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The Educational Context of Developing Child's Emotional and Social Competences

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Editorial

Modern education has had and is still facing a period of many dynamic changes and the mission of the Journal of Preschool and Elementary School Education, as the editor-in-chief put it in the introduction to the first volume, is to "provide readers with comprehensive and up-to--date knowledge about the child's early education". Approaches towards education are today experiencing change, including in the sense that instead of transferring information or knowledge, the educators are expected to stimulate in many ways children's skills and personal development. In order to overcome the economic crisis, the European Union's education strategy stresses the importance of skills for growth embodied in key competences.

This present issue, which includes the research outcomes of education professionals representing four countries (Poland, Bulgaria, Slovakia and Hungary), was devoted to the education context of developing a child's *social and emotional competences*.

In this volume, Micheala Racheva from the University of Sofia, Bulgaria, probably addresses this topic in the most comprehensive way. She specifies the competencies that children acquire in preschools that are required for school, and the difficulties that arise from the non-equal opportunities or the need for the appropriate measurement of children's overall development. The author places special stress on the development of communication, and with reference to the current education policy in Bulgaria and the European Union, to the interactive paradigm based on the social and emotional interaction between children and their teachers.

Two studies from Poland show how and with what result the social and emotional abilities can be developed by *alternative pedagogic programmes*. Barbara Surma surveyed the level of school-readiness of five--year-old children attending a kindergarten in Cracow using Maria Montessori's education system. The number of institutions introducing

this method, laying special emphasis on children's independence and responsibility for their social and material environment, are growing in our region, and the author's objective, to measure in an exact manner the real outcomes of this pedagogic program, merits special attention.

More articles call attention to the fact that words used for describing social and emotional competences are not fully or accurately defined. Education is under constant transition and society requires a school-system to absorb new values and methodologies. In her thought-provoking study Elżbieta Płóciennik seeks to set out a new complex theoretical system, called *teaching for wisdom*, indicating the challenges modern schools are facing. The article enumerates the advantages of this method, and details how this program finds its links and precedents among the innovators of Polish education.

The other three studies approach different areas of education in which social and emotional competences can be fruitfully developed.

The Bulgarian authors Lucia Malinova and Bozhidar Angelov in their study present an analysis on how social and emotional competences are developed in children of pre-primary age through the activity of playing. Using the most up-to-date literature, they show how games advance children's socialization, how their ability for interaction is reflected in these forms of education, and what roles educators can take in order to facilitate the advantageous effect of game-playing.

Teachers of the University of Prešov, Iveta Scholtzová and Edita Šimčiková, prepared an interesting article that will enable readers to understand more clearly the cross-curricular correlation of mathematics with other competences. In the authors' interpretation, mathematics is not a special field of training used typically for developing cognitive abilities, but also a subject which can have a positive impact on the social and emotional aspects of pre-primary and primary school age children's personalities. They also set out the requirements that teacher-training needs to fulfil in order to raise the level of competence-centred teaching of mathematics.

A challenge education must face is the overall influence of computer technology on children's lives. The Hungarian researchers Ágota Balogh

and Erzsébet Lestyan stress its positive effect and show how IT tools can advance differentiated, competence- and motivation-centred education. They verify through a widely extended survey that IT can be an operative tool in children's motivation and that the acute problem of differentiation in schools can be effectively addressed by using modern technology.

Emotional and social intelligence, the ability to identify, assess, and control the emotions of oneself, of others, and of groups is of special importance with a view to the development of other cognitive skills, and is a really key competence if we would like to ensure the later welfare and prosperity of our children. This is the ability that can only be effectively shaped in early childhood. Our volume will hopefully provide readers with inspiration and ideas to think further the issues related to this extraordinarily pivotal area of education.

Attila B. Kis

Articles

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Group Dynamics in Play and Games among Pre-school Children

Introduction and background

Any educational strategy, which aims to achieve successful socialization, takes into account the particular impact of the elements of children's immediate and broader social surroundings. The socio-psychological perspective to the formation and self-expression of the personality of a child requires an analysis of the major activities that children engage in during their pre-school years, the system of inner relations that are characteristic for any type of activity, as well as the interrelations between different activities themselves. According to E. Petrova, the preschool stage of development features all major types of activities, but one of them plays the most decisive role in the subsequent evolution of the child's personality. Is that really so, and why do we consider that nothing other than the game is that particular activity?

Ludwig Wittgenstein, one of the most eminent and influential representatives of linguistic and analytical philosophy, states in his *Philosophical Investigations* that: "One might say that the concept "game" is a concept with blurred edges. But is a blurred concept a concept at all? […] Someone says to me: 'Show the children a game.' I teach them gaming with dice, and the other says: 'I didn't mean that sort of game.' Must the exclusion of the game with dice have come before his mind when he gave me the order?" The philosopher then continues, "But still, it isn't a game, if there is some vagueness in the rules […] This means: it has

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impurities, and what I am interested in at present is the pure article. But I want to say: we misunderstand the role of the ideal in our language. That is to say: we too should call it a game, only we are dazzled by the ideal and therefore fail to see the actual use of the word "game" clearly".

The diverse interpretations of the interrelation between children and games often emerge due to the lack of the above conditional distinction. This highlights the need of a particular theoretical framework which could pinpoint game-related issues. Many authors have written on the importance of play and games in pre-school education (e.g. Sofronieva, 2011; Pramling-Samuelsson & Fleer, 2009; Gyurova, 2009; Shopov, 2008; Daloiso, 2007; Sofronieva & Tosheva, 2006; Caon, 2006, etc.). Here, first of all, we would like to consider some aspects of social rules and human interaction as perceived by M. Argyle. He argues that just like games, social relations are subject to particular rules; they ensure the implementation of group behavior patterns thus leading towards the attainment of certain objectives. We find this analogy between social rules and human interaction rules on the one hand, and rules and relations between participants in a game, to be the key to the understanding of children's interrelations as well as to their successful maintenance and enhancement on the part of the pedagogue in the course of play. Furthermore, this analogy is useful as a demonstration of the conditional simplicity in children's interrelations within a game, the presence of a pedagogue as well as the viability of the latter's socio-psychological approach.

Modern researchers seem to underestimate the role of game playing as an inherent component of culture systems. After Johan Huizinga's famous book *Homo Ludens*, written in the 1930s, there has been no other fundamental study of play with the exception of Daniel Elkonin's *The Psychology of Play*, which focuses upon child's development through playing as the predominant activity during the first seven years. Elkonin considers play an activity that mirrors social interactions outside the boundaries of an immediately utilitarian activity. He points out the resemblance that play bears to art, as they both ensue from a common genetic origin. During adulthood art replaces play forms as it offers an age-relevant range of possibilities for interaction and entertainment.

Both art and play provide interpretations of various aspects of human life and activity. Both of them gradually grow into a social necessity with an inherent and discrete educational function. It is the latter that renders new dimensions to the relations between play and culture which can be best traced during the pre-school age period. The mechanisms of play, further enhanced by culture, contribute to the socialization of the child. Thus, play is of major importance for socialization as it helps to transform behavior patterns into well-organized meanings and roles, as T. Shibutani suggests. The ratio between the latter two is of vital significance for pedagogical work.

We have hereto outlined some of the specific socializing functions of play. It should be noted, though, that analyses of the different aspects of play in the pre-school period vary in accordance with the way in which child's personality development is perceived. There are two main questions that are usually highlighted: firstly, is it justifiable to consider the occurrence of a mechanical shift in the three types of activities – namely, play, learning and work; and secondly, what are the principles that govern the definition of age-related developmental periods and the leading activity shift that corresponds to them?

Any delineation of age-related periods of psychological development calls for the definition of those formal indicators that provide the basis for the clear distinction of relevant development criteria. The majority of researchers are well aware of the fact that it is not possible to define consistently age-related developmental periods on the grounds of a single criterion. Alexei Leontiev points out that periodicity in child's psyche development is not directly related to actual period content and particular historical circumstances. He states that it is not the child's age which predetermines the development period content but rather the age boundaries of the period depend on its content and vary in accordance with changes in the social environment. The latter in their turn actuate the activity which becomes dominant during a particular development period. Nevertheless, we should not disregard the fact that Leontiev's activity theory is an element of Lev Vygotsky's sociocultural concept of psyche development. Looking from this perspective, it would be difficult to

agree with the incompatibility of the leading activity concept and the socio-psychological theory of personality development, elaborated by Artur Petrovsky and dealing with the laws of intragroup and intergroup dynamics, as well as with the circumstances related to the shifting of individual social positions.

Admittedly, play is an important socialization factor but this in itself raises the question whether the above concepts are incompatible or intertwined? Are we justified in claiming that the leading activity concept displays best the integrative functions of play in the pedagogical process, thus making it possible to elaborate a pedagogic system for the overall development of the child's personality? This sustainable scientific paradigm and the achieved results presuppose the elaboration of such a system. Therefore, we maintain in particular that "the possibilities for discoveries, innovations and creative interpretations are related to the cultural competences at all stages of adolescent development. Pre-school education follows the provisions of the new programme strategy as of 2008 as a project for European intercultural practice of early childhood education. Thus, pedagogical technologies are being enhanced through the search for new opportunities for concept implementation into the nursery environment that provides the transition to primary school. They can be best analyzed and assessed from the perspective of their potential for further development with a view to the elaboration of a new level of education systems that correspond to the European key competences" (Gyurova, 2009).

When defining socialization as a process of expansion and multiplication of an individual's social relations, it becomes quite clear that play should not be separated from or opposed to the other impact factors in the educational process. On the contrary, as a socializing factor it influences other socializing institutions which become relatively independently manifested over the course of child's development. The relation between play and various other socializing factors at pre-school age opens new opportunities for the efficient development of child's personality. This is so both because the nature of children's interaction in the course of playing is the foundation for social behavior, and at the same time it provides the necessary precondition for successful socialization.

The structure of socialization itself makes it evident that play remains a valid and constant factor in the course of a lifetime, although its intensity varies. In the particular context of working with pre-school children, play should be contextualized alongside other socialization factors such as peers, family, teachers, mass media, etc. and this accumulated impact is of vital importance for the interaction between social and individual consciousness. The specific relation between play and other socializing factors results in a particular socializing effect due to the diversity of social roles that the child, stimulated by this relation, enacts during play. This further enhances the characteristic features of play as a leading activity that contributes to the generation and differentiation of other new types of activity, the formation and reformation of individual psychic processes, the identification of the main psychic changes in the course of child's personality development (according to A. Leontiev) and the broadening of the child's social culture.

Therefore, pedagogical support should be focused upon the reoccurring discrepancies between the child's desire to interact with its immediate environment and its actual abilities to do so. If play is perceived as a socializing factor which assists children in a very specific way to establish and maintain social contacts, then the role of the pedagogue is to cater for the satisfaction of social needs ensuing from the accumulative impact of the different socializing institutions. Paradoxical as it may sound, the pedagogue's mission at the nursery is to fulfill a mainly regulatory function, or in other words to provide for the implementation of the specific connections between the variety of significant socializing factors. Undoubtedly, the information which is disseminated in the society during any social process is social information as it essentially concerns human interaction, needs, interests, etc. If we take into account the fact that the social function of play is connected in more ways than one to the need of new experience then it becomes evident that in order to develop the activity of playing the child should use social information above all.

According to D. Elkonin, the foremost element of play is the role that the child takes on as it unites in itself all other elements. During pretend (or dramatic) play, the very actions of the child undergo significant the very actions of the child, as well as its attitude towards reality, undergo

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significant transformation. But which aspect(s) of reality in particular shapes up the character and content of roles taken on by children? According to a number of pedagogy experts, the reality in which a child lives and interacts can be conditionally divided into two intertwined but still independent spheres. The first one is the sphere of objects and the second one is the sphere of activities and human interaction relevant to the particular activity. Thus, D. Elkonin draws the conclusion that the content of dramatic play is not the object and its utilization or transformation by man, but rather human interaction, implemented through particular actions with particular objects. In other words, it is "human-to-human interaction" rather than "human-to-object interaction".

Our study enabled us to conduct research of the possible connections between the different socializing factors in play. The role, taken on by the child during pretend play, depends on the type of information which can be either cognitive, i.e. derived from the immediate contact with reality, or social. The latter provides the child with the impetus to select a particular role content during play. Creative play occurs after the child has become the recipient of social information, which includes the objects relevant to it. Therefore, the "human-to-object-to-human" scenario seems to cater best for children's needs to master social relations by means of role play and performance of their inherent actions. Consequently, the pedagogue should encourage the child's reception of social information and its utilization in the playing process. Pedagogic effort needs to be in particular directed towards the impact of social information over the structure of the play and the dynamics of group interaction. Accordingly, the pedagogue should carefully:

1. Monitor the impact of social information disseminated among the children and its sources during dramatic play;
2. Analyze the intragroup processes when a group is relatively isolated over a certain period of time;
3. Monitor the trajectory of children's interest, their preferences to particular plots for pretend play and the relevant impact of social information;

4. Analyze the changes in play structure and roles under the influence of various socializing factors;

5. Check regularly the potential occurrence of a conflict between the social information disseminated by socializing institutions and the sensor information already acquired by the children.

In this way the pedagogue will manage to establish the necessary preconditions for the enhancement of children's ability to become activity subjects, which we consider as the uppermost objective of every educational effort in the pre-school context.

What is essential for the understanding of pretend play dynamics is the consideration of the so called missing link in the role taken on by the child. A child is interested in a particular role during a dramatic play as long as it provides certain aspects that remain unattained and undefined, i.e. as long as there is a missing link. This term generally denotes certain actions or typical behavioural patterns which would allow the child to embrace a given social role in its entirety. The missing link exists because the taking on of any role can be reduced to the performance of actions that are inherent to it and normally the logic of these actions is defined by life itself, i.e. by their sequence in reality. When a child takes on a role that either lacks a missing link or the child itself is not fully equipped with the necessary social information that ensures the smooth performance of the pretend play, then the play's evolution is curbed. This is the reason why the limitation of sources that would normally provide children with social information results in changes to group dynamics. Of particular interest is the differentiation of separate stages of pretend play, which are directly related to the contacts between children themselves as well as between units of the play. If sufficient access to necessary information is provided, then contacts between play units range between 50 and 70, while in the case of limited access to information they quickly drop down to 15 – 30, thus finally freezing in a complete standstill. At this stage children interact exclusively among themselves and their contact focuses upon the child which is of greater informative value for the particular play unit. With time, though, the informative value of each group member

is quickly exhausted, thus leading to individual isolation. Group connections are severed definitively. Children no longer play with each other, but rather next to each other. Verbal and nonverbal communication is reduced to the minimum. It is evident that the pedagogue should promptly identify such a situation and take relevant action.

Social information definitely assists changes in children's interactions both during playtime and in real life situations. There is an intriguing trend which is of particular significance with a view to resolving the conflict between so called play and real behavior. Interaction during play is considered to be related to roles, play content and rules, while real life interaction is subject to desires and behavioural motives. These two types of interaction do not necessarily overlap in all cases, which some pedagogues perceive as a barrier to the use of play as an active tool of education and self-education. Observations on and experiments with the impact of social information over play demonstrate a highly significant fact – namely, that the said impact of social information is largely manifested in the enhancement of group organization. When such information is insufficient, the child becomes much more suggestible and tends to accept unquestioningly the opinions of other group members. In contrast, when the child is equipped with the necessary social information, he or she reacts much more selectively to the opinions of other group members, in particular in terms of the content and values of their joint activity. It turns out that the conflict between real life and play behavior is resolved and the dilemma between independence and dependence is overcome. The child is in the position to self-determine itself within the group as a result of the very tasks and objectives of play.

Here we come upon one of the fundamental differences between our approach and G. Mead's symbolic interactionism. The latter reduces interaction between group members to a mere exchange of opinions. Symbolic interactionism undermines the intermediary role of activity content for interhuman relations. A pedagogue should take into account the above mentioned aspects of joint activity and the mutual subordination which are manifested in the different meanings that the child ascribes to the role it takes on. From a socio-psychological perspective,

social information impacts upon the development of self mainly in terms of the inclusion of the child in different social groups. Thus it collaborates with a phenomenon which is often both a tool and a product of socialization – namely, interpersonal perception. Therefore, the pre-school pedagogue is faced with the following phenomena, which are a direct result of the impact of social information – the emergence of opinion leaders; shifts in value orientations; the role of identification and self-reflection for the establishment of a child's self image.

Most researchers of socializing impacts focus upon the identification of the individual with other people whose behavior and value orientations become models for him (S. Freud, E. Erikson, A. Epstein). Usually this approach is taken within the theory of social learning, derived from the work of A. Bandura. This line of study is further followed by R. Walters, L. Berkowitz, U. Bronfenbrenner, Feshbach, etc. who claim that the observation of social models indicates the channels through which social information reaches the child. This implies the availability of numerous models and behaviours which the child can learn from via observation, i.e. it can identify itself with them. Clearly, model-following behavior exceeds mere imitation because when children acquire the motivation that is the driving force behind their actions they assume the relevant type of behaviour which is a symbolic equivalent of observed behaviour. Imitation is one of the major forms of acknowledging the impacts of reality and a tool for integration of the individual into a particular system of group values and ethical norms; therefore, it indisputably constitutes one of the components of child's character formation at the pre-school age.

It is common knowledge that social ideas tend to be disseminated more quickly if they are embodied in particular characters/persons, rather than if presented in abstract forms. Children are likely to identify with their favourite story characters. We find it important to highlight the fact that a child never enacts a single particular action of those characters or persons which it identifies with. It interprets some of their specific actions, never merely imitating them but rather enacting their general features (E. Petrova, C. Bruner). In other words, creative play occurs not via imitation but via interpretation of some typical behavior. Imitation is relevant at the

stage when new knowledge is acquired, but at the stage of playing it is replaced by interpretation.

