



# Modern Educational Approaches as a Factor of Development of Students' Intellectual Abilities

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**Annotation.** Increased information flow requires introduction of such learning methods that enable to transfer a substantial scope of knowledge, provide high level of mastering sufficient volume enough material under study and its consolidation by the student in practice.

**Keywords:** *intellectual abilities, educational paradigm, problem learning, reflective, learning techniques, teaching strategies.*

## Introduction

The problem of the effective development of the intellectual abilities of students brings forward new challenges when the new approaches to learning appear. New educational approaches, strategies, methods of training require the new interpretation of the cognitive development of a student.

A special role in formation of a personality, development of thinking is assigned to the process of abilities formation in students to independently work with the information, to conceive own actions, to carry out its analysis and transfer the obtained knowledge to the new subject content. This idea conditions a new need in development of reflective nature technology, the purpose and the result of which is to master the methods of the reflexive

thinking, cognitive skills that would be further included into the intellectual apparatus of the personality and applied in the course of independent searches and discoveries.

Formation of an intellectual personality occurs during the process of training, upbringing and realization of the personal potential under the influence of socializing factors. Therefore, the intellectual person as a new type of personality with the developed intelligence, own spiritual wealth, personhood and unique identity must be a strategic aim of the educational system.

**Object of the study:** development of intellectual abilities of the students during the educational process.

**Purpose of the study:** to generate and theoretically justify the modern model of the development of intellectual capabilities of students.

**Objectives of the study:**

1. to identify the challenging aspects of development of students intellectual abilities.
2. to describe the basic processes and techniques of students cognitive development.
3. to analyse contemporary pedagogical approaches and describe the main pedagogical strategies of the development of the cognitive abilities.
4. to create the modern pedagogical model of the development of intellectual capabilities of students.

**Methods:** a critical review of research literature: analysis and synthesis material from diverse sources, the identification of problematic aspects and different approaches of students cognitive development as well as the basic pedagogical strategies, the generalisation of main ideas and creation of new contemporary pedagogical model.

**Challenges of development of intellectual abilities of students related to modern approaches in education.** Various researches have *different way of looking at the intelligence structure*. Some researches interpret intelligence as the general factor represented at all levels of the intellectual functioning and the other authors regard intelligence as a group of unrelated factors.

The Spearman's model (cited in Дружинин, 2000, 23) may be referred to such a theory, in which the author regards the general intelligence as a G-factor. G-factor shall be determined as the total quantity of "mental energy". Except for G-factor, Spearman singled out the S-factor characterizing the specificity of either each particular test or some kind of intellectual activity. Thus, the Spearman's model may be characterized as the Two Factor Theory of Intelligence. When developing further his Two Factor Theory of Intelligence, Spearman outlined three intermediate intelligence factors between the general G-factor and specific S-factor: numerical, spatial, verbal.

Thus, from the Spearman's point of view, each person is characterized by a specific level of the general intelligence, on which depends his capacity to adapt to the subjective environment. Besides, all people have specific abilities developed to various degrees, which are manifested in the solution of the specific objectives of this adaptation (Акимова, 1999).

The main Spearman's opponent was L. Thurstone (cited in Аткинсон and other, 2007, 422) who denied the existence of G-factor. In Thurstone's opinion, there is a set of independent capabilities, which determine the success of intellectual activity called "Primary Mental Potentials." L. Thurstone singled out 12 factors, 7 of which were called "Primary Mental Abilities": *S* (spatial relations), *P* (perception), *N* (number), *V* (verbal comprehension), *F* (word fluency), *M* (memory), *R* (reasoning).

H. Gardner developed his theory of multiple intelligences as a radical alternative to a theory that he called "classical" view of intellect as the capability to logical thinking.

H. Gardner (1983) was amazed at the variety of roles of grown-up representatives of various cultures, roles based upon very diverse abilities and skills equally needed for survival in respective cultures. On the grounds of his observations, he made a conclusion that there is a plenitude of different intellectual capabilities in various combinations, instead of the unified basic intellectual ability, or G-factor. H. Gardner determined intelligence as the "ability to solve tasks or create products conditioned by a particular cultural characteristics or social environment." It is the multiple nature of intelligences that allows people to take up such various roles as a role of physician, farmer, shaman and dancer.

