armenian high schools. The specific methods were chosen because there was a shortage of data about non-formal/active learning methodologies used in the Armenian educational sphere. There was not much literature to review specifically about the case in Armenia; therefore, direct observations were undertaken.

The observations helped to understand the situation in Armenia clearly, and the findings were divided into several parts. In the first part of the research, the importance of non-formal/active learning educational methodologies in Armenian high schools was discussed. This specific part gives a precise understanding of what teachers and students from Armenian high schools think about adding non-formal/active learning methods to the curriculum of the schools. The research focused on two high schools located in Armenia, Sebastatsi Educational Complex and AYB School, concentrating on project-based learning in the Sebastatsi Educational Complex. It explored what sort of learning techniques teachers use there and what students think about the education they are getting at school. The research also concentrated on AYB Schools, specifically what methods they use in the classroom as a school that provides innovative education to the students. The AYB School educational curriculum is designed with numerous interesting group works and projects that make the students' learning experiences more effective and engaging.

During the research process, I also visited the Alashkert High School, which is located in the Armavir region, village of Alshkert, so I will learn more about the educational system they use in the local schools. Therefore, at the end of the research findings sessions, a separate section is dedicated to the differences in the school systems and how, in regional schools, the Soviet-style educational curriculum is still deeply rooted in the system.

## The Importance of Non-formal and Active Learning Activities in High Schools

The significance of non-formal education and active learning methods in Armenian classrooms was analyzed through qualitative and quantitative data collection methods. At the beginning of the research, the scholarly papers and articles provided a precise understanding of what non-formal and active learning methodologies are and how they were used in different countries around the world. Moreover, questions about the relevance of non-formal/active learning education were asked of the interviewees, and the question was also discussed during the two focus groups, which were conducted in the Sebastatsi Educational Complex.

Concentrating on the interviews, the interviewees gave various positive answers to the questions about the relevance and importance of active learning/non-formal educational methodologies in the high school system.

Interestingly, the majority of interviewees, particularly those who were not educators, showed limited awareness of these educational methodologies and their practical application within the educational landscape. Although the educational system in the Sebastatsi Educational Complex is project-based learning and teachers the classes use a lot of active learning/non-

formal educational methodologies, the students didn't know about the existence of the concepts and how they are different from learning curriculums in the high schools with Soviet-style learning systems. During the interviews, one of the teachers mentioned, "We do project-based learning at Sebastatsi High School, and it appears to be very effective, but I have never heard about non-formal educational methodologies. We have some manuals at school with different activities described in them. Maybe those manuals contain non-formal educational methodologies?". The responses from other teachers were practically the same; one of the teachers mentioned that the school annually sends them to different training in order to learn new techniques and implement them during the classes, so they don't only use manuals to learn about new activities but also participate in school organized training. Simultaneously, the two interviewed students from both schools did not know about the non-formal/active learning methodologies.

Moreover, when the concept description was given to the students, they changed their minds and said that at both schools, teachers usually use active learning/non-formal educational methodologies quite often. Ashot, who is one of the students, mentioned, "I like the activities that my history teacher does, and from the concept depictions that you gave, it appears that some of the things we do during history classes can be called active learning/non-formal activities. Anyways, I love those activities; they give room for developing my creativity". Therefore, the overall conclusion can be made that not many students and teachers know about the specific methodologies designed specifically for non-formal/active learning methodologies.