Identification in its turn is a socio-psychological mechanism that is directly related to the issue of leadership. It emerges in the course of human interaction and challenges the pedagogue with a particularly intriguing question whether there are opinion leaders in the joint activity of children and whether the leader brings along some social novelty as a result of easier access to social information. To solve this issue the pedagogue needs to explain repeatedly the functions of the group leaders, assess their acts during all stages in the development of joint activity. Exceptionally valuable in this respect are the studies of N. Vitanova, based on sociometric test findings that provide the educator with the tool for making informed decisions. Sociometric methodology, when applied to the pre-school environment, addresses aspects of peer perception. It enables the pedagogue to identify leader functions as well. The latter fall into three general categories: organizational, informative, and communicative. The child leader, performing an organizational function, provides the coordination between the separate units of the joint activity. The informative child leader opens up opportunities for the acquisition of additional information. The communicative child leader enhances the ambience of friendliness and well-being within the group. We should specifically point to the relativity of this classification of leader functions – it can serve as a basic working tool for the pre-school pedagogue.

Finally, we can highlight once again the cognitive nature of play as it generates reflection. The emerging awareness of the self develops as a result of cognitive experience and the development of the child's relations with the world, material objects and other human beings. The rational aspect of play is manifested via the mechanisms of reflection and identification and by virtue of the often undermined unity of reflective, practice-oriented and communicative activity of children at the pre-school age.

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Abstract

The article covers topical problems related to the group dynamics theory and practice in play and games in nurseries. It offers a brief overview of various research findings in the pedagogy, social psychology, cultural theories and mass media.

According to the authors, play activities and games recreate social interactions of people. These activities broaden children's views and enhance interaction skills. They should be regarded as part of children's upbringing and education. Activities based on play and games in pre-schools are related to other factors which develop and foster children's social skills. The findings of the present study verify that group dynamics in play and games among children mirrors children's social behaviour and helps children build up and enhance their interaction skills.

Keywords: pre-school education, socialization, pretend play, interaction

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Teaching for Wisdom in Early Modern Education

Today, modern education is looking for innovative organizational and methodical solutions that will effectively support the development of children's potential. The increasing individualization of work with children and attempts to adjust the educational process to their needs and abilities is fostering in young people active examination and discovery of their surrounding reality, as well as the gaining of new experiences and skills in an independent way. Furthermore, the reorientation of educational goals supports children's active participation in social life, while the expected task of the teacher is to implement the idea of education in values.

One of the universal values that is now growing in importance, not only at the level of international relations, but also at the level of human relationships in a local environment, is wisdom in terms of behaviour – interpreting a situation, making decisions, undertaking actions, evaluating the activities of others etc. However, *wisdom*, which has been analyzed and defined throughout the ages mostly as the goal of philosophy, or as a philosophical category[1], hardly ever appears in the literature as a characteristic of an individual, subject to pedagogic influence.

Wisdom is most often understood as the final stage of the development of an individual or expert knowledge (Carr 2009, pp. 181–188) and, when defined in this way, it is not available to individuals in their

[1] Cf. the concepts of Socrates, Plato, Thomas of Aquino, Descartes, G. W. Leibniz, D. Hume.

childhood. However, modern psychologists also see *wisdom* as a result of learning (knowledge) and experience (Sękowski 2001, p. 98), a holistic cognitive process (Csiksentmihalyi and Rathunde 1990), which means a feature and attitude of the mind. In this case, it is a characteristic that can be developed in all people, from their youngest years, because it not only relates to knowledge and intelligence, but also to an attitude towards life, cognitive abilities, a number of personality traits and the motivation to act (Sękowski 2001, p. 111). It is also understood as an integral part of the practical intelligence and creativity of an individual, when its application leads to usefulness and the successful implementation of ideas by an individual or a group (Sternberg and Davidson 2005, pp. 327–340). Moreover, according to theoreticians, only *wisdom* introduces harmony into internal life and relationships with others because it is the basis for logic, prudence, moderation, and just judgments and decisions, which in turn results in success in learning, social activity and – in adulthood – a professional career (Sternberg et al. 2009, p.105).

Wisdom, particularly according to Sternberg's concept, is a category conditioning successful actions and the proper use of general and practical intelligence, as well as creativity in the development and implementation of different solutions, projects, visions and plans in accordance with the needs of individuals, groups, communities and institutions. The basic assumption of this concept is the integrated development and application of Wisdom, Intelligence and Creativity Synthesized (WICS), as this conditions transgressive thinking, which is based on the assessment of previous solutions and ideas, and the usefulness of new ones (Ibid).

Thus, the basis for the development of *wisdom* is the development of personality traits, interpersonal and intrapersonal attitudes, the image of the self in relationships with oneself and the external world, the involvement in action and the ability to use memorized information in order to change and improve the surrounding reality for the sake of the individual and/or the common social good. More and more often, this kind of teacher's educational activity is described in English psycho-pedagogic literature as *Teaching for wisdom*. This includes not only the

teacher's methodical activity which leads to certain competences, and supports manifestations of the students' wise behaviour in the future, but also the organization of specific conditions within the teaching-learning process, allowing for the purposeful shaping of skills and competences related to the valuation, design and implementation of wise decisions, undertakings and behaviour towards oneself and others in life. In Polish, this process could be called *Edukacja dla mądrości* (*Teaching for wisdom*).

One of the barriers to the development of students' wisdom in modern schools is not only the issue of the notion's complexity, but the fact that – according to the observations of theoreticians – schools do not teach the art of asking questions, openness to change, sensitivity to essential problems, tolerance for ambiguity[2] or how to boldly move the borders of cognition (Sękowski 2001, p. 106). Furthermore, due to its complexity, *wisdom* as a personality trait or a characteristic of the mind escapes simple measurements which dominate in the evaluation of the ability and competence of effective learning, as well as other intelligence measurements, which discourages practitioners and theoreticians from extensive research in this area (Pietrasiński 2008, p. 17).

Another barrier to the implementation of the idea of preparing young people for a wise life in modern schools is the lack of theoretical bases in this field: only a few Polish psychologists and educationists are dealing with the issue of *wisdom*, creating its definitions and determining the scope of the competences it includes[3]. Because of all these problems, the notion of *Teaching for wisdom* is not present in Polish education, although the relationship between quality of life and the effectiveness of education, and such personal characteristics as practical intelligence, reflective thinking, dialogue, creativity and wisdom are being increasingly acknowledged.

[2] Cf. N. Postman. *W stronę XVIII stulecia*. Warszawa: PIW, 2001, p. 174; K.J. Szmidt. „Teoretyczne i metodyczne podstawy procesu kształcenia zdolności myślenia pytajnego." *Dylematy edukacji artystycznej, Tom II. Edukacja artystyczna a potencjał twórczy człowieka*. Ed. W. Limont and J. Cieślikowska. Kraków: Oficyna Wydawnicza Impuls, 2006.

[3] One should list the publications by Z. Pietrasiński, A. Sękowski, K.J. Szmidt.

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In Poland, the need for education that develops the wisdom of an individual (although not expressed directly) has been considered by:

- Janusz Korczak, in his concept of educating children for cooperation and responsibility (Korczak 1957);
- Tadeusz Lewowicki, in his demands for the more frequent implementation of the socialization function in schools, which means presenting modern valuable life standards and models that are appealing to young people (Lewowicki 1991);
- Zbigniew Kwieciński, through the idea of education fostering awareness, creativity and the active fulfilment of one's identity and the self by undertaking extrapersonal activities (Kwieciński 1995);
- Krzysztof J. Szmidt, in his demands for the support and development of creativity in children and students through creative problem solving and the development of interrogative thinking (Szmidt 2004);
- Zbigniew Pietrasiński, in his deliberations on teaching that promote the mind, which also covers the preparation to improve one's own behaviour and personality (Pietrasiński 2008);
- Danuta Waloszek, in her concept of gradually accustoming children to bear responsibility in certain areas of activity (choice of materials, tools, ways of performing a task, partners, pace of work etc), and co-responsibility with teachers in other areas (designing tasks to perform, choosing the subjects of classes, planning time for the activities undertaken, choosing homework and consolidation exercises etc.) (Waloszek 1994);
- Małgorzata Cywińska, in her presentation of a constructive aspect of conflict situations which are used to plan changes, prizes, redressing damages, compensation, reaching an agreement in an interpersonal dialogue (Cywińska 2004);
- Małgorzata Karwowska-Struczyk, in her presentation of an alternative methodical solution in preschool education, organized in accordance with the rule *plan – do – tell*, where the child is

stimulated to solve educational and everyday problems in a creative way (Karwowska-Struczyk 2012);

- Irena Adamek, in her proposals for ways to develop children's ability to solve problems individually and in a team, to cope with different situations and to understand problems in human relationships, such as difficult financial situations, interpersonal conflicts and the aggressive behaviour of others (Adamek 1998);
- Edyta Gruszczyk-Kolczyńska, in her demands for including such socio-emotional characteristics as the sense of being in control, pride and satisfaction, the sense of purpose and happiness after performing tasks on one's own, the attitude towards the performance of tasks entrusted by the teacher, the orientation towards communication with others and helping others during the performance of tasks, and the ability to plan and organize games in cooperation with others in the process of preparing and diagnosing a child's readiness to start learning at school (Gruszczyk-Kolczyńska and Zielińska 2011);
- Anna Buła, in her presentation of methodical possibilities and solutions for the purpose of philosophizing with early school children (Buła 2006).

Other theoretical and practical guidelines for organizing *Teaching for wisdom* during childhood can be found in the concepts of other authors who describe activities that stimulate the child to independent learning and searches, and confirm the vast developmental potential of the child, although it is not always optimally used and developed at the initial stages of education, especially in the socio-emotional sphere[4].

However, in order to develop and verify all proposals for methodical solutions related to *Teaching for wisdom*, it is necessary to define the notion of *wisdom* in the context of possible educational effects.

[4] I am referring to the publications by M. Kielar-Turska, A. Brzezińska, B. Muchacka, W. Puślecki, J. Bonar, J. Uszyńska-Jarmoc, D. Czelakowska.

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1. Wisdom as a complex characteristic of an individual

In the context of the information presented above, *Teaching for wisdom* is inseparably related to the necessity of the development of such children's/students' traits as general intelligence, practical intelligence, creativity and reflectiveness.

Naturally, the family constitutes the first environment that introduces the child to the world of values, from which the child (when surrounded by genuine and wise parental love) should draw positive patterns of behaviour, thinking, acting and developing relationships with others. Family and the closest social environment should also provide wisdom, which means knowledge concerning the *pragmatics of human life* (Pietrasiński 2001), through one's own example and life advice (Ibid., pp. 90–93). However, this is not always the case.

The environment where *Teaching for wisdom* should be deliberately organized is school (preschool). Factual knowledge and the methodical competences of teachers can support the organization of educational situations that allow children/students to experience values and wisdom, develop their potential cognitive abilities, gain experience in the interpretation and evaluation of wise/unwise behaviour, and develop the habits of wise behaviour. These situations should be a source of getting students ready to use wisdom in life and to shape their value systems. The proposal of a detailed competence scope for the notion of *wisdom* is presented in the table below.

Table 1. Wisdom as a complex characteristic of an individual

Traits	Competences/abilities
Justice and prudence	Just assessment (judgment) of conflict situations Solving problems through dialogue Discussing and sharing views
Openness	Openness to novelty, changes Sensitivity to the needs of others Taking into consideration different points of view Taking into consideration a different perspective on a given situation Establishing relationships with others Tolerance for ambiguity

Sensitivity to problems	Noticing problems (life, civilization, social, local) Finding positive role models in literature, films and everyday life Recognizing universal values, deliberations on values
Self-consciousness, self-knowledge	Knowledge of one's own strong and weak points Presenting one's own 'naive theories' and intuitive ideas and choices Controlling one's own emotions The ability to accept positive and negative opinions about oneself Determining one's own emotional attitude towards a problem (knowledge of the significance and difficulty of the problem solved)
Motivation	Involvement in solving problems and conflict situations
Cognitive curiosity	Formulating problems Being surprised, asking questions
Analytical thinking	Analyzing problems and situations, including conflicts Analyzing the usefulness of ideas, solutions Interpreting universal values Analyzing one's own behaviour in terms of values Distinguishing important and unimportant information
Operational character and the logic of thinking	Connecting causes and effects in a logical way Predicting the effects of a situation or the undertaken activities Predicting the causes of successes and failures of the decisions made or projects undertaken Considering situations and problems from the perspective of their conditions and consequences Making generalizations
Reflectiveness and criticism in thinking	Evaluating existing solutions and ideas and their usefulness Justifying ideas, choices, resolutions Justifying the choices made Identifying advantages and disadvantages in solutions and projects (existing and new) Creativity
Generating ideas of how to solve problems	Planning one's own activities for others (for the sake of oneself and/or others) Planning individual and group undertakings, including orientation towards success Looking for alternatives, possibilities
Practical/pragmatic nature of thinking	Making appropriate choices of solutions to problems (for the sake of individuals and the community) Attempting to solve vital problems Introducing to one's life/activities learning from different sources Drawing practically useful conclusions from information Making decisions in difficult situations at individual and social levels

Source: Own study based on the literature quoted in this article.

On the one hand, such a holistic understanding of *wisdom* as an individual characteristic shows how complex the notion is, while on the other, it reveals specific abilities, skills and competences that should be noticed, supported, developed or shaped as part of the child's activity at school or preschool. All the more so as there are several important social reasons to develop wisdom in classes at school.

First of all, the aim of school (and preschool) should not only be to provide children with knowledge, but to help them use this knowledge wisely. Moreover, one has to remember that knowledge can be used for good or evil purposes, and schools should therefore teach how to use knowledge for good purposes – for the good of an individual and/or a larger community (a group of students, a class, school, family, local environment, etc).

Another reason for the necessity of implementing the idea of *Teaching for wisdom* is the growing phenomenon of social, political, economic and ecological *ignorance*. This – in a situation when schools depart from the implementation of education in values – can be manifested by the *lack of time* (as teachers often explain it) for supporting individuality, interests, artistic skills, dialogue, creativity, true cooperation with others in learning and problem solving. It can also be a consequence of the fact that schools follow an encyclopedic curricula, oriented towards knowledge and derivative skills, instead of preparing students for making wise decisions, taking into consideration the alternatives and effects of their actions.

Furthermore, the problems of modern youth, such as with addictions and establishing social relationships, as well as with disorders related to learning and carrying out tasks in cooperation and contact with others, may result from the lack of the need and ability to *analyze the experience gained, properly distinguish important and unimportant information, draw practically useful conclusions from it* (Sękowski 2001, p. 100), and establish priorities in life. This translates into young people's inability to organize their own free time in a way that would enrich their personalities and abilities; the fact that they look for exciting but not always socially acceptable activities within their peer group; and fatal accidents

being a consequence of the lack of common sense, the ability to assess the situation, to feel empathy or the inability to take into consideration the possible effects of the situation.

Other factors confirming the need to implement *Teaching for wisdom* that should be listed here are suggestions related to the theory of positive psychology: wise individuals build harmony in their relationships with others, feel good and have a sense of happiness and satisfaction with their lives[5]. This is because the basis for *wisdom* is focus on the positive aspects of human life, the strong points and characteristics of an individual's functioning and the positive aspects of social life, which, unfortunately, is not the main tendency in the Polish culture.

Another argument justifying the need to implement *Teaching for wisdom* at all levels of education in Polish schools is the tendency to subordinate one's own behaviour to so-called mental traps, described by the American psychiatrist Aaron T. Beck (2002), which have a negative influence on everyday relationships with family and friends: tunnel vision (when people see only what they want to see), overgeneralization (*You always… You never…*), exaggerating, ascribing base reasons or bad intentions to the behaviour of others etc. These kinds of behaviour are also listed as errors made by teachers when assessing their students' progress (Aronson et al 1997; Ledzińska and Czerniawska 2011): attribution error (when students who *look* better/worse are assessed better/worse), the self-fulfilling prophecy effect (when a student who is classified as being worse is consistently assessed worse), the error of reinforcing negative states, generalizations etc. Other errors made by teachers in the educational process were listed in a publication by Małgorzata Taraszkiewicz (1996): failing to use students' personal experience or to address their imagination, criticizing children's associations, lack of behaviour encouraging expression of oneself, lack of awareness of the lesson's aim, emphasizing the negative aspects in comments on class and homework etc,

[5] Cf. M. Csikszentmyhalyi, *Przepływ. Jak poprawić jakość życia. Psychologia optymalnego doświadczenia*, Warszawa 1996; A. Carr, *Psychologia pozytywna…*, op. cit.; R.J. Sternberg, L. Jarvin and E. L. Grigorienko, *Teaching for Wisdom…*, op. cit.

and labelling students. It could be argued that this confirms, in the school context, a shortage of wisdom in the actions of many adults.

In summary, it has to be said that *wisdom* is a complex characteristic of an individual, which does not only relate to people's character, but also to the way they think. It is closely connected with the life and educational experience of the individual, their emotions and experiences, as well as the values preferred and shaped by their environment. Furthermore, it has to be emphasized that wisdom depends on the social environment and its expectations, as well as external conditions which are often coincidences in the life of an individual, either supporting or not supporting the development of wise behaviour (Sękowski 2001, p. 100). Thus, it is worth considering how to organize deliberate and insightful educational effects, which would intentionally (and not by chance) provide experiences and situations that foster the child's maturity towards wisdom.

2. Proposals for methodical solutions in Teaching for wisdom[6]

Teaching for wisdom requires the development of theoretical and methodical grounds. Academic guidelines related to the development of wisdom are the indispensable elements of these grounds; publications on philosophy, psychology and pedagogy serve as the basis for the implementation of practices, academic research and the diagnosis of the current state of affairs. Educational guidelines related to the implementation of *Teaching for wisdom* are also of importance and include provisions in the core curriculum at all stages of general education, the guidelines of the Ministry of National Education and pedagogical supervision.

