



USING PROGRAMMED LEARNING TECHNOLOGY IN ORGANIZING EXTRACURRICULAR LEARNING ACTIVITIES FOR GENERAL SECONDARY SCHOOL STUDENTS

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Abstract

This article outlines the concept of programmed learning technology and its potential in educational practice. It presents suggestions and recommendations for applying this technology to organize extracurricular learning activities for students in general secondary schools.

Keywords: Extracurricular learning activities, programmed learning technology, digital learning platform, information technologies.

Effectively organizing extracurricular learning activities in general secondary schools increasingly requires the use of **programmed learning technology**.

Programmed learning technology can be defined as a method of instruction in which the actions of both the teacher and the learner (or a substitute learning device) are guided by a pre-developed program [1]. This technology is designed to be learner-centered, focusing on the development of competencies [2].

By enabling students to master material independently and apply acquired knowledge to complete learning tasks, programmed learning fosters greater learner autonomy. Students receive immediate confirmation of the correctness of their responses, which builds their confidence in having assimilated the material. As a result, this approach enhances motivation, reduces negative attitudes toward learning, and eliminates misunderstandings that can lead to failure or knowledge gaps [3]. Furthermore, programmed learning allows for timely refinement and correction of presented material, ensuring that educational objectives are achieved [4].

One of the persistent challenges for teachers is developing an effective communication and teaching system that accommodates students with varying



learning speeds. Some students grasp material quickly but incompletely; others learn both quickly and deeply; and some progress more slowly. In many cases, instructional efforts tend to focus on average learners, which can create inequities and learning gaps [1].

A viable solution is to integrate programmed learning technology into extracurricular activities. This technology makes it possible to individualize the pace of learning, allowing students to repeat material as needed until mastery is achieved. In doing so, students maintain control over their own learning process, receive immediate feedback on the accuracy of their answers, and develop a sustained interest in and understanding of the subject matter. This ensures continuous feedback between teacher and learner [5].

Given current educational demands, the application of programmed learning technology in extracurricular activities is both appropriate and necessary. The development of programmed learning methods is closely linked to advances in information technology, which define the general requirements for managing the learning process. Implementing these requirements in educational programs relies on pedagogical and psychological research into the distinctive features of the teaching–learning process [5]. However, some specialists approach the development of such activities from a narrowly psychological perspective, while others rely primarily on the field of cybernetics. In practice, this often results in an empirical approach based on experience rather than an integrated theoretical framework. Ideally, information from both psychology and cybernetics should be combined [6]. The general theory of programmed learning is based on structuring the process of mastering educational content [7]. When applied to extracurricular activities, it enables students to learn a logically coherent and manageable quantity of cognitive material for full and accurate understanding.

Today, programmed learning generally refers to mastering structured educational content through devices such as computers, programmed textbooks, or simulation tools. Learning is organized as a well-managed process, with information broken into small, easily digestible units presented sequentially. After studying each unit, the learner undergoes an assimilation check before progressing to the next stage. The typical cycle consists of **presentation** → **assimilation** → **verification** [7].



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In modern contexts, programmed learning (often implemented as Computer-Aided Instruction, CAI) is no longer limited to stand-alone computers but is increasingly conducted on educational digital platforms. Such platforms significantly accelerate access to essential learning materials in extracurricular settings and greatly expand the reach of instruction, even for students far removed from the teacher's physical classroom [1].

Another advantage of programmed learning is its capacity for **complete mastery of subject matter**. Once diagnostic objectives for a topic have been set, the learning content is divided into sections, and assessment tools are designed for each section. Instruction continues until students have fully mastered each element and section of the subject matter [8].

Given these advantages, the integration of programmed learning technology into extracurricular activities—particularly when delivered via digital learning platforms—offers substantial benefits for general secondary school education. This approach provides individualized pacing, ensures consistent feedback, fosters sustained learner motivation, and supports the comprehensive mastery of academic content.

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