Moving to what had been discussed during the two focus groups with 12 graders, as most of the students didn't know about the differences between learning methodologies and which ones are more effective, the concepts of educational methodologies with descriptions have been

given to them. During the discussion about the differences in the methodologies, one of the students mentioned that he went to a school in Yerevan middle school that used Soviet-style learning methodologies, and after that experience, Sebastatsi Educational Complex was unique and more effective for her educational journey. Her previous experience was different, not only from how they were learning about different educational materials but also from what interactions they were experiencing at high school with teachers and students. While continuing the discussion about student/teacher interactions, one of the students said, "If using non-formal/active learning methods means that during the classes we will interact with our friends more for completing various tasks and group projects, then I would love to see it at every school in Armenia." When I asked Lilit why she would like to see more student/teacher interactions at schools, she responded, "In that way, you do a peer-to-peer review, you understand the given material better and, in my case, learn faster. Also, in my previous school, we never did any group projects or interactive activities, so I would 100 percent agree with adding the active learning/non-formal educational methodologies to school curriculums". The discussion around the concepts of educational methodologies turned into students discussing what they like in more interactive classes and how, for some of them, it works perfectly.

During the interviews with teachers about the learning methodologies, they mentioned that schools annually send them to training courses during which they learn new activities that they can use during class sessions. At the same time, one of the teachers mentioned that the training is not only about learning new activities or new ways of carrying out the classes but there are also parts about psychological interactions with students at the age of 15-18, inclusive learning at schools, gender equality and ethics. Therefore, the training mentioned by the teachers

is not exclusively about learning new methods and activities to use during the class sessions, but they are also meant to concentrate on many different things about the learning process.

The collected data about the importance of non-formal/active learning methodologies underscores the essential role of non-formal educational methodologies and active learning methods in shaping the educational landscape of Armenian high schools. By empowering students with the knowledge and tools necessary to navigate diverse learning environments, educators can cultivate a generation of critical thinkers and lifelong learners in order to tackle the challenges of the future with confidence, resilience, and strong knowledge.

## Project Based Learning Sebastaci High School

In order to understand what sort of educational methodologies the two mentioned schools use and how they work on the engagement of the students, a more detailed approach was undertaken to discuss each school system separately. The first educational system that will be addressed is the one that is used in the Sebastatsi Educational Complex.

During the interviews, the teachers mentioned that the school uses a project-based learning system, which is being improved and updated early in order to use student feedback and improve the areas where there are gaps. A bit more about the school: Sebastaci High School is a semi-private school located in Yerevan, and it is a secondary school, meaning that elementary, middle, and high school students study in the same educational environment. However, this particular aim only concentrated on improving high school students' academic curricula using non-formal/active learning methodologies.

The history teacher at Sebastatsi Educational Complex, Ms Armine, described the institution in a more detailed way so the system would be understandable. She stated that in other public schools, students have subjects such as Armenian language, math, chemistry, biology, history, etc. Moreover, students during the three high school years can choose specific subjects and concentrate only on those subjects. At Sebastatsi school, project-based learning is mandatory for each subject, meaning that the students are obliged to complete a set of tasks during the whole semester in order to get grades for the class, and there are no exams. The tasks may vary depending on the subject; for instance, for the Armenian history class, students need to work on creative projects, posting on forums every week and making stories that involve historical characters. While talking to Nazeli, who is one of the history class students, she mentioned, “Although we never had exams for history class sessions and mostly worked on creative projects to get grades, I remember Armenian history very well. If I had the chance to learn history in any other way, I would choose project-based learning again as it is very interactive and interesting”. The teachers’ and students’ opinions about project-based learning aligned in all aspects. Students loved learning about the subjects using creative projects as they had the chance to work with their peers, and teachers also enjoyed the process of assigning the tasks and not working with exam sheets.

Another example of a subject that one of the students at Sebastatsi school- Nazeli, brought about project-based learning was the math class curriculums. She said that although project-based learning might seem a bit difficult for the STEM classes, it actually works for those classes, too. For instance, students during math class get different short lectures on explaining problem sets and how students can use various formulas to solve other equations. Simultaneously, after the theoretical parts are explained, Nazeli explained that students form

small groups and usually do the homework together and post the answers to the questions on the school forums. Forums are generally public, so all the other students can access the forums and check what their peers posted there. The school system also cooperates tightly with the teachers to make the process enjoyable for the students, especially the graduating students, as they need the knowledge to get into universities, but they also need to enjoy their time at school. During the discussion about student/teacher interaction, Ms. Armine stated, “We have teacher rooms at school where we usually gather from time to time and discuss what works during our classes and what could be changed in order to improve the learning process for the students.” Although the education is individual and different for each student, the teachers at Sebastatsi High School are trying their best to find practices that work for all the students attending the class.