In the case of theoretical grounds, it is vital to determine the rules of conduct for teachers who consciously prepare children from their

[6] In this part of the article, I use proposals for methodical solutions which I have already published, drawn from Sternberg's concept that is presented in *Teaching for Wisdom, Intelligence, Creativity, and Success*. However, they are supplemented by new proposals for educational situations which support the acquisition and development of wisdom in children at early stages of education.

youngest years to wisely function within society, and to expand teachers' education by classes and training which introduces the theoretical and practical knowledge necessary to implement *Teaching for wisdom*.

When developing the bases for *Teaching for wisdom*, one should determine certain standards of teachers' conduct, the aim of which should be to achieve goals related to the preparation of children for a wise life. Here it is apt to quote Robert Sternberg's guidelines, according to which teachers should:

- Be a role model for children/students, because sooner or later the teachers' actions can be reflected to a greater or lesser extent in the students' behaviour; this also concerns reflective thinking and wise behaviour,
- Base their educational work on universal values,
- Support and stimulate students' aspirations to achieve, which means focusing on the strong points of children's functioning and their abilities,
- Use diverse teaching methods which support the activity of students' different developmental spheres,
- Use tasks and instructions concerning different kinds of students' activity and make use of their different abilities and competences (memory, analytical, creative and practical skills, and wise thinking),
- Maintain a balance in the development and stimulation of students' differing abilities and skills, including those involving analytical, practical and creative intelligence,
- Take into consideration different ways and means of providing students with knowledge: through analysis, critical and creative thinking, and practical activities,
- Pay attention to the use of tasks and instructions that make students realize their strong points (Sternberg et al. 2009, pp. 6–7).

Based on the demands of other educationists and psychologists, one can formulate other rules for teachers when implementing *Teaching for wisdom*:

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- The use of Edward de Bono's techniques, which support the development of reflective thinking (Pietrasiński 2001),
- The use of diverse techniques of creative thinking in modern education because they support the development of personality and creativity, as well as reflectiveness and interrogative thinking (Płóciennik 2010),
- The introduction of open tasks into education at the same time and to the same extent as convergent tasks (Bonar 2008),
- The use of conflict situations between people, students and children to constructively improve the relationships between them and/or to analyze the benefits of such behaviour (Cywińska 2004).

Teachers as organizers of children's/students' activities should also be aware of the positive emotional aspects of creative processes and independent actions; they should understand the need for searching and going astray; they should understand and appreciate the value of children's strong personal involvement in the organization of their own activities. Thus, they should let children/students be original, fantasize, be inventive and unconventional in their actions; they should form and develop cognitive motivation and the need for achievements. In the designed educational situations they should involve the imagination of children/students because it is the *"…driving force of true creative experience, determining the states of curiosity and anxiety, discovery and search, allowing experience of things in a full and intensified way*" (Dewey 1975). They should also be aware of the fact that activities such as inventing stories, drawing picture stories and carrying out all kinds of projects develop not only the imagination, creativity, ingenuity and eloquence, but also literary, composition and artistic skills. On the other hand, the techniques of creative thinking and teachers' work in accordance with the rules stimulating (and not hindering) development also accelerate and optimize other achievements by children, as they are related to the development of general and special skills, practical intelligence and the children's involvement in action (Renzulli 1998).

In relation to the practical bases, it is necessary to provide teachers who implement *Teaching for wisdom* with educational support, including proposals and the preparation of teaching aids and tools that would help teachers work in this area, such as philosophical tales, proverbs and anecdotes tailored to children's perceptual abilities at the level of early education. This would allow for clarification of difficult information and issues for children, in accordance with the accessibility of the rules and the use of visual methods.

Looking at teaching aids that can be used at school/preschool in order to implement *Teaching for wisdom*, one has to mention those that are traditionally used in educational processes, such as scientific kits which include instruments such as magnifying glasses, microscopes, measures, scales, loose substances, containers, scent cups, sound-emitters etc; plant breeding kits with all kinds of natural materials; dice games (including those made by children), jigsaw puzzles, lotto (including pictures for associations), and teaching aids which make it easier to recognize and express emotions, such as emotion cards, feelings dice, hand puppets, mirrors etc. However, there are also special kinds of teaching aids that support children's understanding of the content of *Teaching for wisdom*, examples of which are:

- Different books of stories and fables, including those made by children.
- Educational, documentary and feature films presenting different situations and civilization, social and health problems, etc.
- Dynamic pictures showing different situations in human relationships that present universal values[7].

The teaching aids listed above can be useful in the following educational situations, covered by *Teaching for wisdom* at the preschool level and early school education:

[7] Cf. E. Płóciennik, A. Dobrakowska. *Zabawy z wyobraźnią. Scenariusze zajęć i obrazki o charakterze dynamicznym rozwijające wyobraźnię i myślenie twórcze dzieci w wieku przedszkolnym i wczesnoszkolnym*. Łódź: Wyd. WSHE, 2009.

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1) Familiarizing children/students with literature and philosophical tales in order to identify and analyze the wisdom of their characters (including wise men).
2) Presenting valuable role models from the life of the closest and further environments, including drawing the children's attention to valuable behaviour of their peers and adults at school.
3) Drawing the attention of children/students to valuable and wise behaviour of characters in films, computer games and plays, and holding discussions about this.
4) Analyzing these values together with children/students and distinguishing the most important ones (for students and/or the group).
5) Monitoring and analyzing behaviour together with the children/students in terms of the values discussed.
6) Involving children/students in discussions about projects which allow them to identify and describe 'lessons' drawn from different sources, and then initiating their implementation in everyday life.
7) Designing the process of implementing values and wise behaviour in the life of an individual and a peer group together with the children/students.
8) Initiating and arranging situations which add to the common good of the group/class.
9) Considering, together with the children/students, better and worse effects while planning common and individual activities, and also including short-term and long-term perspectives and different points of view.
10) Carrying out different tasks together with children/students, based on the project method, in which participants analyze their own knowledge and skills (or lack thereof) in a given area; in planning improvements and carrying out tasks for the common good, they assess their own activity and analyze the effects.
11) Analyzing, together with the children/students, the knowledge and skill requirements necessary to carry out the planned tasks.
12) Organizing true participation of the students/children in activities that support the development of social sensitivity.

13) Organizing educational situations that aim to:
- Analyze and improve interpersonal relationships in a group based on discussions and corrective measures (for example, planning apologies),
- Formulate feedback and one's own reflections with the use of the unfinished sentences method, such as: *I have learned today that…, I have noticed that…, I was sad when…, I was happy when…, I was surprised today to discover that I can…, I was surprised today to discover that I can't…, Tomorrow I would like to learn…*,
- Plan and organize the course of a thematic game, breeding plants or animals, taking part in environmental actions and regional events,
- Plan and carry out one's own projects for organizing free time in different situations or in case of bad weather (*What can you do at home when it's raining?*), and then analyze their implementation and propose modifications,
- Encourage children/students to imagine the nearest future or express their dreams/desires, and then plan small, gradual, realistic steps that can be carried out within a short time in order to initiate the process of fulfilling these visions right away, as far as possible, including the planning of necessary improvement activities.

14) Organizing situations, in which children/students:
- Generate ideas for dealing with difficult situations, taking into consideration their conditions and consequences,
- Express opinions and judgments about problems and solving different problems in the environment,
- Criticize events, information, behaviour from their environment and generate ideas for alternative positive behaviours, solutions, information,
- Reconstruct different situations and scenes which present different kinds of situations and conflicts between people, and then suggest alternative solutions supporting a peaceful solution to the problem,
- Develop creativity through exploration, combinations and transformations,

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- Look for as many disadvantages, shortcomings, deficiencies of certain solutions (concerning construction, learning, organization) and risks these solutions entail as possible, and then find a way to eliminate them,
- Imagine the plot of a story presented by a teacher (positive visualization can serve as a correction measure: strengthening individuals who imagine their own positive traits or behaviour towards others; negative visualization, on the other hand, discourages the pursuit of certain activities by presenting situations related to negative emotions, and serves preventive purposes),
- Come up with answers to questions: *What is it like now? What should it be like? Why it is not as it should be? What conclusions can be drawn from this?*, using the metaplan technique in connection with such topics as: *Our school, Environmental protection, My learning, Cooperation with others*,
- Consider, one by one, the consequences of the following fictional situations related to the multiplication of certain elements of an object, and then determine the functions of the modified object, for example: *1) Imagine you receive additional pairs of arms and legs. What would happen if you had four legs? What new skills would you have? How would this change your life? 2) Imagine you could install an additional hose on a vacuum cleaner. What difficulties and what new possibilities would this entail?*,
- Take a close look at an example object, from close up and from a distance, paying careful attention to it; participants should note all the characteristic features: scratches, bites, fold marks, dents, bulges etc. After getting to know the object the participants can change its name to something they feel is more appropriate,
- Ponder the explanation of example antinomies given by the teacher (an antinomy is a logical contradiction: a combination of two notions that are apparently mutually exclusive), such as: *a strong weakness, bad love, a poor rich man, a weak strongman* and so on; then come up with their own examples of antinomies, choose one of them (the one they like most) and present it in an

artistic or spatial way, based on their own idea. At the end, the works are presented and the students' associations are explained.

Teaching for wisdom (especially at the early educational stages) requires personal competence by the teacher, interesting teaching aids and modern, motivating techniques that stimulate and develop the child's potential abilities and competences related to general and practical intelligence and creativity. In early education, of particular importance is the type of children's/students' activity that leads to the direct experiencing of the surrounding cultural, natural, technical and social reality. Such activity is undertaken by individuals through internal emotional involvement, which leads to the experiencing of values in an in-depth way, supporting development and gaining all kinds of practical experience, which in turn fosters maturity towards wisdom.

The gradual development of wisdom in an individual as *a form of species adaptation to the most difficult challenge, i.e. life management skills* (Pietrasiński 2001, p. 32), is possible only thanks to the internal development of an individual, but is necessary for all humankind. This is why *wisdom* as a complex individual characteristic, subject to pedagogic influence, should be present not only in discussions about the positive and optimum functioning of individuals within society, but also in discussions about the essence of changes in education. Although developing wisdom, based on dialogue and the teacher's ability to ask questions which trigger independent thinking and reveal the potential of individuals as part of the creation of new knowledge, was called for as far back as by Socrates and his students, modern schools still mostly train the memory and analytical skills leading to memorization and the reconstruction of information, which, unfortunately, does not support the development of a young person's value system.

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According to the presented outline of the *Teaching for wisdom* concept, it is possible to conduct education which stimulates and develops

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reflectiveness, independent thought, intelligence and creativity from the very first stage of schooling. This type of education makes it possible to prepare future members of adult society to solve vital civilizational and everyday problems in an effective way, unlike the traditional educational model, the main aim of which is to train the memory and teach analytical skills. The ability to predict outcomes, make decisions, resolve conflicts, think and act in a creative way, understand and process information, take an active part in solving problems, associate facts and phenomena, and communicate and cooperate with others, is essential for future generations. This is why such education, starting at the preschool level, is fully justified.

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Abstract:

Teaching for wisdom (especially at the early educational stages) requires personal competence by the teacher, interesting teaching aids and modern, motivational techniques that stimulate and develop the child's potential abilities and

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competences related to general and practical intelligence and creativity. In early education, of particular importance is the type of children's/students' activity that leads to the direct experiencing of the surrounding cultural, natural, technical and social reality. Such activity is undertaken by individuals through internal emotional involvement, which leads to the experience of values in an in-depth way, supporting development and gaining all kinds of practical experience, which in turn fosters maturity towards wisdom.

The environment where *Teaching for wisdom* should be deliberately organized is school (preschool). Factual knowledge and the methodological competences of teachers can support the organization of educational situations that allow children/students to experience values and wisdom, develop their potential cognitive abilities, gain experience in the interpretation and evaluation of wise/unwise behaviour, and develop the habits of wise behaviour. These situations should be a source of getting students ready to use wisdom in life and to shape their value systems. The proposal of a detailed competence scope for the notion of *wisdom* is presented in the this article.

Keywords: early education; child in pre-school age; teaching for wisdom; values; practical intelligence

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Interaction and Skills of Children in Nurseries and Primary Schools

Introduction

The paper discusses the building-up of children's competences by matching different language and social structures. It reviews communication as a process which facilitates socialization, the relationship between "children and cultures", speech development and mastery of language skills at the pre-school and primary school levels of education. Communication and socialization of children are highlighted as key factors in the education and upbringing of pre-school children. The communicative behaviour of children is analysed from a double perspective: on the one hand, as a process which facilitates children's socialization; and on the other, as a product of this same socialization. The relationship between communication and socialization, which may in turn lead to the building-up of children's communicative competence, has been studied. It is directly linked to specific social occurrences where emphasis is laid on the process of widening and strengthening the relationship of children's personalities and the surrounding world by means of language. Therefore, communicative competence usually means the ability to establish and maintain the necessary contacts among individuals. For pre-school and primary school children it takes the form of a combination of common speech characteristics, which render not only the ability to form separate phrases and sentences but also the choice of appropriate ones that will reflect and represent adequately the social norms of behaviour in the specific acts of speech interaction (Angelov, 2005; Bradshaw, 2003). We

believe that the relationship between the social context of children's interaction, as well as the typification of their ways of communication by means of speech mechanisms define the degree of communication in a goal-specific situation set up by the pedagogue. Awareness and orientation of children to the meaning of words and their forms of sound form the foundation of other speech elements and events which are in constant interaction. Raising children's awareness of those elements is vital. We want to raise awareness of those elements or competences, or characteristics of speech that are part of the communicative competence. In the first place, this is the discrete character of the elements which defines their potential to combine with one another. Secondly, the linear character of speech makes it possible for language to function by forming specific systems of separate elements. Thirdly, the heterogeneous character of speech allows the different degree of complexity of the separate elements to emerge. Fourthly, the hierarchical structure of speech manifests itself in the ability to form interrelations between different elements in which parts of some elements become an integral part of another, more complex system.

Language is a system with specific characteristics which interact in accordance with the specific condition of communication. Therefore pedagogues can bring about certain aspects of these specific common characteristics. They should focus their efforts on engaging children in various communicative exchanges in which children can actively participate and form their own means of expression rather than blindly imitate adults' modes of speech. Language practice should stimulate children to build up their own system of rules and maintain their own individuality (Angelov, 2007). This can be achieved by:

Speech and individuality:

Awareness of one's own biography – experiences, family and kinship, place of birth as an opportunity to share speech achievements: readiness for a conscious sense of belonging to a particular ethnic group, culture and community.

Differentiation of daily life and activities and understanding the processes and natural events in the surrounding world: readiness for independent statements and deductions.

Awareness of one's own and other languages and cultures: readiness for tolerance.

Development of communication and social skills: readiness for making direct speech utterances appropriate to the particular situation.

Mastery of techniques for making statements and supporting a point in difficult situations – being at the centre of others' attention when one differentiates parts of speech and shows readiness for supplying arguments.

Comprehension of the meaning of utterances: readiness for imitation of specific textual content and processing of words and phrases.

Language and communication with the others in the world:

Introduction to modes of communication with the others: readiness for sharing experience in different situations.

Identification of positive and negative communicative experiences and recognition of their causes: readiness to step into someone else's shoes.

Identification of mistakes when expressing acceptable social behaviour: readiness for receptivity and offering help.

Orientation towards a play/game media environment and its analysis: readiness to engage in a play/game style of interaction.

Awareness of the dangers of speech manipulation and inaccurate interpretations of utterances: readiness for supporting one's own point of view.

Identification of means of verbal and non-verbal play interaction and communication: readiness for differentiating and showing different types of participation - in routine and play situations. Practice of language and intellectual skills: readiness for applying rules and adopting appropriate forms of communication.

Utilization of play and game books and other available mass media recourses: readiness for acquiring information.

Understanding others when using the Bulgarian language: readiness for empathizing and employing feelings of concern towards others in communication.

Description and analysis of natural phenomena and social occurrences: readiness for adaptability.

Speech analysis of different role-plays and social roles: readiness for conscious responsibility.

According to Burkart (2000) communicative skills or communicative competence is the ability of the individual to send and receive information in any and every given situation. This communicative competence is related to and can therefore be developed into any communicative situation, in which the communication partners can undertake specific, independent actions. Thus, the pedagogic communicative model should imply that a role exchange between the sender and receiver of information may occur at all times. The participants in the communicative act should not be defined according to rigid hierarchically defined positions, but according to their functions in a communicatively organized structure of relationships. That means that the two participants are partners in the communication process. "In communication there are always two perspectives: that of oneself, and that of the others. In each communicative act we make a difference between these two perspectives but at the same time we are capable of sharing emotions and feelings." (Sofronieva 2012:3). The education and upbringing of children are conditioned by communication in which participants share equally emotions, feelings and experiences in the specific context of each communicative situation.

The priorities **in pre-school education are:**

1. Expanding opportunities for children aged from 3 to 7 years. This is related *to setting up a system based on specifically devised learning contents and techniques* which will facilitate the inclusion of

minority children and children from lower social backgrounds in the reception year of schooling. There is a need for a new model of pre-school education, based on the principles of tolerance and equal opportunities for all. On the other hand, *a special strategy for educating parents* should be devised and applied, too. Parents need to appreciate the advantages of pre-school education. The current social work interventions that are offered to families are not sufficient to achieve this goal.

2. Introduction of *information and communication technologies* – play games and computer-based media programs.
3. Systemizing the *general learning and social skills* of pre-school children which lead to ensuring future sustainability and long-lasting interest in learning at school.

Quality training and teacher preparation need to be ensured. Teachers should be able to adapt to the constantly changing dynamics of the environment; they should have *skills for integrated interaction (in the Bulgarian language, in a different language spoken in the family and in foreign languages) in pre- and primary schools* (Gyurov, 2006). The new challenges regarding children's readiness and transition from pre-school to primary school level of education are:

1. The new requirements expected of all citizens for lifelong learning and the need for purposeful education from an early age. Nowadays education is becoming a key factor in achieving a better standard of living and prosperity in life. A successful start in primary school guarantees, to a great extent, future success in the years of schooling that follow.

