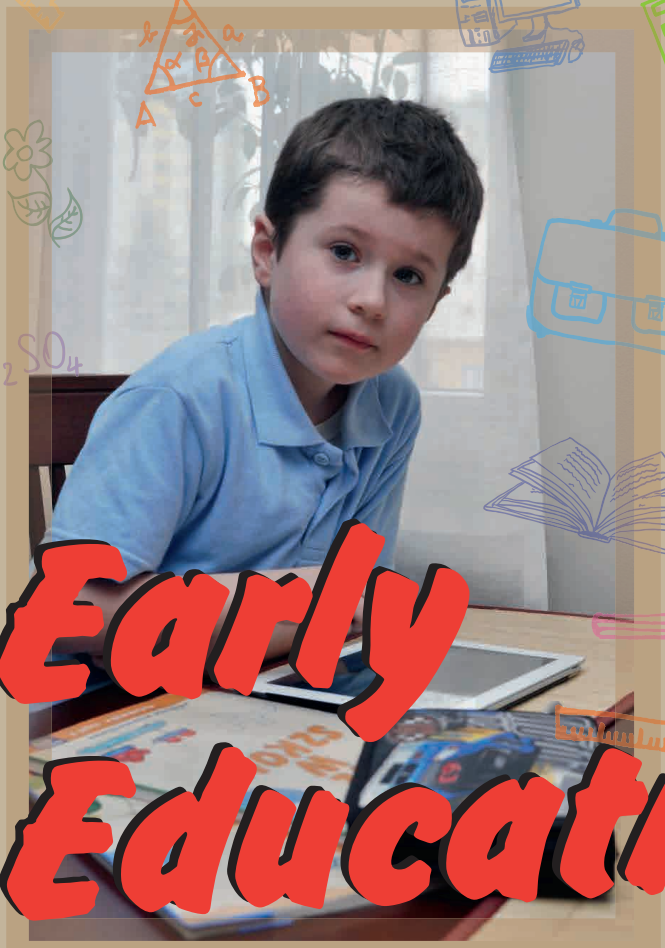

Early Education

Practice & Reflection

redakcja naukowa
Bożena Muchacka i Iwona Czaja-Chudyba

Wydawnictwo Naukowe Uniwersytetu Pedagogicznego
Kraków

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Introduction

Numerous theoretical works and teachers' opinions indicate the need for deeper consideration over the further direction of early school education. Being aware of these postulates, we deliver to you a volume dedicated to problems of early school child education, hoping that it may become an inspiration for discussions and critical analysis of the presented issues, concepts or investigations. Undertaking such questions was prompted by our conviction about the importance of experience quality at this stage of child development, and by our awareness of the significance of stimulation and support that a child should receive at this level of education.

Presently, in Poland early school education becomes the subject of increasing interest, hence this book also contains some reflection on its role and condition within the light of contemporary education changes, and an analysis of theoretical sources inspiring the practice of child development support.

Papers included in this book also focus on the analysis of teachers' reflective practice. The present scientific paradigms acknowledge teachers' right to be investigators of their own activity, allow for free experimentation, introduction of author's innovations, critical expression and reflective design of the learning environment. The analysis of the problem field, outlined in the book title, should thus be started with the answer to the major questions: *what is reflection?* and *what may be the consequences of its implementation into educational practice?* It should be explained here that the term "reflection" means deeper consideration, analyzing the problem, thinking over a certain idea (*Polish Language Dictionary* 1981). In pedagogic literature, reflection is understood as critical searching for the solutions while acting practically, or as a quest connected with the analysis and estimation of consequences of conditions influencing education. That is why reflection as defined in this book is always related to action (practice) and oriented towards a solution of the actual problems.

Point of entry for the concept of reflective practice as defined above is constituted by two works by D. Schön, "*The Reflective Practitioner – how Professionals Think in Action"* (1983) and "*Educating the Reflective Practitioner"* (1987). Within this view, the process of reflection involves conceptualization and articulation of questions as well as teachers' examination of their own educational practice. The basis for reflectiveness is *searching openness* (Bloom 1997), the attitude coupled with looking for knowledge and certainty, with discovering the foundation of one's own pre-assumptions, and a category of reflective *practical experience* (Pearson 1994) – the necessity of modification or change in intended actions due to conditions and circumstances the teacher may be confronted with. The second form of ability connected with such reflectiveness is *thinking of dialectic and dialogical type* (Sternberg, Jarvin, Grigorienko 2009), when in order to find the best solution different perspectives are taken into account and the effort is made to integrate the opposing points of views and to reach the consensus.

The reflective teaching and upbringing process requires analytical and evaluative competencies, constituting the foundations for professional teachers' judgments. Wise decisions should be based on *reflective thinking* – selection of meta-cognitive strategies and estimation how the specific, chosen strategy works, as well as the idea how to change it if it does not function properly in practice. On the other hand, the category of "reflectiveness" contributes significantly to contemporary theoretical discussions and methodological quests, and originally enriches the practice of early school child education. It is closely connected with the most promising contemporary educational paradigms – the constructivist and emancipation perspective. For the representatives of these scientific currents, early school education is one of many educational propositions possessing equal rights, for which the essential core is not only the objective and neutral knowledge, but also the personal one, connected with children's experiences and the process of their constructing the basis for knowledge. In educational solution projects introducing reflection as an element of early school practice, children are encouraged to collect information by themselves and to confront new experiences with the previously acquired knowledge, to exercise and master their abilities to learn. Learning is thus described as an essential constant need. Fundamental changes are clearly coupled with learning stimulation, logical thinking and drawing conclusions

development, and creating projects, which are the most desired and highly appreciated activities.

Deriving inspiration from so defined theoretical and methodical dimension, the authors concentrate their considerations on the following topics:

– tradition and modernity in theory and practice of early school education (these questions are presented by Nada Babicz);

– theoretical sources of early school education practice (analyzed by Bożena Muchacka, Éva Bakosi Kovácsné, Jánosné Hovánszki and Korbuly Kissné Katalin);

– inspirations and quests for new ways in methodology of research on childhood (these issues are outlined by Aldona Kopik, Barbara Walasek-Jarosz and *Jan Kochanowski,* Bożena Grzeszkiewicz*,* Ewa Lewandowska and Mateusz Muchacki);

– consequences of changes in the educational policy (a topic undertaken by Jolanta Andrzejewska, Joanna Sosnowska, Aldona Kopik, Barbara Walasek-Jarosz, *Jan Kochanowski* and Radmila Burkovičova);

– contexts and conditions of reflection on the child and childhood (this subject is considered by Iwona Czaja-Chudyba, Lucyna Smółka, Zbigniew Baran, Robert Haraszkiewicz and Hanna Młodożeniec);

– initiatives and searching for new directions in the practice of early school child education (proposed by Urszula Jolanta Szuścik, Celestyna Grzywniak, Marta Mosiołek, Kornelia Solich and Elżbieta Płóciennik).

We do hope that the present volume will establish the basis for fruitful and reflective exchange of experience between scientists, theoreticians and practitioners of education. We also hope that it will enable the presentation and popularization of the results of research conducted as well as the programmes and strategies worked out by the authors to support child development in early school period, as in Poland there is a need of wide exchange of scientific ideas and experience with the foreign authors and teachers. We would like this book to be not only the source of up-to-date and valuable information, but also a chance for teachers-practitioners to enrich their professional experience.

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CHAPTER I

Reflection over theory and practice within the light of educational changes in Poland and in the world

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Play as a form of therapy for children (historical and pedagogical aspects of problem)

Play is a spontaneous activity which arises from the mental, physical, and perhaps also social requirements of children. It is a "natural" activity of the child and it may be employed, as well as drawing (Wallon, Cambier, Engelhart 1993; Fleck-Bangert 2004; Oster, Gould 2005; Czaja-Chudyba 2006; Muchacki, Stolińska 2004), during a therapy with children (aged from three to twelve years) because of its diagnostic value. Play provides a possibility for children to express their emotions and feelings through a natural and self-healing process. Friedrich Fröbel (1782–1852), a German educator, writes that play *"[…] is the highest [form of] development in childhood, for it alone is the free expression of [it] what is in the child's soul […]"* (1903: 22).

Moritz Lazarus (1824–1903), a German philosopher and psychologist, and a famous professor of Preussische Kriegsakademie [Prussian Military Academy] in Berlin (1868–1872) and next of the University in Berlin (from 1873), presented the therapeutic aspects of play in his important theory of play-recreation and play-relaxation (1883/1907, in: Kalmar 1987: 671–690; Klein 2004). The first (known and documented) case of the therapeutic use of play by "great" Sigmund Freud (1856–1939) was noted in Wien in 1909 (Freud 1921: 287–305). In the 1930s, psychologists and therapists working with children developed the theory of play therapy as well as the practical use of play in therapy with children. In 1934, Frederick Allen presented a new approach to the problem of play therapy (1934: 193–202) and David Levy (1938: 387–389) in the 1930s developed a new technique of play therapy (called "release therapy") to deal with children with specific

trauma. He showed that each child who had experienced a specific stressful trauma-situation would re-enact her/his trauma in "free" play (Levy 1938: 387–38). In 1932, Melanie Klein (1882–1960), the famous (Austrian-born) British psychoanalyst, incorporated play into her therapeutic sessions with children as the *iure* into therapy. In the 1940s, she devised a therapeutic technique for children that had an impact on the development of child psychology and contemporary psychoanalysis (Klein 1955: 223–237; see also: Ead. 1955: 122–140; Ead. 1955: 3–22; Grosskurth 1986; Kristeva 2004). After observing troubled children play (with toys [dolls], animals, etc.), Klein attempted to interpret the specific meaning [contents and forms] of child's play (1959: 291–303). She explained the therapeutic function of play and also stressed that play therapy may provide a possibility to solve the child's emotional problems. Donald W. Winnicott and John Bowly were her co-workers in that area and they continued her work.

In the 1930s, Joseph C. Soloman developed a technique of "*active play*" which was used in therapeutic work with impulsive children, and Frederick Allen used Otto Rank's theory of "birth trauma" in his practical work with children in play therapy and in his theory of relationship therapy. In the 1940s, psychologists and psychiatrists stressed that play may be used as a form of children's psychotherapy, in which children reveal their problems as a "fantastic spectacle" to their toys or sometimes to their animals. During playtime, the therapists and children enter into a relationship which is designed to enable (the child) to experience basic trust and to trigger fantasies that represent the child's conscious and unconscious thoughts. Children may learn to re-model the types of their emotional behaviour that have impaired their development. The play-setting (toys, creative tools and materials) and also the "freedom" of play activity (to do and to say whatever the child wishes) encourages the troubled child to realize a sense of child's identification, transform her/his attitudes from passivity into activity, and separate fantasy and reality.

Leo Kanner (1894–1981), an Austrian-born American psychiatrist and physician, devised a new diagnostic method for children. He offered children an opportunity to express themselves by speaking on behalf of dolls representing their parents and siblings, teachers or themselves. Kanner's method gives the possibility to observe playing children (1943: 217–250).

Ernest Harms (1895–1976), a well-known American philosopher and psychiatrist, presented the diagnostic function of play in his paper in 1948 (1948: 233–246) and the play techniques in a handbook (1964). He allowed the psychologists to observe child's spontaneous play-activity and he stressed that a serious attempt to create the systematic basis for the play-diagnosis must include understanding of the specific character and interrelationship of: [a] psychology of a child and psychology of play, [b] philosophy of play, [c] childhood mental illness. He also explained that child's play is the response (or may be the reaction) to her/his unconscious motivation. Thus, the understanding of play seems to enhance the understanding of the child's motivation and behaviour (1948: 233–246). Incidentally, it is worth recalling that Ernest Harms was an author (and co-author) of papers (1944: 112–122) and monumental books on children's psychiatry and psychology (Harms 1960, 1962; Id., *Problems of Sleep and Dream in Children*, New York 1964, 1967; Harms, Jenkins 1976).

Virginia M. Axline (1911–1988) was one of the American pioneers in the use of play therapy in her therapeutic work with children. She studied child's psychology and psychology of play (at the Ohio State University and Columbia University). She taught six years in two schools (the School of Medicine and the School of Education) at the New York University and next she taught seven years in the Teachers' College at Columbia University. Axline is also the author of *Play Therapy*, a book which since its first publication in 1947 (in New York) has helped to make her name synonymous with the technique of play therapy for children (Ekslajn/Axline 2003). She also wrote *Dibs in Search of Self*: *Personality Development in Play Therapy* (first edition in the USA was in 1964), the story of *Dibs*, a little boy, in search of self through the process of psychotherapy. In the 1940s, Axline began to develop nondirective play therapy, the principles of which were based on Carl Rogers' newly-emerging person-centred approach[1]. Current play therapy practice (in the contemporary USA and Western Europe) is still largely based on Virginia Axline's therapeutic work with children[2].

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[1] In her text *Entering the Child's World Via Play Experiences* ["Progressive Education" Vol. 27: 1950, pp. 68–75], Axline summarized her concept of play therapy.

[2] See: http://en.wikipedia.org/wiki/Virginia_Axline – [dated: 2 December 2011].

Virginia Axline established eight basic principles of nondirective play therapy with children. In her opinion, each play therapist:

[1.] must develop a warm, friendly relationship with the child, in which good rapport [between them – B.M.] is established as soon as possible,

[2.] accepts the child exactly as she/he is,

[3.] establishes a feeling of permissiveness in the relationship (and the child feels free to express her/his feelings completely),

[4.] is alert to recognize the feelings that the child is expressing and reflects those feelings back to the child in such a manner that s/he gains insight into the child's behaviour,

[5.] maintains deep respect for the child's ability to resolve her/his own problems if given an opportunity to do so,

[6.] does not attempt to direct the child's actions or conversation in any manner,

[7.] does not attempt to hurry the therapy along [because it is a gradual process], and

[8.] establishes only those limitations that are necessary to anchor the therapy to the world of reality and to make the child aware of her/his responsibility in the relationship (Axline 1989).

Virginia Axline also presented the view that the playing child express her/his attitudes and concepts about herself/himself in relation to others people (1951: 358–363).

In the 1950s, the theory of play therapy (as well as the practical use of play in therapy with children) was studied by the play therapists. In 1951 both Isidor Bernstein and Eugene Evart-Chmielnicki wrote about the diagnostic application of children's play (Bernstein 1951: 503–508; Evart--Chmielnicki 1951: 18–34). In the 2nd half of the 20th century, play therapists as well as educationists and psychologists presented play as the medium in therapy with children. In their papers and books, they stressed that play in therapy may be used for children suffering from a wide range of problems: from different "reactive" situations (such as a recent death in the family or the divorce of parents) to chronic stress or illness.

In the scientific views of modern researchers, the use of play in therapy sessions with children is appropriate in many circumstances (abuse [by parents or by siblings] of alcohol or drugs, violence in the child's family, maltreatment in the child's family or at school) and disorders (brain dysfunction, brain damage syndrome, depressive psychosis and depression,

aggressive conduct disorder, attention-deficit disorder, hyperkinesias, etc.) as well as in children impairments or disturbances (autism, enuresis, etc.) and also emotional or sensor-motor problems.