Project-based learning was the student’s favorite part based on the focus group with the students. While answering one of the questions, Armen noted, “What I love about project-based learning is that I can come to school, sit during the class, and work on my own project. There is no need to listen to lectures as you explore everything yourself”. Another student, Lilit, noted that they usually don’t have exams in the middle or end of the terms, she stated: “I love that we don’t have any exams, and there is no need to prepare for the exams as we can work on our project during those times.”

Moreover, after this, another fundamental question about students getting into universities is that there are usually exams required for all the university entrances. The question was also discussed during the focus group to understand what students think about it clearly. One of the students, Meri, gave the following answer: “We don’t usually stress about the university entrance exams because we have the knowledge to pass any kind of exam; it’s just we don’t do specific exams at school.” Another student said, “Most of the students who come to our school

end up going to the best universities in Armenia; we even heard about cases where students applied abroad and went to study in Europe or the US.” Although the students at Sebastatsi Educational Complex do not have proper skills in exam preparation as they don’t have any exams at school, most of them are not afraid of the university entrance exams, and they see how most of their peers get into different universities in Armenia and abroad.

### Project Based Learning and Group Works/Projects at AYB School

The second educational institution that was added to the research about the educational system is the AYB School. The school is located in Yerevan; it is a private institution (unlike Sebastaci School) known for its innovative educational approach to different school subjects, particularly its integration of Project-Based Learning (PBL) and group work/projects. The interview and focus group with the school students showed how they used different nonformal/active learning methodologies in order to improve the student experience at school. Another interesting fact about the building is that the school has a lot of high windows, especially in the classrooms. I hadn't noticed that when one of the students stated, "Windows at our school are also empowering me to study more and feel concentrated on what I do." The building of the school, the pedagogical methods, and the learning style, as uncovered through interviews and focus groups with students and teachers, serve as a unique aspect of the school and one of the reasons why parents choose AYB for their kids.

Coming from conventional educational paradigms where subjects are often taught in isolation, AYB uses PBL and group work throughout its curriculum, making them essential components of every subject. This ensures that students are consistently engaged in authentic, real-world projects and collaborative tasks that are pertinent to their studies, facilitating deeper

comprehension and practical application of knowledge. For example, as one of the teachers mentioned in the chemistry class, students immerse themselves in hands-on experiments and research projects, exploring chemical reactions and properties. In the Soviet-style learning system, students just listen to lectures and look at the experiments the teachers conduct during the classes. At AYB School, while working in groups, students design experiments, analyze data, and present their findings, fostering teamwork and critical thinking skills. One of the students, Arman, mentioned during the discussion about the classes they have at AYB, "I changed my school to AYB for my high school, and chemistry became one of my top 3 favorite subjects at school. In the way that we have classes here, it is so much easier to understand the topics and stay focused." Another student also added to what Arman noted and said that she stays focused during the classes because they are pretty interactive and engaging, which is why she is not having much trouble understanding what is being covered during the chemistry classes. Concentrating on what specific techniques they use during Chemistry class, Arman mentioned, "One of my favorite activities is when we have to solve some formula and then quickly change our pairs in order to solve the other formula with another student." Another student also joined and said, "I like it when our chemistry teacher usually turns on calming music during the activities; it just makes me focus more. I really don't know how." Different methodologies that teachers use at AYB School can be considered as part of the active learning/nonformal educational curriculum. Therefore, based on the students' reactions to the class curriculum, the learning methods definitely work at school, especially for high school students.