D. Vernon's model (cited in Дубинский, 2005, 49) determines three hierarchy levels. On the very top, there is the general intelligence, then two principal common factors come: verbal-numerical, practical, mechanical-spatial. On the third level, there are factors responsible for special abilities: mechanical thinking, arithmetic intellect and so on; on the bottom the hierarchy levels there are more private subfactors.

The Cattell's model (cited in Дружинин, 2000, 35) singled out two factors, such as "free" (or "running") and "connected" ones. "Connected" intelligence factor shall be determined by a mix of knowledge and intellectual skills of the personhood, which the individual has assumed in the course of socialization from early childhood to the end of life. This factor shows how the individual has mastered the general culture of the society, to which s/he belongs. "Free" intelligence factor shall determine the primary accumulation of knowledge and, in Cattell's opinion, do not depend on introduction to the culture.

*Various approaches to reviewing of the intelligence imply various approaches to learning for the purpose of development of intellectual abilities.* In case of the approach that the intelligence is composed of general abilities pronounced in all intellectual spheres, then it will be necessary to find out such learning methods that would facilitate the developing of the general intellectual abilities. Then, the same learning techniques must be used in various subjects and we should hope to achieve development of the general intellectual abilities. If we adhere to another approach stating that intellect is a combination of separate, specific abilities, in this case, the separate learning technologies will be necessary to develop all intellectual abilities facilitating the development of the separate, specific abilities. If we stick to the third approach stating that intelligence structure encompasses

both general and specific abilities, it is necessary to use learning technologies that are designed for development of general, separate, and specific abilities.

Some authors *specify the biological ground of the intelligence more, and the others emphasise social and cultural ground of the intelligence*. According to the J. Piaget's operational theory of intelligence (Пиаже, 1969), the intelligence is a more perfect form of adaptation of organism to the environment representing the unity of assimilation and accommodation processes. Thus, the essence of intelligence is a capability of flexible and simultaneously stable adaptation to physical and social reality; its basic purpose is arrangement of interaction between the man and environment. Intelligence development is an impromptu process subject to special laws of maturing the operational structures, and gradually raising from the domain-life experience of a child.

Within the framework of the Vygotsky's cultural and historic theory (Выготский, 1982; 2000) the intelligence issue is regarded as the problem of the child's mental development. Intelligence development shall be conducted under the influence of such leading factors as utilization of tools, mastering skills, inclusion into social interaction with other persons. In Vygotsky's opinion, there the principal difference between natural intelligence being the product of biological evolution, and human intelligence historically appeared, the structure of which is based on functional use of this word. Therefore, the mechanism of the child's intellectual development is connected with formation of word meanings in his/her conscious, the shift of which characterizes the direction of growth of his intellectual abilities.

H. J. Eysenck's model (Айзенк, 1995) singled out three types of intelligence closely connected with approaches to explanation of its nature:

- biological intellect which means the physiological, neurological, biochemical and hormonal basis of cognitive behaviour mainly connected with the structures and functions of the brain cortex;
- psychometric intelligence, which shall be determined using the standard tests of intelligence quotient (IQ) measurement;
- social (or practical) intelligence as a manifestation of socially useful adaptation; at that such displays of social intelligence are specified and studied as reasoning, tasks solving, memory, learning ability, comprehension, information processing, strategy making, adaptation to external environment.

*Under the influence of the biological approach to such notion as "intelligence", a traditional approach to development of the intellectual abilities was generated during the training process: differentiation of students according to intellectual abilities, passive stands of the student in the course of training. Emphasis on the social and cultural ground of intelligence changes an approach to the training process, i.e. the training process is characterized by the following: active stand of the student, co-operation with other students and teacher, dialogue-based educational process.*

The supporters of the cognitive approach *consider intelligence as ability groupings of acquisition, processing, application, retention of knowledge just as the product of the goal-directed training*. A problem of educability and creativity plays a special role. If we adhere to this method, the pedagogical strategies of development of the intellectual abilities must rely upon active and creative process of acquisition and processing of information.