Edna Salant (1980: 93–97) discusses the preventive use of play therapy in the treatment of the preschool child. She states that play provides a good opportunity to initiate therapeutic intervention when there are indications that a child needs it. Play may also be used by a child to communicate a family-, kindergarten- or school-conflict, fear, and other problems. In her/his play, the child may express emotions that indicate whether s/he is happy or sad.

In the 1980s, experience with play therapy enabled American and Western-European psychiatrists (working with children) to apply an entire spectrum of modern treatment (in a socially appropriate way). Paul Fine (1982: 79–96) stresses that biological, behavioural, social and other forms of therapy can be anchored in a child's play. Other psychiatrists (especially children neuropsychiatrists) discuss play as an effective therapeutic tool for the medical experts working with children with psychiatric disorders or physical handicaps (Guillemaut 1982: 415–422; Sikes, Kuhnley 1984: 272–285; O'Connor 1986: 105–108; Conn 1989: 3–13; Baran 1998: 40–41).

Valeria Sikes and John E. Kuhnley (1984) emphasize that play therapy may provide a corrective emotional experience in a schizophrenic child. Child's play, in their opinion, is an instrumental tool (in the multimodal approach to treatment) in "producing" a re-integration of the child's fragmented *ego* functions (Sikes 1984: 272–285). The contemporary play therapy used in schizophrenia is based on their therapeutic work experience with the schizophrenic child.

Kevin O'Connor (1986) also shows play as a medium for testing a model of child's depression. He claims that play enables to estimate the following agents: affective pain, anger at an object, introjections of an object and associated anger, and depressive symptoms (O'Connor 1986: 105–108; von Gontard, Lehmkuhl 2003: 35–48 and 88–97).

Play therapy of children (aged 3–5 years) who were sexual abuse victims has also been studied by Redmond Reams and William Friedrich (1994)[3] and next by Karyn Dailey Jones (2002: 377–389).

[3] See: http://en.wikipedia.org/wiki/Play_therapy – [dated: 29 November 2011].

In the last two decades (from 1991 to 2010) it may have been noted that play therapy with children was used in kindergartens and elementary and secondary schools as an effective form of children's problem solving (such as abuse [by parents or by siblings] of alcohol or drugs, violence in the child's family, maltreatment in the child's family or at school, etc.)[4].

In the last two decades, researchers have often studied the effectiveness of play therapy. Research examining that problem (related to children's conduct disorders, aggression and oppositional behaviour of children) has been undertaken in the USA and in Western Europe.

In the Internet encyclopaedic entry *Play therapy* we read:

"[Dogra and Veeraraghavan (1994)] […] exhibited significant positive change in adjustment [of children (aged 8–12 years) who were exhibiting significant aggression – B.M.] while significantly decreasing aggressive behaviors [after sessions of nondirective play therapy – B.M.]. Schmidtchen, Hennies and Acke (1993) showed a decrease in behavioral disturbances and an increase in "person-centered competences" [of children aged 5–8 – B.M.] who exhibited behavioral disturbances and received […] sessions of nondirective play therapy"[5].

At the beginning of the 21st century, Dee Ray, Sue [C.] Bratton, Tammy Rhine and Leslie Jones (2001: 85–108) also examined the effectiveness of play therapy.

Summarizing, play therapy is an effective form of counselling or psychotherapy that uses play to prevent or resolve psychological challenges of children. It may be used as a diagnostic tool that ought to determine the cause of the child's disturbed behaviour. The different forms and patterns of play, as well as the different objects of play may be used to understand the rationale underlying the child's behaviour, as children present in play their interior obfuscations and anxieties. In this context, I should like to stress that play therapy is in fact a self-help mechanism that effectively eliminates children's interior obfuscations and anxieties, in the "natural" way.

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[4] In Poland, Bożena Muchacka (1991: 179–186) and next Joanna Grochulska-Stec (1993: 131–150) have presented the diagnostic aspect of children's play in educational practice.

[5] See: http://en.wikipedia.org/wiki/Play_therapy – [dated: 29 November 2011].

In 1982, play therapists established the Association for Play Therapy (APT). In 2006, the APT had almost 5000 members in 26 countries[6]. Today, I hope that in the nearest future also Poland will have its representation in that Association.

(Translation: M. Muchacki)

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Children and adults learn together

U suvremenoj stručnoj i znanstvenoj literaturi o učenju i poučavanju djece dominantne su su sljedeće tvrdnje: djeca uče putem socijalne interakcije s odraslima[1] i drugom djecom; djeca uče manipuliranjem i eksperimentiranjem; djeca uče iz svojih grešaka; djeca uče putem igre; djeca konstruiraju svoja znanja predvidljivim slijedom; djeca grade svoja znanja iz ponovljenih iskustava; djeca uče putem interakcije s ljudima i materijalima. Navedene tvrdnje posebice su elaborirane u modelima razvojno primjerenih predškolskih programa (teorijska elaboracija, istraživanje kakvoće i edukacijskih ishoda). Teorijski okvir navedenih tvrdnji čine različite interpretacije konstruktivizma te socijalno kulturne teorije učenja i poučavanja. I pored niza oprečnosti zajedničko im je viđenje učenja i poučavanja djece kao razvojne vrijednosti i primarne djelatnosti djece i odraslih u različitim okruženjima (obitelj, jaslice, vrtići, lokalna zajednica).

Baveći se dugovremeno istraživanjem učenja i poučavanja djece u dječjim vrtićima, za ovaj rad odabrala sam socijalnu interakciju kao teorijski okvir u tumačenju učenja i poučavanje djece. Zašto socijalna interakcija temeljena na socijalno kulturnoj teoriji učenja i poučavanja odnosno razvoja? Zato što taj pristup obećava razumijevanje socijalne naravi znanja što znači učenja i poučavanja kao i razumijevanje perspektiva

[1] Termin odrasli uključuje roditelje, odgojitelje odnosno predškolske učitelje – one koji su u poziciji poučavatelja, učitelja, tj. kompetentnijeg sudionika u interakciju s djecom, učenju i poučavanju.

djece i odraslih u raznovrsnim svakodnevnim uzajamnim odnosima, djelovanjima.

Konstruktivizam i socijalno-kulturna teorija učenja i poučavanja

Socijalno-konstruktivistička interpretacija znanja temelji se na pretpostavci o konstrukciji znanja putem interakcije pojedinaca sa zajednicom, odnosno socijalno-kulturnim okruženjem. Interakcijom, odnosno grupnom medijacijom, ostvaruje se konsenzus različitih interpretacija. Ako se znanje definira u „terminima mentalne reprezentacije" onda je riječ o radikalnom konstruktivizmu, a ako se, pak, znanje definira „terminima konsenzusa" onda je to socijalni konstruktivizam. Ostaje pitanje što ako se znanje definira i kao mentalna reprezentacija i kao konsenzus odnosno i kao personalno i kao socijalno. U tom slučaju riječ o mogućem rješenju kontradikcije između radikalne konstruktivističke interpretacije personalnog i socijalnog tj, kontradikcije „između individualnog stvaratelja smisla i socijalnog" (Rowlands, Carson 2001: 2).

Unatoč različitostima i proturječnostima u tumačenju konstruktivizma, održivo je shvaćanje konstruktivizma kao epistemologijskog pristupa spoznaji i znanju. Konstruktivizam naglašava konstruktivnu narav spoznaje i znanja, relativnost spoznaje i znanja, procesualnost znanja, vrijednosnu pozadinu spoznaje i znanja, te funkcionalnost znanja.

Moja perspektiva bavljenja konstruktivizmom (teorija i praksa učenja i poučavanja) ima ishodište u povijesno kulturnoj teoriji razvoja Vygotskog i sljedbenika, koja se često nekritički povezuje sa socijalnim konstruktivizmom i konstrukcionizmom. Socijalni konstruktivizam samo u onom dijelu koji se tiče interakcijske naravi učenja i poučavanja te intersubjektivnosti o čemu slijedi u nastavku rada.

Duffy, Cunnigham (1996), polazeći od konstatacije o različitostima, ustanovljuju i njihovu povezanost općim viđenjem o tome da je učenje aktivni proces konstruiranja znanja, a poučavanje „proces podrške" konstruiranju znanja. Istodobno ukazuju na konstruktivističko viđenje učenja kao „aktivnosti" u kontekstu. Konkretnije, viđenje učenja kao cjelovitog procesa konstrukcije i rekonstrukcije znanja.

Jedna od dominantnih teorijskih perspektiva o učenju je socijalno-kulturna perspektiva. Središnje mjesto u njoj imaju socijalna interakcija i jezik kao najznačajnija oruđa komunikacije i učenja. John-Steiner, Mann (1996) tvrde da su sociokulturni teoretičari, koristeći se konceptom „zone proksimalnog razvoja" (ZPR-a), konceptualizirali učenje kao distribuirano, interaktivno, kontekstualno te kao rezultat djetetove/učenikove participacije u «zajednici prakse». Zajedničko im je su-participacija, kooperativnost i združeno otkrivanje značenja u funkciji su-konstrukcije znanja i ekspertnosti. Socijalna priroda učenja, poučavanja potvrđuje važnost socijalne interakcije u kojoj dijete konstruira svoju stvarnost u recipročnim relacijama s drugima, važnima u njegovu životu (roditelj, odgojitelj, učitelj, vršnjak, nevršnjak, skupina). Važni drugi posreduju socijalno-kulturno iskustvo, tj. vrijednosti u smislu prioriteta: prihvatljivo – vrijedno i poželjno, ovisno o prirodi kulturnoga scenarija (Babić 2007).

Porastom interesa za povijesno kulturnu teoriju Vygotskog te proučavanjem uloge socijalne interakcije, mijenjaju se shvaćanja o odnosu individualnog i socijalnog u učenju. Individualna dimenzija učenja promatra se u recipročnim relacijama unutar socijalnog okruženja. Učenju se pristupa kao konstrukcijskom, socijalnom i kulturno-situiranom procesu (Salomon, Perkins 1998; Robbins 2005). Odnosno, iz socijalno-kulturne perspektive učenje se opisuje kao proces transformacije putem participacije u socijalno-kulturnim aktivnostima (Robbins 2005; Rogoff 2003). Očevidno je da se učenje i razvoj iz socijalno-kulturne perspektive događaju kroz proces promjenjive participacije u promjenjivim kulturalnim zajednicama aktivnim doprinosom pojedinaca, njihovih socijalnih partnera, praksi i tradicija, kulturalnih oruđa, tehnologija, materijala i vrijednosnih sustava (Rogof 2003). Pojedinci i njihovi socijalni partneri, kao i aktivnosti u koje su uključeni, kontinuirano se transformiraju i razvijaju međusobno integriranim načinima (John-Steiner, Mahn 1996).

Matusov, Bell, Rogoff (2002) smatraju važnim pitanje o vrijednosti pojedinačnih pristupa učenju i poučavanju. Koji pristup je „bolji" i za što je „bolji"? Je li je „bolji" za učenje kako sudjelovati u aktivnostima koje su u funkciji individualnih prioriteta ili je „bolji" za učenje kako sudjelovati u suradnji? Ustvari pitanje je o različitim kulturnim vrijednostima (Matusov 1998) koje se očituju i u „scenarijima" učenja i poučavanja. Djeca uče putem „društvenog angažiranja". Tako mogu naučiti odgovarajuće načine interakcije u konkretnim institucionalnim kontekstima. (Matusov, Bell,

Rogoff 2002). Analizirajući vrijednosti različitih pojedinačnih pristupa, perspektiva poučavanja, Pratt (2006: 37) tvrdi kako ne postoji „jedno rješenje za sve", te nema univerzalnog pristupa koji osigurava „dobro" poučavanje. Perspektive poučavanja „su samo filozofske orijentacije vezane uz znanje, učenje, uloge i odgovornosti učiteljskog posla" (Ibidem: 37).

Socijalna situacija učenja i razvoja

Dvadeseto stoljeće, stoljeće djeteta, obilježeno je intenzivnim istraživanjima o kulturnom posredovanju individualnog razvoja posebice u predškolskoj dobi. Kulturno posredovanje pretpostavlja socijalno okruženje, socijalnu situaciju razvoja i socijalnu interakciju. U psihološkoj literaturi, pod utjecajem Vygotskoga, postoje različita tumačenja socijalnog okruženja. S jedne strane je tumačenje socijalnog okruženja kao čimbenika razvoja. S druge strane je tumačenje Vygotskoga (na koje upozorava, Veresov 2002), prema kojemu je socijalno okruženje izvor razvoja. Socijalna situacija razvoja (Vygotsky 1984), kao sustav odnosa između djeteta i socijalne stvarnosti, pokretač je razvojnih promjena u smjeru od socijalnoga ka individualnom. Kao jedinstveni i neponovljivi odnos između djeteta i okruženja, sukladno socijalnim očekivanjima i zahtjevima, socijalna situacija razvoja određuje stvarno mjesto djeteta u sustavu socijalnih odnosa. Nadalje, utječe na osobitosti djetetova shvaćanja i prihvaćanje vlastite socijalne pozicije.

U razmatranju socijalnih aspekata učenja posebice važno ulogu ima socijalna medijacija. Uspješnost socijalne medijacije proizlazi iz aktivne participacije djeteta koja omogućuje transformaciju razumijevanja i načina rješavanja problema čime se socijalno okruženje transformira u socijalnu situaciju razvoja. Veresov (2002) navodi istraživanja koja su pokazala da socijalna situacija postaje razvojnom kada se u životu djeteta javljaju zadaće koje ono osvješćuje kao problem koji ne može riješiti postojećim sredstvima odnosno aktivnostima. Učinci interakcije između individua, njihovih socijalnih okruženja i artefakata kulture razvojne su prirode (Rubcov 1996). Socijalna interakcija je istodobno kontekst i glavni mehanizam psihičkoga razvoja. Stjecanje znanja i oruđa intelektualne prilagobe događa se u socijalnoj interakciji djeteta s odraslima i kompetentnijom

djecom. Ustrojstvo zajedničkih aktivnosti dijete, učenik – odrasli, učitelj[2] utječe na učinke učenja, poučavanja. Ono uključuje pozicije sudionika u aktivnosti, razmjene pri rješavanju zadaća, međusobno razumijevanje i refleksiju. Socijalna interakcija koju karakteriziraju reciprocitet, uzajamno uvažavanje i kooperacija ostvariva je u uvjetima prilagođavanja, odnosno podešavanja individualnih razlika u uvjerenjima, idejama, intencijama, kako bi se postigla uzajamno prihvatljiva pravila i konvencije (Fell, Sebastian-Nicell, Hammer 2003). Vrijednost učenja i poučavanja vidi se u razvoju autonomije u smislu samoregulacije, kompetentnosti, neovisnosti i sposobnosti preuzimanja odgovornosti za vlastite akcije i vjerovanja. Ostaje pitanje o vremenskoj usmjerenosti učenja i poučavanja: usmjerenost na postojeću datost i budućnost ili samo na budućnost.

