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"MULTIPLE INTELLIGENCES" AND "MINDS FOR THE FUTURE" IN A CHILD'S EDUCATION

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Abstract

A modern teacher needs to be equipped with up-to-date knowledge, interesting practical solutions and educational inspirations. The role of a teacher is not only to support child development, which is undoubtedly the most important value in education, but also to create favourable conditions for children to discover the world in a multi-intelligent way.

Gardner's theory of multiple intelligences is well-known and valued all over the world. It has significant influence on education in many different countries. MI theory enables humans to assess or evaluate their own abilities and take into account the other *person's* perspective. *Every teacher should individually discover Gardner's theory, build a store of knowledge of multiple intelligences, and finally decide how to implement it effectively in the teaching-learning process.*

Hopefully, the authors' concept of Multi-intelligent education for the child will not only inspire the teachers and provoke reflections on their everyday pedagogical activities, but also motivate them to take up innovative educational projects and activities in order to create better opportunities for all students. In some way, the teacher is able to "create" a student through discovering his/her interests and abilities. In the process of pre-school, and then school education, in everyday situations teacher-student relationships are established.

Keywords: multiple intelligences, multi-intelligent education, intelligence profile, child's education**,** modern teacher, minds for the future.

Introduction

Intelligence plays an important role in every human life. It helps an individual to adapt to the environment and facilitates taking opportunities offered by this environment. There have always been created various conceptions of intelligence; and the term "intelligence" itself has become a buzzword recently [Nęcka 2009, p. 8]. Everyone attaches great significance to intelligence. It is not easy to define „intelligence", and experts' points of view on intelligence are highly diversified.

Howard Gardner has significantly contributed to extending the term "intelligence" thanks to his theory of multiple intelligences. The conception suggested by Gardner differs from traditional approach to intelligence and

changes a line of its perception. "It is an extension of the term "intelligence" over verbal, logical and mathematical abilities which used to be almost exclusive matter of interest for previous theories" [Vasta, Haith, Miller 1995, p. 394]. The power of human mind makes everyone possible to succeed in life if they know how to use its potential to their benefit.

Howard Gardner's theory of multiple intelligences

Howard Gardner, psychologist and neurologist, perceives human capabilities in an original way. He believes that intellectual abilities are inseparably linked with the context in which we live, as well as with our human resources. "Intelligence – one of many – is an ability to solve problems or create products which are specifically important for a particular environment and cultural or social context. This capability of problem solving allows an individual to approach the situation which needs achieving a certain goal by finding the appropriate way" [Gardner 2009a, p. 18]. It challenges the assumption of classical theories on intelligence that there is only one type of intelligence.

The model for the theory of multiple intelligences was originally based on seven intelligences: musical, kinaesthetic, logical-mathematical, linguistics, visual-spatial, interpersonal and intrapersonal. Later, the eighth intelligence – naturalistic – was included in the model. Gardner, looking for scientific evidence for existential intelligence, mentions currently „eight and a half intelligences" [Gardner 2009a, p. 37]. It is worth emphasising that a lot of potential intelligences may exist that have not been identified and described so far. Their number is not even possible to determine.

The theory of multiple intelligences has aroused worldwide interest but also reserve. It has numerous supporters, but in the world of omnipresent IQ, the theory of multiple intelligences has struggled for understanding and acceptance. "Traditionally, intelligence is understood as predisposition that globally determines human cognitive activities. At school this category is frequently applied in order to explain this sort of human behaviour which involves mental processes" [Czaja-Chudyba 2005, p. 25]. Gardner extends traditional concept of intelligence believing that it is considerably more diversified and polymorphous. In classical psychometric approach intelligence is defined operationally – as an ability to perform tasks included in intelligence tests [Gardner 2009a, p. 17]. According to non-psychometric approach which apart from the theory of multiple intelligences deals also with social, emotional and practical intelligence concepts, intelligence cannot be measured. As the author claims, the theory of multiple intelligences is more conformed to reality and it better reflects findings on human intelligent behaviour [Gardner 2009a, p. 17].