A. Staats (1970) is one of the representatives of this method. In studies of social and behavioural and orientation, the intelligence is regarded as the combination of cognitive skills, the learning of which is a necessary term of the intellectual development. A. Staats regarded the intelligence as a system of behavioural abilities resulted from a “cumulative and hierarchal education”. The intelligence is interpreted as the “basic behavioural repertoire” acquired due to specific training procedures.

Within the R. Firestein’s meaning (cited in Холодная, 1997), the intelligence is a dynamic process of man-and-world interaction; therefore, the intelligence development factor is mobility (facility and plasticity) of individual behaviour. The intelligence development with aging is a function of mediated learning experience, its influence upon cognitive abilities of a child. Mediated training experience is a plenitude of learning technologies including skills of evaluation of own competence, behavioural control, search for a purpose and so on, whereby the subject is able to manage its states and own intellectual activities.

All the above-described challenges associated with development of intellectual abilities *require a new approach to education and generation of optimum model of intelligence development*. Based upon the R. Sternberg’s WICS theory (Стернберг, 1996; Sternberg, 1997), a model of cognitive development of students has been created. This theory relies upon a synthesis of various approaches to intellectual abilities stating that both general and specific abilities may be outlined within the intelligence structure, as well as considering the social and cultural ground of intelligence, and regarding the intelligence as an active and creative process of acquiring and processing the information.

## **The pedagogical model of the development of intellectual capabilities of students in the context of new educational paradigm**

The created model relies upon the personally oriented paradigm of education, which is based upon self-regulating learning process.

This model provides some grounding in designing of the education process at schools.

When designing the process of cognitive learning, one must rely not only on the psychological model but also on modern approaches in education.

Table 1. Model of Development of Intelligence Abilities of Students

Techniques of cognitive development according to the Sternberg's theory	Learning / teaching technologies	Approach to learning	
Analytical teaching: analysing, evaluating, judging, inferring, critiquing, comparing, contrasting.	Learning technology stimulating the critical thinking: critical learning (“Reading and Writing for Critical Thinking”), technology of reflective learning based on “Model of Pedagogical Reasoning”.	Problem learning	Reflective learning
Creative training: creating, designing, inventing, exploring, discovering, imagining.	Learning technologies developing creative thinking: creative-problem-search training methods, modelling, analogues and alternatives method, figurative-conceptual thinking, mental maps, brainstorming.		
Practical learning: applying, using, implementing, contextualizing, putting into practice.	Learning technology based on personal experience: <ul style="list-style-type: none"> <li>• learning in practice,</li> <li>• life skills training,</li> <li>• action learning strategy.</li> </ul>		
Wisdom learning: try to find the common good, to look at things from the point of view of others as from their personal position, reconcile one's interests with the interests of others and interests of the organization, to look at the long term things as short-term things; the way you can incorporate ethical values into the decision-making process, to implement in real life something that is or is believed to be effective in spite of place and time.	Learning techniques based on social context: <ul style="list-style-type: none"> <li>• contextual learning,</li> <li>• collaborative learning,</li> <li>• case technologies,</li> <li>• assertive learning,</li> <li>• dialogue-based learning,</li> <li>• project learning.</li> </ul>		

Pollard and others (2008) describes different approaches to learning in the different psychological theories. Behavioural learning theory, which does not consider the internal processes of human thinking, studies the behaviour construed as a battery of reactions on any situations. As A. Pollard says, one of the founders of behaviourism E. L. Thorndike (1874–1949) considered that the education of the person must be based on purely mechanical but not conscious principles. Therefore, he tried to describe the person using simple rules equally fair for animals. Among these rules, two laws serving as a platform for further development of the training theory. When referring to the role of teacher during the education process it should be noted one important moment: behavioural approach regards the teacher as an owner of a particular knowledge. His main function is to impart knowledge to students, in the first place, via passive communication methods, i.e. lecturing, retelling, and reasoning. In such classes, the students acquire knowledge,

memorize facts and conceptions of material, practice skills and abilities until they master it in full and demonstrate a sufficient level in tests.

Modern approaches in training are based upon constructivism and social cognitivism (Pollard et al., 2008; Schiro, 2013; Shulman, 1992). *The constructivism in pedagogical science* appeared thanks to J. Piaget (Пиаже, 1969). Constructivist education philosophy suppose foundation of conditions under which the students by themselves would be able to teach individual fragments of classes, change the course of discussion within the framework of the study problem under the discussion, propose its methods and teaching forms.