Za odgojno-obrazovnu praksu smatram važnim pitanje o ustrojstvu učinkovite suradnje djece i odraslih u učenju i poučavanju. Istraživanja o socijalnoj interakciji i učenju, 80-tih godina prošlog stoljeća, bila su usmjerena na učinkovite oblike ustrojstva suradnje učitelja i učenika kao i samih učenika. U njima se posebna važnost daje pojmu „pedagoški sporazum" (pod utjecajem ženevske škole) prema kojemu su učenici socijalno i spoznajno odgovorni u konstrukciji vlastitih znanja. Temeljna zadaća „pedagoškog sporazuma" je ostvariti „komunikcijski dogovor" među učenicima, koji se razlikuju prema poziciji i spoznajnim mogućnostima. U zajedničkim aktivnostima odraslih i djece ključno je uspoređivanje osobnih gledišta s gledištima ostalih sudionika. Pri tome se pojavljuje sociokognitivni konflikt – suprostavljanje pozicija sudionika izazvano različitim točkama gledišta. Koordinacijom različitih točki gledišta razrješuje se sociokognitivni konflikt. Promjene u učenju i razvoju događaju se zahvaljujući interiorizaciji postignute koordinacije. Uspjeh u zajedničkom rješavanju zadaća ostvariv je u uvjetima kooperacije, pri čemu način suradnje postaje predmetom analize i aktivnosti djece. Uspješnost rješavanja zadaća, problema povezana je sa suradnjom putem kooperacije, uzajamnim razmjenama radnji sudionika. Odnos prema drugom sudioniku gradi se uvidom u njegove operacije s točke motrišta zajedničkih radnji, operacija. Spoznaje o međuodnosu načina provedbe zajedničkih aktivnosti i načina rješavanja zadaća imaju primjenjivu vrijednost u elaboraciji praksi

[2] Dijete i učenik rabe se, uvjetno, kao istoznačnice: dijete i učenik su osobe, individue koje uče.

učenja i poučavanja u formalnim edukacijskim kontekstima (jaslice, vrtići, škole).

Učenje i poučavanje u vrtićnom okruženju: primjeri istraživanja interakcije odraslih i djece

Kakvoća interakcije predškolskih učitelja i djece u institucionalnom predškolskom okruženju dugovremena je tema znanstvenih i stručnih rasprava predškolskih i drugih stručnjaka. Uz to, ona je i tema brojnih istraživanja: od učenja jezika, socijalizacije i socijalne kompetencije djece, akademskih postignuća, kognitivnog razvoja do specifičnih edukacijskih ishoda. Komunikacija i interakcija, posebice uloge sudionika i ustrojstvo relacija među njima područje je vlastitih istraživačkih interesa i istraživanja[3]. Za potrebe ovog rada podastirem one rezultate istraživanja o učenju i poučavanju djece u interakciji s odraslima za koje pretpostavljam da su jednako vrijedni praktičarima i teoretičarima, odnosno predškolskim profesionalcima.

Kritičnu ulogu u dizajniranju okruženja, interakcije sudionika te sudjelovanja djece u učenju i poučavanju imaju odrasli (roditelji, odgojitelji/učitelji). Oni, kao predstavnici kulture i kompetentniji partneri u „vođenom sudjelovanju" podupiru razvoj djeteta u smislu preuzimanja odgovornosti za vlastito učenje i sudjelovanje u zajedničkim aktivnostima. Odrasli i djeca aranžiraju socijalna iskustva svojim izborom i strukturiranjem situacija. Pretpostavlja se da su razvojno vrijedna nastojanja i prakse odraslih u kojima dominira aktivno sudjelovanjem djece i vođenje djece prema samostalnosti, samoregulaciji. Interakcijom u recipročnom dijalogu djeca uče dijeliti i stvarati značenja, odnosno uče rabiti jezik i kao sredstvo komunikacije i kao sredstvo mišljenja.

Gillies (2004) vidi važnost interakcije u kooperativnim grupama u pružanju prilika učenicima za učenje primanja i davanja informacija, za nova razumijevanja i gledišta te za komuniciranje na socijalno prihvatljiv

[3] Istraživanja komunikacije i interakcije između odraslih i djece u vrtićnim uvjetima realizirana su u znanstvenim projektima: Ka komunikacijskom modelu predškolskog odgoja, Razvojni učinci interakcije na djetetovu autonomiju te Konstruktivizam i razvojno primjerena praksa.

način. Prednosti kooperativnog učenja očituju se u prilikama za aktivnu interakciju djece/učenika jednih s drugima, za dogovaranje, prihvaćanje novih načina rezoniranja i ponašanja (Rogoff & Toma 1997; Matusov 2001).

Vrijednost okruženja učenja i poučavanja procjenjuje se, prije svega, prema parametru dječje slobode u očitovanju i isprobavanju vlastitih ideja, slobode od pritisaka odraslih i drugih sudionika te prema parametru sudjelovanja djece. Uspješno «vođenje» djece u „vigotskijanskom" smislu ostvarivo je u kontekstima u kojima su sudionici (odrasli i djeca te djeca međusobno) sposobni za socijalno reverzibilne radnje i socijalno prikladnu uporabu verbanih i neverbalnih sredstava komunikacije. «Vođenje» odnosno podrška kompetentnijeg partnera (učitelja, roditelja, vršnjaka, nevršnjaka) polazi od određivanja razine djetetova razumijevanja, dizajniranja okruženja u kojemu je pozornost usmjerena na nuđenje socijalnog iskustva u duljem i kontinuiranom vremenu.

U osobnim istraživanjima komunikacijskog ustrojstva dijaloškog učenja i poučavanja ustanovljeno je da razina sličnosti u bitnim točkama gledišta partnera određuje uzajamno razumijevanje i koordinaciju radnji. (Babić, Kuzma 1995, 2000). Istraživanja interakcije odrasli – dijete u kontekstu igre i učenja i poučavanja u dječjim vrtićima (Babić, Irović 2001, 2005, 2007; Muchacki 2009) ukazala su na važnost razumijevanja pozicija djece i odraslih u zajedničkom rješavanju kognitivnih problema, na primjerima njihova međusobnog interakcijskog iskustva i stilova ponašanja. Spoznaja o tendenciji odraslih (roditelja i odgojitelja) ka socijalnom konformizu u interakciji s djecom u igri i učenju i poučavanju, korištene su u preispitivanju «teorija» o djetinjstvu – kao polazište edukacijske rekonstrukcije. Sljedeća važna spoznaja odnosi se na dječja viđenja odraslih u zajedničkim aktivnostima igre, učenja i poučavanja: odrasli kao istinski suigrač, partner ili odrasli kao posjednik moći. Dječja viđenja pozicija odraslih u konfliktnim situacijama utjecala su na njihov izbor: ustrajavanje na svome – konfrontiranje, pregovaranje ili potčinjavanje mišljenju odraslih. Stupanj samostalnosti djece utjecao je na izbor: samostalnija djeca pokazivala su tendenciju opiranja interventnim postupcima odraslih (preuzimanje, ispravljanje, negiranje i sl.), a nesamostalnija djeca tendenciju odustajanja od svojih namjera i prihvaćanja postupaka odraslih. Zapažene tendencije tumačene su interakcijskim iskustvom dijete – odrasli. I samostalna i nesamostalna

djeca konceptualiziraju svoja pozitivna i negativna iskustva s odraslima u zajedničkim aktivnostima. Ona propituju, provjeravaju i razvijaju svoj svjetonazor u interakciji s odraslima (Babić, Kuzma 2000; Babić, Irović 2001, 2005, 2007).

Rezultati provedenih istraživanja o komunikacijskom ustrojstvu učenja i poučavanja u dijalogu te o interakciji odgojitelja i roditelja s djecom u igri i učenju potvrdila su pretpostavke o međudjelovanju vrijednosnog sustava i edukacijskih praksi predškolskih odgojitelja, o tendenciji ka kontinuiteta u odnosu na socijalni konformizam te o dominaciji strategija vođenja tipa regulacije djetetovih radnji, ponašanja. Navedeni rezultati korišteni su kao uporišta u istraživanju socijalno-kognitivne koordinacije, na primjeru asistirajućeg ponašanja predškolskih odgojitelja pri rješavanju kognitivnih problema, zadaća. Pretpostavljeno je da spoznaje o razvojnoj vrijednosti asistirajućeg ponašanja odraslih u uvjetima socijalno-kognitivne koordinacije mogu biti doprinos u elaboraciji predškolskih programa, u redizajniranju pristupa učenja i poučavanja i pripadajućih strategija te u izobrazbi predškolskih odgojitelja.

Kako je ustrojena zajednička aktivnost odgojitelja i djece tijekom učenja i poučavanja? Koja su dominirajuća ponašanja odgojitelja i djece? Koje su dominantne intencionalne pozadine (ili intencije) pojavnih oblika kontrolirajućeg, asistirajućeg i konfuznog ponašanja odgojitelja? U kojoj su relaciji kontrolirajuće, asistirajuće i konfuzno ponašanja odgojitelja sa odzivljivim, incijativnim i konfrontirajućim ponašanje djece? Kako djeca reagiraju na pojedinačna, najfrekvenija ponašanja odgojitelja u zajedničkoj aktivnosti učenja i poučavanja?

Odgovori na navedena pitanja traženi su u provedenim istraživanjima o učenju i poučavanju djece u dijadnoj i grupnoj situaciji u dječjim vrtićima[4].

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[4] Višekratnim uvidom u videozapise i pisane protokole ustanovljene su kategorije i pripadajući pojavni oblici ponašanja odraslih i djece. Za jedinicu analize odabran je interakcijski događaj odnosno interakcijska sekvenca. Ponašanja odgojitelja i djece promatrana su u njihovoj recipročnosti, kako bi se pratila uzajamnost interakcije.

Prema kriteriju odzivljivosti i asistenciji ustanovljene su kategorije ponašanja odgojitelja i djece. Ponašanja odgojitelja:

Kontrolirajuće ponašanje – različiti oblici kontrole radnji, ponašanja djece (poziv i najava, tehnička uputa, naredba, pitanje provjeravanja, vizualno praćenje/

U analiziranim interakcijskim sekvencama učenja i poučavanja najzastupljenije je pohvaljivanje adekvatnosti unutar kategorije kontrolirajuće ponašanje. Pohvaljivanje je praćeno vizualnim provjeravanjem radnji – koraka u rješavanju kognitivnog zadatka**.** Intencionalna pozadina pohvaljivanja i vizualnog provjeravanja jeste uvid odnosno kontrola – slijedi li dijete zadani obrazac ponašanja (što i kako uraditi). U poučavanju djece, odgojitelji su usmjereni, prije svega, na točnost iz vlastite pozicije poučavatelja. Njihovo stajalište o tome što je točno, ispravno, što znači i edukacijski vrijedno, kritična je varijabla vođenja djece. Pohvaljivanje adekvatnosti uz vizualno praćenje posjeduju obilježja visoke razine reglementacije.

Sličnu zastupljenost pohvaljivanja i vođenja tipa „davanje smjernica za učenje" , navode Tsung-Hui Tu, Wei-Ying Hsiao (2008) u istraživanju verbalne interakcije predškolskih učitelja i djece u poučavanju „znanosti" (prirodnoznanstveno područje). Komparirajući učiteljeve verbalizacije u različitim centrima aktivnosti ustanovili su povezanost između verbalizacije (iskazi različitih funkcionalnih osobitosti) i područja – centara aktivnosti.

Jedan od mogućih objašnjenja zapažene pojave može biti tradicionalno poticanje učitelja (tijekom njihove obuke i prakse) na ponašanje

provjeravanje sa i bez komentara, upozorenje, negiranje, neodobravanje, pohvaljivanje adekvatnosti, odobravanje i potvrđivanja);

Asistirajuće ponašanje – pomoć djetetu, djeci pri rješavanju zadatka (objašnjavanje sa i bez pokazivanja, uputa, sugestija/prijedlog sa i bez pokazivanja, nuđenje pomoći, uzajamno «slaganje», pružanje modela);

«Konfuzno» ponašanje – proturječno ponašanje (preuzimanje, neodgovaranje, preuzimanje i negiranje, paralelno slaganje s djetetom i djecom, spremanje materijala).

Ponašanja djece:

Odzivljivo ponašanje – svi oblici pozitivnog reagiranja na ponašanje odgojitelja (gledanje i slušanje, potvrđivanje, prihvaćanje, komentiranje, odgovaranje, slaganje i odgovaranje, zajedničko slaganje/rješavanje zadatka s odraslim;

Konfrontirajuće ponašanje – negativno reagiranje na ponašanje odgojitelja (nastavljanje po svome/»oglušivanje», suprostavljanje, neprihvaćanje/negiranje, dvoumljenje);

Inicijativno ponašanje – ponašanja kojima djeca «iskoračuju» u interakciji s odgojiteljem (poziv sa i bez pokazivanja, nastavljanje započetog, slaganje/rješavanje zadatka, predlaganje, manipuliranje materijalom, pitanje, traženje pomoći, paralelno slaganje s odraslim i drugom djecom) (Babić, Irović 2007).

u ulozi „vodiča" (Gillies 2004). „Vodiča" u smislu izravnog predlaganja rješenja uz preuzimanje od djece rješavanje zadatka. Mogući ishodi takovg način vođenja u odnosu na ponašanja djece: djeca ne traže izravnu pomoć od odraslih već se oslanjaju jedna na drugu. Djeca mogu vidjeti odraslog, prije svega, kao izvanjskog „vodiča" koji normira njihovo ponašanje prema kriteriju prihvatljivosti, tj. korektnosti. Na primjer, kako objasniti najveću zastupljenost pohvaljivanja u interakcijskim sekvencama inicijativnog ponašanja djece? U tim sekvencama, djeca se najčešće obraćaju odgojiteljima (verbalno sa i bez pokazivanje uradka) tražeći njihovu procjenu, njihovo vrednovanje. Višekratnim uvidom u videozapise, ustanovljena je vrijednosna pozadina odgojiteljevih procjena Pretpostavljam kako bi zajednički uvid istraživača i odgojitelja mogao pomoći u rasvjetljavanju intencija odgojiteljevih i dječjih radnji u poučavajućoj interakciji. Ukoliko je „sudija" primarna uloga odgojitelja tada je upitna recipročnost u interakciji tijekom učenja i poučavanja. Wells (1999) u svojim istraživanjima dijaloškog pristupa učenju i poučavanju, tvrdi da je jedna od glavnih zapreka dijalogškoj razmjeni u učionici tzv. „trijadni dijalog" (učitelj započinje, dijete odgovara, učitelj nastavlja) – pseudo dijalog kojim učitelj osigurava djetetovu produkciju „točnih" odgovora. Ako učitelj, umjesto vredovanja djetetova doprinosa, zahtjeva objašnjenje, proširenje ili vlastita gledišta djeteta tada započinje stvarni dijalog sukonstrukcije značenja (Wells 1999).

Drugo mjesto, prema zastupljenosti, zauzima asistirajuće ponašanje odgojitelja.