Howard Gardner publishing his works on the theory of multiple intelligences referred mainly to psychologists and did not expect such wide recognition from pedagogists. Gardner has never created a programme for development of multiple intelligences, but he presented "some concepts of education in the spirit of the multiple intelligences theory" [Gardner 2002, p. 102]. This theory has become an inspiration for teachers "to develop curricula including the aspects which used to be neglected in teaching (such as creative writing, arts or music education) and to try new methods of measuring abilities in different fields of education" [Dembo 1997, p. 322].

First curricula and activities applying the theory of multiple intelligences to the process of education were based on Harvard Project Zero. According to Gardner's concept of education, it is extremely significant for a child to understand the world. Therefore Project Spectrum, carried out by a group of researchers as part of Project Zero, seems to be of special importance. It concentrates on pre-school children and is an innovative attempt to determine intelligence profile and working styles of young children [Gardner 2009a, p. 125]. The principles of multiple intelligences theory were proved by empirical research which was conducted as part of Project Spectrum. Activities aimed at implementing the idea of multiple intelligences are carried out in schools belonging to the association Smart Schools which was established within Project Zero. In these schools special programmes "focused on an individual" are developed. The basis for schools which implement this system is identification of child's strong points and balance of special and general abilities. At the same time general cognitive and individual abilities are developed [Czaja-Chudyba 2009, p. 117].

The theory of multiple intelligences revolutionized the way of thinking about human intelligence and abilities. Educational projects originating from MI theory seem to adopt fundamental assumption of the Gardner's concept according to which *every child is unique.* Nowadays Gardner's theory is applied by pedagogists all over the world. The influence of the multiple intelligences theory on education in numerous countries of the world is becoming more and more significant [Chen, Moran, Gardner 2009]. This theory has also affected the Polish education.

Multi-intelligent education

The authors' concept of ***Multi-intelligent education*** [Kopik, Zatorska 2010] is based on the assumption that every child has the potential to develop abilities in different fields. Every child is unique and has the right to full mental, physical, motor, emotional and social development. It is therefore vital that the adults (parents and teachers) not only enhance children's abilities, passions, talents and interests, but also help children develop strategies to compensate for their weaknesses and capitalize on their strengths. The above-

mentioned concept might hopefully be a source of inspiration for further thoughts and reflections, as well as creative actions taken up for children's sake. It opens new opportunities to create, discover and experience the world so that the teachers feel highly motivated to set off a fascinating educational journey together with their students. The concept of multi-intelligent education is mainly based on Howard Gardner's theory of multiple intelligences, diagnosis and identification of child's abilities, individualization of teaching-learning process, inspiring educational environment and dialogue of all the elements responsible for the process of education.

Theory of multiple intelligences. Gardner believes that a human being in the course of evolution has developed different abilities of information processing which enable him to solve problems or produce any goods. Therefore, in Gardner's theory, the term "intelligence" is defined as "bio-psychological potential to process specific forms of information in a particular way" [Gardner 2006, p. 27]. Each person possesses a certain range of all intelligences and uses them in accordance with the preferences and tasks performed. The theory of multiple intelligences reveals how to recognise potential abilities and then apply them to support human development.

Linguistics intelligence. The world is perceived through words – spoken or written. The characteristic feature is sensitivity to rhymes, meaning of words, and sounds, as well as ability to speak clearly and to present events logically.

Kinaesthetic intelligence. The world is perceived through movement and physical contact. The characteristic feature is ability to control bodily motions and capacity to handle objects skilfully.

Logical-mathematical intelligence. The world is perceived through numbers and chain of events. The characteristic feature is interest in the world of objects, symbols of numbers and mathematical calculations.

Visual-spatial intelligence. The world is perceived through pictures and spatial forms. The characteristic feature is ability to visualize images or spatial relations with the mind's eye.

Naturalistic intelligence. The world is perceived through natural environment and surrounding. The characteristic features are high sensitivity, ability to notice patterns in the nature, as well as to recognise and categorise objects.