It is obvious that this is possible when teacher wonderfully manages the training material and training situation on the lesson, s/he is a good teacher-improvisator. This allows him or her to recede from the stiff structure of lesson and transfer the reins of power to students preserving the basic line of the lesson and achieve its objectives. Moreover, at first, the teacher-constructivist listens to points of view of students involving them into a process of significant discussion, and then resumes and discloses his position with regard to this issue by no means protruding it. The student must take the full participation in framing of the new knowledge, but not to obtain it in a ready form from the teacher's lips. She or he manages the education process herself or himself.

*Social-cognitive (culture and historic) theory of L. S. Vygotsky* (Выготский, 1982, 2000) worked out the theory of a person developing and creating the culture during the process of cognitive interpretation. Sense-making plotting enables discovering an author's nature of the social and culture nature of the person and his similarity. "Scientific problem begins where the society is not regarded as the "social life introduction machine" and, the aim thereof is to understand the human creative, author's character of rising and establishment of this or that phenomenon of human's sociality in history and individual biography where there is a sphere of complicated relations being opened between the author and addressee of the social act." (Выготский, 2000). L. S. Vygotsky wrote that the social medium does not impose a comprehension apparatus on a man. This apparatus has two trends. One of them addresses social and cultural reality being at the same time a psychological key to challenges of the subjective world of people. Another trend is a facility of modification of the person inside experienced comprehensively by a person.

It is necessary to analyse the main aspects of the L. S. Vygotsky's theory in the context of education. According to his idea, both parents and teachers are peculiar mediators between students and tools of culture learning. Learning tools include complex multi-functional structures including the social component and language. Four key principles were outlined by L. S. Vygotsky as a basis for any learning forms.

1. Education and development are social and joint activities. The interaction between children, grown-ups and age mates has a decisive meaning. Such interaction may not be only a form of information transfer (reproductive), i.e. education in the traditional meaning of this word. The students independently generate understanding and knowledge, and joint activities promote the development of creative



orientation. The constructive training proposes that the joint problem solving and decision making during the interaction would create favourable conditions for such learning.

2. Learning must be conducted within the context that is meaningful for students. Many such learning trends as situation-conditioned, successive and complex training, address the fact that learning implies the presence of the relevant context. Most often, this means that which is already learned, must be used. An independent informational search is a part of creative process activating the cognitive activities.
3. Correlation of non-subject experience of students and their direct subject-oriented school experience. Many educational trends pay attention to study of that students already know and understand.
4. Zones of proximal development may serve as guidance to lesson planning and course program preparation. The teacher is able to facilitate any tasks of students in accordance with the zone of proximal development. Therefore, the Vygotsky's constructivism has a social nature as he attaches a decisive importance in knowledge acquisition to active group and communicative methods, e.g. communication between people (with other children, parents, teachers).

*What approaches in education are the guarantee of success and mostly suit to comprehensive development of intelligence?* It goes without saying that we take into account problem-based learning and reflective learning.

Thus, *the problem-based learning represents* a modern level of development of didactics and the best teaching practice. This learning is called problematic because the organization of the educational process is based upon the principle problem, and systemic solution of training problems is a characteristic of this type of training.

Problem situation and training problem are primary conceptions of the problem-based learning. Learning problem is understood as reflection of logical and psychological contradictions of mastering determining the direction of the mental search stirring the interest to study the essence of unknown and leading to learning of a new concept or a new mode of action. There are two basic functions of the training problem:

1. Determination of trend of the intellectual search, i.e. student's activities to find out the problem solution method.
2. Formation of cognitive abilities, interests, motives of the student's activity to master new knowledge (Омарова, 2011).

This is the facility for teacher to manage the cognitive activity of the student and to empower student thinking. This type of learning is like the stimulus of thinking activation as well as the process of its solving serves and the method of transformation of knowledge to belief.

The problem situation is the way to arrange the problem learning, this is the baseline of thinking that drive the cognitive need in learning, and creating internal condition for active mastering of the new knowledge and activity ways.