Sugestije/prijedlozi (sa i bez pokazivanja) kao najfrekvetniji pojavni oblik asisitirajućeg ponašanja, odgojitelji očituju izravnim «vođenjem» djece: kako točno riješiti zadaću – složiti kvadrat od pojedinačnih oblika, dijelova. Sugestije/prijedloge odgojitelji, uglavnom, koriste u svhu „testiranja" dječjih radnji, a neznatno u svrhu usmjeravanja dječje pozornosti na kritične točke zadatka. Zapaženi oblici asistencije (od objašnjavanja do pokazivanja) podupiru pretpostavke o paralelizmu u interakciji odgojitelj – dijete, o niskoj razini uključenosti odgojitelja u zajedničko rješavanje zadatka te o diskontinuitetu usklađivanja asistencije s djetetovom razinom razumijevanja i «ekspernosti».

Usporedbom s podacima o asitenciji odraslih (roditelja i odgojitelja) u dijadnoj situaciju učenja, poučavanja, ustanovljena je sličnost u funkcionalnoj pozadini različitih oblika asistencije. Sličnost se očituje

u tendenciji odgojitelja i roditelja ka kompeticijskom odnosu s djetetom – riješiti umjesto djeteta, dokazati svoje umijeće uz odricanje mogućnosti osobne pogreške i neuspjeha. Osim navedenoga, to podupiru i podatci o «konfuznom» ponašanju odgojitelja i roditelja.

Preuzimanje rješavanja zadatka, imenovano kao konfuzno pona-šanje sudionika u interakciji pri zajedničkom rješavanju zadatka, svo-jevrsno je self-direkcijsko ponašanje, suprostavljeno asistenciji tipa socijalno--kognitivne koordinacije. Podatci o zastupljenosti konfuznog ponašanja odgojitelja govore o opravdanosti pretpostavke da odrasli imaju poteškoća u usmjeravanju pozornosti na gledište(a) drugoga sudionika interakcije. Kao i kod zapaženih oblika kontrolirajućeg ponašanja, i ovdje je moguće potražiti odgovor u osobnom iskustvu učenja i počavanja odraslih tijekom školovanja. Ta pojava može biti djelomično objašnjena osobnim iskustvom učenja i poučavanja tijekom školovanja te replikacijom naučenih obrazaca kao bitne sastavnice privatne „teorije" učenja i poučavanja. Osim toga, i proturječnim ulogama odgojitelja. Na jednoj strani su zadani socijalni zahtjevi iskazani ciljevima odgoja i obrazovanja u ranoj i predškolskoj dobi, a na drugoj, usmjerenost na dijete. Od odgojitelja se očekuje uspješna realizacija zadanih ciljeva i uvažavanje djetetove posebnosti, interesa i iskustva učenja. Pitanje je kako uspješno balansirati u ostvarenju obaju uloga. Rezultati istraživanja o relaciji vjerovanja predškolskih učitelja spram važnosti interakcije učitelj – dijete (Wilcox-Herzog, Ward 2004) te komparativna studija o vjerovanjima i praksama finskih i američkih učitelja o razvojnoj primjerenosti (Berge 2005) potvrđuju pretpostavke o vjerovanjima kao prediktorima namjera. Učiteljeva/odgojiteljeva vjerovanja odnosno njihova privatna, implicitna „teorija" učenja i poučavanja služe kao «kontekstualni filter» za promatranje, interpretaciju i adaptaciju vlastitih učioničkih iskustava.

Koja ponašanja su očitovala djeca i kakva je njihova zastupljenost u situaciji učenja i poučavanja? Najzastupljenije je odzivljivo ponašanje, slijedi inicijativno, a najmanje je zastupljeno konfuzno ponašanje. Zapažena je sličnost u zastupljenosti odzivljivog i inicijativnog ponašanja djece tijekom rješavanja kognitivnog zadatka. To je moguće objasniti prirodom situacijskog konteksta, prirodom zadatka i socijalnim iskustvom djece u vrtiću.

Koja su odzivljiva ponašanja djece najfrekventnija i u kojoj su relaciji s ponašanjima odraslih?

Dječja odzivljivost najčešće je iskazana prihvaćanjem odgojiteljevih sugestija/prijedloga. Zapažena je međusobna uzajamnost između ponašanja odgojitelja i djece u učenju, poučavanju. Međutim, ostaje pitanje o vrsnoći i kakvoći ponašanja odgojitelja u zajedničkim aktivnostima učenja i poučavanja. Dosadašnja istraživanja nisu dala jednoznačni odgovor na pitanje o razvojnoj vrijednosti zapaženih međuodnosa ponašanja odgojitelja i djece. S jedne strane je izravno vođenje djece u smislu korektnog rješavanja zadatka s niskom razinom uključenosti u zajedničko rješavanje zadatka i socijalnokognitivnu koordinacija, a s druge, visoka razina odzivljivosti i socijalne osjetljivosti djece.

Koja su najčešća incijativna ponašanja djece i koja su reaktivna ponašanja odgojitelja?

Najfrekventnije incijativno ponašanje djece je poziv upućen odgojitelju. Intencionalna pozadina pozivanja je usmjeravanje pozornosti odgojitelja na uradak. Traženje podrške, potvrde, povratne informacije mogući su razlozi dječjih poziva odgojitelju. Baucal (2003) navodi da je to emocionalno-motivacijska podrška u suradnji s kompetentnijim partnerom kao prva važna razina pomoći djeci. Slično tumačenje podrške navodi Cukerman (2006). Podrška inicijativnim radnjama djece znači ostvarivanje specifičnog oblika suradnje odraslih i djece. Riječ je o suradnji „jednakih" i „različitih". Odnos između odraslih i djece moguće je opisati jezikom vidova pomoći kako bi djeca uspješno riješila zadaće. Cukerman (2006) upozorava na asimetriju u sustavu poučavanja: podržavanje jednih oblika dječje inicijative i ograničavanje drugih.

Što se događa u suradnji odraslih i djece ako postoji značajna asimetrija u odnosu na kompetetnost i moć? Pretpostavljam da, upravo, moć (osobni doživljaj moći spram djece) može utjecati na (ne)mogućnost uspostavljanja dijaloga, usuglašavanje različitih perspektiva te na razumijevanje i postignuća.

Najčešće reakcije odgojitelja na pozive djece su pohvaljivanje u sklopu kontrolirajućeg ponašanja te sugeriranje odnosno predlaganje (sa i bez pokazivanja) u sklopu asistirajućeg ponašanja. I ovi podatci potkrepljuju pretpostavku o dominaciji perspektive odraslih u učenju i poučavanju djece.

Iako najmanje zastupljena, «konfuzna» ponašanja djece svojevrsna su reakcija na izvanjsku kontrolu i vođenje kao i na „konfuzno" ponašanje odgojitelja. Djeca reagiraju prihvaćanjem ili suprostavljem odgojiteljevim

radnjama, postupcima. Zamijećena je tendencija prihvaćanja kao i u istraživanjima interakcije roditelja i odgojitelja u zajedničkom rješavanju kognitivnog problema u dijadnoj situaciji. Na primjer, u situacijama odgojiteljevih upozorenja i opomena, sugestija/prijedloga te u situacijama odgojiteljevih preuzimanja, djeca češće reagiraju prihvaćanjem. Međutim, unutar prihvaćanja postoje varijacije u ponašanju djece ovisno o njihovoj inicijativnosti i samostalnosti. Inicijativnija i samostalnija djeca pokušavaju «zaustaviti» ustrajavanje odraslih na svojim namjerama, a nesamostalnija djeca odustaju od svojih namjera, prihvaćaju zahtjeve odraslih, traže potvrđivanje i odobravanje odraslih.

Obiteljska i vrtićna interakcijska iskustva djece s odraslima, ovisno o njihovoj kongruentnosti, mogu biti podržavajući i/ili inhibirajući čimbenik postignuća djece.

U učenju i poučavanju odrasli se nalaze pred zahtjevnim zadatkom socijalne medijacije (posredovanja) i socijalno-kognitivne koordinacije (usklađivanja motrišta), kakvoća kojih se smatra ključnim čimbenikom uspješnosti učenja i poučavanja djece. Uvidom u ustrojstvo zajedničkih aktivnosti odraslih (roditelja i odgojitelj) i djece u dijadnoj situaciji zajedničkog rješavanja kognitivnog zadatka i odgojitelja i djece u grupnom poučavanju djece u rješavanju kognitivnih zadaća, zamijećene su teškoće odraslih u građenju intersubjektivnosti, dijaloga s djetetom, djecom. Tendencija odraslih ka dominaciji, «preuzimanjem» kognitivnog zadatka i „nametanjem" djeci načina njegova rješavanja, mogu biti prepreka dječjem učinkovitom rješavanju zadatka i uspješnosti učenja. Ujedno čine upitnim razvojne vrijednosti takve „instrukcije" odnosno vođenja djece.

Prikazane rezultate istraživanja moguće je potpunije razumjeti ako se promatraju u relaciji s karakteristikama vrtićnog okruženja. Stoga u nastavku rada razmatram vrtićni kontekst iz pozicije djece i odraslih.

Dječji vrtić: socijalni i kulturni kontekst učenja i poučavanja

Važno pitanje u sklopu višestrukih gledišta o djetinjstvu jeste društveni prostor djetinjstva. Suvremeno djetinjstvo obilježava institucionalizacija (jaslice, dječji vrtići, škole). Institucije za djecu su mjesta gdje djeca žive dio svoga svakodnevnog života, mjesta gdje su odrasli (odgojitelji, učitelji, roditelji) te mjesta koja svjedoče o suvremenom djetinjstvu. Djetetovi potencijali i bitnost ulaganja u učenje za život i budućnost, argumenti su

za uključivanja djece u institucionalni kontekst. Institucije za djecu, kao strukturirani društveni prostori, reguliraju vrijeme i aktivnosti te se o njima u literaturi govori i kao institucijama „discipliniranja" i „kontroliranja" djece. „Discipliniranje" i „kontroliranje" u smislu socijalne regulacije sukladno očekivanjima odnosno zahtjevima socijalnih i edukacijskih politika te praksi institucija za djecu. Djeca u ranoj dobi uče i nauče gdje, kada i kako mogu provoditi vrijeme tijekom boravka u jaslicama i vrtiću. Konkretnije, gdje mogu boraviti u određeno vrijeme, koji prostori i kada su slobodni, koja su ponašanja primjerena u konkretnim prostorima.

Strukturirani prostor i vrijeme u dječjim vrtićima odrasli i djeca mogu različito percipirati: kao ograničenja i regulaciju i/ili kao vođenje uz mogućnost izbora i pregovaranja. Ograničenja i regulacija mogu biti viđeni iz perspektive odraslih kao načini socijalizacije u dobrobit djece, a iz perspektive djece kao načini podvrgavanja ovisnosti i poslušnosti. Polazište u spoznavanju perspektiva djece i odraslih o dječjem vrtiću mogu biti autonomija, povezanost i regulacija. Autonomija u smislu procesa nastajanja neovisne individue, povezanost u smislu trajnijih odnosa između odraslih i djece te regulacija u smislu neformalnih i formalnih ograničenja koja se nameću djeci kako bi se ostvarili socijalni zahtjevi – „oblikovanje" buduće generacije, budućih odraslih ljudi (Backe-Hansen 2001).

Viđenje djece kao autonomnih i aktivnih sudionika u aktivnostima s odraslima znači strukturiranje prostora i vremena koje uključuje vođenje djece uz mogućnost izbora i pregovaranja. Dječja iskustva o prostoru i vremenu u vrtićima govore kako ograničenja koja mogu biti i izazov za traganje mogućnosti pregovaranja o njima. Halden (2005) upozorava na opasnost od potcjenjivanja djetetove socijabilnosti i kompetencije. To znači zanemarivanje činjenice kako se djeca mogu razvijati samo uz osobe u koje imaju povjerenje, osobe koje imaju vremena i koje su ih sposobne pratiti u njihovu napredovanju i razvoju.

Dječja percepcija okruženja odrastanja obuhvaća i institucionalno (jasličnо, vrtićno) i obiteljsko okruženje. Važna sastavnica dječje percepcije obiteljskog i institucionalnog okruženja jeste percepcija vlastita sudjelovanja i djelovanja na karakteristike okruženja i procese. Sudjelovanje i djelovanje u smislu odlučivanja koje uključuje mogućnost izbora i utjecanja na pitanja važna za djecu kao što su prostor, vrijeme aktivnosti, odnosi. Sheridan, Pramling Samuelsson (2001) u istraživanju o dječjim shvaćanjima sudjelovanja i utjecaja u predškolskim ustanovama,

zaključuju kako djeca imaju ograničenu mogućnost odlučivanja. Primarno odlučuju o aktivnostima i igrama koje su sama inicirala, a rijetko o ustrojstvu, rutinama, sadržaju i aktivnostima koje iniciraju učitelji. Nadalje, smisao odlučivanja iz perspektive djece ovisi o tome tko i u kojemu kontekstu donosi odluke. Većina djece shvaćaju smisao odlučivanja u činjenju onoga što treba, što je dozvoljeno ili zabranjeno.

Vrijednost usporednih (komparativnih) istraživanja o dječjoj percepciji vrtića i obitelji vidim u dobivanju potpunijeg uvida u odnose između svijeta odraslih i svijeta djece. Posebice u odnosu na autonomiju, povezanost i regulaciju koji se očituju u različitim aspektima životne stvarnosti djece.

Spoznaje o iskustvima djece u obitelji i vrtiću te spoznaje o interakciji odraslih i djece u učenju i poučavanju u vrtićima govore o razlikama u shvaćanjima očekivanja djece i odraslih. Svakodnevne interakcije odraslih i djece indikator su kakvoće institucionalnog okruženja. Prostorno i vremensko ustrojstvo vrtićnog okruženja iz perspektive djece vide se kao najznačajnija polja djelovanja i odlučivanja odraslih, jer u njima imaju najveću moć i kontrolu.

Uvid u prakse odraslih (roditelja i profesionalaca) i dječja iskustva u svakodnevnim interakcijama s odraslima, prije svega iz perspektive djece, jedan je od obećavajućih putova ka razumijevanju karakteristika i utjecaja institucionalnog okruženja na dječja iskustva i aktivnosti te na institucionalizaciju djetinjstva.

Ako interakcija odraslih i djece i djece međusobno sadrži mogućnosti za aktivno sudjelovanje, s odraslima i djecom; ako u stvaranju i tijeku zajedničkih aktivnosti sudjeluju djeca i odrasli kao partneri različitih mogućnosti i razina odlučivanja; ako djeca prakticiraju svoje mogućnosti odlučivanja i preuzimanje kontrole u zajedničkim i osobnim aktivnostima; ako postoji pregovaranje u različitim područjima učenja i poučavanja onda je moguće govoriti o dječjem vrtiću kao mjestu gdje djeca i odrasli uče zajedno.

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CHAPTER II

Tradition and modernity in theory and practice of kindergarten teacher education

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Komplexe methodische Kompetenzen im Kindergarten

Anlass zur Erneuerung des methodischen unterrichts im Kindergarten

1. Das ungarische Unterrichts- und Hochschulwesen befindet sich jetzt in einer Entwicklungsphase, wo der Grundpfeiler des Schul- und Bildungssystems die Kompetenz der zentrischen Konzeption ist.