Musical intelligence. The world is perceived through sounds, rhythm and melody. The characteristic features are aptitude for perception and creating music, musicality, and understanding the structure of music works.

Interpersonal intelligence. The world is perceived from the angle of others. The characteristic features are: understanding other people, as well as ability to communicate effectively and interact with others.

Intrapersonal intelligence. The world is perceived through introspective and self-reflective attitude. The characteristic feature is ability to self-reflect on one's behaviour, motivation and emotions, as well as deep understanding of the self and ability to control one's behaviour [Kopik 2014, p. 119].

Everyone has natural predispositions towards certain type or types of intelligences. Particular intelligences are developed to different extent; they function in mutual connections, cooperate and form together an individual intelligence profile.

Diagnosis and identification of child's abilities. Getting to know the students is an essential part of teacher's work. Thorough observation conducted in his natural environment is a basic method of getting to know a child. Gardner believes that during an assessment of child's abilities, such measurement tools should be used in which each sentence and question defining a type of intelligence will be expressed with the language and symbols suitable for the language of the intelligence it refers to. Each intelligence enables an individual to achieve success, but establishing borders between specific types of intelligences does not seem to be an easy task. It is crucial to collect possibly accurate information on a child in order to obtain precise picture of his abilities. Improper identification of child's possibilities by a teacher may lead to decreasing school requirements. Too high or too low requirements concerning children school achievements can affect the standard and quality of educational activities.

An extremely significant element of the conception appears to be reliable diagnosis which allows identifying and determining individual intelligence profile for each child, as well as support his educational development. The knowledge on strong and weak points is the basis for building high self-esteem. Identification of student's intelligence profile should be based on the results of teacher's thorough observation of a child and the information obtained from parents by means of survey. Support tool in the diagnosis process intelligence profile of the student is a "*Child Observation Questionnaire for Parents and Teachers"* [Kopik, Zatorska, 2010, pp. 50-54]. It contains questions on child behavior in eight categories indicating the characteristics of the type of intelligence. Initial diagnosis of a child's intelligence profile should include the following information: "strong" points and child interests in general aspect, possibilities for making good use of "strong" points in order to support "weak" ones, directions of special abilities

development, intelligences which need support, work directions and ways of developing child's abilities.

It is necessary for teachers to identify and recognise students' cognitive abilities, their strengths and weaknesses and individual intelligences which require to be developed. Such self-diagnosis allows the teacher to adjust teaching methods to meet the needs of a variety of students. The intelligences profile scale "*Range of possibility*" [Kopik, Zatorska 2010, pp. 43-48] is the tool which pelp us to know about our Intelligences profile.

Intelligence profile – array of abilities

Individualization of teaching-learning process. Teachers should notice, develop and support their students' individual abilities, and school ought to provide all the students with opportunities for comprehensive development. Training tailored to individual student needs and capabilities is a complex, comprehensive program that requires a specific organization of activity of the child. The teacher should organize a varied and interesting teaching-learning process based on a close cooperation of all participants. The ability to mutual good cooperation should be developed in students from an early age. There is a need to reinvent the way of thinking about collaborative learning and collaborative learning individualization.

Inspiring educational environment. The child must be provided with attractive terms to multi intelligence explore the world, the creation and development of the imagination. This is achieved by properly organized, inspiring, or liberating creative enthusiasm, guiding a learning process, and also triggers curiosity and encouraging learning environment for action. Facilitated by appropriate educational environment in the form of the Fun Land: Creative Movement Lands, Land of Knowledge and Imagination Land. Each of these Lands is a new challenge; let's go on educational travel, and the child involved in creating their own learning space. **The Land of Creative Movement** enables children to meet their biological need for physical movement as well as to explore and experience the space around them. Activities in the Land of Creative Movement help children develop independence, confidence, emotions

control and accuracy. They also influence emotional and mental development, encourage logical thinking, improve children's powers of observations, memory and imagination [Kopik, Zatorska 2010, p. 85]. **The Land of Knowledge** allows children to develop the need for multisensory experience and perception of the world. It involves acquiring knowledge through games and personal activities, as well as taking up educational challenges. The Land of Knowledge contributes to cognitive independence, exploring, experimenting and experiencing. It enables children to create reality through games, inspires to ask questions and look for the answers independently, as well as improves teacher – student cooperation [Kopik 2013, p. 42]. **The Land of Imagination** encourages creative activities, developing imagination and interests in foreign languages as well as enables children to create different types of artwork. "Games in The Land of Imagination reinforce self-esteem, self-belief in success, trigger self-motivation and encourage even the most tentative children to try new methods through explorations" [Kopik, Zatorska 2010, p. 92].