One of the most popular modern learning technologies is *the reflective learning*. It is mostly suitable for successful development of the intellectual abilities in terms of modern psychological science. In particular, A. V. Karpov's works (Карпов, 2001) convincingly showed that reflection is based upon synthesis of integral processes acting as product of their co-organization. It is necessary to understand the term "reflexivity" as the physiological and individual quality of a person greatly influencing his various behavioural and activity-related manifestations. This approach has developed in the form of multi-level complex strategy of investigation of regulatory processes in professional activities.

The reflective activity results to development and change of the student, his position in training activity, his activity in the subject learning. Reflective learning is transformative, oriented to development ability to learn. This is not simple transfer of aid and generation of interaction situation but also creation of conditions for manifestation of creative nature of psychic development including that via educational processes.

Guided by the Sternberg's theory and general approaches in pedagogics, it is possible to single out learning technologies that would be effective in developing of the intellectual abilities of students in accordance with requirements of modern education.

Learning technology based on D. Kolba's model is of a definite interest from the point of view of generation of reflective training methods in vocational school [Джонсон, Джонсон, Джонсон-Холубек, 2001]. Training cycle in this model is represented in four processes: personal experience; understanding of experience, theoretical grounding and application in practice.

Another variant of the D. Kolba's basic model was the practical training model developed by K. Mellander (1993). Its training cycle was developed by the new activity elements. There are six such components: motivation – psychological readiness and sensibility; information means that facts and data are converted into information; processing means that information is converted into experience and understanding; conclusions means eureka moments when the experience and understanding are developed into knowledge; practice means that knowledge is developed into skills and approaches; feedback means further reflections and improvement. In the K. Mellander's model the training should include several stages. The First Stage. To know (what): Do you know that you knew about it earlier? The Second Stage. To know (how): How did you know about it? The Third Stage. To know (why): Do you understand that it is important, why one should do this in such a way? The Forth Stage. To be interested in (why): Are you interested in why it is necessary to take some or other actions? At the same time these stages are the reflecting content which allows to make knowledge personally significant.

*Critical learning technology* is aimed not only at the formation of the student's critical position, but also at the development of the ability to form one's opinion in the process of searching of the relevant information, sensible and objective assessment of the quality of this information, to change one's views when the new reliable information is found. Critical thinking conception includes the clear description of skills and abilities relat-

ing to critical thinking (interpretation, analysis, estimation, conclusions, explanation, self-control). Comprehension of these actions provides not only completeness of the reflexive analysis but also allows to reveal the problems of the knowledge built-up. Critical thinker tries to estimate what he has read, heard and saw.

The modification of the critical thinking strategy is the reflective learning technology based on the “Pedagogical Reasoning Model” developed by L. Shulman (1992). It includes the following cycle of actions: understanding, transformation, assessment, reflection and new understanding. Understanding is comprehension of the objective and structure of the teaching subject and realization of its place in the educational program. First of all, to teach means to understand the objectives and the structure of the teaching and the concepts inside and outside the discipline. Transformation is the conversion of the teaching informational content taking into account the students’ abilities. The instruction contains the variety of the training activities and covers the majority of the pedagogical key aspects: management, relations, team work, discipline, humour, questions, information recognition and retrieval. Assessment is the examination of the content understanding degree during the process of the online training and the students’ testing at the end of the lesson or a chapter, and also the assessment of own actions. Reflection means repetition, remodelling, playback and critical analysis of the personal teaching abilities and grouping of the considered explanations into the criteria, according to which the changes will be done in order to teach more effectively. New understanding is the new well-minded and reasonable teacher’s actions, which allow to reach new understanding of the objectives of teaching disciple, students’ personalities and the pedagogical processes itself. The acquisition of the pedagogical knowledge within the reflective learning technology is based on the reflection of the personal experience and the experience of the colleagues through using of the various methods: theoretic information sharing, case study, research practice. The reflective learning strategies use such educational medium as dialogical log kept by the student.

J. Stil, K. Meredit, D. Ogl, Ch. Tample are the authors of the technology “Reading and Writing for Critical Thinking” (RWCT). The technology provides for development of thinking, formation of communication skills and individual work skills (Халперн, 2000). The RWCT technology widely uses the graphic simulation for reference of ideas, events, concepts, things. One of the central provisions of the RWCT technology is consecution of the three phases of the learning session:

1. Challenge (creation of learning motivation).
2. Understanding (input of new information, work with text).
3. Reflection (understanding of the information, which has been already acquired, creative development).