Daraus folgt, dass wir zum Beispiel die in der Ausgangsregelung für Kindergartenpädagogen genannten, vorgeschriebenen Kompetenzen bei der Planung der Fachgruppen und der Fächer abbauen, ausführlich darlegen, detaillieren müssen. Wir konnten unsere Lehrmaterialentwicklungsarbeit nach den Bolognaer Veränderungen mit Hilfe von Bewerbungsquellen anfangen.

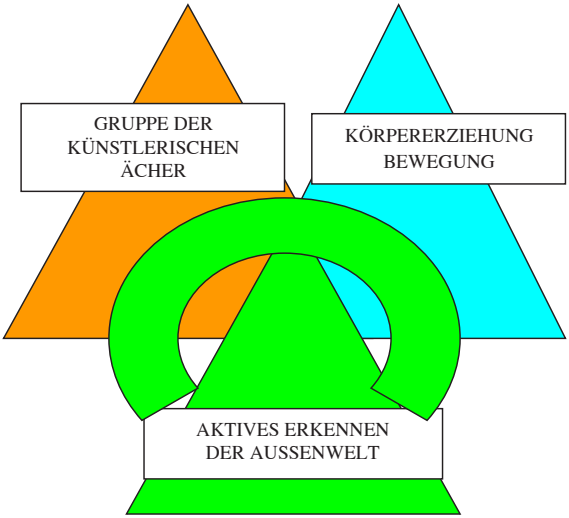
So kam es zur Ausarbeitung des methodischen Moduls: Komplexe methodische Kompetenzen.

2. Die spielerische Natur des Kindes im Kindergartenalter und seine anderen charakteristischen Eigenschaften (wie Globalität und die zentrale Rolle des Ichs usw.) bewegen die Fachleute in den im engen und weiten Sinne genommenen Lerntätigkeiten des Kindes nach Komplexität zu streben und spielerisch zu sein. Die Sicherung der Persönlichkeitsentwicklung der 3- bis 7-jährigen Kinder erfordert, ihre globale Weltsicht respektierend, dass die spielerische Erfindung der Bildungsinhalte in den Tätigkeiten nicht getrennt nach den einzelnen methodischen (fachspezifischen) Gesichtspunkten sondern auf komplexere Weise geschieht.

Auf den einzelnen Bildungsbereichen sind sowohl bestimmte Fähigkeitsdominanten, als auch Überlappungen zu beobachten. Sogar dieses hierarchische System unterstützt die Gültigkeit der Komplexität der Bildungsbereiche.

3. Bei der Vorbereitung der Studenten ist die Ausbildung dieser kindzentrischen Attitüde unentbehrlich. Dadurch sehen wir begründet, noch engere Verknüpfungspunkte zwischen den einzelnen Methoden zu suchen. Diese Gedanken führen uns zu der Bestimmung der komplexen methodischen Kompetenzen im Kindergarten. Von besonderer Wichtigkeit sind diese Kompetenzen während der integrierten Kindergartenpraxis, wo die Grundlage der Synthese die aktive Erkennung der Aussenwelt (die Erkennung der Gegenstände, der Umwelt und der sozialen Umgebung, der Mathematik) bildet, und dazu verknüpfen sich noch die weiteren Methoden: sowohl die Gruppe der künstlerischen Fachelemente (die Methode der musikalischen, visuellen, muttersprachlichen und literarischen Erziehung und die Methode des Puppenspiels) als auch die Körpererziehungsmethode (siehe Graphik Nr. 1). Der Name der einzelnen Methoden entspricht den Anforderungen der Bildungs- und Ausgangsregelungen (im weiteren FBAR).

Unser Gedankengang wird auch dadurch unterstützt, dass es Überdecken, bzw. Beziehungen im Inhalt der einzelnen Methoden, in der Form der Aneignung (Methode, Tätigkeit, Organisationsform) gibt.



Graphik 1.

4. Wir hielten die Einfügung eines neuen grundlegenden Lehrfaches für nötig, das eine allgemeine Vorbereitung zu den neu strukturierten Methoden gibt. Der auf diese Weise aufgebauten, komplexen, methodischen

Lerneinheit geht das Lernen von einem Einführungsmodul voraus. Der Inhalt des Einführungsmoduls wurde nach den in jeder Methode gültigen Gesichtspunkten definiert.

5. Damit die Vorbereitung zeitgemäss ist, müssen die Kompetenzen der FBAR im Modul, bzw. in dessen Fachelementen vorhanden sein. Wir können die Bildung auf Kompetenzgrundlagen am besten unterstützen, wenn wir diejenigen Möglichkeiten und Lösungen suchen, die die einzelnen Kompetenzen verstärken, ihren transverbalen und mehrfunktionellen Charakter zur Geltung bringen.

6. Das Geheimnis der erfolgreichen Veränderung ist, wenn die Pädagogen über einen reichen Vorrat an Methoden verfügen, unter denen sie, den verschiedenen pädagogischen Situationen entsprechend, immer wählen können. Damit sie in den Besitz davon gelangen, brauchen sie eine Bildung und berufliche Vorbereitung, die den Wert auf die Bereicherung dieses Methodenvorrats und dessen Ausprobieren in der Praxis legen. Deswegen ist es wichtig, dass der Unterricht und die praktische Vorbereitung besser als bisher aufeinander aufgebaut werden und man den Studenten noch mehr Übungs- und Analysemöglichkeiten sichert.

Das Ziel der Ausarbeitung des Moduls

Der die Ausbildung von komplexen methodischen Kompetenzen beabsichtigende Modul ist ein System. Dieses System sichert – im Rahmen des komplexen Methodikunterrichts im Kindergarten – die praxisorientierte Vorbereitung der Studenten und es umfasst auch die Herausbildung der nötigen Fähigkeiten und Attitüden. Unser Ziel ist, einerseits eine integrierte, fundamentale Vorbereitung zu geben, in der die einzelnen Kompetenzen miteinander harmonisieren, andererseits eine komplexe methodische Praxis zu organisieren, in der die zum Ziel gesetzten Kompetenzen in ihrer komplexen Form erscheinen.

Die auszubildenden Kompetenzen

Bei dem Definieren der zu dem Themenkreis gehörenden Kompetenzen wurden die Bildungs- und Ausgangsforderungen berücksichtigt; und wir

haben auch mit den von den Studenten erwünschten 10 Standards der Pädagogen gerechnet:

Die 10 Standards der Pädagogen sind:

Die Kenntnis des Faches; Die Kenntnis der menschlichen Entwicklung und des Lernens; Die Adaptierung des Unterrichts zu den eigenen Bedürfnissen; Die Anwendung von verschiedenen Lehrstrategien; Motivations- und Lernorganisationsfähigkeiten; Kommunikationsfähigkeiten; Fähigkeiten zum Planen; Die Wichtigkeit des Lernens; Berufliches Verpflichtungs- und Verantwortungsgefühl; Kooperationsfähigkeit.

Sehen wir uns jetzt die Kompetenzbereiche und Kompetenzelemente mit Hilfe der Kompetenzkarte an, die den Inhalt des Studiums bilden

Graphik 2. Kompetenzenkarte der hervorgehobenen Kompetenzen

DIE EINFÜGUNG DER UNTERRICHTSGEGENSTÄNDE DES MODULS IM STUDIENPLAN

Die einfügung unserer neuen vorstellung im studienplan erfolgte auf folgende weise:

FACHGEBIET/FUNKTION DES THEMENKREISES	NAME IM LEHRPLAN	STUNDEN-ZAHL PRÜFUNG ECTS-Punkte	TYP DER LEHRVER-ANSTAL-TUNGEN	
1. Integrierte theoretische Vorbereitung auf Kompetenzgrundlagen (Vorbereitung auf komplexe methodische Kompetenzen)	Spielerisches Lernen im Kindergarten	1 Referat/ 1 ECTS 2. Semester	Vorlesung + Seminar	NEUES FACH
2. Differenzierte methodische Vorbereitung (Ausbildung und Förderung von komplexen methodischen Kompetenzen)	Pädagogik und Methode des Spieles Methode der literarischen Erziehung (Märchen, Gedichte) Methode des Puppenspieles Methode der visuellen Erziehung (Zeichnen, Basteln, Handarbeiten) Methode des Singens (Gesang, Musik, Spiele mit Liedern) Methode der Körpererziehung (Bewegung) Methode der Erkennung der Umwelt, Methode der Mathematik (aktive Erkennung der Umwelt, auch mathematische Erfahrungen und Kenntnisse)	3Bewertungs-Noten/ 3 ECTS 3 B.-Noten / 3 ECTS 3 B.-Noten / 3 ECTS 3 B.-Noten / 3 ECTS 3 B.-Noten / 3 ECTS 3 B.-Noten / 3 ECTS 3 B.-Noten / 3 ECTS 3 B.-Noten / 3 ECTS	Theorie + methodi-sche Praxis	
3. Integrierte (komplexe) Praxis im Kinder-garten (Fördern der Verwendung von kom-plexen methodischen Kompetenzen, Üben)	Praxis im Kindergarten (individuell und in Gruppen)	1 B.-Note / 1 ECTS 5. Semester	Praxis	NEUES FACH

Im Folgenden beschäftigen wir uns nicht mehr mit der differenzierten methodischen Vorbereitung, nur noch mit den ersten und den dritten Lehreinheiten. Wir haben über die Ausarbeitung dieser zwei Lehreinheiten nachgedacht.

Die Beschreibung des Lehrprogramms

NAME DES MODULS: KOMPLEXE METHODISCHE KOMPETENZEN GRUND-PARAMETER DES MODULS

UNTERRICHTSFACH	Kontakt-stunde	ECTS--Punkte	Kontrolle	Status
KOMPLEXE METHODISCHE KOMPETENZEN	15+15	1/1	Vortrag Praxis--Note	Kollo-quium

WÖCHENTLICHE STUNDENZAHL: in zwei verschiedenen Semestern: 1 Stunde pro Woche (siehe die Situierung des Faches im Unterrichtsplan).

KURS-SCHLUSS:

Erste Lehreinheit: Vortrag.

Zweite Lehreinheit: Praxisnote.

STELLE DES MODULS IM STUDIENPLAN:

Im Rahmen der Kindergartenpädagogik wöchentlich einmal eine Stunde im 2. Semester.

Im Rahmen der Praxisbildung im Kindergarten wöchentlich einmal im 5. Semester.

DIE ZIELSTELLUNG DES LEHRELEMENTES:

– Die theoretische Begründung, dann die Änderung und Förderung, von komplexen methodischen Kompetenzen im Kindergarten, die nötig sind, um das spontane oder organisierte spielerische Lernen im Kindergarten zu planen, zu organisieren und zu leiten.

– Die Synthese von Theorie und Praxis in der Verarbeitung der Fachliteratur bewusst zu machen.

– In den Einzeln- und Gruppenarbeiten die Technik der Beobachtung, der Selbstanalyse und der Selbstbewertung zu vervollkommnen.

DER MODUL BEINHALTET*:*

– In der Anlehnung an Kenntnisse der Entwicklungspsychologie der Kinder im Kindergartenalter und an die allgemeine Pädagogik, das Ziel und die Bedeutung der wichtigsten charakteristischen Merkmale und Gesetzmässigkeiten des spontanen und des organisierten Spiels im Kindergarten zu verwirklichen, besonders:

• Die Möglichkeiten von Sammeln der spontanen spielerischen Erfahrungen;

• Die Rolle der einzelnen Methoden;

• Die Aufgaben der Kindergartenerziehung aus der Sicht der einzelnen Methoden;

• Die Aufgabe der Kompetenzenbildung, im Allgemeinen, im Rahmen der einzelnen Methoden;

• Die im Rahmen des spontanen und des organisierten spielerischen Lernens geltenden Grundprinzipien.

Besonders hervorgehobene Grundprinzipien sind:

• die Geltung der Prinzipien des spielerischen Individuums

• die Geltung der Prinzipien der Betätigung

• die Geltung der Prinzipien der Differenzierung

• die Geltung der Prinzipien der Ungebundenheit

• die Geltung der Prinzipien der Komplexität.

– Die Betonung der Wichtigkeit, des Verlaufs der komplexen bzw. integriert handelnden, auf Erfahrung- und Erlebnissammeln basierenden Tätigkeitsorganisation und die Verwirklichung der damit zusammenhängenden Aufgaben der Kindergartenpädagogen. (Die Grundlage der Synthese bildet das Erkennen der Umwelt und dazu kommen noch das künstlerische Erkennen und die Bewegung);

– Die modernen Organisations- und Arbeitsformen, Methoden des spielerischen Lernens im Kindergarten, mit besonderer Berücksichtigung der Projektmethode;

– Die Gesichtspunkte, die Forderungen der Strukturierung, Vorgehensweise der Auswahl von den Entwicklungsinhalten und die allgemeinen Fragen der Planung, Methodische Komplexität und Projektplanen;

– Die berufliche Forderungen, Gesichtspunkte und Ziel der Selbstbewertung, der Selbstanalyse und der Analyse des komplexen spielerischen Lernens im Kindergarten;

– Das spielerische Bekanntmachen der natürlichen und gesellschaftlichen Umgebung, mit Hilfe der bedeutendsten Tage der Natur und der Volkstradition und durch die komplexe Darstellung von Bildungsinhalten. Die Studenten haben den Inhalt der Aufgabe zu bestimmen, die Entwicklungsprozesse zu planen, die Tätigkeiten zu organisieren und zu leiten.

• Das Üben des Erkennens von spontanen spielerischen Lernsituationen.

• Das Üben von bewusst organisierten spielerischen Lernorganisation.

• Beobachtung, Selbsteinschätzung, Selbstanalyse.

– Das Bewusstmachen der Beziehung und der Aneinanderverknüpfung von der Literatur und der Musik (z.B. Die Rolle des Rhythmus, Melodie und Lautstärke in der Vorführung, die motivierende und erlebnisergänzende Rolle der Lieder und der Musik-Instrumente in der Aufführung), der Literatur und der visuellen Tätigkeit (der Fähigkeit, ein inneres Bild vorzustellen und es zum Erscheinen zu bringen), der Literatur und der Bewegung (mit grossen Bewegungen begleitete Gedichte), derjenigen Fähigkeit, diese zusammen zu planen und gemeinsam darzustellen.

• Beobachtung, Selbsteinschätzung, Selbstanalyse

– Leiten, Organisieren und Planen von spielerischen Lernmöglichkeiten, die mit der Bewegung zusammenhängen.

• Beobachtung, Selbsteinschätzung, Selbstanalyse

FORDERUNGEN (Kompetenzen: Kenntnisse, Fähigkeiten, Attitüde)

DIE WÄHREND DER BILDUNG HERAUSZUBILDENDEN KOMPETENZEN

Die zu erwerbenden Kenntnisse:

– In der Anlehnung an Kenntnisse über die Entwicklungspsychologie der Kinder im Kindergartenalter und an die allgemeine Pädagogik, müssen die Studenten das Ziel, die Bedeutung, die wichtigsten charakteristischen Merkmale und Gesetzmässigkeiten des spontanen und des organisierten Spiels im Kindergarten kennen. Sie müssen besonders stabile Kenntnisse über die Möglichkeiten von Sammeln der spontanen spielerischen Erfahrungen und über die Rolle der einzelnen Methoden haben.

