

**SOCIAL-PSYCHOLOGICAL REFLECTIONS OF THE EFFECTIVE USE OF  
EDUCATIONAL TECHNOLOGIES**

**VLADIMIR KARAPETYAN**

Khachatur Abovyan Armenian State Pedagogical University

*E-mail:* [vskarapetyan@mail.ru](mailto:vskarapetyan@mail.ru)

**MARIANNA AMIRAGHYAN**

Khachatur Abovyan Armenian State Pedagogical University

*E-mail:* [amiraghyan.80@mail.ru](mailto:amiraghyan.80@mail.ru)

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**ABSTRACT**

In the context of technological advancement, educational systems face new challenges arising from both unprecedented growth of information and increasing diversity of learners' needs and expectations. The goal of the article is to analyze the effective possibilities for investing and implementing educational technologies in the context of learners' individual, cognitive, and social-psychological characteristics giving special attention to synergistic and algorithmic approaches, as well as emphasizing moral and value-based aspects in the educational process.

Research methodology: 1) theoretical analyses related to the issue; 2) consideration of the ideas of synergetics and Karpman's Drama Triangle model within the educational process; 3) observation conducted through the analysis of Nar-Dos's work "*The Murdered Dove*", aimed at identifying learners' moral positions and perceived roles.

The research revealed the following results: 1) despite their practical applications, technologies do not ensure a fully comprehensive educational and developmental process; 2) learners' perception types (visual, auditory, cognitive) require individualized approaches, which are not always taken into account in the educational process; 3) the synergistic approach is effective only when groups have relatively similar abilities; 4) the algorithmic structure of technologies must be

understandable to the learners so that they can think in logical steps rather than relying on memorization.

**Key words:** *educational technologies, self-organized learning, algorithmic thinking.*

## **Introduction**

The 21st century is an era of integration and advancement of technologies in the fields of science and education. Educational technologies are not only an effective model for implementing learning activities, but also encompass psychological assessment, organizational, spiritual, humanistic, and managerial components - whether at the individual or group level. These are achieved through time efficiency, optimal use of learners' resources, accessibility, availability, and more. In this context, the use of educational technologies is viewed not merely as a supportive tool for the learning process, but also as a vital component in ensuring holistic personal development, self-organization, and socialization. Regardless of the subject being taught, educational technologies broadly expand various spheres of human activity.

They enhance the effectiveness of these activities and, facilitate individuals' cognitive, emotional, and behavioral orientation within vast volumes of information - enabling them to make choices and find effective solutions. All of this, if not entirely, then at least partially, meets societal demands, where individual interests are aligned with the social environment. Nevertheless, certain contradictions are observed worldwide, which are reflected in the concept of the education crisis (Coombs, 1974) and in discussions among various experts. These contradictions relate to the mismatch between labor market demands and educational programs, the overload of teaching staff, the level of educational motivation among learners, technological changes, the inconsistency of education with modern requirements, and many other related issues. Let us note that the modern learner significantly differs from their peers of the 1950s–60s, primarily in terms of information processing and the use of technological processes. It is also well known that the volume of information is growing at an unprecedented rate, labor market demands are changing, development is progressing more rapidly, whereas the pace of effectively organizing educational processes - particularly in higher and professional education institutions - is relatively slow. It should also be noted that the educational system does not always take into account the learner's spiritual needs or the satisfaction they derive from the educational process. This is partly due to low level of educational motivation among learners, which is often hindered by traditional technologies. As a result, the learner tends to reproduce the learning material mechanically, without any significant progressive development being observed. One of the challenges faced by universities is the identification and development of new talents during the years of study, as well as in the processes of continuing education. Professional higher education institutions have not yet fully transformed into innovation centers to the extent

necessary to respond to potential labor market changes through reskilling. This is especially concerning given projections that by 2050, the labor market may experience up to a 25% reduction in human potential, and the independence of educational technologies may come into question. As for general education, it can be observed that the deepening crises within modern families also have an impact on the learner's educational process, regardless of the technologies used in the teaching process. Moreover, the process of professional development for specialists is not planned in all countries based on the cognitive needs of teaching staff. For example, in the Republic of Armenia, a recent graduate still faces the issue of retraining. Furthermore, not all schools are equipped with the necessary devices. Despite the rapid advancement of technology, learning difficulties have always existed and will continue to exist, along with unequal access to technology.