The main purpose of the *assertive learning technology* (K. Beck, A. Rash, B. Sho, G. Emery) is the development of the skills to listen attentively, to understand the point of view of the other person and to reach the working compromise (Бек, Паш, Шо, Эмери).

Эмери, 2003). Assertiveness is the philosophy of the personal responsibility and tolerance. The principal constituent of assertiveness is self-respect and respect of the other people. The training process supposes effective communication wherein the assertive behaviour model, i.e. confidence and positive approach, are formed. The training programs include trainings, classes with critical incidents analysis, polemic methods, role-playing games. During discussions, the participants are allowed to express different points of view and opinions.

Reflective practices are required in the technology of contextual teaching and learning, developed in the research and teaching school of A. A. Verbitsky (Вербицкий, 1991). The learning which at theoretical level simulates substantive and social content of activity should be considered as the contextual learning. Context is a system of internal and external factors of human activity in a specific situation. At that internal context is a complex of individual characteristics, attitudes, knowledge and experience of a person, and external context is a complex of social and cultural, substantive, space-temporal and other characteristics of situation of action and deed. The basic unit of the content of context teaching is a situation.

Learning technology is also similar in its content when using case study or situational training. It involves learning using the reality situation models. Students must analyse the situation, get the gist of the problem, propose possible solutions and choose the best of them. Field situations based on real factual material and “chair” (fictional) cases are distinguished. Using a case-technology allows, besides analytical, practical and creative skills, to develop social skills (to understand of human behaviour, the ability to listen to, to sustain a discussion or argue the opposing opinion, control oneself and etc.) and self-analysis skills (understanding and analysis of opinions of others and one’s personal opinion).

For more than one decade, the project-based learning technologies have been widely used at all levels of education in our country and abroad (J. K. Jones, D. Dewey, V. M. Zhurakovskaya, W. K. Kilpatrick, V. M. Symonenko and others, cited in Аткинсон and other, 2007, 418).

In professional education, the project-based learning strategy is based on the “project scenarios” compilation learning. Scenarios are divided into four categories: promising projects, strategic projects, critical scenarios, follow-up scenarios. The project-based learning strategy complies with the logic of designing, i.e. consists of a sequence of stages of the project activities, which guarantees getting of result and learning of the detailed process of creating the product. Conditionally the following stages of the project implementation can be distinguished:

1. Collection and analysis of information about the project and its objectives.
2. Development of plans, strategies, calculations.
3. Team discussion of possible result and the process of creating the project.
4. Project implementation.

5. Students' self-rating of implemented project.
6. Adoption of assessment or proposal of project implementation stages correction.

This group of technologies is based primarily on the theory of social constructivism, the essence of which is that students learn the content of education when they create or 'construct' the knowledge in the context of social experience.

## Conclusions

Contemporary educational paradigm of interpretation/interaction imposes new challenges not only on socio-emotional but also on cognitive development of a learner.

Theoretical analysis of structural models of intelligence allows to presuppose different educational approaches when different models are employed. Some models, which emphasise importance of general intelligence also focus on applying the same educational techniques teaching different study subjects (Mathematics, Lithuanian), whereas other models, which highlight the significance of specific skills, allocate significant attention not only to nurturance of general but also to development of specific skills teaching different study subjects. Structural intelligence models, which emphasise biological nature of intelligence most frequently suggest differentiation of learners, considering the level of their intelligence and passivity of learners in the process of education. Structural intelligence models that highlight not only biological but also social nature of intelligence, target at activity of the learner and dialogue-based interaction between the teacher and learners in the process of education.

Contemporary model of intelligence development embraces integral groups of intelligence components suggested by R. Sternberg (WISC: Wisdom, Intelligence and Creativity Synthesized), educational approaches targeted at learner's personality development (problem-based and reflective learning) as well as pedagogical strategies that comply with the aforesaid approaches and structural components of intelligence.