Die Studenten müssen:

– die Aufgaben der Kindergartenerziehung aus der Hinsicht der einzelnen Methoden,

– die Aufgabe der Fähigkeitenbildung im Allgemeinen im Rahmen der einzelnen Methoden und

– die im Rahmen des spontanen und des organisierten spielerischen Lernens geltenden Grundprinzipien kennen.

Besonders hervorgehobene Grundprinzipien:

• die Geltung der Prinzipien des spielerischen Seins
• die Geltung der Prinzipien der Betätigung
• die Geltung der Prinzipien der Differenzierung
• die Geltung der Prinzipien der Ungebundenheit
• die Geltung der Prinzipien der Komplexität.

– Die Studenten müssen die Wichtigkeit und den Verlauf der komplexen bzw. integriert handelnden, auf Erfahrung- und Erlebnissammeln basierenden Tätigkeitsorganisation und die damit zusammenhängenden Aufgaben der Kindergartenpädagogen kennen. (Die Grundlage der Synthese bildet das Erkennen der Umwelt und dazu kommen noch das künstlerische Erkennen und die Bewegung).

– Sie müssen die modernen Organisations- und Arbeitsformen, Methoden, moderne Techniken und Mittel kennen und betätigen können.

– Die Studenten müssen die Gesichtspunkte, die Forderungen der Strukturierung, die Vorgehensweise der Auswahl von den Entwicklungsinhalten und die allgemeinen Fragen der Planung erwerben und Kenntnisse über die projektpädagogischen Kriterien und die Möglichkeiten der methodischen Komplexität und über deren Beziehungen und Zusammenhänge, über das Durchsetzen der methodischen Komplexität im Projektplanen haben.

– Sie müssen die Gesichtspunkte der Selbstanalyse und der Selbsteinschätzung kennen.

Die zu erwerbenden Fähigkeiten:

Die Studenten müssen fähig sein, kleinere, dann grössere thematische Einheiten zu den spontanen und den bewusst organisierten spielerischen Lerntätigkeiten der Kinder im Kindergartenalter zu planen, zu organisieren und zu leiten, in denen die methodische Komplexität zur Geltung kommt. Besonders:

• Die Studenten müssen fähig sein, die Eigentümlichkeiten und Gesetzmässigkeiten der Lerntätigkeit im Kindergarten zu berücksichtigen.

• Sie müssen die nötigen Grundprinzipien in dieser Lerntätigkeit im Kindergarten geltend machen.

• Die Studenten müssen in den Entwicklungsinhalten die zwischen den einzelnen Methoden vorhandene Verknüpfungspunkte erkennen, und diese während der Planung berücksichtigen. Sie müssen komplexe Projekte planen können. Sie müssen fähig sein, die komplexen pädagogischen Situationen zu deuten, in denen die Grundlage der Synthese die Erkennung der Aussenwelt ist, und wozu sich noch die Erkennung der Künste und die Bewegung verknüpfen.

• Die Studenten müssen fähig sein, die Entwicklungsinhalte dem Individuum und der Gruppe gemäss differenziert auszuwählen und zu organisieren. Sie müssen die zu der Entwicklung zweckmässigen Tätigkeits- und Arbeitsformen erwerben und die Methoden auswählen können.

• Sie müssen die kindliche Entwicklung stets beobachten, verfolgen und analysieren.

– Sie müssen zu den vorgenommenen Aufgaben Verbindungen suchen, sie müssen Kontakte aufbauen.

– Sie müssen sich selbst analysieren und sich immer wieder bewerten.

Die unten betonten Fähigkeiten sind zu bilden:

• bewusste Wertenwahl;

• die Verwendung von den Kenntnissen;

• die Fähigkeit, Zusammenhänge und Verhältnisse zu erkennen und die der Kreativität;

• die Fähigkeit, methodisch zu analysieren und zu synthetisieren und mit den neu entstandenen komplexen Einheiten zu assoziieren;

• komplexe Erlebnisse kreativ handelnd sowohl in den Einzelfällen als auch in den globalen Themenkreisen weitergeben können;

• die Fähigkeit, sichernde Verhältnisse erfolgreicher Tätigkeiten zu schaffen;

• die Situation zu erkennen und zu analysieren;

• andere zu motivieren;

• die Fähigkeit der pädagogischen Beobachtung und der Analyse;

• die Fähigkeit, die Aufmerksamkeit zu teilen;

• Sinn für Organisation;

• soziale Kompetenzen;

• soziale Grundfähigkeiten: Kommunikation, soziale Perzeption;

• Empathie;

• Toleranz;
• Konflikte lösende Fähigkeit;
• hilfsbereites Verhalten;
• die Fähigkeit der erfolgsreichen Leitung;
• Kooperationsfähigkeit;
• die Fähigkeit der Selbstanalyse, der Selbsteinschätzung und der Selbstannahme.

Berufliche Attitüde und das Verhalten
– Offenheit, Rezeptivität, beruflicher Schaffensdrang;
– innovatives Denken und Handeln;
– Verantwortungsgefühl und Aufgabenübernahme;
– anspruchsvolles Verhalten;
– gesellschaftliche Empfänglichkeit;
– Toleranz, annehmende und rezeptive Anstellung;
– Empathie;
– Kinderzentrische Anstellung (Miteinbeziehen und Ehre des Kindes, Zuhören usw.);
– Familienzentrische Anstellung und die Ehre der Familie;
– Überzeugung von der Erziehbarkeit und der Entwicklungsfähigkeit;
– ästhetische Empfänglichkeit;
– Selbstlosigkeit;
– positive, erfolgsorientierte Einstellung;
– Ehre der universellen und nationalen Normen;
– Die Überzeugung über eine ständige Entwicklung – umweltbewusstes Verhalten;
– Systemanschauung;
– Der Wunsch nach der individuellen Entwicklung.

Inhaltseinheiten des Moduls

Die erste inhaltliche Einheit des Moduls

Theoretische Fragen des spielerischen Lernens im Kindergarten = theoretische Begründung der komplexen methodischen Kompetenzen im Kindergarten

1. Thematische Einheit (2 St.)

– Auf den Kenntnissen über die Entwicklungspsychologie der Kinder im Kidergartenalter und über die allgemeine Pädagogik basierend, das Ziel und die Bedeutung sowie die wichtigsten charakteristischen Merkmale und Gesetzmässigkeiten des spontanen und des organisierten Spiels im Kindergarten zu erwerben, besonders:

• Die Möglichkeiten von Sammeln der spontanen spielerischen Erfahrungen

• Die Rolle der einzelnen Methoden.

2. Thematische Einheit (2 St.)

– Die Aufgaben der Erziehung im Kindergarten aus der Sicht der einzelnen Methoden zu erwerben.

3. Thematische Einheit (2 St.)

– Die Aufgaben der Fähigkeitengestaltung im Allgemeinen und im Rahmen der einzelnen Methoden zu erwerben.

4. Thematische Einheit (2 St.)

– Die im Rahmen des spontanen und des organisierten spielerischen Lernens geltenden Grundprinzipien zu erwerben.

Besonders wichtige Grundprinzipien sind:

• die Geltung der Prinzipien des spielerischen Individuums;

• die Geltung der Prinzipien der Betätigung;

• die Geltung der Prinzipien der Differenzierung;

• die Geltung der Prinzipien der Ungebundenheit;

• die Geltung der Prinzipien der Komplexität.

5. Thematische Einheit (2 St.)

– Die Wichtigkeit und den Verlauf der komplexen bzw. integriert handelnden, auf Erfahrung- und Erlebnissammeln basierenden Tätigkeitsorganisation zu betonen und die damit zusammenhängenden Aufgaben der Kindergartenpädagogen zu verwirklichen. (Die Grundlage der Synthese bildet das Erkennen der Umwelt und dazu kommen noch das künstlerisches Erkennen und die Bewegung.)

6. Thematische Einheit (2 St.)

– Die modernen Organisations- und Arbeitsformen, Methoden des spielerischen Lernens im Kindergarten, mit Berücksichtigung der Projektarbeit.

7. Thematische Einheit (2 St.)

– Die Gesichtspunkte, die Forderungen der Strukturierung, Vorgehensweise der Auswahl von den Entwicklungsinhalten und die allgemeinen Fragen der Planung.

Die projektpädagogischen Kriterien und die Möglichkeiten der methodischen Komplexität und ihre Beziehungen und Zusammenhänge.

Das Durchsetzen der methodischen Komplexität im Projektplanen.

8. Thematische Einheit (1 St.)

– Die beruflichen Forderungen, Gesichtspunkte und Ziel der Selbstbewertung, der Selbstanalyse und der Analyse des komplexen spielerischen Lernens im Kindergarten.

Die zweite inhaltliche Einheit des Moduls

Die förderung von kompetenzelementen – im rahmen einer praxisübung im kindergarten

9. Thematische Einheit (15 St.)

– Integrierte Darstellung der verschiedenen Studien, die Wiederholung der allgemeinen Forderungen des Projektschreibens (1 St.)

– Das spielerische Bekanntmachen der natürlichen und gesellschaftlichen Umgebung, mit Hilfe der bedeutendsten Tage der Natur und der Volkstradition und durch die komplexe Darstellung von Bildungsinhalten. Wie bestimmt man den Inhalt zur Aufgabe? Wie plant man die Entwicklungsprozesse? Wie organisiert und leitet man Tätigkeiten?

• Das Üben des Erkennens von spontanen spielerischen Lernsituationen;

• Das Üben von bewusst organisierten spielerischen Lernorganisation;

• Beobachtung, Selbsteinschätzung, Selbstanalyse (2+3 St.)

– Das Bewusstmachen der Beziehung und das Aneinanderknüpfen von der Literatur und der Musik (z.B. Die Rolle des Rhythmus, Melodie und Lautstärke in der Vorführung, die motivierende und erlebnisergänzende Rolle der Lieder und der Instrumente der Aufführung), der Literatur und der visuellen Tätigkeit (die Fähigkeit, ein inneres Bild vorzustellen und zum Erscheinen zu bringen), der Literatur und der Bewegung (mit grossen Bewegungen begleitete Gedichte). Die Herausbildung derjenigen Fähigkeit, diese zusammen planen und gemeinsam darstellen zu können.

• Beobachtung, Selbsteinschätzung, Selbstanalyse (2+5 St.)

– Leiten, Organisieren und Planen von spielerischen Lernmöglichkeiten, die mit der Bewegung zusammenhängen.

• Beobachtung, Selbsteinschätzung, Selbstanalyse (2 St.)

Arbeitsformen:

Frontale Form mit dem Lehrer, frontale Form mit dem Studenten, in Gruppen, in Paaren, individuell

Ort:

Fachräume, Gruppenraum im Kindergarten, Spielhof, Beschäftigung ausserhalb des Kindergartens, pädagogisches Labor.

Methode der Bewertung der Leistung der Studenten

Wichtig ist die Aktivität und das erfolgreiche Sein in den Aufgaben, die sich den Erwerb von Kenntnissen zum Ziel setzen. (Die Studenten müssen zuerst die erhaltenen Aufgaben lösen, dann darüber einen Bericht halten. Die Bewertung erfolgt auf einer dreistufigen Skala.)

Bericht:

Schriftliche Arbeit aus den 8 Themenkreisen der theoretischen Fragen des spielerischen Lernens im Kindergarten. Bewertung auf einer dreistufigen Skala. Einen Teil der endgültigen Bewertung bildet noch die drei stufige Bewertung der Arbeit der Studenten im Unterricht.

Praxisbewertung:

Die Erfüllung der individuellen und der in Gruppen verrichteten praktischen Aufgaben, die Bewertung der schriftlichen Vorbereitung, aktiver Teilnahme, der Selbstanalyse und der Selbstbewertung ergeben eine praktische Bewertungsnote.

Das Modul wurde erfolgreich eingeführt. Die Rückmeldungen der Studenten und der Lehrkräfte zeigen, dass die Vorbereitung und die Praxis in dieser Weise vielmehr dem Grundcharakter der Kinder entsprechen. Die Studenten zeigen grössere Selbständigkeit, Kreativität, Offenheit und berufliche Schaffenslust. Sie erkennen die Zusammenhänge, entwickeln eine komplexe Sichtweise und streben mehr danach, spielerisch zu sein.

So ist unser Modul zur Entwicklung der von uns zum Ziel gesetzten Kompetenzen geeignet.

Im Folgenden wollen wir sie anhand einiger Beispiele veranschaulichen und zeigen.

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CHAPTER III

Changes in educational policy – threat to or opportunities for kindergarten education?

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Learning of a six-year-old child during the kindergarten and school period: introduction to the problem

The Polish society has got accustomed to permanent economic, social and educational reforms. Many people think about and discuss the prerequisites of these changes and their consequences. In the present, we are experiencing yet another educational reform, which consists in programme and organization changes, especially on the steppingstone of the education of a six-year-old. The reform arouses many controversies, and inspires the parents' and pedagogues' environments to search for the answers to the questions concerning the quality of the kindergarten and school education, the chances of children from different environments, and the school's preparation to accept a six-year-old pupil.

The article concerns the issue of learning of a six-year-old child, who is in kindergarten or elementary school. It focuses on the chosen areas of the child's activity (play, work, and education) and analyzes the resources of the material environment of both kinds of facilities and the methods used in them, as well as the forms of the teachers' work.

The process of learning of a six-year-old child on the kindergarten's or school's premises is considered a basic category. Learning is a process of constructing, interpreting, and modifying personal representations of the world in a situational and cultural context (Bruner 2006). In the kindergarten's educational-didactic activity we notice three kinds of child's learning:

– spontaneous – the child undertakes casual activities (e.g. casual play, constructive or explorative play, shadowing, observing and experiencing objects and phenomena in the social and natural environment undertaken

by the children themselves, theatrical improvisations, an independently taken plastic-constructive activity) (Andrzejewska, Wierucka 2010) and the teacher is the organizer of the educational environment, for example, educational centres,

– spontaneous – reactive – in which the child is stimulated by the teacher through creating education and project occasions. The motivation of the child to undertake the activity is to satisfy one's cognitive curiosity and the desire to discover new things,

– reactive – the child solves different kinds of educational tasks that are planned and directed by the teacher in the form of educational classes.

"The task of the teacher is to create, on purpose, such an environment for the child in order for him to be able to learn at any moment" (Andrzejewska, Lewandowska 2009: 159). A pupil who actively builds his own knowledge simultaneously engages the mind and emotions, and connects different areas of knowledge. The teacher, planning the learning of a six-year-old child during the time in the kindergarten or at school, should "recognize a child's individual path of development, determine his style of learning, help the child in creating adequate self-esteem, not allow the feeling of otherness or rejection to appear, properly direct his activity, and create conditions to satisfy basic needs" (Grzeszkiewicz 2009: 377).

During the creation of an educational environment of the child's learning, the teacher faces the task of considering the arrangement of the thematic educational centres on the facility's premises (classes and other rooms of the institution) as well as the kindergarten's garden or the school's field. In Polish kindergartens, in recent years, the following centres have appeared: "play"; experimental and "scientific" research; health; independent work; interesting book; repose and dreams; composition and music, art, theatrical creativity; sciences (mathematics, reading, writing, work cards, alphabet, foreign languages); musical – movement and ballet activity; culinary; treasures; cultural (the presentation of children's work, photography, painting, religion); natural scientist and ecologist; secrets of history" (Andrzejewska, Wierucka 2010: 155).