Another example that one of the students, Anna, brought is the engaging music class activities. During the music class, students engage in group performances, composing original pieces or interpreting musical compositions. Anna noted, "We usually have the freedom to

choose what composers we want to discuss and learn. The genre is chosen by the teacher, and the composers or compositions can be chosen by us". Through collaborative rehearsals and performances, they develop their musical abilities while learning the value of cooperation and shared artistic expression. These methods help the students to learn in a more engaging way, and from their and teachers' reactions, the methodologies work on the students. As for the feedback from students during the focus group sessions, the efficacy of PBL and group work at AYB. Many express a preference for this approach, citing the opportunities it affords for hands-on learning and peer collaboration. For instance, one student, Armen, appreciates the chance to apply theoretical concepts in practical experiments facilitated by group discussions and problem-solving. Another student, Lilit, values the collaboration fostered through group work because the collective sense of achievement while overcoming challenges together is one of the best feelings.

While concerns may arise regarding the alignment of PBL and group work with university entrance exams, students at AYB exhibit confidence in their preparedness. They attest to the comprehensive nature of their learning experiences, emphasizing the acquisition of both subject-specific knowledge and transferable skills essential for academic success. This confidence is reflected in the school's track record, with many graduates gaining admission to esteemed universities both domestically and internationally.

Teachers at AYB play an essential role in facilitating the implementation of PBL and group work. One of the teachers, Ms Vardayan, said, "You may have noticed that teachers in our school usually have many qualifications, so graduating with a bachelor's degree might not be enough for working here. You need pedagogical certifications, psychological certifications, and some certifications that say that you are familiar with different learning methodologies." Specifically, in the case of the AYB school, this might be one of the primary reasons why the

educational methodology is working very well, as they are very selective with the choice of teachers. They are committed to utilizing active learning methodologies and regularly engage in professional development activities to enhance their instructional practices. By embracing innovative pedagogical approaches, they ensure that learning remains dynamic, relevant, and student-centered.

## Conclusion

The capstone research concentrated on the effectiveness of non-formal and active learning methodologies within traditional classroom settings in enhancing the educational experience for high school students. The study researched the historical roots of active learning/non-formal educational methodologies and tied them to the system currently used in Armenian classrooms. As there is not much data about classroom management and settings for Armenian schools, it was harder to identify the learning methods used within the classrooms over the years. Therefore, the Soviet-style learning methodology was researched and compared to the European style of teaching and what experts usually think about the differences between the educational methodologies in various countries.

The research conducted in AYB school and Mkhitar Sebastaci Educational Complex in Yerevan has demonstrated the significant potential of active learning to boost student engagement, critical thinking, and collaborative skills. At the same time, a point was made that these two schools are located in Yerevan, which is the capital city of Armenia. Therefore, the rest of the country, except for several schools located in Yerevan, still uses Soviet-style learning techniques and methodologies. That was also the primary reason why schools that use active

learning/non-formal educational methodologies had been researched. The research proved that these modern methodologies work better on the performance of high school students than the old-fashioned Soviet-style learning methods, which are still used throughout the whole country.

The investigation of the case addressed two primary research questions: the adaptability of non-formal and active learning methods in traditional classrooms and their specific impact on Armenian high school students and society. Through this dual focus, the study has revealed that while traditional educational systems do not fail to give proper knowledge, Armenian high school students view non-formal educational approaches as valuable tools for learning new skills and not getting disappointed with their study materials.

At Sebastatsi Educational Complex, project-based learning has proven effective in making subjects more interactive and enjoyable for students. Consequently, at AYB School, the integration of hands-on experiments and group projects across various subjects helped the students to understand the materials better and stay focused during their classes. Therefore, both students and teachers approved of the effectiveness of these methodologies, which include enhanced focus, collaboration, and the development of critical skills necessary for academic success and beyond.