2. The differences in children's standard of living and educational capabilities. The growing social differentiation in Bulgarian society, just like in other countries, which has been caused by social and economic factors, has lead to substantial differences in children's living standards and in particular their educational capabilities (Starkey, 2002). There is a great number of children from marginal communities and families, and the proper education of such children is hindered by insufficient

resources. Moreover, communication in these families and communities often takes place in the children's mother-tongue or another dialect form of language. These, as well as other macro and micro factors of children's socialization, have led to considerable differences in children's capabilities when they start formal schooling.

3. The new legislation. The adoption of the decision to introduce a compulsory reception year, i.e. a preparatory class for children's transition to formal education in primary schools, has lead to the need for appropriate instruments to diagnose and measure children's overall development at this entry stage, thus serving as a foundation for organizing and offering effective education, synchronizing the methods and curriculum content in primary schools.

4. National and international research findings. There are numerous research findings regarding the parameters, aspects and criteria for diagnosing children's readiness for school on the national and international levels. All these should be improved and expanded. Nowadays, along with the traditional psychological, physical and speech development of children, greater emphasis is being placed upon the ***cognitive*** (James, 2001) and intellectual development viewed as one construct which encompasses ***social, aesthetic***, ***artistic, and emotional development.*** New emphasis is laid on ***parents' active and direct participation*** in their children's welfare, education and upbringing. Offering training and guidelines to parents will enable them to monitor and facilitate their children's development at home, in the family environment. This is a relatively new trend in current research and in particular in the area of diagnostics.

5. Methods for diagnostic screening. Attempts to introduce certain methods for diagnostic screening at the administrative level in the educational system without sufficient scientific background, planning and funding of research projects in this area, might result in misrepresentation and a reduced appreciation of the need to develop and apply appropriate methods.

The need for diagnosing effectively children's readiness for school should be part of the new cultural and social environment in Bulgaria, in

which ***reform in education and the new educational paradigm*** which centres on the ***children/pupils' wellbeing and worth*** are of utmost importance in education. Future development and improvement of pre-school and primary school education should take all the factors mentioned above into account.

Two main goals can be defined. They are interrelated and guarantee a new approach.

1. ***Equal opportunities for and access to education*** – quality education for every child.
2. ***Quality education:***

a) *enhancement of knowledge and development of skills;*
b) *stimulation of children's creative thinking and decision making;*
c) *effective socialization of children, encouragement of their initiative, curiosity and autonomy.*

When discussing children's development, we should take into account the current educational policy in Bulgaria. The national strategy for development of school education places emphasis on the need to offer the most favourable conditions to all children in order to ensure their optimal development and educational outcomes. This strategy has its merits but it will not automatically create a finer, more active system unless we utilize and employ the personal and professional potential of our contemporary teachers (Gyurova, 2009). A precondition for achieving this goal is applying an ***interactive paradigm*** which is grounded in the belief that children grow, change and develop during a process of diverse and enriching cognitive, social and emotional interactions with their teachers. This is based on a number of official documents, i.e. Regulation 4 on pre-school education of the Ministry of Education in Bulgaria of 18 September 2000, the National Programme for Development of School Education and Pre-school Education (2006–2015) and **the eight key competences of the European framework (European Reference Framework, 2007), recognized as parameters in future educational policy in Bulgaria, namely:**

Communication in the mother tongue;
Communication in foreign languages;
Mathematical (competence) literacy and basic competences in science and technology;
Digital competence;
Learning-to-learn;
Social and civic competences;
Sense of initiative and entrepreneurship;
Cultural awareness and expression.

Conclusion

The true merits and dimensions of any interaction of children at pre-primary school level is best revealed in the content and volume of the mutual activities which they are expected to undertake to best fit the pedagogical task, and their respective cooperation. That leads to a deeper understanding of the term ***"social competence"***. It should be looked upon as a competence related to developing and nourishing valuable, positive attitudes in children towards developing their own understanding and sense of the surrounding world, the participants in the interaction and, last but not least, themselves. With regard to this issue, some of the key factors are ***individual motivation*** and ***the emotional – assessment component,*** i.e. how a child accepts and evaluates a situation. These factors complement the characteristics typical of the children's world. Furthermore, they are the cornerstones of the ***socio-emotional school readiness*** of children which have recently received more attention. The enhanced requirements of primary schools (with regard to the children's age to start their formal education, the contents and organization of the pedagogical process, the organisation of the work and duties of the primary school teachers, the smooth transition from pre-primary to primary schools for children) provide clear evidence of the importance of understanding well all that is involved in the term school readiness. More and more primary schools, especially in the private sector, put up

specific enrolment requirements. Children's readiness to start school is tested in various ways; for instance, by having their aptitude to early second language learning tested. Therefore, screening and diagnosing children's readiness for school should be enlarged and enhanced in order to be effective. In a nutshell, educators and experts are now interested in the ***socio-emotional, aesthetic and artistic, and motivational readiness*** of children.

The necessity to develop key competences which lead to improved educational outcomes lies in the foundation of the EU strategies. Clearly, there is a need for further research and the implementation of a new approach which is on the one hand based on the existing social and economic environment in Bulgaria, and which on the other hand strives towards the further development and improvement of the education system in the country.

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Abstract

The paper discusses issues related to building up and enhancing the communicative skills of children and their relationship with the specific socio-cultural

environment of nursery and primary schools. Emphasis is laid on the importance of developing children's linguistic competence by providing favourable conditions. This allows desirable modes of verbal and non-verbal behaviour to be exemplified and expressed, and therefore allows interaction to take place.

Key words: communicative competence, interaction, pre-school and primary school education

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Mathematical Education and Developing the Emotional and Social Competencies of the Child in Pre-primary and Primary Education in Slovakia

Introduction

It is a typical feature of the contemporary school that it focuses primarily on the acquisition of knowledge and information despite the two decades of declarations on humanistic trends in education, and the generally perceived need to devote more time to influence the social and emotional development of children. A common cause of this condition is, according to the representatives of teachers, the highly demanding content of subjects' curricula in the last years; these curricula have been filled with a larege amount of knowledge (curriculum from 1996), and educational attainments have been verified through cognitive tests. The reduction in the content of the curriculum currently in force (since 2008) provides space for pursuing the personal development of children and for planning activities that develop the affective side of a child's personality. However, teachers lack the available tools for detecting the efficiency of the process and to verify the results attained in a given area. What is important here is the collaboration of educationalist and other experts from the field in order to obtain the relevant results. Some alternative schools in Slovakia have also participated in this process.

Mathematics is considered to be a subject which primarily develops the cognitive area of children and pupils aged from 3 to 10 years. This is also documented in the content standards and the performance standards of the mathematical-logical sub-area of the *State Programme of*

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Education ISCED 0 - pre-primary education, 2008 (hereinafter *SVP-ISCED0*). The standards are formulated within the thematic area *People*. Similarly, the content and performance standards of the *State Programme of Education for the 1st stage of primary education in the Slovak Republic ISCED 1 - primary education*, 2011 (hereinafter *SVP-ISCED 1*) state the requirements for pupils' knowledge and skill in mathematics. Measuring pupils' achievement in mathematics or children's readiness for school education in the mathematical content area is, in Slovakia, aimed at verifying the cognitive knowledge of children and pupils through cognitive tests, largely based on lower-order thinking skills. Developing cognition and stimulating cognitive skills in mathematics is naturally a priority, but, in practice, cognitive education cannot be deprived of developing the non-cognitive abilities of children and pupils.

The Emotional and Social Aspects in Developing a Child's Personality

Emotion (feeling) is according to Košč (1994, p. 45) a conscious experience of man's relationship to things, to himself, to his own conduct and to other people. The author states that there is either a positive or negative interaction between emotions and cognitive processes. Interest in the subject may invoke feelings like excitement, surprise and disappointment, or conversely, feelings may trigger a loss of interest in logical connections, reasoning and argumentations. Emotions play an important role in human life, since they are a part of its motivation structure. The education of humans is associated with cultivating their emotional area which includes also fostering intellectual emotions that are part of learning, studying the unknown and discovering. The concept of emotional intelligence is gradually coming to the attention of psychologists. Goleman (1997) argues that emotional intelligence is the ability to:

- motivate oneself, not to give up in front of obstacles,
- control oneself - motivations, moods,

- influence the quality of thinking,
- empathize with the situation of others.

Goleman also points out that the development of emotional education improves learning and school performance of children.

According to Shapiro (2004), emotional intelligence is a part of social intelligence. It is the ability to monitor our own feelings and emotions as well as those of the others and use them in one's own thinking and behaviour. Emotional and intellectual skills are complementary in the real world. Developing problem-solving skills is an example of such interrelatedness. Even a pupil in the first year of primary school solves a simple maths task to add (4 + 3) in several ways - the sum can be determined by counting one by one, by adding the smaller number to that of the larger, or by drawing. The pupil him/herself decides on the process of finding solutions in the context of the given task.

In interpersonal relationships, however, a short-circuit between logical and emotional judgment can occur. Emotional logic (which underlies intuition) helps to solve the problem. But, when emotions are too strong, the solution to the problem requires the application solely of logical procedure. Children of all ages learn how to solve problems, which in effect leads to developing the ability to overcome obstacles. The concept of social education in our view means specifically and systematically targeted development of a child's personality within the social environment of both classroom and school (Šikulová, 2003). It usually concerns creating such conditions, in the process of teaching and school life, which stimulate developing in children the ability to integrate into the group, work in groups to solve real-life problems, and interact with other members of the group. The situations in the school environment serve as a model, but the issues being addressed are related to real life. Komárková et al. (2001) consider social interaction as the basis for the socialization of humans. It is crucial for self-awareness, self-esteem, thinking and language, social sensitivity, transmitting communication signals, conflict resolution and the like. The social skills of children also include asking questions, information sharing, expressing interest in and acceptance of the others.

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The child's ability to get on with others and communicate with them contributes significantly to their feeling of success and gratification in life. A child needs to distinguish between different social situations, respond appropriately to them and harmonise their own expectations with the needs of the others.

Social learning ensures socialisation of the child. Forms of social learning include: learning under guidance (a child is being taught – direct guidance is provided, for example how to buy a bus ticket), learning by imitation (a child imitates a teacher in the process of work, but also in relations with others), learning by identification (a child behaves identically in certain situations as another person before), learning by being instructed (we provide reasoning to a child why s/he should do something the given way).

Baďuríková (1999/2000) uses the term emotional literacy, by which she means:

- emotional self-awareness – the ability to recognize and name the emotions
- control of emotions
- communication (about emotions and feelings)
- personal decision making
- empathy
- managing the relationships.

One of the main goals of early childhood education should be a contribution to the emotional and social development and adjustment of the child – a positive self-concept, self-reliance, self-expression, ability to address common social situations and the development of interpersonal relationships. The child's entry into school represents a significant milestone in his emotional and social development. It is necessary that the child has reached the desired level of socialization in order to take up his new role – to be a schoolchild. Adequate social maturity means that a child is able to communicate with teachers and classmates adequately; s/he is able to differentiate between the position and authority of a teacher and that of

his or her classmates. If a child is socially immature, it may happen that s/he behaves impulsively and egocentrically. The emotional symptoms of a schoolchild differ from those at the pre-school age. Emotional lability, impulsivity and childhood egocentrism disappear. Gradually, the child will acquire the ability to control his behaviour in accordance with the norms; s/he wants to conform to teachers's and parents' expectations. The school is one of the determining factors of the socialization of the child. It is the environment which affects the development of social self-perception and the reflection of behaviour (Kolláriková - Pupala, 2001).

Social and Emotional Competencies in the Pre-primary and Primary Curriculum within the Context of Mathematical Education in Slovakia

SVP-ISCED0 (2008) defines the educational aims for preschool age. They include striving to achieve the optimum level of emotional and social operation of the child as the basis for his/her future life in society. The aims related to our pursuit can be identified among the partial aims of the programme:

- to meet the child's need for social contact with peers,
- to develop the social, emotional and moral aspects of the child's personality through purposeful and systematic work in creative atmosphere.

In addition, the authors of *SVP-ISCED0* (2008) highlighted the need to carry out educational processes in kindergarten through play and the child's positive emotional experience. In order to ensure that the national curriculum aims are adequately met, the pre-primary graduate profile was drafted in the form of a set of competencies and both content and performance standards. For the areas of social and emotional development of the child's personality the program contains the formulations of *personal, social and communicative competences* in the *socio-emotional*

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thematic area. *SVP-ISCED0* (2008, p. 8–9) identifies the following specific competences:

1. *Personal Competences – essentials of self-awareness:*
- is aware of his/her own identity
- manifests a relationship to self and to others in behaviour
- expresses his/her own feelings and assesses current emotional state
- estimates own capabilities and competences
- behaves with confidence in various situations
- is aware of the consequences of his/her own behaviour with respect to other people.

2. *Personal Competences – essentials of commitment:*
- asserts oneself respecting him/herself and others
- defends him/herself and others
- is interested in what is happening in the family, kindergarten and the immediate surroundings.

3. *Social Competences:*
- behaves emphatically to his/her surroundings
- behaves in accordance with the social rules and norms when in a group
- plays and works in pairs, in a group and in a team
- plans, organizes and assesses the activities
- continues playing and other activities, and completes the activity
- takes joint responsibility for his/her activities and for the activity of the group
- resolves conflicts with the assistance of adults or independently
- helps others with the assistance of an adult or alone
- accepts and respects multicultural diversities of people.

4. *Communicative Competences:*
- leads a monologue and begins dialogue

- listens actively and comprehends ideas and information from the media
- expresses and communicates his/her own ideas and opinions
- reproduces texts and announcements
- communicates acquired knowledge
- manifests pre-reader's literacy.

Pre-school education is predominantly focused on attaining basic competences. The role of a teacher is to manage education in accordance with the development of preferred competences by appropriate activities, keeping them interactive and experiential for a child.

The content of *SVP-ISCED0 (2008)* is divided into four thematic areas, each subdivided into three learning areas. The abovementioned *socio--emotional area* is one of them. By analysis of content and performance standards we have identified the themes and specific aims which, in our view, can be listed in the area of social and emotional development of the child's personality, but at the same time have an intrinsic link with mathematical and logical sub-areas.

Table 1. Thematic Area **I am**, *socio-emotional area:*

Content Standard	**Performance Standard** / ***mathematical context***
Defending Own Position in the Conflict	Peacefully defends own opinion. / *Defends the proposal of own algorithm in solving mathematical problem*.
Self-regulation	Demonstrates self-regulation in games and other activities. / *Controls own behaviour in a mathematical game and when learning*.
Decision Making	Decision-making during an activity. / *Taking the correct decision on procedure for solving mathematical tasks, choosing the activity corresponding to the instruction*.
Self-assessment	Assesses his/her own skills in various activities. / *Selects mathematical tasks and activities following assessment of own abilities*.
Basic Rules of Cultural Behaviour	Applies and respects the habits of cultural behaviour. / *Follows the rules of conduct in a mathematical game and educational activity*.

Table 2. Thematic Area **People**, *socio-emotional area:*

Content Standard	**Performance Standard** / ***mathematical context***
Sharing, Support, Gifting	Shares, gives a present to someone, helps someone. / *Divides a whole into halves, quarters*.
Acceptance of Different Opinions	Accepts difference of opinion in discussion. / *Accepts other views on solving the mathematical task or problem.*

Table 3. Thematic Area **Nature**, *socio-emotional area:*

Content Standard	**Performance Standard** / ***mathematical context***
Evaluation of Natural Environment	Evaluates the natural environment. / *Creates tasks and mathematical situations in the context of the evaluation of natural phenomena.*
Conservationist Attitudes to Nature	Shows a positive attitude to nature and its conservation. / *Creates tasks and mathematical situations in the context of nature conservation.* Discusses feelings, experiences and impressions resulting from nature conservation and displays them. / *Suggests games, solves tasks in worksheets, describes and solves mathematical problems drawn from children's experiences.*

Table 4. Thematic Area **Culture**, *socio-emotional area:*

Content Standard	**Performance Standard** / ***mathematical context***
Emotionality in Play	Expresses the joy of playing. / *Experiences mathematical game joyfully.*
Sociability in Play	Is engaged in group play and co-operates. / *Co-operates in mathematical group game.*
Planning, Implementation and Evaluation of Play	Initiates, develops and completes game. / *Plans mathematical game, completes the game.* Plans, implements and evaluates game. / *Evaluates the course of mathematical game or activity.*
Drawing, Painting, Modelling	Draws, paints and models from imagination and ideas on given a subject or theme. / *Draws and models geometric figures or groups of elements.* Modelling by different techniques. / *Builds models from construction kits and other materials, creates images from cut-out pieces and jigsaws.*
Books, Letters, Numbers	Shows an interest in books, letters and numbers necessary to navigate the books. / *Distinguishes numbers and uses them in mathematical situations, when browsing through children's books.*

Among the aims for the Slovak school, the document *SVP-ISCED 1* (2011) includes the following (p. 7):

- to develop a balanced pupils' capacity to communicate and understand each other, to evaluate (choose and decide) and to act proactively on the basis of self-conduct and self-reflection,
- to support the development of intrapersonal and interpersonal skills, in particular the ability to openly enter into social relationships, to collaborate effectively, to develop a social responsiveness and sensitivity to classmates, teachers, parents and other people of the community in his/her wider cultural and natural surroundings,
- to lead pupils to tolerance and to accept other people and their spiritual and cultural values,
- to teach students to exercise their rights and also to fulfil their duties, to take responsibility for their own health and to protect and strengthen it actively.