While realizing an educational project or classes, the teacher of a six year old has to remember that s/he is not the only source of knowledge about the nature and the social world. Still, s/he proposes and formulates problems which – with his/her help and the help of other adults – children solve by themselves, during various cognitive, explorative, manipulative

and other activities. The six-year-old child ought to be an active subject, that is why the teacher should reasonably pair the methods and forms of work with the pupil. When organizing the learning of a child on the kindergarten or school's premises, the teacher should assume that the child's encounter with an adult "who thinks differently, makes demands, limitations, and orders" (Andrzejewska, Wierucka 2010: 155) must always be a developmental factor. Children need smart and conscious educators acting in their nearest developmental sphere.

Study results

The aim of the conducted research in the 2009/10 school year was to:

– define and compare the methods with which teachers work with six--year-olds,

– describe the material space in which the six-year-old child plays, works, and learns in kindergartens and schools.

Six kindergartens and five schools in the Lubelszczyzna area were studied, in which six-year-old children were learning.

The methods and forms that the teachers used during classes in kindergarten and school are presented below.

Table 1. Methods used by the teachers during classes in kindergarten and school

Methods used while working with a six--year-old child	Kind of facility					
	Kindergarten		School		Sum of results	
	Number	%	Number	%	Number	%
Passing	1897	21.38	1689	26.45	3586	23.81
Problematic	2581	29.09	1305	20.04	3886	25.81
Exposing	2449	27.60	2053	32.15	4502	29.90
Practical	1744	19.60	1338	20.90	3082	20.47

"The teacher of a six-year-old child should be a specialist in the area of subject-related as well as methodological knowledge" (Muchacka, Czaja--Chudyba 2007: 42). Unfortunately, the educational practice invariably professes the aimed, intentional, directed activity by the teacher. It prefers teaching in which the stimulus is the knowledge or a task given by the teacher and the pupil has few occasions to solve problems and

independently search for knowledge. In the examined kindergartens, the teachers most often used problematic methods; however, at schools the teachers most often reached for exposing methods. A six-year-old child, attending a kindergarten, has to acquire a series of abilities, including learning abilities. It is only possible in a social, cultural, and educational context of life. Therefore the teacher should make sure that the children as often as possible solve problems from their nearest developmental spheres. The course of classes conducted using the problematic methods encourages the child to undertake cognitive activity, to investigate, to conduct research work and to execute experiments. The problems that appear during classes should encourage the children to use their own knowledge and skills, as well as the knowledge and skills of their peers, the teacher, and other sources that are accessible at a given educational moment, for example, the parents. The pedagogue's task is "to evoke the children's curiosity, encourage them to start a spontaneous search, observe the pupils' behaviours, stimulate their activity, direct their actions, and encourage them to look for other possible solutions" (Muchacka, Czaja-Chudyba 2007: 8). Hence, the teacher's activity must be "based on thorough knowledge about the child's development. It is a necessary condition for knowing and understanding the occurring phenomena and foreseeing the consequences of the actions undertaken" (Grzeszkiewicz 2009: 376) by the teacher.

"How the child will cope with new challenges depends on the actual level of development at which one begins learning, on positive and negative experiences in different fields, the knowledge and skills mastered in the early and middle childhood, and on educational conditions" (Grzeszkiewicz 2009: 372).

The teacher, as well as the child himself, has influence on the quality of the child's activity. "The adult determines, among others, such elements as: the space and its arrangement as well as the time devoted to the child's different activities" (Andrzejewska, Lewandowska 2009: 155). The kindergarten space is the group classroom, garden, locker room, hallways, gym and recreational class, consulting rooms (e.g. of a speech therapist). On the other hand, the school space is the classroom, hallways, recesses, gym, field, common room, or the school store. Both the time and the space are perceived differently by children and teachers.

What kind of learning environment does the teacher of a kindergarten and school create for a six-year-old child?

Table 2. Material conditions created by the teacher in kindergarten and school

Material environment	Kindergarten		School	
	Number of elements	%	Number of elements	%
Environment for casual, theme, constructive play	889	11.8	92	1.9
Environment for recreation and relaxation	216	2.86	38	0.75
Learning environment				
Area: language and mathematics education	1988	26.39	1251	25.89
Area: technical education	632	8.38	196	4.05
Area: aesthetics education	1922	25.51	1293	26.76
Area: health education	1678	22.2	1848	38.25
Area: farming work in class and in the garden, cleaning activities	207	2.7	113	2.33

The external space is locally, socially, and culturally conditioned. It concerns the existence and co-existence of educational subjects. It is located in three areas: perceiving the external (material) world, the social area, among others the contact with peers, and the world of one's own needs and possibilities of their realization. The perception, understanding, and enrichment of these three areas is an important educational goal (Dymara 2005).

A six-year-old child using accessible resources (including material) has to create one's own knowledge independently. Better material conditions, intellectual resources, social-communicative environment between the teachers and the peers secure a more effective way of gaining and constructing knowledge. The kindergarten and school create different material environments for the six-year-old child. The kindergarten pays more attention to creating space for theme, constructive, and experimental play, recreation and relaxation of the pupils, as well as learning in the area of language, mathematics, and technical education. The school focuses on the child's learning in the area of health and aesthetics education and organizes space for didactic play. Material conditions for casual and theme play in the school are considerably limited with respect to the objects as well as the space needed.

Both of the facilities do not create the opportunity for the children to learn to carry out cleaning, gardening, farming work and the work for the welfare of the peers and the community. The prepared utensils and tools for children's work are low quality and small in number. Education facilities should be equipped with objects, tools, and aids that will introduce the child to the world of people's work, satisfy the children's curiosity, and inspire their respect for the work done by other people. One should remember that the child's work is an action focused on a goal, and heads for concrete results. An essential task of the teacher of six-year-olds is shaping positive behaviours towards work.

The area of technical education of the six-year-old child seems neglected in both facilities. It is disturbing because technical education is of considerable significance, as it implements the child to planning, managing practical activity, develops thinking and spatial imagination, practices precision, endurance, regularity, manual efficiency, and acquaints the pupil with tools needed to execute work. Objects constituting copies of real tools encourage the child to handle them carefully, teach the specificity of their usage and show the child the technical thought of many generations.

During the day, a six-year-old needs a moment of rest and relaxation. A well-prepared corner for relaxation and appeasement allows the child to get rid of negative emotions, restore inner balance and establish bonds with peers. In such a place there could be mats for lying down, pillows, blankets, recordings with relaxing music, cuddly toys, figures for puppet theatres, books and magazines to look over with peers.

Conclusions

"The child sees the world in its entire complexity, as a cohesive unity. In the child's mind there do not exist abstractive divisions, resulting from portioning knowledge within different branches of science. Thanks to this, one sees the connections, dependencies, which others do not perceive" (Nowak 2007: 409). The kindergarten and school, by following the developmental needs of a six-year-old and the logic of a learning child, have to think more precisely about the material space, in which the pupil stays for many hours. The teacher of a six-year-old, according to the constructivism theory, should organize the educational environment

for the child's learning with more attention, and should avoid methods of providing prepared, only appropriate scientific knowledge. Aids and objects located in the classrooms of the six-year-old children in the facilities surveyed remained in a very loose connection and were logically and methodologically unorganized. This did not help the children in discovering the world's order, did not encourage them to classify, compare and segregate objects in relation to qualitative and quantitative features.

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Adaptation to the institution of a kindergarten – does it concern only the child?

Adaptation is a process of adjusting oneself to the conditions present in one's environment. In the social meaning, it is understood as a process of achieving balance between the needs of a person and the conditions of the social environment (Milerski, Śliwerski 2000: 7). In the environment of a kindergarten, the adaptation of children is a complex process, one that is situated between children's sphere of safety and their integration, that is to say the aspiration to establish relationships with the community, i.e. the children and adults of whom the kindergarten environment is composed. Satisfying the widely understood need for safety in its physical and psychological aspect is one of the conditions of children's gentle adaptation to a kindergarten. Successful adaptation of children to the institutional environment is usually an introduction to the next process, which is the integration with a group in which children spend time. The awareness of community has a positive influence on the feeling of safety, which, in turn, facilitates the adaptation to external conditions and expectations.

↔ SAFETY ↔**ADAPTATION** ↔ SOCIAL INTEGRATION ↔

As a process which continues for a stretch of time, adaptation also means children's seeking an appropriate place for themselves within their relationships with adults as well as with other children[1]. Some children

[1] The issues of adaptation with regard to 3-year-old children were described in the work by Jadwiga Lubowiecka. Refer to J. Lubowiecka, *Przystosowanie psychospołeczne dziecka do przedszkola*, Warszawa 2000.

adapt to a kindergarten quite quickly, while others need very long time to succeed; there are also children who do not manage to adapt to the kindergarten environment at all. It is worth mentioning that this does not concern only the youngest children (mainly three-year-olds) to whom adaptation programmes developed by kindergarten teachers are most frequently dedicated. It should also be mentioned that there are many children among three-year-olds who adapt "painlessly" to institutional conditions. The issue of "finding" one's own appropriate place in a children group is the problem of children who have contact with a new kindergarten environment for the first time, regardless from their age. The scope of tasks faced by a child who begins kindergarten education is, doubtlessly, complex. It happens that meeting the requirements and observing the principles which exist in a kindergarten is difficult, particularly when first experiences gained by children do not reflect the image of the institution painted by their parents.

As Jadwiga Lubowiecka (2000: 20) observes, the kindergarten environment is an element which dominates over a child. The institution of a kindergarten, which has been created intentionally for the development of children, remains static towards them during the process of adaptation. It is the children who should adapt to the institution's requirements, meet its expectations, and follow its programme. A child entering a kindergarten for the first time must face many tasks on many levels, namely:

a) on a personal level:

– meeting new people: adults and other children,

– the necessity to spend time in a large peer group,

– establishing relationships with newly met people (in a very short time),

– adapting to requirements expressed in the form of a request, order, or prohibition,

– the change of one's life rhythm and lifestyle,

– accepting one's own social position which is different than that in the family.

b) on a physical level:

– becoming familiar with one's own surroundings and learning the new space,

– becoming familiar with kindergarten rooms, their functions, and equipment,

– learning how to use equipment located in the classroom, bathroom, toilet, cloakroom, garden, etc.

c) on a strategic level:

– gathering information about the organization of a day in the group and in the kindergarten,

– becoming familiar with requirements concerning the participation in the life of the group,

– becoming familiar with and identifying social principles and norms binding in the group and in the kindergarten,

– learning the independence,

– mastering self-care activities (unassisted eating, sanitary activities, putting on and taking off basic clothes, or unassisted walking up and down stairs).

The strategic level seems to be the most important, although all levels listed here complement and condition each other. Presenting the activities that children have mastered (mainly self-care activities) as early as at the beginning of the education has significant impact on their independent and autonomous functioning in the group (Kuszak 2006: 59–65). The level of gained competences within this scope provokes children to perform some activities independently and, at the same time, provokes the teacher to praise children. By sending positive messages, the teacher enhances children's self-esteem, which speeds up the process of acclimatization.

Difficulties in children's adaptation to a kindergarten are of various intensity and last for different periods of time. Most frequently, they are the consequence of a threat to the sense of security, which is connected with anxiety, fear of loneliness and of the unknown, an excessive number of new stimuli, or inability to face up to difficult situations (Post 2010: 44–46). Such threat is also a result of discrepancies between the expectations and requirements of the environment and a child's ability to meet them. Behaviours and reactions which are most often observed and which reflect children's problems with adaptation are the following: crying during the parting with parents, being reluctant to leave home in the morning when going to the kindergarten, crying during the stay in the kindergarten, aggression, loss of appetite, refusing to eat, staying close to an adult (often holding an adult by the hand), participating in games and classes

unwillingly, refusing to contact other children, withdrawal, or apathy[2]. Somatic disorders, which sometimes occur, like stomach ache, vomiting, diarrhoea, sleep disorders, bed-wetting, or stuttering, require consultation with a specialist and consideration whether a child is ready to go to the kindergarten and whether or not this moment should be delayed.

The process of acclimatization depends on a child's development stage, individual adaptive predisposition and general resistance of the nervous system (Klus-Stańska 2004: 7). Adaptation is most difficult for fearful and shy children, those who have had unpleasant experiences in contacts with adult strangers (e.g. they stayed in a hospital for a long time or have undergone medical treatment), those who have already had an unsuccessful attempt in adaptation, or those who have not had contacts with peers before (Lubowiecka 2000: 35–46).

Adaptive abilities may be enhanced or impaired by the impact of the family or institutional environment. It is the family that most completely provides a child with behaviour patterns in various situations, teaches a child to perform various roles, shows various ways of communication with the environment, and introduces the child into new social tasks (Klus-Stańska 2004: 34; Brzezińska, Lutomski, Smykowski 1995: 8). Conclusions of the research on adaptation by G. Sochaczewska cited by J. Lubowiecka (2000: 33) indicate that children who adapt best are those who come from families with a rational style of upbringing in which material conditions and social status are of lesser importance. Among younger pre-school children, those who have most difficulties in adaptation are children who come from overprotective families (in which e.g. children are helped with self-care activities, which makes them more dependent and helpless in a new environment); for older children, the process of adaptation is more difficult as a consequence of their parents' rejection and lack of acceptance (children do not have the understanding, support, and interest of their parents) (Lubowiecka 2000).

Problems with acclimatization are experienced also by those children whose parents have not completely managed themselves to accept the fact that they have to part with the child (this concerns mothers in particular). A survey conducted in one of the kindergartens in Łódź among parents

[2] Emotional and social development of pre-school children was described by Jan Strelau. Refer to J. Strelau, *Psychologia. Podręcznik akademicki*, Gdańsk 2000, pp. 305–306.

who have just had contact with the institution of the kindergarten for the first time indicated that it is not only children who experience difficulties in the process of adaptation to the new situation. Asked in the survey about their feelings during the first days of their children's stay in a kindergarten, the parents mentioned mainly the following: 1) *fear and anxiety about the child's ability to manage in a new situation*; 2) *anxiety about whether the child is crying*; 3) *uncertainty of how long the child can stand the absence of the mother*; 4) *fear and anxiety about children and the teachers, who have to replace the parents to a large extent*; 5) *curiosity and thrill*; 6) *anxiety*, *pride and joy*; 7) *happiness and joy that their child reacted to the kindergarten so well*; 8) *satisfaction that their child stays in the kindergarten willingly*[3]. The answer to "Did the reaction of your child on the first day of his/her stay in the kindergarten surprise you?" was "Yes" in the majority of the cases and the reasons were the following behaviours of the child: 1) *We expected greater confidence and courage of our child*; 2) *Our son quickly accepted the principles binding in the kindergarten (e.g. sitting in a circle, unassisted eating)*; 3) *We observed that our child was enthusiastic and glad of his/her stay in the kindergarten*; 4) *Our child cried when we wanted to take him/her home and it surprised us very much*[4].