However, the research also concentrated on the fact that most schools in Armenia do not use these methodologies and stick to the Soviet-style learning curriculum. While Sebastatsi and AYB schools embrace innovative approaches, regional schools like Alashkert Secondary School predominantly use Soviet-style educational practices. This gap highlights the need for broader educational reforms to ensure that all students in Armenia can benefit from modern, interactive learning environments.

Overall, the findings suggest that integrating non-formal and active learning methodologies can create a more dynamic and effective educational environment for both students and teachers. This integration not only works better on the students' engagement in class and out-of-class activities, but it also provides students with the necessary skills that are needed in today's quickly changing world. As educational institutions continue to evolve, embracing these methodologies may prove essential in meeting the diverse needs of students and addressing broader societal and educational goals for their students.

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## APPENDIX 1

### Designing In-Class Activities: Examples of Active Learning Activities

A workshop from the University of Pittsburgh's  
University Center for Teaching & Learning



#### Activities for Lectures

- **Structured Notes:** A Detailed outline of the presentation with key words or phrases left out. Students fill these in as the lecture progresses.
- **Labeling a Diagram:** Each student is given an unlabeled diagram or picture which the student labels as the information is given during class.
- **Word Pictures:** Use during lecture to graphically convey ideas and concepts. These require students to fill in words or phrases.
- **Exemplifying:** Students are asked to describe examples and non-examples given a concept, problem, situation, or principle.
- **Incomplete Statements:** Students are given incomplete statements by the instructor and asked to complete them.
- **Three Points Summary:** Students are asked to summarize the three most important points of a lecture.
- **Paraphrases:** Students summarize in their own words what the instructor says.
- **Guest Speaker:** A presentation is given by a known expert followed by questions from the students.
- **Presentation with Listening Teams:** A lecture followed by an organized question/answer/discussion period. Before the presentation, students are organized into small groups and each group is given a listening assignment, e.g., listen for a point that can be applied to a particular situation, etc. At the end of the presentation, each group makes comments and asks questions related to their particular assignment.

#### Individual Activities

- **Individual Exercises:** These provide an opportunity for the students to practice skills. This could include labeling, rank ordering, multiple choice, problem solving, or true/false and completion. Exercises must be completed in a set time period and the instructor gives and discusses the correct answers.
- **Role Play:** Students are given a situation and a role to play of a character in the situation. Without practice, they act out the events in the situation. Role play may be used for the purpose of situation analysis or to provide feedback to the students about their own behavior.
- **Questioning Strategies:** Questions which the students will be asked are planned by the instructor prior to the lecture. Each question is written out and is related to a learning objective. In case of no response or incorrect responses, the instructor will also be prepared to ask easier or lower learning level questions which will lead the student to answer the original question.
- **Personal Vignette:** Given a topic or learning objective, the students are asked to relate it to their real experiences (personal or professional) by telling a brief story about it.
- **Progress Quizzes:** Short self-tests which are not graded. Answers are provided to the students after completing the quiz.

### Group Activities

- **Buzz/Brainstorm Sessions:** A small group of students work within a determined time limit to answer a question or solve a problem and come to a conclusion.
- **Group Work Exercise:** Students are given a problem or situation to solve in a 5 – 10 minute period of time. All directions and rules are printed in a visual and explained by the instructor.
- **Rank and Report:** Given a series of items or issues, students rank the importance of the items or issues and report the results with a justification.

#### Group Activities (continued)

- **Problems:** A group of students works on given problems within a specified time. The instructor discusses the correct answers at the end of the activity.
- **Complete Case Studies:** These are real world descriptions of problems with all accompanying data. Groups are asked to resolve the problem within a given period of time. Each group makes recommendations while the instructor acts as moderator.
- **Diagnostic Sessions:** Groups diagnose a problem, situation, process, etc.
- **Pyramiding (Snowball Groups):** Given a problem, students first work alone, then in pairs, and finally in foursomes (maximum) and compare, refine, and revise their conclusions and recommendations.