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# Šiuolaikinė edukacinė prieiga kaip mokinių intelektinių gebėjimų ugdymo veiksnys

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## Santrauka

Straipsnyje siekiama teoriškai pagrįsti šiuolaikinėmis edukacinėmis priemonėmis paremtą mokinių intelektinių gebėjimų plėtojimo modelį. Problemos aktualumą lemia tai, kad intelektinių gebėjimų plėtotė dažniausiai siejama su akademinė mokymo paradigma, t. y. su geru žinių lygiu ir kognityvinių gebėjimų išlavėjimu. Tuo tarpu šiuolaikine interpretacine / sąveikos paradigma grindžiamas ugdymas orientuotas į mokymąsi socialiniame kontekste, į kūrybiškumo, refleksyvaus mokymosi gebėjimų plėtotę.

Siekiant sukurti teorinį šiuolaikinėmis edukacinėmis priemonėmis grįstą mokinių intelektinių gebėjimų plėtojimo modelį, siekta atsakyti į keletą probleminių klausimų:

- Identifikuoti interpretacinės / sąveikos paradigmos kontekste kylančius iššūkius mokinių intelektinių gebėjimų ugdymuisi.
- Aprašyti bazinius kognityvinių gebėjimų tapimo procesus ir jų ugdymosi būdus.
- Išanalizuoti šiuolaikines kognityvinių gebėjimų ugdymo edukacines priemones bei esmines pedagogines strategijas.
- Sukurti ir teoriškai pagrįsti šiuolaikinį pedagoginį mokinių intelektinių gebėjimų ugdymo modelį.

Siekiant identifikuoti mokinių intelektinių gebėjimų ugdymosi probleminius aspektus, straipsnyje apžvelgti skirtingi struktūriniai intelektinių gebėjimų modeliai, pažymint, kad vieni jų orientuoja į tų pačių ugdymo būdų taikymą mokantis skirtingų dalykų (matematikos, lietuvių kalbos), nes akcentuoja bendrųjų intelektinių gebėjimų svarbą, kiti orientuoja į skirtingų gebėjimų plėtotę, mokantis skirtingų dalykų, nes išryškina specialiųjų gebėjimų aktualumą.

Straipsnyje konstatuojama, kad struktūriniai intelektinių gebėjimų modeliai, akcentuojantys biologinę intelekto prigimtį, dažniau orientuoja į mokinių diferencijavimą, atsižvelgiant į intelekto lygį, bei mokinio pasyvumą ugdymosi procese. Struktūriniai intelektinių gebėjimų modeliai, išskiriantys ne tik biologinę, bet ir socialinę intelekto prigimtį, orientuoja į mokinio aktyvumą, dialoginę sąveiką su mokytoju ir mokiniais ugdymosi procese.

Straipsnyje aptariami intelektinių gebėjimų modeliai, kurie pabrėžia kūrybingumo, mokymosi socialiniame kontekste ir kitus aspektus. Vienas iš tokių modelių yra R. Sternbergo WICS

(*Wisdom* – išmintis, *Intelligence* – intelektas, *Creativity* – kūrybingumas, *Synthesized* – visų komponentų sintezė) teorija. Kuriant intelektinių gebėjimų ugdymo pedagoginį modelį taip pat išanalizuoti svarbiausi ugdytini intelektiniai gebėjimai: a) analitinių gebėjimų ugdymas – analizuoti, lyginti, aiškinti, vertinti, spręsti, kritiškai interpretuoti; b) kūrybinių gebėjimų ugdymas – įsivaizduoti, atrasti, išrasti, interpretuoti; c) praktinių / taikymo gebėjimų ugdymas – kontroliuoti impulsus, atkakliai veikti, nebijoti rizikuoti, priimti atsakomybę, kurti gerovę visiems, pažvelgti į situaciją iš skirtingų perspektyvų, derinti interesus ir kt. Šios technologijos susietos su šiuolaikinėmis edukacinėmis priemonėmis – probleminiu ir refleksyviuoju mokymusi bei konkrečiomis mokinių ugdymo strategijomis.

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**Esminiai žodžiai:** *intelektiniai gebėjimai, ugdymo paradigmos, probleminis mokymasis, refleksyvusis mokymasis, mokymosi būdai, pedagoginės strategijos.*

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