These challenges are perhaps linked to the psychological profiles of both learners and educators, as well as to the core priorities of education. Shaping a thinking child or specialist is one thing; the technologies being used are another. These technologies are generalized and do not always take into account each learner's educational needs based on their interests, aspirations, and educational expectations. From this arises the issue of continuously studying each learner's educational needs and personal growth. Considering individual characteristics, for example, in the process of perceiving information, it is evident that individuals with a visual learning style perceive and understand information better through images, diagrams, and illustrations. Auditory-type individuals focus on the structure of words and sentences - everything related to hearing. Cognitive-type individuals pay attention to the evidential aspect of information - how well the arguments, viewpoints, and statements are substantiated. Specialists often respond to this by saying that the material is presented both verbally and through video. However, in reality, the learners focus on their own way of perceiving information - they create their own cognitive schema (Piaget). Although both individual and group courses are used in the teaching process - and are often combined with each other - the psychological aspect still remains debatable. This becomes even more evident when we take into account the varying speeds of comprehension and different types of thinking among learners within the same class (Thurstone, 1924), which can differ significantly. The speed of response is also important. For example, students with slower thinking may be capable of choosing the right learning technology, but the teacher moves on too quickly. If there isn't sufficient comprehension, the material is not understood, which in turn complicates the process of perception. Learning difficulties arise, particularly in middle school, especially in science subjects.

This issue can partly be solved by using the concept of synergy (from the Greek meaning "activity"), which is implemented through self-organization in human activity (since in this case, the individual takes into account their own personal characteristics). Therefore, technologies should also be directed towards the self-organization of the individual's activity, working together, collaborating,

as well as making correct and timely decisions, which is a modern requirement in contemporary society, where personal and professional capabilities are developed. On the other hand, for years, we have been discussing interdisciplinary connections and attempting to prepare future specialists for conducting interdisciplinary research. However, the question arises: how well is a specialist in a certain field informed about other areas and equipped with sufficient knowledge related to the phenomena of those fields? However, it should be noted that synergy in general is beneficial, but it is limited in that the same group may consist of learners with similar abilities, which does not lead to development. On the other hand, if learners at different levels (strong, weak) are placed together, it again proves ineffective, as the more capable children tend to move ahead. Therefore, the question arises: how should the groups be formed to ensure that synergy is effective? It is important to create conditions where working together is productive and leads to the best possible outcome. Thus, it is essential that the differences within the groups are not too big when they are formed.

### **Discussion**

Technologies pursue a clear goal, but they intersect with other educational objectives. However, the question arises: how can these technologies be integrated to ensure that the entire phenomenon functions as an educational and developmental process? For example, the analysis of a literary work is not just a description or mechanical reproduction of historical material (although it may seem like that is what is being evaluated), but rather, it is about shaping moral qualities and values in a person through that analysis. Therefore, the analysis of a literary hero's character and the moral examination of their actions is crucial. This should serve as a guide for the learner to apply in practical life. As a result, we use technologies to assimilate the material, but in essence, it does not lead to technologies that promote the development of moral, humanitarian principles, as well as the shaping of a model of behavior for a citizen of that country (devotion to their country).

In connection with the above-mentioned, during our experiments, we analyzed the novella *"The Murdered Dove"* by Armenian writer Nar-Dos. Our aim was to identify all the possible roles described in the story. As a result, we recorded several participants' responses to the question of how they themselves would act in certain situations (for example, how to deal with a deceitful person). The adolescents, nonetheless, believe that each person is a unique individual and pointed out aspects that, to some extent, are reflected in Karpman's Drama Triangle model - sometimes in the role of the "victim", sometimes the "persecutor", and other times the "rescuer". Perhaps this, too, can be seen as a kind of original technology - demonstrating the possibility of role changes in various social situations (Karpman, 2014).