The pupil after completing the primary stage of education should have acquired *inter alia* the following core competencies (p. 8–9):

competence to apply basic mathematical thinking and possession of basic exploratory skills in science and technology

– to apply basic mathematical thinking to solve practical problems in everyday situations and to be able to (at different levels) use mathematical models of logical and spatial thinking and presentation (formulas, models),
– to be prepared to continue to develop the ability to explore, ask questions and find answers, which leads to the systematic storing of knowledge;

personal, social and civic competences

– to posses the basis that will allow for the development of a positive self-image and self-confidence,
– to be aware of his/her own needs and creatively exploit his/her own abilities,

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- to be able to assess his/her own strengths and weaknesses as well as his/her own opportunities for development,
- to recognize the importance of protecting his/her own health and to be aware of its relatedness to appropriate, active leisure time activities,
- to be able to demonstrate age-appropriate estimation of the consequences of his/her own decisions and actions,
- to be aware of his/her own rights and duties,
- to have acquired the basis for effective cooperation in group,
- to be able to accept new ideas or come up with new ideas and procedures when working in a group,
- to be aware of the socio-emotional climate in the classroom and by his/her own actions contribute to good interpersonal relations.

Finding intersections between competence to apply basic mathematical thinking on the one hand, and social and emotional competencies on the other, is one of the fundamental objectives of mathematical education.

The *State Programme of Education Mathematics (Educational Area: Mathematics and Working with Information) Annex ISCED 1, 2009 (hereinafter SVP-ISCED 1-Mathematics)* states the further aims and general requirements for the development of pupils' personality (p. 4):

- to promote and strengthen positive moral and volitional qualities of students, for example autonomy, determination, endurance, tenacity, self-criticism, criticality, purposeful self-education, confidence in their own abilities and capacity, systematic addressing of problems in private and public contexts;
- to create and develop a positive attitude of pupils towards common European values,
- towards permanent learning of cultural values created by European countries and Slovakia;
- to develop within mathematical education pupils' key competences in social and communication areas, in ICT, in personal and civic areas, in science, and to develop a competence of learning to learn.

The content of the mathematical curriculum at the primary stage is divided into five thematic areas:

Numbers, Variables and Calculations with Numbers
Sequences, Relations, Functions, Tables, Diagrams
Geometry and Measurement
Combinatorics, Probability, Statistics
Logic, Reasoning, Proofs

At each stage of education, not all of the above thematic areas may necessarily be explicitly listed in the curriculum. The mathematical education at the primary level should provide the pupil with certain competences relevant to mathematical content (cognitive competences), but at the same time s/he should achieve certain attitudes (non-cognitive competences) in terms of the following (p. 33–34):

Numbers, Variables and Calculations with Numbers:

S/he ceases to be "afraid" of numbers, quantifies the reality around him with more confidence, confidently makes comparisons of people, things and events by means of numbers, is satisfied with the numerical representation of the solution and, if necessary, can perform a check on the correctness of a calculation.

Sequences, Relations, Functions, Tables, Diagrams:

Observes, undertakes searches and discovers relationships between numbers and quantities, perceives the need for autonomy while exploring and verbally presenting a solution, perceives the need for the gradual establishment of reasonable views on the relationship between mathematics and real life, is interested in improving his/her own logical thinking and its constant expansion and deepening (classification, using elementary algorithms, etc.) through the elements of critical thinking, is positively motivated to build the foundations of his/her own personal development.

Geometry and Measurement:

Is not indifferent to his/her surroundings, is able to focus on exploring geometric shapes in the surroundings, tries to apply geometry in

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practical problems when appropriate, is ready to use measurement and calculation coherently, strives for accuracy in measurements and calculations, makes efforts to develop his/her own spatial imagination.

Solving Application Tasks and Tasks Developing Specific Mathematical Thinking:

Distinguishes and classifies the world around him/her according to the truth and falsity of phenomena, feels the need for quantification of phenomena in his/her surroundings, is aware of the importance of sorting the events and things, acquires a need to give reasoning to truth or falsity of statements and situations (pictorial or situational).

Educational Methods in Mathematical Education and the Possibilities of Developing Social and Emotional Competencies of the Child/Pupil

In order to effectively develop the competence of preschool and junior school age children it is necessary to approach to the choice of suitable **educational methods**. Podhájecká (2008) states that play is the primary means of personal development of preschool age child; however, play is also a major educational method in kindergarten. A similar view is shared by other experts in primary education. Skalková (1999) argues that in didactic games and games with rules, the pupil learns to comply with established rules, which leads to his socialization and self-control. The child learns to interact with others, learns the rules of conduct and practices self-control. Play or a didactic game may have a mathematical context. Nowadays, however, more attention is paid to the methods that motivate and activate pupils in the acquisition of knowledge and also develop their personalities in the social and emotional spheres. Pash et al. (1998) outline the *social forms* of learning in which students learn from each other. In this instance the teacher acts more as a mediator or facilitator, instead of providing information to pupils directly. The advantage of social forms of learning is in that we all live in a social world and children's play as well as their work take place

in a social environment too. Teaching in school often provides little room for such processes. The teaching methods which promote social learning include *simulation, staging and dramatization*. The *simulation method*, according to Skalkova (1999), introduces pupils to simulating a fragment of real life and offers them space to solve and analyse problems that may exist there (there is an overlapping of the issues pertaining to the cognitive and affective levels of education). Simulation games, used in the education of pupils, open possibilities for pupils to try out something which could provide them with new experience or something that they have not yet encountered in life. It usually takes the whole class to be involved in simulation and the space is created here for students with different abilities to participate. The difficulty level of the simulated situation depends on the age and experience of pupils; for example, at the first stage of primary school pupils can create a system of *postal service in our life* (the mathematical context being the road to the post office, i.e. orientation in space, finding the shortest path to the post office; numbers and calculations – payment at the post office…). The *staging method* consists of playing the roles of people involved in any situation that is to be demonstrated. In this case there is also a problem to be solved and the pupils enter into the role of someone else. For example, at *the municipal office*, the pupil plays the role of a citizen who wants to solve his/her problem (the mathematical context being numbers and calculations – to calculate and pay the fee for garbage collection depending on the number of persons in the household, to calculate and pay the fee for a pet…). S/he thus gains the new emotional experience and develops communication skills. (The staging of the phases of the teaching process – microteaching is also used in the training of future teachers). *Dramatization* is one of the methods of drama in education. Dramatization allows for specification of the curriculum, deeper understanding and experiencing the content, and develops pupil's personality – his creativity, organizational and communication skills (the mathematical context being numbers and calculations – shopping in the store…).

The following is an example of one of the methods of drama education – pantomime: Pupils draw one of the two-digit numbers (for example,

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11, 15, 24, 27, 30, 41, 48, 56, 59, 63, 74, 79, 85, 92, 97) from a hat. Everyone should think about how the number of tenths in his/her number could be represented by postures of body while standing or lying down. One by one, each pupil presents the ideas saying in advance what number is going to be shown. Other students may assess, introduce new ideas, or otherwise suggest how the number could be rendered. Everyone should defend his/her presentation. Given the complexity of some representations of numbers, it is possible to work in pairs. The pair initially agrees on the method of representing a number. After presenting all the numbers, pupils are ordered in line according to the drawn two-digit numbers and thus create structured numerical series. The teacher then nominates different intervals of numbers so as to produce three five-member groups of students (group 1 – numbers less than 41, group 2 – numbers greater than 45 and less than 70, group 3 – numbers greater than 72). The pupils are placed in the groups on a random basis. Each group finds its place in the classroom where they collaboratively invent the task of addition and subtraction of the two two-digit numbers in the range less than 100 (for example, 20-11, 11-10 and others). When presenting their tasks the numbers are shown by their own body and the mathematical operation is indicated by a body movement based on previous activities. Each member of the group must have its role in the presentation of a task and must coordinate his/her concepts of number representation or mathematical operation with the other members of the group. Others have to guess what formula was invented by their classmates and determine its solution.

The method of *discovering* new knowledge provides motivation for pupils. They perceive it as an activity carried out by them without external pressure. It thus allows them to get involved emotionally and enjoy success (the mathematical context being an inductive procedure in "discovering" the triangle inequality through manipulation with sticks of different length…).

From the aspect of educational forms, it is *co-operative learning* which we consider appropriate and effective for the social and emotional development of pupils. The pupils are in mixed groups and work on a common task. For example, a team of pupils solve the problem specified by

a teacher, or they learn together, or they form a teaching team in which each team member is given instructions from the teacher on what to teach the rest of their group. Everyone is responsible for the performance of the group, but, at the same time, everyone is responsible for his/her own teaching. In cooperative learning, pupils learn to receive help and to provide assistance. It is a skill that will be needed later in their careers.

Undergraduate Teacher Training for Mathematical Education

The undergraduate training of teachers for pre-primary and primary education has recently been determined by some new factors. In the past, the prospective applicants for this type of study had been recruited mainly from grammar schools or pedagogical and social academies. Most of them had strong motivation for being trained as teachers. Currently, the prospective applicants come from different types of secondary schools. Their level of mathematical abilities as well as the level of mathematical literacy varies significantly. Moreover, many of them have developed a negative attitude towards mathematics and mathematical education. The undergraduate training of students – that is, future teachers – has therefore three main objectives:

1. raise the standard of subject specific mathematical education,
2. shape the positive attitudes towards mathematical education,
3. develop the ability of didactic interpretation of mathematical content at the pre-primary and primary stages of education.

The second objective is especially important insofar as the non-cognitive dimension of mathematical education is concerned. In our opinion, only a teacher who is convinced of the meaningfulness of mathematical education can positively influence the minds of his/her students. In such case, teaching mathematics will not be carried out only to provide pupils with the maximum knowledge but the learning process will also contribute to the development of pupils' emotional and social competences.

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Conclusion

Education and teaching are always interconnected. It has been argued that education is more important than mere teaching (Zelina, 2004). The cognitive field concerns learning and thinking, while in the non-cognitive field it is the manifestation of emotions, motivation, socialization and creativity that matters. The activities of non-cognitive areas are manifested in play, learning and interaction between people. Mathematical education in kindergarten and primary school cannot be based solely on the activities in the cognitive domain. A child needs to view mathematics as a school subject that is necessary for his life since it can be experienced in various forms almost every day. Mathematical knowledge in conjunction with emotional and social competencies acquired through education can help children to solve problems. Mutual interaction works both ways, since fully developed social and emotional intelligence supports changes of attitudes towards mathematics in a positive way.

All those who have ever worked in the field of mathematical training of educators would probably agree that the study of mathematics creates, develops and strengthens positive character and volitional and moral qualities such as: diligence, accuracy, fairness, thoroughness, critical self-awareness, responsibility, initiative, persistence and tenacity. Mathematics does not tolerate shallowness and a lack of systematic behaviour. The above qualities (among others) should also be fostered by pre-primary and primary education.

To conclude, we can only agree with the idea of H. Freudenthal: *"Never ask how much of mathematics a child can learn. Ask rather to what extent mathematical education can contribute to the human dignity of a child."*

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Abstract

Mathematical education at the pre-primary stage sets out its aims which are predominantly focussed on the area of developing the cognitive side of the child's personality. This area becomes the focus of relevant curricular documents for mathematical education, on the one hand, and influences the actual teaching

of mathematics in practice, on the other. Meaningful and effective cross-curricular mathematical education opens a new space for developing the emotional and social skills of the child. The above aspect of mathematical education has the potential to become a determining factor in creating a positive attitude towards mathematics.

Keywords: pre-primary and primary education, mathematical education, emotional and social competencies

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in the 1st stage of primary schools, monitoring of the needs of a newly inducted teacher as a determinant of undergraduate mathematical training of elementary teachers, cognitive aspects of mathematical education, comparison of primary mathematics in Slovakia and abroad.

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The Level of School Readiness of Five-year-olds within the Area of Social Development in View of the Pedagogic Principles of Maria Montessori – an Analysis Report

Introduction

In general, social development is understood as a socialization process the objective of which is making a person develop certain skills and abilities necessary for the effective functioning in the society (K. Hurrelmann, 1994, p. 16; quotation according to S. Kowalik, 2002, p. 72) and preparing a person for seizing and fulfilling their own role in adult life. During the socialization process, the person extends his/her knowledge about their group, social roles, relations among people playing given roles, as well as rights and obligations within the group. Moreover, the person learns to accept certain attitudes, standards and values. Apart from the fact that the person becomes integrated into the social group, another important aspect related to social development is the process in which the person shapes themselves within the group, i.e. autonomization, which leads to "unique patterns of reacting, thinking and acting in different situations" (M. Kielar-Turska, 2004, p. 113). In kindergarten, the child's social development is very dynamic and intensive. The person enters a broader social environment which makes it possible for them to start new relations, take up different roles, develop experience related to the contact with adults and other children. Furthermore, the child shapes his or her own image within the context of the social group. He or she adopts certain attitudes accepted by the group in which the child lives.

It is assumed that a child graduating from kindergarten masters certain skills relevant to their development abilities. Such skills include:

- paying attention to others;
- the sense of one's own uniqueness and influence;
- communicating with others in important situations;
- understanding that the surrounding world is organized in a reasonable manner;
- the sense of belonging to a group – following social agreements;
- understanding the concept of ownership;
- behaving according to certain principles.

The social development of a kindergarten child is understood as the process of interacting with other people, taking up and learning different tasks, obligations and social roles, as well as shaping attitudes. It is accomplished through the child's contact with other people. At the beginning, such contact takes place in the family, through relations with close family members. Later, it develops in educational institutions, in the so-called broader social environment.

Depending on the theoretical and practical assumptions adopted in particular educational institutions, the process of social development manifests itself in different forms. However, it always aims to achieve the same objectives. Montessori kindergartens offer an example of an alternative approach to education. The number of day nurseries, kindergartens and schools based on the assumptions of the Montessori pedagogic system is increasing. It is one of the reasons as to why research on the way the system functions in Poland should be carried out. The organization of the educational process in Montessori kindergartens is characterized by the child's individual work in mixed-age groups. The emphasis is laid on developing the child's independence and, at the same time, the responsibility for oneself and for the social and material environment. An important element of the Montessori education is independence and freedom to make decisions concerning one's own actions. This is fulfilled according to the principles in the so-called prepared

environment, specified by M. Montessori (M. Montessori, 1952, 1970, B. Surma, 2007).

However, the emphasis laid on individualization may, in this concept, be questionable with regard to children's correct acquisition of social skills. Moreover, in the books by M. Montessori we do not find direct explanations related to social development in her concept (M. Montessori, 1994; B. Surma, 2007, p. 51–56, P. Trabalzini, 2009, p. 175–182). Therefore, one should carry out diagnostic analysis when monitoring the process of children's social development in view of Montessori pedagogic principles. Comparative analysis of children's social behaviour in Montessori kindergartens and schools versus traditional schools was carried out by Sabina Guz between 1994–2000. The descriptions of analysis results confirm the thesis that an educational environment prepared according to the pedagogic principles of M. Montessori facilitates social development within the scope of pro-social behaviour and social relations among children in a group (S. Guz, 2006, p. 183–214). These studies take into account different indicators of social behaviour than those associated with school readiness and were carried out using different methods. To date, the research has been carried out on stimulating values in the Montessori system (I. Sikorska, 2010), the results of research on school readiness for learning mathematics were published (B. Surma, 2013), and attempts were made to describe the educational system (B. Bednarczuk, 2007, M. Miksza, 2000, J. Dybiec et al.)

The objective of the article is to determine the degree to which five-year-olds attending a Montessori kindergarten achieved the level of school readiness within the area of social development. The analysis was carried out with the use of the school readiness test prepared according to the guidelines of the Ministry of Education. It is a pilot study.

Methodological assumptions of the author's own analysis

The main issue concerning the analysis was formulated in the form of the following question:

– What was the level of school readiness of children born in 2007 who attended the Integrated Montessori Kindergarten in Cracow in the school year 2012/13?

The nature of the study that was undertaken was diagnostic and explanatory, therefore the details of the problem were focused on answering the following questions:

– What was the level of school readiness of children born in 2007 within the area of social development in the research carried out in September 2012 and April 2013?
– What is the difference between the results of September 2012 and April 2013 among the children in question?

The main study method was document analysis with the categorized observation technique. In order to specify school readiness in the kindergarten, the teachers carried out two tests using the "school readiness diagnosis card" published by Nowa Era publishing house (E. Derewlana, et al, 2002). In order to analyse the test results (in this case partial ones) only one area mentioned in the issue of the study was used.

Specifying school readiness within the scope of social development referred to the area described by the test authors as the independence development area. The skills specified by the following indicators were evaluated:

– the child gets dressed on their own,
– ties up their shoes without help,
– prepares and tidies up their workplace,
– organizes different kinds of games for themselves,
– fulfills tasks,
– finishes the activities they started,
– tries to overcome difficulties
– makes good contacts with peers,
– makes good contacts with adults,

– initiates games with peers,
– follows all rules and norms established within a group,
– cooperates with others in the group, adopting various roles,
– easily adjusts to new situations,
– reacts adequately to the situation.

The indicators separated within this area specify the child's readiness within the scope of independence in the activities that determine the child's self-reliance, their ability to organize their own actions, to specify the objective, to control the progress of tasks fulfilled and to finish what has been started. This area may be specified as related to a certain level of the person's autonomization, as well as taking over and learning tasks, obligations and social roles. Further indicators refer to the social and communication area. The child should be able to make good contacts with adults and peers. This way the process of the child's interaction with other people, and the way the child adopts rules and regulations established within a group, is evaluated. Since, to a certain degree, social development includes the emotional sphere, an analysis was also undertaken of the way in which the children reacted to new situations, and the adequacy of their reactions to different kinds of situations.