### Activities to Promote Class Discussion

- **Controlled Discussion:** This is used after a lecture. Students ask questions and make comments while the instructor controls the process which goes on for a prescribed period of time.
- **Choices:** Given data on an event and several choices, students are asked to discuss all choices. They may select a choice, justify it, and give the consequences.
- **Debate:** This is an organized and civil argument moderated by the instructor.
- **Discussion of Handouts:** These are special documents, reports, pictures, etc. that are discussed.
- **Modeling:** Students are shown an ideal product, situation or person. Through questioning and discussion, they are able to explain why this is a "model" of what it is.
- **Simulation:** This presents cases, problems, scenarios, etc. in which the students must role play. A critical situation is discussed and analyzed and decisions are made about how to resolve the situation.
- **Read and Discuss:** This is a short reading followed by a discussion.

### Activities to End a Class

- **Active Review:** After the instructor summarizes the class, students spend two-three minutes quietly thinking or reading through their notes to identify any points of confusion. They clarify any points of confusion by asking questions of one another and the instructor.
- **The Silent Question:** The instructor asks students to respond to the following question: "A question I still have about this topic but have been afraid to ask is..." Students write their questions on a sheet of paper and the instructor addresses questions then if time permits, or at the next class.

## APPENDIX 2

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### IOWA STATE UNIVERSITY Center for Excellence in Learning and Teaching

## 226 Active Learning Techniques

These techniques have multiple benefits: the instructor can easily and quickly assess if students have really mastered the material (and plan to dedicate more time to it, if necessary), and the process of measuring student understanding in many cases is also practice for the material—often students do not actually learn the material until asked to make use of it in assessments such as these. Finally, the very nature of these assessments drives interactivity and brings several benefits. Students are revived from their passivity of merely listening to a lecture and instead become attentive and engaged, two prerequisites for effective learning. These techniques are often perceived as “fun”, yet they are frequently more effective than lectures at enabling student learning.

Not all techniques listed here will have universal appeal, with factors such as your teaching style and personality influencing which choices may be right for you.

#### Instructor Action: Lecture

1. **Picture Prompt** – Show students an image with no explanation, and ask them to identify/explain it, and justify their answers. Or ask students to write about it using terms from lecture, or to name the processes and concepts shown. Also works well as group activity. Do not give the “answer” until they have explored all options first.
2. **Think Break** – Ask a rhetorical question, and then allow 20 seconds for students to think about the problem before you go on to explain. This technique encourages students to take part in the problem-solving process even when discussion isn't feasible. Having students write something down (while you write an answer also) helps assure that they will in fact work on the problem.
3. **Updating Notes** – Take a break for 2-3 minutes to allow students to compare their class notes so far with other students, fill in gaps, and develop joint questions.
4. **Choral Response** – Ask a one-word answer to the class at large; volume of answer will suggest degree of comprehension. Very useful to “drill” new vocabulary words into students.
5. **Word Cloud Guessing** - Before you introduce a new concept to students, show them a word cloud on that topic, using an online generator (e.g., Wordle, Tagxedo, or Tagul) to paste a paragraph or longer of related text, and challenge students to guess what the topic was.
6. **Instructor Storytelling** – Instructor illustrates a concept, idea, or principle with a real- life application, model, or case-study.
7. **Grab a Volunteer** – After a minute paper (or better: think pair share) pick one student to stand up, cross the room, and read any other student's answer.
8. **Socratic Questioning** – The instructor replaces lecture by peppering students with questions, always asking the next question in a way that guides the conversation toward a learning outcome (or major Driving Question) that was desired from the beginning.
9. **Reverse Socratic Questioning** – The instructor requires students to ask him/her questions, and the instructor answers in such a way as to goad another question immediately but also drive the next student question in a certain direction.
10. **Pass the Pointer** – Place a complex, intricate, or detailed image on the screen and ask for volunteers to temporarily borrow the laser pointer to identify key features or ask questions about items they don't understand.
11. **Turn My Back** – Face away from the class, ask for a show of hands for how many people did the reading. After they put hands down, turn around again and ask to hear a report of the percentage. This provides an indication of student preparation for today's material.
12. **Empty Outlines** – Distribute a partially completed outline of today's lecture and ask students to fill it in. Useful at start or at end of class.