During our studies, it became clear that an experienced teacher was able to accurately guide the adolescent's role interpretation in response to questions such as: *If the character is a "victim" in this situation, how might they become a "rescuer"? What was the cause of their emotional suffering?*

When teenagers are able to go beyond the boundaries of the story and express their own attitude toward the event, they begin to acquire new qualities in understanding complex human relationships. In addition, it is essential to take into account the characteristics of algorithmic thinking when selecting technologies—for instance, how technologies are structured according to specific algorithms so that they are purposeful and effective. For example, to find similarities in a technological sense, a specific algorithm is applied.

*Examples:*

1.  $126 : 2 :: 64 : ?$
2. 9, 4, 16, 6, 36, 9, 81, ?

In this direction as well, research based on algorithm construction has been conducted among students across various subjects. A typical example is the problem-solving process, where each solution involves applying either a linear or a branched algorithm. These should not be viewed as isolated problems, but rather as opportunities to identify a typical solution algorithm built on the foundation of applying technology.

### **Conclusions**

Based on the research, we can conclude that:

- Educational and scientific technologies can significantly enhance the learning process, provided that they are appropriately elected and compatible with the logic of constructing clear algorithms.
- It is necessary to take into account learners' individual characteristics, as well as psychological and cognitive factors, in order to improve learning outcomes.
- As for the peculiarities of perceiving works of artistic nature, the application of algorithms in this field can also contribute to the development of value-based orientations. As revealed by our study, adolescents are capable of independently forming attitudes toward moral issues by perceiving various social roles ("victim" "persecutor" "rescuer") in a wide range of situations.
- Educational technologies can promote the development of learners' self-organization skills by enabling them to manage their learning process more effectively. In this context, the synergetic approach takes into account individual differences and self-organizational capacities, which can serve as a foundation for identifying and appropriately applying effective methodological approaches.
- Although educational technologies are primarily aimed at content acquisition, it is essential to use them for the development of moral and value-based aspects as well. Technologies

should contribute not only to intellectual growth but also to social and moral education, making the educational process more balanced and comprehensive.

- Learners' logic in applying educational technologies stems from their awareness of the socio-psychological aspects of the learning material. This includes not only the different styles through which learners perceive content (visual, auditory, cognitive), but also the nature of their thinking (individual or group-oriented approaches) in order to ensure effective learning.

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**ԱՄՓՈՓՈՒՄ**  
**ԿՐԹԱԿԱՆ ՏԵԽՆՈԼՈԳԻԱՆԵՐԻ ԱՐԴՅՈՒՆԱՎԵՏ ՕԳՏԱԳՈՐԾՄԱՆ ՍՈՑԻԱԼ-  
ՀՈԳԵՐԱՆԱԿԱՆ ԱՐՏԱՑՈԼՈՒՄՆԵՐԸ**  
**ՎԼԱԴԻՄԻՐ ԿԱՐԱՊԵՏՅԱՆ, ՄԱՐԻԱՆՆԱ ԱՄԻՐԱԳՅԱՆ**

Տեխնոլոգիական առաջընթացի համատեքստում կրթական համակարգերը բախվում են նոր մարտահրավերների, որոնք բխում են ինչպես տեղեկատվության աննախադեպ աճից, այնպես էլ սովորողների կարիքների և սպասումների բազմազանությունից: Հոդվածի նպատակն է վերլուծել կրթական տեխնոլոգիաներ ներդնելու և իրականացնելու արդյունավետ հնարավորությունները սովորողների անհատական, ճանաչողական և սոցիալ-հոգեբանական բնութագրերի համատեքստում՝ հատուկ ուշադրություն դարձնելով սիներգետիկ և ալգորիթմական մոտեցումներին, ինչպես նաև շեշտը դնելով բարոյական և արժեքային ասպեկտների վրա կրթական գործընթացում:

*Հետազոտության մեթոդաբանություն.* 1) խնդրին վերաբերող տեսական վերլուծություններ, 2) սիներգետիկայի գաղափարների և Կարպմանի դրամատիկական եռանկյունու մոդելի քննարկումը կրթական գործընթացում, 3) Նար-Դուսի «Սպանված աղավնին» աշխատության վերլուծության միջոցով իրականացված դիտարկում՝ ուղղված սովորողների բարոյական դիրքերի և ընկալվող դերերի բացահայտմանը:

Հետազոտությունը բացահայտել է հետևյալ արդյունքները. 1) չնայած իրենց գործնական կիրառություններին, տեխնոլոգիաները չեն ապահովում լիարժեք համապարփակ կրթական և զարգացման գործընթաց, 2) սովորողների ընկալման տեսակները (տեսողական, լսողական, ճանաչողական) պահանջում են անհատականացված մոտեցումներ, որոնք միշտ չէ, որ հաշվի են առնվում կրթական գործընթացում, 3) սիներգետիկական մոտեցումն արդյունավետ է միայն այն դեպքում, երբ խմբերն ունեն համեմատաբար նման կարողություններ, 4) տեխնոլոգիաների ալգորիթմական կառուցվածքը պետք է հասկանալի լինի սովորողների համար, որպեսզի նրանք կարողանան մտածել տրամաբանական քայլերով, այլ ոչ թե նյութն անգիր վերարտադրելով:

**Բանալի բառեր՝** *կրթական տեխնոլոգիաներ, ինքնակազմակերպված ուսուցում, ալգորիթմական մտածողություն:*

## РЕЗЮМЕ

### СОЦИАЛЬНО-ПСИХОЛОГИЧЕСКИЕ РАЗМЫШЛЕНИЯ ЭФФЕКТИВНОГО ИСПОЛЬЗОВАНИЯ ОБРАЗОВАТЕЛЬНЫХ ТЕХНОЛОГИЙ

ВЛАДИМИР КАРАПЕТЯН, МАРИАННА АМИРАГЯН

В условиях технологического прогресса образовательные системы сталкиваются с новыми вызовами, которые обусловлены как беспрецедентным ростом объема информации, так и растущим разнообразием потребностей и ожиданий учащихся. Целью статьи является анализ эффективных возможностей внедрения и реализации образовательных технологий в контексте индивидуальных, когнитивных и социально-психологических особенностей обучающихся, уделяя особое внимание синергетическому и алгоритмическому подходам, а также подчеркивая нравственно-ценностные аспекты в образовательном процессе. Методология исследования: 1) теоретический анализ проблемы; 2) Обсуждение идей синергетики и модели драматического треугольника Карпмана в образовательном процессе. 3) Наблюдение, проведенное посредством анализа произведения Нар-Доса «Убитый голубь», направленное на выявление моральных позиций и воспринимаемых ролей учащихся. Исследование выявило следующие результаты: 1) Несмотря на практическое применение, технологии не обеспечивают в полной мере комплексный образовательный и развивающий процесс. 2) типы восприятия обучающихся (зрительное, слуховое, когнитивное) требуют индивидуализированных подходов, что не всегда учитывается в образовательном процессе; 3) синергетический подход эффективен только тогда, когда группы имеют относительно схожие возможности; 4) Алгоритмическая структура технологий должна быть понятна учащимся, чтобы они могли мыслить логически, а не полагаться на механическое заучивание.

**Ключевые слова:** образовательные технологии, самоорганизованное обучение, алгоритмическое мышление.

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Հորիզոն տիրույթ է գրիմարիմի՝ 10.02.2025

Հորիզոն երիշխիմիմի է ամսագրիմիմի՝ 20.03.2025