School readiness in the above mentioned indicators was evaluated in the following manner:

- Level A: the child performs the activities in question on their own (carefully/neatly/correctly); the child's actions reveal the fact that a given skill has been fully developed.
- Level B: the child performs the activities in question on their own, making single/insignificant/small/scarce mistakes; the child's actions reveal the fact that a given skill should be improved.
- Level C: the child tries to perform a task on their own or expects support (the child performs the activities imprecisely/not carefully/incorrectly/makes mistakes); the child's actions reveal that a given skill is being shaped and should be developed.

- Level D: the child is unable to perform particular activities on their own or with the teacher's help, or the child performs tasks incorrectly; the child's actions reveal that a given skill has not yet been developed.

Within the group of children tested were all the children born in 2007, i.e. 22 children (12 boys and 10 girls) from four mixed-age groups functioning in the Integrated Montessori Kindergarten in Cracow. According to the guidelines, the children were diagnosed twice in the school year 2012/13. The first test was carried out in September 2012, and the second test took place in April 2013. All the test results have been analysed in terms of quantity. The children were given points for the level of school readiness they achieved (level A – 4 points; level B – 3 points; level C – 2 points; level D – 1 point) in order to check how many of them achieved the maximum level, then – the high level, the medium level, the low level and the lowest level.

The level of school readiness of the children tested within the area of social development – the description of the test results.

Within the area referring to social development, the children were evaluated by the teacher with the use of the categorised observation technique. There were 14 indicators determining the readiness level within this area. In order to analyse the results obtained, the following range of points was adopted: the highest level was 56 points; a high level was 49–55 points; the medium level was 42–48 points; a low level was 35–41 points; the lowest level was below 34 points, meaning that the child was not ready for school education. Such a range of points resulted from the need to analyse the results of the children who, in most cases, obtained A and B level grades.

In September only one child (4.5%) obtained the highest level of school readiness in terms of social development. The child was given the maximum number of points.

Eight children (36.4%) obtained the high level, meaning that in some aspects they were mastering a given skill, they could perform certain activities but they needed some help, or they made occasional mistakes. The number of points given (49 – 55) indicates that at least seven of the fourteen skills were fully developed, and the other skills were being improved.

Eight children, i.e. also 36.4% obtained the medium level. These children fell within the range of 42 – 48 points, which meant that most of the skills tested were evaluated as level B skills, i.e. skills that were being improved or perfected.

Three boys obtained the low level (13.6%). In one case the reason for low grades was the problem of bilingualism – at the beginning of the school year it was very difficult for the boy to make friends, to find his place in the group, to understand the rules and to organize different tasks. It was the first year of the boy's functioning in a Polish kindergarten. By April the boy's results had improved – from 35 to 48 points – which indicates that the child mastered most skills on the B level. The reasons for the poor results of the remaining two boys may include slower development within the area of fine motor coordination as well as communication and emotions. Two children (i.e. 9.1%) obtained the lowest level with results of 30 and 31 points respectively, which means that they were unable to perform most of the activities tested or that these skills were already being shaped. In these cases the reason for such poor results is the children's disability which makes them retarded in all areas of development.

The April results indicate that three children obtained the maximum number of points (13.6%). Eleven children obtained the high level (50%). Four children obtained the medium level (18.2%) and two children obtained the low level. And, just as in September, two children were on the lowest level, which means that in terms of social and emotional development, these children are unable to master the skills that shall make it possible for them to achieve success at school (Table 1).

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Table 1. The level of school readiness of the children tested in terms of social development

Test date	September 2012				April 2013			
	Boys	Girls	Total	%	Boys	Girls	Total	%
The highest level	0	1	1	4.5	1	2	3	13.6
High level	4	4	8	36.4	7	4	11	50
Medium level	4	4	8	36.4	1	3	4	18.2
Low level	3	0	3	13.6	2	0	2	9.1
The lowest level	1	1	2	9.1	1	1	2	9.1
Total	12	10	22	100	12	10	22	100

Source: the author's own work.

During the school year 2012/13 most five-year-olds (more than 80%) obtained school readiness within the scope of the required skills. However, only three of them obtained the highest number of points, which means that social development, and especially certain skills specified in the test, are strictly related to biological maturity, and not to stimulation or exercises done by the children. This is illustrated by the detailed analysis of the test results in tables 2 and 3.

On the basis of the results of the five-year-olds tested in September 2012, one may conclude that the largest number of children with the highest level of independence referred to getting dressed (16 children), making good contact with adults (17 children) and peers (14 children), as well as organising different games (12) and initiating games with peers (10 children). It may be assumed that being in a mixed-age group, in which the children are free to choose their activity, in which they have to obey certain rules and in which the development material is limited, makes the children obtain good results within the scope of social skills such as communicating with others and organising games. Moreover, a half of the children tested are able to prepare and tidy up their workplace, and 10 children need some help with these activities.

Indicator 7, which refers to the evaluation of the ability to try to overcome difficulties, shows that 12 children (5 boys and 7 girls) have not yet

achieved the highest level. In September, only 6 children had this ability, and 4 children achieved level C. It was difficult for 8 boys and 6 girls (indicator 11) to follow all the rules and standards established within the group. 5 boys and 5 girls were unable to cooperate with others in the group through adopting various roles. In September 2012 it was difficult for 6 boys and 7 girls to quickly and properly adjust to new situations, and 4 boys and 7 girls at times did not react adequately to new situations. These skills cannot be trained. It is also impossible to make the children master these skills more quickly. It is because these skills are related to psychological, emotional and neurological development. The children achieved the lowest grades in the evaluation of independence while tying up their shoes, which is often caused by the impossibility of practicing this skill in everyday life. To perform this activity one needs a proper level of fine motor skills as well as sight and movement coordination, which – to a large degree – depends on the child's level of maturity achieved around the age of 7.

Table 2. The level of school readiness within the area of independence of the children born in 2007. Test date: September 2012.

Independence development indicator	Boys				Girls				Total			
	A	B	C	D	A	B	C	D	A	B	C	D
1. The child gets dressed on their own	8	4	-	-	8	2	-	-	**16**	**6**	-	-
2. Ties up their shoes	2	-	6	4	3	3	2	2	**5**	**3**	**8**	**6**
3. Prepares and tidies up their workplace	6	6	-	-	5	4	1	-	**11**	**10**	**1**	-
4. Organizes various games for themselves	6	6	-	-	6	3	1	-	**12**	**9**	**1**	-
5. Fulfils tasks	4	4	4	-	4	4	2	-	**8**	**8**	**6**	-
6. Finishes activities that have been started	5	4	3	-	3	6	1	-	**8**	**10**	**4**	-
7. Tries to overcome difficulties	4	5	3	-	2	7	1	-	**6**	**12**	**4**	-
8. Makes good contacts with peers	6	5	1	-	8	2	-	-	**14**	**7**	**1**	-
9. Makes good contacts with adults	8	3	1	-	9	1	-	-	**17**	**4**	**1**	-
10. Initiates games with peers	5	5	1	1	5	4	-	1	**10**	**9**	**1**	**2**
11. Follows all the rules and norms established within the group	3	8	1	-	3	6	1	-	**6**	**14**	**2**	-

12. Cooperates within the group, adopting various roles	5	5	2	-	4	5	1	-	**9**	**10**	**3**	-
13. Easily adjusts to new situations	2	6	4	-	2	7	-	1	**4**	**13**	**4**	**1**
14. Reacts adequately to the situation	6	4	1	1	2	7	1	-	**8**	**11**	**2**	**1**

The second test was carried out in April 2013. Since only three children obtained the highest grade in all 14 indicators, detailed results of other children should be analysed in order to determine which skills within the area of social development have not been shaped or have proved to be the most difficult for the children. It is worth mentioning that more than 68% of children obtained the high or medium levels, which means that in the near future the children may obtain the highest level of the skills tested. What needs to be done is to adjust tasks to the children's abilities and making it possible for the children to master such skills as tying up their shoes (only 6 children could do that; 9 needed some help, 6 could make the first knot, and 4 are uninterested in tying up their shoes), finishing tasks that have been started (11 children need additional stimuli to encourage them to achieve the expected result), trying to overcome difficulties (8 children made attempts, 11 children needed external motivation or reinforcement, 3 were unable to cope with difficulties). Only 5 children easily adjusted to new situations and the behaviour of 15 children indicated that they still have some difficulties with dealing with emotions. Moreover, 11 children did not always react adequately to a new situation. Only 9 children obtained the proper level of readiness within this area. Almost all the children made good contacts with peers and adults. Initiating games with peers is related to the child's personality and communication skills. Thus, shy children prefer submitting to others rather than initiating games on their own. However, one might notice that a mixed-age group makes it possible for all the children to adopt the role of a game initiator. Older children easily interact with younger children, organising time one for another. This way each child may find a game partner and fulfil one's needs through adopting different roles. This is confirmed by the results of the sociometric research carried out among the children attending this kindergarten.

Table 3. The level of school readiness within the area of independence of the children born in 2007. Test date: April 2013.

Independence development indicator	Boys				Girls				Total			
	A	B	C	D	A	B	C	D	A	B	C	D
15. The child gets dressed on their own	8	4	-	-	9	-	1	-	**17**	**4**	**1**	-
16. Ties up their shoes	2	3	4	3	4	3	2	1	**6**	**9**	**6**	**4**
17. Prepares and tidies up their workplace	10	2	-	-	7	2	1	-	**17**	**4**	**1**	-
18. Organizes various games for themselves	9	3	-	-	6	3	1	-	**15**	**6**	**1**	-
19. Fulfils tasks	6	4	2	-	5	4	1	-	**11**	**8**	**3**	-
20. Finishes activities that have been started	5	5	2	-	3	6	1	-	**8**	**11**	**3**	-
21. Tries to overcome difficulties	5	5	2	-	3	6	1	-	**8**	**11**	**3**	-
22. Makes good contacts with peers	6	6	-	-	9	1	-	-	**15**	**7**	-	-
23. Makes good contacts with adults	8	4	-	-	9	1	-	-	**17**	**5**	-	-
24. Initiates games with peers	7	3	1	1	5	4	1	-	**12**	**7**	**2**	**1**
25. Follows all the rules and norms established within the group	6	5	1	-	5	4	1	-	**11**	**9**	**2**	-
26. Cooperates within the group, adopting various roles	7	3	2	-	6	3	1	-	**13**	**6**	**3**	-
27. Easily adjusts to new situations	2	9	1	-	3	6	1	-	**5**	**15**	**2**	-
28. Reacts adequately to the situation	6	5	-	1	3	6	1	-	**9**	**11**	**1**	**1**

In order to illustrate the progress, the test results of all the children were collected and compared. Chart 1 shows the differences between the first and the second test indicating the differences between the children on the A level. The graphic picture of the results obtained also shows which skills were the most difficult for the children.

After comparing the test results from September and April it is possible to determine that the second test revealed a significant improvement in most of the skills that were tested. However, not all the children have mastered the skills tested at the highest possible level. Significant progress refers to the number of children who can prepare and tidy up their workplace, organise various tasks for themselves, perform different tasks, follow all the rules and norms established within the group, as well

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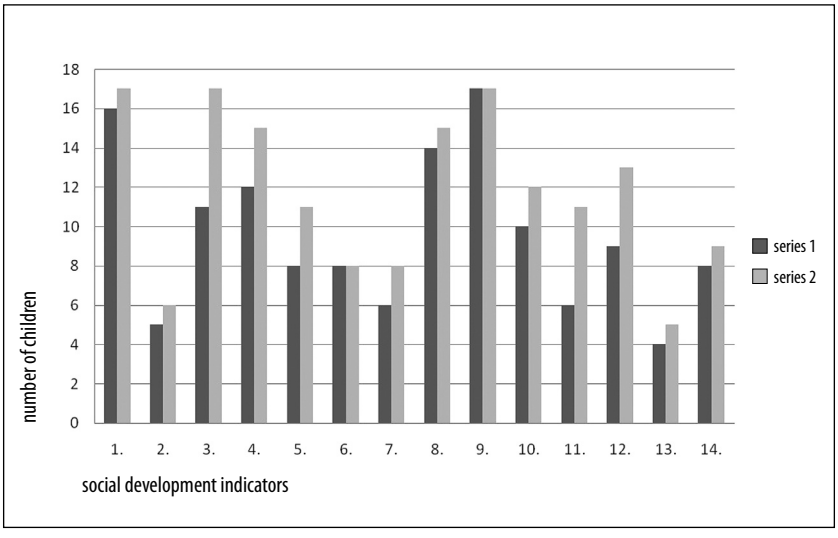
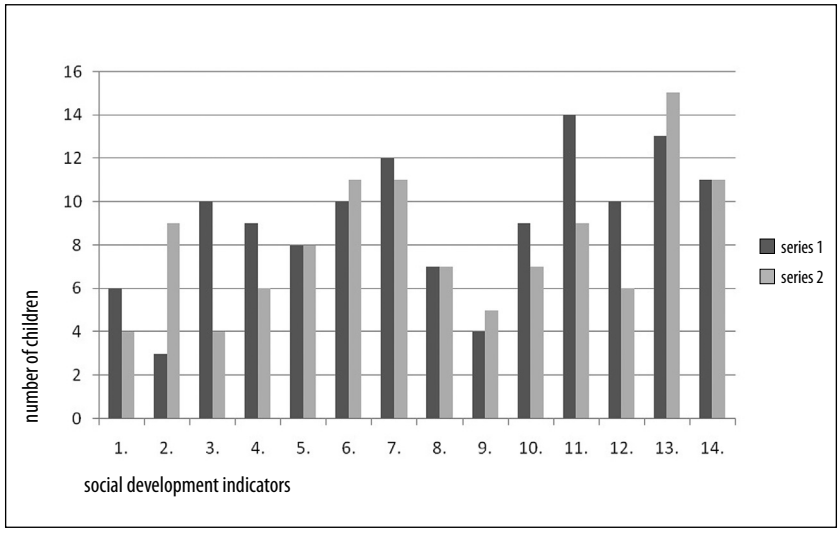
as cooperate within the group. However, there are still not many children who can tie up their shoes, finish the activities they started or adjust to new situations.

Chart 1. The comparison of the test results within the area of social development – level A



It is true that the inability to tie up one's shoes does not have a bad influence on school education. However, children's inability to master all other skills may make it difficult for them to adapt to school conditions and to adjust to the requirements that do not take into account the lack of readiness/maturity in emotional development, the lack of persistence in overcoming problems, and the lack of aspiration for regular learning. The comparison of the B level test results within the area of social development reveals that there were more children who were improving when it came to the ability to tie up their shoes (indicator 2), trying to finish the task they started (indicator 6), and dealing better with new situations. These skills are to be perfected. In other cases, the smaller number of children in the second test means that their performance was evaluated as being better, which is ilustrated in chart 1.

Chart 2. The comparison of the test results within the area of social development – level B



Summary of the test results

The main problem with the test result analysis that was carried out was the question of the degree to which the five-year-olds attending the Montessori kindergarten are prepared for school in terms of mastering social skills. The results of September 2012 made it possible to determine which skills needed to be improved. Furthermore, these results made it possible for the teachers to plan some individual work with the children. Only three children (13.6% of the total) mastered all the required skills at the highest level. 78.2% of the children tested obtained the high or medium level, which means that the process of shaping their school readiness within the area of social and emotional development is in progress. The fact that the children have not fully mastered some skills that were tested may be the reason for their poorer performance at school, more rapid discouragement from regular learning and emotional difficulties, when compared to older, more mature children. The results indicate that

within one year of preparation for school the children made significant progress, but – due to their age and biological development – not all of the required skills had been mastered at the highest level. One needs to remeber that some skills cannot be shaped through exercise. Social and emotional development is strictly related to the process of growing up. It means that some skills cannot be mastered more quickly. Such skills include an adequate reaction to new situations, overcoming difficulties, as well as performing and planning tasks on one's own.

The children from the Montessori kindergarten had the opportunity to shape a lot of skills related to independence and the development of emotional resistance. A mixed-age group facilitates the shaping of good relations with other people. Most children developed these skills at the highest level; some of them at the B level. This is a very good result, taking into account that within the tested group there were some children with development problems.

As the above mentioned test results are related to a pilot study, one cannot draw any general conclusions. In most cases, the children diagnosed obtained a satisfactory level of social development. One should take into account that these skills are constantly being shaped and mastered, which is connected with the age of the children. Being successful at school shall depend on lowering school requirements and adjusting the teaching and learning methods to the abilities of a six-year-old.

In order to illustrate children's development process in terms of educational principles determined by M. Montessori, one should continue the study, increasing the number of children tested both in Montessori and in traditional kindergartens, and comparing the test results.

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Abstract

Children of kindergarten age develop very quickly. With proper stimuli, they should reach the appropriate level of school readiness around the age of six. The subject of the study carried out in one of Cracow's kindergartens was to determine the level of school readiness in terms of social development. Tests were carried out among five-year-olds attending a kindergarten based on the pedagogic principles of Maria Montessori. The author wished to know what social skills were developed by the children within the context of an alternative method of interaction. The test group included 22 children from four mixed-age groups. The school readiness evaluation was carried out twice in the school year 2012/13, with the use of the categorised observation technique. The results show that within one year's time of preparation for school the children made significant progress, but – due to their age and biological development – not all the required skills were shaped at the highest possible level. In the second test only 13.6% children obtained the highest grade in all the test indicators. More than 78% children obtained the high or medium level, which means that the skills tested have not been fully shaped. Children need more time for improving and reinforcing these skills. Social and emotional development is strictly related to the process of growing up. Therefore, certain skills cannot be shaped faster. These include an adequate reaction to new situations, overcoming difficulties, as well as performing and planning tasks on one's own. The test results confirm that the Montessori educational context faclitates the shaping of such skills as independence of action, making good contacts with adults and peers, or preparing and tidying up the workplace. It was a partial and pilot study.

Key words: social development, social relations, social attitudes, social skills, school readiness of five-year-olds, Maria Montessori method

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Differentiated Development in the School in Particular Motivation

Introduction

One of the most important tasks of education is to recognize the differences and otherness between the children. The introduction of integrated education and training in schools justified the implementation of differentiated development.