Dialogue of all the elements responsible for the process of education. Dialogue is the most mature form of contacts, which helps to create optimal conditions for growth. Seeking ways of understanding, proper relationship climate, trust and participation of all stakeholders, voluntary and systematic contacts and sense of purpose, which is the welfare of the child, is proposed model of cooperation.

Theory of multiple intelligences is very popular in Poland. Many kindergartens and schools have worked using this theory. It proves correct for working with children in preschool [Kopik, Zatorska 2011b] and early school age [Kopik, Zatorska 2011a].

Five minds for the future

Over the years, Gardner has been exploring the secrets of human mind, and as a result of his research and observations, he has identified and described five kinds of minds which have to be cultivated for future success. The concept of the five minds for the future is another inspiration to take on new challenges in education. "Minds for the Future", implemented by the European Agency for Development, helped to create an innovative curriculum (http://umysly.edukacyjni.pl/pl/program_nauczania) for classes I-III, and interesting didactic materials (http://umysly.edukacyjni.pl/pl/materialy_dydaktyczne).

The programme "Minds for the Future" has been pilot introduced in 20 schools in Poland.

However, it is hardly possible to say which of the five minds: disciplined, synthesizing, creating, respectful or ethical will be most needed and desirable in a challenging future world. Each kind of mind seems to be rather a way of thinking and acting which makes use of several intelligences, than an

ability. According to Gardner, modern education should focus on nurturing all the five future minds since the best chances to succeed have those who will develop this quintet of minds [Gardner 2009b, p. 159].**The disciplined mind** refers to the ability to think in ways associated with major scholarly and professional disciplines as well as the ability to apply oneself diligently, improving steadily and continuing beyond formal education [Gardner 2009b, p. 152]. **The synthesising mind** involves the ability to collect information from disparate sources as well as to select and process that information in ways that make sense to the synthesiser and also to other persons. **The creating mind** is able to break new ground, to develop new ideas and to pose unfamiliar questions. It involves fresh ways of thinking and reaching unexpected conclusions. Building on discipline and synthesis, the creating mind goes beyond existing knowledge to offer new solutions. **The respectful (tolerant) mind** involves the awareness of and appreciation for differences among human individuals and groups. **The ethical mind** is able to observe the most important values, regardless of difficulties, adversities or threats. This mind takes into account the common good of the wider community, realising how work can serve purposes beyond self-interest.

It is important for each person to have achieved certain aspects of all five mental capacities for the balance of mind needed for the future. However, it is hardly possible to say which of the five minds will be most needed and desirable in a challenging future world.

Conclusion

Howard Gardner, who proposed the theory of multiple intelligences and the concept of future minds, believes that human cognition and human potential should be understood in a broad and complex way. Hopefully, the authors' concept of *Multi-intelligent education for the child* will not only inspire the teachers and provoke reflections on their everyday pedagogical activities, but also motivate them to take up innovative educational projects and activities in order to create better opportunities for all students.

Gardner's theory of multiple intelligences is well-known and valued all over the world. It has significant influence on education in many different countries. MI theory enables humans to assess or evaluate their own abilities and take into account the other person's perspective [Kopik 2014, p. 120]. Every teacher should individually discover Gardner's theory, build a store of knowledge of multiple intelligences, and finally decide how to implement it effectively in the teaching-learning process.

The changing contemporary society determines and defines transformations in many areas of life. We are witnesses of creating new social and educational reality. Education of young people is one of the most important domains of social life [Stańkowski, Szpringer 2013].

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