



DOI: **10.5958/2249-7137.2021.01338.0**

TYOLOGICAL FEATURES OF STUDENTS' LEARNING ABILITY IN THE STUDY OF MATHEMATICS IN HIGHER EDUCATION

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ABSTRACT

This article is devoted to the study of the typological features of students' learning ability in the study of mathematics. Proficiency is a comprehensive criterion, which gives us a definitive picture of the availability of the necessary knowledge, skills and abilities of the student, but at the same time, this criterion does not contain information on the cause of deficiencies in LP. And the more variety of content and form of educational material passes through his perception and practice in changing situations of activity, the more this ability will be richer in skills, stronger, more consolidated and more mobile in his activity”.

KEYWORDS: *Proficiency, Level Of Proficiency, Learning Ability, Perception, Objectivity, Integrity, Constancy, Categorical Nature, Meaningfulness.*

INTRODUCTION

In pedagogy there is no precise interpretation of the concept of “proficiency”. The pedagogical dictionary defines proficiency as “the result of learning, which includes both the present storage of knowledge available to the day, and the established ways and techniques of acquisition thereof”. Thus, proficiency is both a basic component for further learning and result of learning at each stage of learning.

According to S.I. Arkhangelskiy, proficiency is defined as - “one of the essential qualities of the learner, reflecting his ability to operate with knowledge and skills in solving of theoretical and practical problems, which he acquires acting on specific educational material. And the more variety of content and form of educational material passes through his perception and practice

in changing situations of activity, the more this ability will be richer in skills, stronger, more consolidated and more mobile in his activity”.

We will distinguish student proficiency as high, medium and low. The level of proficiency (LP) shall be characterized as follows:

High LP - the student deeply and completely possesses the content of the educational material and conceptual framework; is able to link theory with practice, to illustrate by examples. Quickly and rationally solves the assigned tasks, clearly and briefly states the answers to the questions posed; can justify his/her judgments on the issue presented. The answers are independent.

Average LP - the student deeply and completely possesses the content of the educational material and conceptual framework; is able to link theory with practice, illustrate with examples, but the content of the answer has some inaccuracies (minor errors) in the presentation of theoretical and practical material, is less particular and complete; mistakes are corrected by the student after further questions from the teacher.

Low LP - the student shows incomplete knowledge and understanding of the main provisions of the educational material, makes inaccuracies and significant errors in the definition of concepts and basic formulas, is not able to justify his/her judgments, there is a violation of the logic in presentation. The answer is characterized by a low level of independence.

Proficiency is a comprehensive criterion, which gives us a definitive picture of the availability of the necessary knowledge, skills and abilities of the student, but at the same time, this criterion does not contain information on the cause of deficiencies in LP. The criterion that gives us information about the reasons why the student has difficulties in the learning process, and as a consequence, LP shortfalls, is learning ability.

In the psychological dictionary, learning ability is defined as individual measures of the speed and quality of human learning of knowledge, skills and abilities in the process of learning.

Z.I. Kalmykova treats learning ability as one of the main indicators of mental development, understands it as a system of intellectual qualities of mind, which determines the productivity of learning activities under other equal conditions (the initial minimum of knowledge, a positive attitude to learning, etc.).

Learning ability is based on: the level of development of cognitive processes of person - perception, imagination, memory, thinking, attention, speech; the level of development of his spheres - motivational and volitional and emotional; development of learning activity components derived therefrom - clarification of the content of educational material from direct and indirect explanations, mastering of the material to the degree of active application.

We shall consider the typological features that underlie learning ability. First we shall consider such characteristic of the learner cognitive processes development as perception.

Perception (from Latin perceptio) - from the pedagogical point of view, it is a cognitive process that forms a personal world view.

The main properties of image formed in the process and as a result of perception are objectivity, integrity, constancy, categorical nature, meaningfulness.

Thingness - a characteristic feature of perception thingness is that as soon as we focus on a certain object, the entire perceived space is instantly divided into an image of the object itself and an image of the space surrounding the object.

Integrity - unlike sensation, which reflects individual properties of the object, perception gives a holistic image of it.

Constancy is the ability to perceive objects as relatively constant in shape, color and size, and a number of other parameters regardless of changing physical conditions of perception.

The categorical nature of human perception manifests itself in the fact that it has a generalized nature. The perceived object is named, and therefore classified, belongs to a certain category. The subject generalizes with others of the same name.

The meaningfulness of perception. Human perception is closely related to thinking. Apperception of an object means to mentally name it, i.e. to refer it to a certain group, class, to generalize it into a word. Even when we see an unknown object, we try to establish similarities with familiar ones in it.

Any lesson of the teacher with the student, necessarily consists of various techniques to enhance perception. The lesson material is written on the blackboard or in the textbook, the most important formulas are underlined, which is a way to separate the information being studied from the common flow, i.e. thingness. When solving problems, all possible options are necessarily examined. For example, when studying a function for extremum and monotonicity, all extremum points are searched for, and accordingly the information obtained as a result of this study will be complete, i.e. holistic.

Each topic necessarily contains several problems on the studied subject, so the same types of objects, such as points of extremum, are sought for different functions, changing their number and nature, for some functions, they may simply be absent.

Here such properties of perception as constancy and categorical nature are manifested. The result of study of each topic is the ability of each student to independently find not only solutions, but also ways to solve problems, i.e. to independently identify significant characteristics of the studied object, to relate them to the existing hierarchy (for example, with the classification of break points or types of solutions of differential equations), which means meaningful perception of the studied material.

CONCLUSION

After the object under study has been isolated from its environment as a coherent, complete image, correlated with other similar ones, and classified, the information obtained must be stored. The memory stores information. We shall consider memory as a cognitive process.

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