Integrated education assumes child-centred pedagogy. It holds that according to the developmental level of students, the perception of reality, the degree of thinking, perception and action competencies, students are capable of learning (Papp, 2006).

Differentiation is an old concept in pedagogy. Learning, the education process, teaching strategies, methods, classroom management, work forms, organization methods, are all topics that appear in the literature (Falus, 1998; M. Nádasi, 1986; Golnhofer–Nádasi, 1980; Papp, 2006). However, primary school education can be characterized by an authoritarian teaching style, the application of frontal work and strong performance orientation.

The assumptions of differentiated education

This means the individualization of goals; other target designation for all children, according to this, differentiation is one of the principles of learning. Assistance acts upon the child, so differentiated learning is also the principle of assistance and individual performance evaluation.

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According to Wocken (1996), another assumption is the two-teacher model (Papp, 1995). Differentiation requires two professionals. In everyday teaching practice, differentiation is a process when we adjust teaching to each student's needs, where the aim is to help the effective learning of children.

According to didactics, there are the following types of differentiation: content, interest, tempo, level, the primary source of information search, result, order, structure, the teacher's time spent on students, learning style, group work (Papp, 2006).

We should apply those methods during differentiation, which ensures every student's effective and successful learning and knowledge acquisition. According to Ainscow (1993), in the case of differential development, the most effective teachers are those who:

- emphasize the importance of understanding
- give tasks that relate to everyday life and challenge students
- ensure the continuous progress in the children's work
- promote the diversity of learning experiences
- give choice to the students
- have high expectations
- create a positive atmosphere
- have a consistent approach
- recognize the student's efforts and performance
- organize rest to facilitate learning
- encourage the students' common activities and cooperation
- monitor their progress and provide regular feedback (Papp, 2006, p. 15).

Learners are mainly different from each other in terms of their intellectual ability, performance, motivation, creativity and other characteristic features. Thus the question arises, how do we promote the development of our students' individual ability? In the course of our research we considered learning motivation as one of the most important indicators that can be used in order to get to know the students. It is an

important task for the teacher to get to know the students in terms of their learning abilities, learning orientation and motivation. It is often remarked that teachers teach with all their words and gestures; if a particular look and gesture has a positive pattern for the students, and they start to be interested in the given subject or education material, then their learning might also be successful. The solution may be to develop the students' appropriate motivation, which meets the aims of their education and motivates the children. We distinguish two types of motivation: intrinsic (internal) and extrinsic (external) motivation; our aim is to ensure that external motivation is internalized. The quality of the learning activity is influenced by the learner's motivation, his or her established cognitive strategy and the learning environment (Réthyné, 2003; Lestyán, 2011).

Components of motivation

There are three major components of motivation: activation, persistence and intensity. Activation involves the decision to initiate a type of behaviour, such as enrolling in a psychology class. Persistence is the continued effort towards a goal even though obstacles may exist, such as taking more psychology courses in order to earn a degree although it requires a significant investment of time, energy and resources. Finally, intensity can be seen in the concentration and vigour that goes into pursuing a goal. For example, one student might coast without much effort, while another student will study regularly, participate in discussions and take advantage of research opportunities outside of class. Different types of motivation are frequently described as being either extrinsic or intrinsic. Extrinsic motivations are those that arise from outside of the individual and often involve rewards such as trophies, money, social recognition or praise. Intrinsic motivations are those that arise from within the individual, such as doing a complicated crossword puzzle purely for the personal gratification of solving a problem (Cherry, 2013, Wigfield – Eccles – Rodriguez, 1998).

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Hierarchy of Needs

The Hierarchy of Needs is a model in which Maslow attempted to capture these different levels of human motivation. It represents the idea that human beings are propelled into action by different motivating factors at different times – biological drives, psychological needs, higher goals. Now the hierarchical arrangement is not meant to imply that those who focus on higher needs are somehow "better" than those who focus on lower needs. It is not that kind of hierarchy. It is a hierarchy within you, within your day-to-day experience. It simply means that higher needs don't appear unless and until unsatisfied lower needs are satiated. If you are suffering from cold and hunger, for example, you just don't have the time or energy to worry about your self-esteem. Your entire being is focused on food and warmth. For this reason, the different levels also broadly correspond to different stages of life. The basic physical needs at the bottom are predominant in infancy; safety needs come into focus in early childhood; belonging needs predominate in later childhood; esteem needs predominate in early adulthood and self-actualization only really comes into focus with mature adulthood (Maslow, 1943, p. 370).

At once other (and "higher") needs emerge and these, rather than physiological hungers, dominate the organism. And when these in turn are satisfied, again new (and still "higher") needs emerge and so on. This is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency (Maslow, 1943, p. 375).

The two lowest levels of the pyramid are important to the physical survival of the organism. Then, once we have our basic physical and safety needs sorted, we feel more ready to share ourselves with others and accomplish things in the world. Most people can readily identify with these common levels of motivation. Maslow held that as we come to feel satisfied with our accomplishments and sense of social worth, we take another step. He referred to this urge as self-actualization. It is very similar to the process Carl Jung referred to as individuation, which tends to kick in during mature adulthood. Self-actualization is different from all the previous needs. We do not feel spurred into action by a sense of deficiency ("Must find food…,"

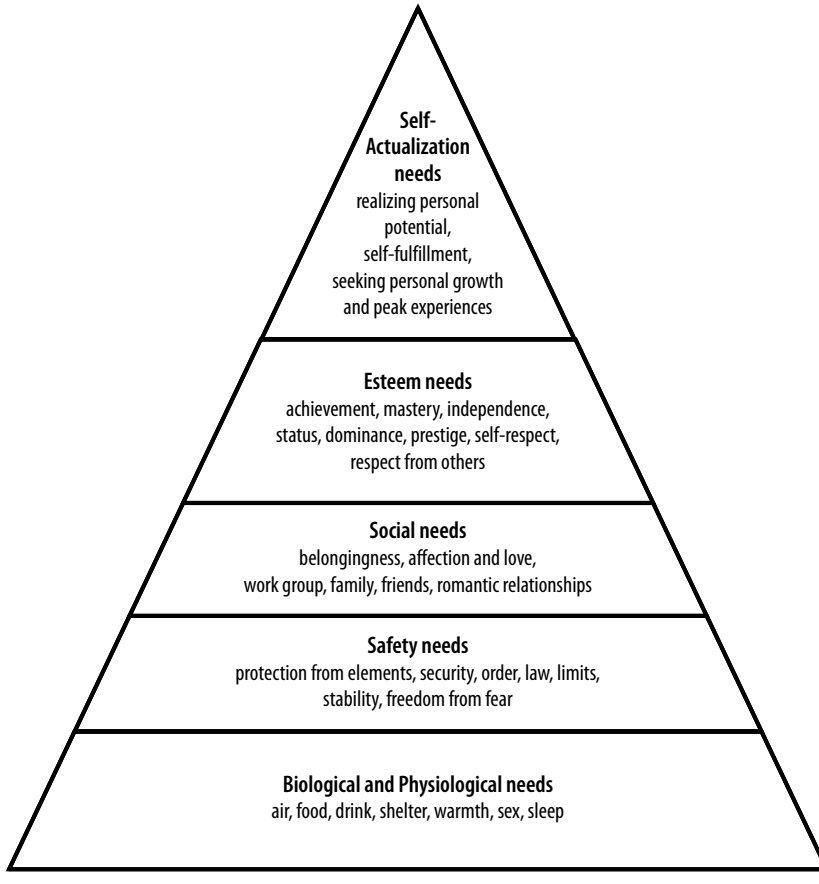

Figure 1
Hierarchy of needs, ST = Self-Transcendence (Maslow, 1943, 375 p.)

"Must make friends…"). Rather, we feel inspired to grow, to explore our potential and become more of what we feel we can be. Maslow called self-actualization a growth need while all the rest are deficiency needs. For Maslow, the level of self-actualization reflects the fact that human beings are not simply biological machines. As we mature and become more aware of ourselves, we are increasingly driven by a sense of personal meaning and purpose. Many people are under the impression that the hierarchy of needs ends there. This is not the case. For while studying people who operate at

the level of self-actualization, Maslow noticed that many of them frequently have, and deliberately seek, some other type of experience - something extraordinary. Maslow termed these peak experiences. They are profound, life-altering moments of love, understanding, happiness, bliss. They are moments in which one feels radically more whole, more completely alive, more aware of truth, beauty, goodness, and so on. Self-actualizing people have many such peak experiences and eventually feel inspired to actively seek them, extend them and stabilize them. Hence, Maslow added the goal of self-transcendence as the final level, the capstone of the pyramid. This desire goes beyond our ordinary human level of consciousness and results in n experience of oneness with the greater whole, the higher truth, whatever that may be. The earliest and most widespread version of Maslow's hierarchy (based on Maslow's earlier work) shows only the first five levels. A more accurate version of the hierarchy, taking into account Maslow's later work and his private journal entries, shows six motivational levels, with self-transcendence at the top (Koltko-Rivera, 2006).

Types of motivation

Kozéki Béla distinguishes three types of motivation dimensions. The first one is the affective (emotional) dimension; this is the dimension of identification from the motivating effects. The teacher can be seen as a positive model for the learner and the child feels that the teacher likes and helps him/her. We should mention the positive relations with peers, which helps effective learning. Unfortunately, this can also be a negative sign, which indicates aggression and confrontation. The second dimension is the cognitive (mental) dimension. From the point of view of teaching and education, it indicates the efforts of co-operation and the teaching of separateness. It can manifest itself in both positive and negative forms. The positive form indicates open-mindedness, honesty, self-expression in the learner's personality; the negative form indicates inhibitedness, the tendency of permanent avoidance. The third dimension is the effective (behavioural, volitional) dimension. This expresses the effectiveness of

education. In this dimension, the teacher's role is to reflect what the learners acquired in the first and saw in the second dimensions observed for the good of the children. In this system, the teacher has an important role in terms of demonstrating consistent, exemplary behaviour and attitude (Kozéki, 1990). During our research, we paid particular attention to motivating factors, the intention, which makes somebody do the activity and ends when the aim is achieved. The level of demand that we expect from ourselves and the third dimension is the stimulus of the motivating factor. The purpose of education is to make learning attractive. In order to do this, we paid particular attention to make learning fun and raise interest. Learning performance and motivation interact with one another. We also took note of the following tasks because of their individual characteristics:

Stimulus by the curriculum: the variety of tasks, creating problems that need to be solved, the application of several kinds of work; *Moral stimulus:* the development of duty, responsibility, separateness, to encourage initiatives; *Emotional stimulus:* democratic atmosphere, tone, to ensure experiences; *Creating a state of mind that is ready for learning:* interest in the curriculum, formulation of learning objectives (Lestyán, 2011).

Competency and technology

Today's education system emphasizes competency-based development, the requirement of which is that at school the development of skills and abilities of the students will be carried out (motivation, concentration, memory, reading comprehension, logical thinking, problem solving, language skills and situation awareness). IT tools can be involved in several areas that stimulate the development of algorithmic thinking, in that they are communication, motivation, information, educational, learning and development pedagogy tools. The computer can be both a teacher and student. As a teacher it can present (teach) the course content, ask comprehension questions (examine), practice, play simulations, document the progress, create statistics, and it can serve as an information source. If the computer takes part in the process of development of

the student, then the child sets the learning environment, transforms the existing tools; in addition, he/she can create programs to a given problem. We can say that information technology may be a motivating, developing, measuring tool. Those children, for example, who have computers at home, have some kind of computer skills when they get into primary schools. These students can not only develop their knowledge of IT but also their other abilities and motivation. IT uses several symbols; it helps self-study. We should use the opportunity that most children are happy to sit down in front of the computer, therefore the development of abilities can be achieved under playful circumstances; through this we can create a learning environment for schools, which offers the opportunity for the self-exploration of knowledge. In this case, we should attach computer-driven education not only to information technology lessons but also to other subject areas. Children's development not only in school, but even with e-learning methods is also feasible. In this case, parents have a very important role to play. This may appear in the form of management, praise, supervision and encouragement as well. The exaggerated use of information technology can be fraught with danger. We should pay attention to the children's social contacts, relations as well (they become alienated from their peers, they become lonely, they find many unknown chat partners on the internet etc…). On the basis of this, it is very important to examine their approach to the computer, their motivation, learning style, what are their weak and strong sides, what would be the most appropriate learning strategy and how the enrichment of the course content, the application of information technology skills and abilities can be incorporated into the development process (Szabóné, 2011).

Nowadays playful information technology is more common, just as the application of Logo- pedagogy as well as the application of Cohen pedagogy, which emphasize the involvement of computers in the educational, teaching and learning processes. The digital teaching materials can also appear in the classroom, at home or in a playful way in the children's everyday life. In the case of digital, interactive, multimedia teaching materials, it is very important that they should include new, interesting,

initiative solutions of the topic for the user. Through programmed education, the student interprets and uses the received information, while the program gives new knowledge and tasks and evaluates the responses. Logo-pedagogy is based on playful information technology; it creates such an environment for the children that they can access new knowledge unnoticeably, without any compulsion. The teacher not only manages the work but also works with the children. One of the main advantages of this pedagogy is that the end result is always a separate, individual piece of work (drawing, animation, audio, text, etc). Besides the accurate, disciplined use of the computer, there are also possibilities to find other solutions; and even if there is an error, they can acquire new knowledge. The logo environment can also be used to teach disabled children. In terms of the effects of this pedagogy, in the case of children positive changes were shown in the areas of creativity, logical thinking, analytical thinking, task setting, and self-confidence. Cohen's pedagogy considers it important to develop the children's abilities; the information technology tools should be involved as education aids. One of the most important principles is that the world of the alphabet should appear in the kindergarten (the software, which is based on these principles, the fairy-tale world); its teaching materials should be wholly connected to the children's daily routines. This method increases the effectiveness of the global, synthetic-analytic teaching of reading; as a result, the children's creativity will develop (Kőrösné, 2009; Szabóné, 2011).

Several educational programs and multimedia applications are available for teachers to support their work. These educational programs are: Tiny Village, Talk Master, Letter Magic, Playhouse 1–2., Mano Series, Fairy-tale land, etc. – they are mainly used in primary schools. The Internet is also a tool that can easily be applied in teaching activities by those who have user-level knowledge in information technology. Many web pages can be found, which help the differential development of students (especially primary school students), where several games and activities are available not only for underperforming students but also for talented students. We shouldn't forget about computer programs such as Paint, Word etc… For the development of problem solving and algorithmic

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thinking, the use of Paint, Dragon for Children, PowerPoint, Comenius Logo, can be a good idea – using these programs the students can practice drawing, the proper use of colours and the mouse, the writing-up of tales, text interpretation. For the development of highlighting, situation awareness, spelling, text comprehension, the practice and knowledge of letters, numbers, problem-solving, the use of a text editor as well as the use of the keyboard can be available. The development of counting, the order of operations, mathematical logic, algorithmic- logical thinking can be solved either by using a calculator or a spreadsheet program (Excel) on the computer. If we want to develop analysing, problem-solving-, algorithmic-, logical thinking, situation awareness, educational programs, the activities of interactive whiteboard functions, and the Internet are also very suitable. One of the new opportunities for the development of talented children is the use of interactive whiteboards. A lot of educational software can be bought from course-book publishers, and they are free to download from the Internet (for example interaktivtabla.lap.hu) but the teacher can also create exercises with easy to use programs (such as Paint, Power Point). Those who are experts in information technology can not only search for the above mentioned possibilities on the internet, but they can also create educational software, animations, logical games, development tasks. One advantage of tasks found on the Internet is that children can create them at home and other teachers can apply them in the classroom. Apart from e-learning teaching, the opportunity for learning can be given. The Internet also provides an opportunity to solve specific tasks such as collecting information, electronic libraries and search programs. If we want to develop the children's algorithmic thinking and problem solving, there are search related tasks, such as finding unknown words and phrases and reading them aloud, searching for biographical information, stories about historical people and events, celebrities, answering related questions orally or on a worksheet. With the help of the instructional program prepared in Power Point, we can develop the children's learning independently (Szabóné, 2011).

The approaches described above and almost all educational studies today draw attention to the role of differential development, but the

proper studies on the effects of differential development have yet to be undertaken. The present study demonstrates one segment of those research sequences with which we want to assess the effects of differentiated education on learning motivation (Lestyán, 2011).

Analysis of research results

Our research was conducted in seven schools. It took place in several villages in the country, 351 upper school and primary school students took part in the developmental classes. In order to test the effectiveness of the examination, we did a control that had a sample of 351 students.

In this study, we present the results of the motivation survey. The measurement was conducted over a four-year period. It shows a comparison between the input and output results.

We used Kozéki-Entwistle's learning motivation questionnaire as a survey. Questionnaires were filled out in groups. The framework of the questionnaire:

- Following dimension.
- Inquiring dimension.
- Performing dimension.

The results of the questionnaire were processed in the SPSS statistical system. In this study we would like to present the results of the motivation questionnaire since the motivation of students refers to the relationship between students and their learning, and the knowledge of those students can have a ppositive impact upon the teacher's job.

The pilot (developmental) group input and output scores can be seen in Table 1 and Table 2.

We can see from the average differences between the two groups that the pilot group experienced a greater degree of development. The developed group has a significant ($p < 0.05$) difference in each case, which could be the result of the development activities.