13. **Classroom Opinion Polls** – Informal hand-raising suffices to test the waters before a controversial subject.
14. **Discussion Row** – Students take turns sitting in a front row that can earn extra credit as individuals when they volunteer to answer questions posed in class; this provides a group that will ALWAYS be prepared and interact with teacher questions.
15. **Total Physical Response (TPR)** – Students either stand or sit to indicate their binary answers, such as True/False, to the instructor's questions.
16. **Student Polling** – Select some students to travel the room, polling the others on a topic relevant to the course, then report back the results for everyone.
17. **Self-Assessment of Ways of Learning** – Prepare a questionnaire for students that probes what kind of learning style they use, so the course can match visual/aural/tactile learning styles.
18. **Quote Minus One** – Provide a quote relevant to your topic but leave out a crucial word and ask students to guess what it might be: "I cannot forecast to you the action of; it is a riddle, wrapped in a mystery, inside an enigma." This engages them quickly in a topic and makes them feel invested.
19. **Everyday Ethical Dilemmas** – Present an abbreviated case study with an ethical dilemma related to the discipline being studied.
20. **Polar Opposites** – Ask the class to examine two written-out versions of a theory (or corollary, law of nature, etc.), where one is incorrect, such as the opposite or a negation of the other. In deciding which is correct, students will have to examine the problem from all angles.
21. **Pop Culture** – Infuse your lectures, case studies, sample word problems for use during class with current events from the pop culture world. Rather than citing statistics for housing construction, for instance, illustrate the same statistical concept you are teaching by inventing statistics about something students gossip about, like how often a certain pop star appears in public without make-up.
22. **Make Them Guess** – Introduce a new subject by asking an intriguing question, something that few will know the answer to (but should interest all of them). Accept blind guessing for a while before giving the answer to build curiosity.
23. **Make It Personal** – Design class activities (or even essays) to address the real lives of the individual students. Instead of asking for reflections on Down's Syndrome, ask for personal stories of neurological problems by a family member or anyone they have ever met.
24. **Read Aloud** – Choose a small text (500 words or less) to read aloud, and ask students to pay attention during this phase of lecture. A small text read orally in a larger lecture can focus attention.
25. **Punctuated Lectures** – Ask student to perform five steps: listen, stop, reflect, write, give feedback. Students become self-monitoring listeners.
26. **Word of the Day** – Select an important term and highlight it throughout the class session, working it into as many concepts as possible. Challenge students to do the same in their interactive activities.
27. **Recall, Summarize, Question, Connect, and Comment** – This method of starting each session (or each week) has five steps to reinforce the previous session's material: recall it, summarize it, phrase a remaining question, connect it to the class and comment on that class session.
28. **Focused Listing** – List several ideas related to the focus point. Helpful for starting new topics.
29. **Background Knowledge Probe** – Use questionnaire (multi-choice or short answer) when introducing a new topic.
30. **Goal Ranking and Matching** – Students rank their goals for the class, then instructor combines those with her own list.
31. **Interest/Knowledge/Skills Checklist** – Assesses interest and preparation for the course, and can help adjust teaching agenda.
32. **Documented Problem Solutions** – Keep track of the steps needed to solve specific types of problems. Model a list for students first and then ask them to perform similar steps.
33. **Provocative Picture** – Begin the lecture with a picture meant to provoke discussion or emotion (another option: a cartoon).

#### **Instructor Action: Lecture (Small Class Size)**

34. **Pass the Chalk** – Provide chalk, a dry erase marker or a soft toy; whoever has it must answer your next question, and they pass it on to the student of their choice.