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Table 1. The motivation scores of the pilot group in the case of Test input and Test output

Motives N=351	Pilot group Test input		Pilot group Test output		average difference	t-value	sign.
	average	stdev	average	stdev			
Emotional Warmth	25.14	4.178	26.30	3.139	1.16	-9.820	.000
Identification	23.61	4.261	24.43	3.559	0.82	-6.666	.000
Affiliation	23.19	4.878	24.44	4.114	1.25	-8.424	.000
Independence	22.03	4.207	23.17	3.714	1.14	-9.289	.000
Competence	22.90	4.245	24.05	3.340	1.15	-7.972	.000
Interest	21.88	4.773	24.52	2.809	2.64	-13.317	.000
Conscience	23.98	4.684	25.49	3.115	1.51	-8.278	.000
Need for order	23.54	4.509	24.87	2.846	1.33	-7.322	.000
Responsibility	22.76	4.320	24.93	2.925	2.17	-11.835	.000
Need for Pressure	14.49	5.800	15.31	5.490	0.82	-7.714	.000

Table 2. The scores of the motivation groups in the case of Test input and Test output in the pilot

Motive groups N=351	Pilot group Test input		Pilot group Test output		average difference	t-value	sign.
	average	stdev	average	stdev			
Following	67.79	10.906	75.17	8.633	7.38	-7.416	.000
Inquiring	67.79	10.906	75.29	6.992	7.50	-10.875	.000
Performing	71.44	11.322	75.29	6.992	3.85	-8.857	.000

The control group input and output scores can be seen in Table 3 and Table 4

Table 3. The motivation scores of the control group in the case of Test input and Test output

Motives N=351	Control group Test input		Control group Test output		average difference	t-value	sign.
	average	stdev	average	stdev			
Emotional Warmth	25.50	3.684	26.15	3.287	0.65	-2.593	0.010
Identification	24.25	3.954	24.90	3.672	0.65	-2.273	0.024
Affiliation	24.57	4.025	25.32	3.731	0.75	-2.625	0.009
Independence	22.62	3.939	23.46	3.622	0.84	-3.015	0.003
Competence	23.77	4.009	24.47	3.763	0.70	-2.509	0.013
Interest	22.48	4.453	23.39	3.945	0.91	-2.992	0.003
Conscience	24.71	3.944	25.48	3.242	0.77	-2.806	0.005
Need for order	23.86	3.757	24.55	3.489	0.69	-2.719	0.007
Responsibility	23.56	4.000	24.25	3.514	0.69	-2.463	0.014
Need for Pressure	15.30	6.596	16.41	6.262	1.11	-3.334	0.001

Table 4. The scores of the motivation groups in the case of Test input and Test output in the control group

Motive groups N=351	Control group Test input		Control group Test output		average difference	t-value	sign.
	average	stdev	average	stdev			
Following	75.15	8.337	76.38	7.688	1.23	-2.066	0.040
Inquiring	69.71	9.236	71.32	8.292	1.61	-2.541	0.011
Performing	72.96	9.227	74.28	7.990	1.32	-2.046	0.041

Table 5. Pilot and Control group average difference

Motive groups N=353	average difference Pilot	average difference Control	t-value Pilot	sign. Pilot	t-value control	sign. control
Following	7.38	1.23	-7.416	.000	-2.066	0.040
Inquiring	7.50	1.61	-10.875	.000	-2.541	0.011
Performing	3.85	1.32	-8.857	.000	-2.046	0.041

If we look at table 5, it can be seen that the pilot group's average differences between all the dimensions are greater than in the control group, apart from "need for pressure".

The first table shows that the pilot group's average difference of interest (between input and output) is 2.64; in contrast, the control group's is only 0.91. We believe that this large difference is due to the use of the IT tools and tasks students performed in the development process.

It follows from the foregoing that if we compare Test input with Test output, there was a significant change in 3 important motive groups (Following, Inquiring and Performing) in the pilot group. In the Following dimension the averages increased by an input of 7.38 in the case of Test input (67.79), compared to the average of Test output (75.17).

In the case of the Inquiring dimension, the average increased from 67.79 to 75.29; that is, a 7.5 increase. In the case of the Performing dimension, the average increased from 71.44 to 75.29; that is, an increase of 3.85.

In the control group, when compared to the pilot group, there was no similar significant change in these three dimensions. In the Following dimension the average increased by 1.23 from the Test input (75.15) to Test output (76.38). In the Inquiring dimension, the average increased by 1.23 (69.71, Test input; 71.32, Test output). In the Performing dimension the average was 72.96, in the case of the Test input, while it was 74.28 in the case of Test output, which showed a 1.32 increase.

According to our assumption, if we manage to maintain motivation at a high level, it will promote more efficient and effective learning.

Conclusion

There is a big difference between the students regarding the extent to which they take part in the teaching-learning process. Besides different individual abilities, we also observed differences in motivation. Motivation is surprisingly important in the learning process as it supports the development of cognitive activities and thinking functions, and obtaining information. Learning and ability development cannot be particularly successful if students do not have the appropriate approach to learning. The teacher's personality, his/her methods of becoming acquainted with children and his/her differentiated techniques assist the students when it comes to performing according to their abilities. Motivation should encourage the learner to want to make efforts in order to learn the curriculum in accordance with his/her abilities.

Our research results support the assumption that knowledge of motivation promotes the development of students with different abilities.

The computer and the tasks, which are solved with the help of computers, are based on an algorithm; this is why it is very adaptable to many fields of Developmental Pedagogy (cognitive skills, talents support etc.). On the other hand, this motivates the children, because most of them like computers. Both the positive changes of the test results and teachers' opinions demonstrate that it is worth using computer tools in the development process. Of course, there is a wide variety of effective methods for the development of the learners' skills. In our article, we emphasise the possibility that the basis of ability development is the computing environment. It is not necessary to be an IT professional to apply the present information technology opportunities; any teacher can use the Internet, the computer in his or her work. However, we must take care of how we apply technical appliances, as they themselves are neither good nor bad; their effect only depends on the user, so the teacher's role is very important, and he or she will play an important role in ensuring that the effects of information technology are positive.

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Abstract

One of the main tasks of education is the appropriate motivation of students. The authors present their investigations in the field of learning motivation, which are the elements of significant research; they examine how differentiated education affects learning features. They apply pilot and control groups to follow the effect of differentiated development over the years. One can directly apply their research results into educational practice. This present study focuses on motivation, which is one of the constituents of this research sequence. For the development of these areas, the authors looked for tools that can be used when working with 10-14 year old students, which help to motivate them and raise their interest. The authors raise the issue how and in what manner digital tools are suitable for the motivation.

Keywords: differentiated development, IT tools, motivation

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REPORTS & REVIEWS

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Review of monograph: Iveta Kovalčíková, Juraj Kresila, "Izbrannyje kontexty reformy nacionaljnoj programmy obrazovanja v Angliji i Slovakiji" [Selected Contexts of National Education Reform in England and Slovakia]

In 2012, the National Pedagogical University of Dragomanov in Kiev, Ukraine published the monograph written by two Slovak authors Iveta Kovalčíková and Juraj Kresila from the Faculty of Education, University of Prešov. The institution's interest in publishing *Izbrannyje kontexty reformy nacionaljnoj programmy obrazovanja v Angliji i Slovakiji* was determined by the topicality of the analysed issues and the relevance that they bear to the Ukrainian education. The authors of the publication focused on the analysis of the conditions leading to successful school reform; the potential barriers to the implementation of the reforming efforts were identified by comparing the processes of education reform in England and Slovakia.

The publication of 96 pages is divided into three chapters.

In the first chapter, titled *Contextual Characteristics of an Education System*, the authors outline the characteristic features of the broader contexts which govern the system of education in the compared countries (England / Slovakia) including the curriculum as its integral part. They describe an area that is complementary to the concept of the curriculum and, together with it, represents an inherent component of the system of education. While the issues pertaining to the curriculum relate primarily to the technology of pragmatic transfer of knowledge, the wider context of education is a latent factor which affects the curriculum and has

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significant potential to saturate the educational effects. The authors point out that… "the analysis of the educational context or educational culture of the national systems of education in terms of the history, educational policies, and various philosophical underpinnings is instrumental in a critical assessment and comparison of the current state of education and developing the conception of education reform". In the historical outline, the authors provide an analysis of how educational aims and ideals can be promoted and pursued at the various levels of the education system. The phenomenon of "education reform" is presented as a process of gradual changes introduced both at the most general level and at the level of actual classroom. It is emphasized that education reform is not just a single and isolated event in time. The phase of implementing the proposed changes at the school level is as important as outlining the general concepts. As the authors state, in the process of creating a compact and coherent system of education, it is necessary that assigned teams of experts have their arguments favouring the same educational program theoretically grounded both at the level of educational aims and ideals, which influence the preferred values of the whole society, and at a specific level, in relation to describing the events in the classroom or school lab.

The second chapter is focused on the conceptual analysis of the curriculum as one of the factors of education. The authors describe the theoretical concept of curriculum and various sources for curriculum planning. Curricular inputs include the learning objectives and content of education. Curricular outcomes, which encompass standards and students' attainment, are important for designing the system of assessment. Interdisciplinary approaches to the curriculum are addressed at the end of the chapter.

A central part of this work, the third chapter, is focused on comparing the processes of education reform and the subsequent creation of the national curricula in England and Slovakia. The Slovak system of education which, corresponding to its regional traditions of Central and Eastern Europe, is represented by a strongly centralized system, is in the process of finding effective ways to decentralize itself. There is a rationale for decentralisation in this respect, since in a democratic and pluralistic

society one can hardly find a unique and most effective model of education, which would be centrally prescribed and acceptable by everyone. The authors indicate that the English experience with education reform in the 1980s is an interesting comparative case study for Slovakia. The introduction of a standardized National Curriculum in England in the given period represented a shift from a heterogeneous and relatively autonomous system of education towards a more centrally administered system. The monograph can be inspiring for policy-makers in the countries of the former socialist bloc as it points to the fact that in these countries the issue of education reform is perceived by experts largely as a need to rebuild the system which was previously unchanged for decades. The long ignored field of education thus became central for professionals, politicians and the public in the second half of the first decade of the new millennium in Slovakia. However, since that time the first confrontations between the theorists' and politicians' ideas on how to reform education are also emerging in professional forums. The education reform which took place in England in the 1980s has been critically reviewed in the literature. The analysis presented in the book can be inspirational for the process of transforming education in the Slovak Republic but also in other former socialist countries. Iveta Kovalčíková and Juraj Kresila bring to our attention the arguments through which the need to introduce education reform was legitimised in Slovakia. They analyse the problems which were to be addressed and eliminated by education reform. They also summarise the conceptual starting points of the Slovak education system and comparatively evaluate the characteristics of both educational contexts - English and Slovak. In the last part of the publication, the authors focus on analysing the transformation of the Slovak system of education, particularly at the level of transforming the curriculum in primary schools.

The concept of the curriculum as the sum of student's experience is too extensive for the authors to analyse and comprehensively incorporate into the book. However, they point to the fact that each curricular transformation has its own agenda which policy-makers cannot ignore. Trends in education reform in post-socialist countries have thus become

a legitimate focus for scholars and politicians. After years of isolation and stagnation, new conceptual education manifestos appear with the ambition to specify the steps necessary to make sure that the proposed system of education is comparable with those existing in the advanced democracies. However, because of the absence of immediate experience in the practical implementation of the educational agenda, the newly created conceptions of reform often seem to be too ambitious and pathetic in their rhetoric. Through the example of the complex and non-linear implementation of education reform in England and Slovakia, the authors in their analysis alert the actors of the reform in other national contexts of the need for *a much broader time horizon for the precise planning of successively following steps with an adequate timeframe provided for their subsequent implementation*, which would eventually lead to a consensus on the adopted national curriculum framework.

Reviewed publication:

Iveta Kovalčíková, Juraj Kresila

"Izbrannyje kontexty reformy nacionaljnoj programmy obrazovanja v Angliji i Slovakiji" [Selected Contexts of National Education Reform in England and Slovakia]

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Review of the publication: E. Gruszczyk-Kolczyńska (ed.), "About Children with Mathematical Skills. A Book for Parents and Teachers"

If I feel like chatting while on board a plane,
I answer a neighbour's question "What do you do?" by saying
"I am a lawyer".
Otherwise, if I need silence and peace, I' d rather say
"I am a mathematician".
(M. W. Gray).

"Mathematics is the queen of all sciences" – is a common, often overused, saying, but still valid, in spite of the time which has passed since it was first uttered. There is no other science in the world which is equally comprehensive and, at the same time, so transparent and specific in terms of its assumptions. Contrary to other scientific disciplines, mathematics is never outdated, and it would be difficult to challenge the soundness of reasoning presented long ago. Mathematics supports the development of logical thinking, solving problems, perceiving its background in various situations in everyday life. The development of contemporary society would not be possible without the knowledge contributed by this scientific discipline. Man would not be able to construct a bridge, an aircraft or a computer without applying the basic assumptions of mathematics. Thus, we owe all the dynamic transformations of the civilised world to mathematics. Given the above statements, we should be concerned about this education of children, which serves to foster the development and shaping of mathematical knowledge and

activity. However, working with a group of children during school classes usually results in the adjustment of the pace and scope of learning to the abilities of an average student. Consequently, the needs of children with stronger mathematical skills are neglected. The ways to identify such skills and the methods to work with such children can be found in the publication under review.

The editor-in-chief of the book under discussion is E. Gruszczyk-Kolczyńska. I think that those who are interested in the mathematical education of children do not need to be introduced to this education specialist. Her numerous publications concerning the mathematical education of kindergarten children, as well as her comprehensive knowledge and skills of its communication, may serve as an incentive to encourage the reading of the book under review. Unquestionably, the authority of the author herself may affect the readers as a magnet attracting a wide range of audience.

The publication is the first book entirely devoted to children with mathematical skills. The knowledge of mathematical skills in children has so far been rather superficial and modest. There are several guidebooks related to supporting the development and education of talented children; however, they usually focus on the presentation of interesting mathematical tasks. The majority of people interested in the issues under discussion are convinced that the only way to develop talented children's minds is to make them resolve such tasks. The editor of the publication is definitely opposed to such a standpoint. Throughout her book she proposes a programme of supporting the intellectual development and education of mathematically talented children at home, in the kindergarten and at school. The programme was divided into ten parts, and each of them is accompanied by theoretical comments and a series of tasks recommended for execution by a child. The whole text is supported by numerous footnotes containing methodological and psychological comments. Their in-depth analysis guarantees success when it comes to the development of young students' mathematical skills, both throughout their school and home education. However, it should be kept in mind that most of the exercises and tasks proposed in the programme have

been described in the other publications of E. Gruszczyk-Kolczyńska. This is confirmed in many of the references re-directing readers to more detailed descriptions of the tasks presented.

The preparation of the publication was preceded by over 40 years of educational experience and intensive scientific research. The results of these studies explicitly indicate that mathematical skills are not only reserved for older students, using more advanced mathematical knowledge or ranked high in mathematical competitions. As E. Gruszczyk-Kolczyńska argues persuasively, mathematical skills have already been demonstrated by older kindergarten children and young students, and there are many children with distinguished skills in this group. The monograph has also undermined another myth resulting in the claim that mathematical skills are rare and occur occasionally. Over a half of the children studied by the author demonstrated well-developed mathematical skills. However, if we want them to be manifested throughout further educational process, appropriate conditions must be created at school and at home. Such conditions should include supporting the intellectual development of children, fostering the skills and extended education in the field in which the skills are demonstrated. Only these kinds of activities shall provide the children with the opportunity to develop their own skills and be successful. However, one should be aware of how to organise such activities and how to support a child with mathematical skills.

The book under review is not only limited to a description of the knowledge and skills of children which may reflect their mathematical skills. It also offers diagnostic tools which, once applied properly, enable teachers and also parents to find out what their children know and what they are able to do in the selected scope of mathematical activity, as well as to draw conclusions on children's skills. The diagnosis consists of two segments. The first one covers screening tests in which all children participate. It has been designed so that a teacher may simultaneously implement the educational goals and the diagnostic goals. It may be successfully carried out during morning hours within mathematical eduction classes, with the entire group of students collectively. Its main objective is to select children weaker than their peers, representing the

average level of knowledge and skills and children who are distinguished in terms of their knowledge and skills within their mathematical activity. The first segment of the diagnosis consists of two experiments, and each of them contains the description of introductory exercises and a series of diagnostic tasks. On the other hand, the second segment of the diagnosis is based on individual studies. This segment covers children who outperform their peers in terms of their knowledge and skills. It also consists of two diagnostic experiments, each of which has been described in the form of a study scenario. Both the first and the second segments of the diagnosis is described in detail, contains criteria for evaluating a child's competence as well as interpretation of guidelines and conclusions which may encourage the introduction of changes in the area of the mathematical education of children. The tasks proposed by the author, contained in the diagnosis under discussion, are accessible and feasible to implement both by teachers and by parents interested in the mathematical education of their own children.

The proposed support of mathematical skills is not closed within the educational process of younger students. In the fifth part of the publication one can find information concerning the development of mathematical skills of children in class 4. The essence and importance of passing from operational reasoning at a specific level to operational reasoning at a formal level is also indicated. E. Gruszczyk-Kolczyńska observes that the majority of teachers of mathematics assume that students in class 4 already demonstrate operational reasoning at a formal level and adjust the process of mathematical education to such intellectual competence. Likewise, the authors of educational packages for children of this age group develop them taking into account these assumptions. Therefore, it is necessary to support children in gathering the experience that will develop their intellectual ability and, at the same time, will contribute to the development of their mathematical skills. A child may gain such experience by resolving tasks tailored to its needs. Thus, in this part of the publication, one can find examples of tasks contributing to the development of the hypothetical- deduction reasoning and combination reasoning as well as the methodological comments for teachers and parents.

The book combines the simplicity of the language with the professionalism of information. It is addressed to a wide group of readers, both teachers and parents, as well as university students – future teachers. It contains numerous examples that illustrate the content that is presented. The book has been written by several authors who skilfully tackle the current problems and communicate important messages. Respecting the ideas contained in the book shall undoubtedly contribute to supporting the development and education of mathematically talented children.

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E. Gruszczyk-Kolczyńska (ed.)
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