Thus, the acceptance of the new environment by children depends greatly on the approval and the positive attitude of their parents or carers. Their fear and anxiety may infect the child so much that the child feels fear and anxiety, too. It often happens that during the morning parting in the kindergarten parents send contradictory messages to their children, e.g. they say "go to your class" and at the same time they hold their children, requesting them non-verbally to stay with their mother or father. Such behaviours do not facilitate the parting; on the contrary, children miss their parents, they are often in despair, and the teacher is forced to take them away from their parents. It is the parents' attitude of consistency, firmness, and calmness that would, undoubtedly, help their children to overcome the fear.

Understanding the difficult position of children and their parents at the introductory stage of becoming a part of the institutional environment, many kindergartens and many teachers have developed programmes

[3] The survey was conducted among parents in one of the kindergartens in Łódź.

[4] Ibidem.

facilitating the adaptation process of children as well as of their parents. The following ideas may be proposed to parents:

– setting a regular lifestyle and day-rhythm for their child,

– teaching their child independence, particularly while putting on clothes, eating, and using the toilet,

– creating opportunities to meet peers and people who are not close relatives,

– visiting a kindergarten before the beginning of the education,

– buying all books and materials used in kindergarten education together with their child,

– talking about the kindergarten, dispelling their child's fear, anxiety, and uncertainty,

– reading specialist literature,

– adopting an attitude accepting the fact of parting with their child in the kindergarten,

– refraining from prolonging the moment of the morning parting with their child in the kindergarten,

– respecting the arrangements concerning the time of taking their child home from the kindergarten.

Adaptation programmes of kindergartens could include activities facilitating easy adaptation of children and their parents to a kindergarten before the beginning of and during the school year. Steps which could be taken before the beginning of the education are listed below:

– gathering information about children as early as during the enrolment process (health, personality, level of fitness, level of independence, including self-care, etc.),

– granting parents the right to stay with their children in the kindergarten (e.g. during the enrolment process),

– granting parents the right to enrol their children to a kindergarten group before the beginning of the new school year (e.g. in May or June),

– giving parents (and their children) the possibility to participate in the first meeting with teachers (e.g. in June),

– in the case of younger brothers or sisters: visiting the kindergarten group when their parents take their elder brother or sister home, participating in ceremonies and events in the kindergarten (the first stage of adaptation).

During the school year, the following activities of the kindergarten staff would be desirable that would make adaptation easier for children, their parents and the teachers:

– consenting to the presence of an adult who is close to a child in the group (it is necessary to set the rules),

– maintaining phone contact with parents,

– shortening the stay of children in the kindergarten (according to parents' and carers' possibilities),

– every-day exchange of information about children between teachers and parents,

– individual meetings of and conversations between teachers and parents (in intimate atmosphere),

– allowing children to bring a favourite toy, mascot, *soft toy*, pillow, or the parents' photo to the kindergarten,

– awakening the feeling of belonging to the new place, setting individual places (a shelf in the cloakroom, a drawer in the classroom, a badge, a binder for drawings, a name card, a towel, or toiletries),

– introducing to other children and staff working in the group (and gradually in the whole kindergarten),

– becoming acquainted with other places in the kindergarten (classrooms of other groups, the gym, the kitchen, the dishwashing room, etc.),

– giving children freedom in choosing games, classes, or educational aids,

– encouraging children to be independent,

– encouraging children who are already adapted to the kindergarten to take care of the newcomers (in the case of groups composed of children of different age),

– accepting children, their needs, possibilities, and interests,

– taking into account individual dietary habits of children,

– creating the atmosphere of calm, quiet, friendliness, and trust,

– being understanding for children's awkwardness and confusion,

– cooperation of all staff working in the group and in the kindergarten in this field.

It happens that parents of children who have great difficulties in adapting to a kindergarten use the possibility of staying with their children in the group until the process of adaptation has been completed. In such a case it is essential to set common rules which would determine the level and scope of parents' presence, and to refer to them if such need arises[5].

[5] Proposals of rules for parents staying with their child in a group until the process of adaptation has finished (from one of the kindergartens): *Parents may stay with*

The process of adaptation to a kindergarten is supposed to help children but also, as has already been mentioned, their parents, who are anxious that they have to leave their children in the care of the kindergarten staff. The following opinion of a parent is very accurate: "I think that parents are more afraid of a kindergarten than their children are. It is completely unnecessary". Parental fears are dispersed when they find friendliness, help, support, and professionalism in teachers and when they see that the environment is clean and aesthetic and it provides an interesting educational offer. Among factors which facilitate adaptation, the parents who answered the survey mention, above all, the following: 1) *appropriate and consistent attitude of the kindergarten staff;* 2) *nice and professional care*; 3) *nice atmosphere in the kindergarten*; 4) *pedagogical care of the kindergarten*; 5) *nice and friendly surroundings; colourful classrooms*; 6) *possibility of staying in the kindergarten before starting the education*; 7) *becoming acquainted with children from the group before starting the education*; 8) *the presence of the elder brother or sister*; 9) *willingness of children to spend time with their peers;* 10) *groups composed of children of different age;* 11) *interesting classes; learning at play;* 12) *becoming more acquainted with the kindergarten environment*; 13) *acceptance of a weekly schedule*; 14) *learning of various "life" tasks*; 15) *positive attitude of children towards the kindergarten*[6].

It may be concluded that the adaptation process has been completed basing on the observation of children's behaviour, e.g. their functioning in the group, while contacting peers, during play and tasks. Undoubtedly, one of the symptoms showing that children have adapted is their readiness to come to the kindergarten regularly, "painless" morning parting with their parents, participation in games and classes with other children, establishing and maintaining relationships with other children and adults, and leaving

their child in a group until the adaptation has finished. 1) During their stay in the group, parents do not interfere with educational activities of the teachers; 2) Parents let problems arising between children be solved by the teacher; 3) Parents try not to judge the behaviour of other children and not to make any comments; 4) Parents' assistance will be welcome while: a) children (particularly the younger ones) are putting on or taking off their clothes before and after going to the garden or going for a walk, b) children are playing outdoor or in the gym (safeguarding children or playing together with them), c) during hygienic activities in the toilet.

[6] The survey was conducted among parents in one of the kindergartens in Łódź.

their classroom without problems (e.g. participating in additional classes which take place outside the group). It happens that children experience re-adaptation to the kindergarten, usually as a result of a long absence caused most frequently by a disease. In such cases, they will always need time and experience.

Adaptation to kindergarten conditions, as has already been mentioned, is a process which concerns children as well as their parents. A separate issue is adaptation from the teachers' point of view in the context of their relationships with children who are newcomers to the kindergarten, the children's parents, and other teachers in the group and in the kindergarten. It is the teacher working directly with children that is responsible, on behalf of the institution, for supporting children and their families in this difficult period of first contacts with the kindergarten environment. Beginning as early as from their first contacts with the kindergarten, children establish two types of interactions; the first one is "a child ↔ other people" and the second one is "a child ↔ physical environment" (Lubowiecka 2000: 51). Teachers play the role of an intermediary and an initiator in both those types of interactions. It is the teachers who are expected to provide children with the sense of psychological security in the period of becoming acquainted with the new environment[7] and to make it easier for the parents to function in the organizational and pedagogical sphere of a kindergarten. The acceptance of each child in a kindergarten group requires an individual approach of the teacher; owing to that children gain confidence in their own abilities and in themselves (Drogoszcz, Piszczek, Zaleska 2008: 62–63). A well-thought out adaptation process at the level of individual groups and the whole kindergarten significantly helps children as well as their carers with settling into the new environment. However, it requires that teachers have communicative skills on many planes, i.e. the teacher ↔ children; the teacher ↔ parents; and the teacher ↔ other teachers.

[7] In the light of the core curriculum for pre-school education from 2008, one of the aims of the education is "to develop emotional resistance in children, which is necessary to manage sensibly in new and difficult situations, including bearing stress and failures mildly". Refer to *Order of the Minister of National Education as of December 23, 2008 concerning the core curriculum for pre-school education in kindergartens, kindergarten divisions in primary schools, and other forms of kindergarten education*, Dziennik Ustaw [the Polish Journal of Laws] 2009, no. 4, item 17.

The research on adaptation to the kindergarten environment referred to in this paper also included a group of teachers, who recognize the adaptation process as significant in institutional education and who identify it not only with children but also with their parents and other teachers[8]. Mostly, they described the feelings which accompanied them in work on the first days of a new school year, such as anxiety, fear, uncertainty, doubts (*Will I cope?*), stress, distance (*examining borderlines in relationships with parents*) but also such as curiosity, certainty, willingness to "build" something new, support, and satisfaction.

Teachers recognize the acclimatization process as an element of their work; on the other hand, they see it as a cause of difficulties. Problems mentioned by the teachers include:

a) on the level of the teacher ↔ children:

– difficult communication with children who do not accept social norms in relationships with others, i.e. other children and adults (verbal and physical abuse);

– disregard for teachers' instructions;

– the need for individual approach to each child when most of them are crying and are anxious;

– dedicating most time and attention to newcomers with a feeling that it is at other children's expense;

b) on the level of the teacher ↔ parents:

– lack of understanding for teachers' intentions on the part of parents;

– stress related to parents' expectations;

– lack of uniform requirements on the level of home – kindergarten (divergent expectations and rules);

– inconsistent attitude of parents towards their children;

– parents showing impatience and excessive expectations concerning their children and the kindergarten;

– pressure from parents that their child should participate in all additional classes and should be able to play with all other children;

– lack of acceptance and understanding;

– awareness that in some cases more time should be devoted to parents than to children;

c) on the level of the teacher ↔ other teachers:

[8] The survey was conducted among parents in one of the kindergartens in Łódź.

– concern for finding a common language and for proper communication and cooperation with a colleague from the team;

– possibility of sharing one's fears, difficulties, and feelings;

– concern for establishing a consistent approach within a group towards children and their parents[9].

Creating the atmosphere of security and mutual understanding in a kindergarten, which is a condition of proper acceptance, is a task for all participants in the educational process. The successful completion of this process is a condition of further development not only of a child but also of parents and teachers. Eliminating fears and anxiety in mutual relationships and open and direct communication enhances the awareness of the aim of common care, educational, and didactic activities. A kindergarten should be a safe and open place of involvement, realization of one's passions and using one's potential for all, children as well as adults. The successful completion of the adaptation process is the introduction of the next stage, namely the integration of the group of teachers, children, and their parents.

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Eductive abilities of six-year-old children in Poland in the light of the length of pre-school education

Analysis issues

The key questions should not be missing from the reflection on the role and condition of pre-school education in the light of modern educational transformations and analyses of theoretical sources inspiring the practice of supporting a child's development. One of them is the question about the theoretical findings on the possibility of supporting the development of children. The subject dispute is not unequivocal. It concerns, on the one hand, recognition that a child's development and the influence on him/her have genetic determinants. Then, the possibilities of practice would concern the existing state, measured by children's abilities. On the other hand, it is considered that a child's development takes place, first of all, owing to the stimulating impact of environments, including family and institutional (school/pre-school) ones. Various tasks are put towards practice then.

In particular, a major role is assigned to pre-school education and care. It belongs to the fundamental human rights. But at the same time it is often stated that it provides enormous social and economic benefits. Kindergarten reduces social and gender inequalities, prepares for school, facilitates the transition to primary education, increases the number of students leaving school, reduces poverty, sets positive results in education, causes high economic benefits, and increases participation of women in the labour market (Sinyolo 2008: 17).

In the period of childhood, the most important socialization institution is, naturally, family. Later, there is school, teachers, and a bit earlier – the kindergarten, where a child acquires the competences necessary to function. Some researchers define this process as a socialization process (Borowicz

1997: 259). Higher school readiness is attributed to 'kindergarten' children than to children not attending kindergarten, regardless of the readiness measurement. Many authors are convinced that kindergarten is an important stage to an educational career, although there is little empirical evidence of such influence (Białecki 2006).

The article presents the evidence of the relation between the pre-school education of the six-year-old children in Poland and children's eductive abilities, which indirectly determine children's intelligence.

How does the pre-school education of the six-year-olds correlate with the children's eductive abilities measured with Raven's test in the coloured version? What is the connection with the type of institution in which children have prepared for school?

Material and method

The data presented in the article refers to the empirical research conducted in 2006 within the research project 'A six-year-old child on the threshold of the school education' (financed by the European Social Fund and Ministry of Education). The aim of this study was a diagnosis of the school readiness of the six-year-old children in Poland for lowering the age of starting school education. The tests were carried out twice. They were conducted in April and May 2006, when 34,225 children finishing one-year preparation for starting school were tested (children born, first of all, in 1999), and in September and October of the same year in the whole Poland, when 33,616 children starting one-year preparation for school education were tested (mostly children born in 2000). The selection of the children to the study had the nature of a random, layer-team selection, and the research samples were representative with regard to the type of the institution (kindergarten, school), and the environment (town, village). Over 8% of the population of six-year-old children were examined in each case (Walasek 2007a, 2007b). At the same time, parents of the children assigned to the study were examined (spring: 31,389; autumn: 29,987). In further analyses, in the drawings, the first study is described as sequence I, and the second as sequence II.

In various studies, the level of children's school maturity is determined depending on the assumed concept (for example, the concept of

D. Goldman, E. Gruszczyk-Kolczyńska, E.B. Hurlock, S. Schuman, and many other authors). The basic element of many of them is the intellectual development of children. In this research, to determine the level of mental development, one of the methods used was Raven's Progressive Matrices in the coloured version (TMK-K), which was acquired from the Psychological Laboratory Tests of Polish Psychological Association (Jaworowska, Szustrowa 2003). The results were also referred to the children's certificate age, measured in decimal parts of the year from the date of birth and the date of the study.

Raven's Progressive Matrices has its theoretical source in Spearman's concept of intelligence, who, on the basis of high correlation of school abilities (the ability to count, read, spell), assumed that the common general factor *g* is fundamental for mental abilities. It is expressed in the form of eductive abilities (the ability to gain new insight, to perceive sense in the chaos, to go beyond the information provided, to create new concepts enabling correct thinking), and reproductive (the ability to recall and use the cultural resource of clearly stated and verbalized knowledge). In order to assess both types of abilities, Raven constructed the Matrices Test and Vocabulary Scales. Nowadays, the test has already got many applications. Coloured Version of the Test, first published in 1947, is designed for testing small children, people with reduced intellectual ability and the elderly.

As a result of much research, now it is recognized that Raven's test is the best single measure of the factor *g* and 'it can be regarded as relatively independent on cultural factors, a test to measure general intelligence, understood as fluid intelligence', which, as we know, is biologically conditioned. However, the views on the changes (growth) of an individual's eductive abilities in the course of a lifetime are unclear. They are considered to be growing more systematically in subsequent generations (Jaworowska, Szustrowa 2003: 6). Despite the objections of many researchers, the test is widely used around the world to study the general group intelligence. In Poland, after a 50-year period of use, the test was already standardized. It is noted that: with age results in TMK increase; the sex does not differentiate the results; the higher is the education of the parents, the higher are children's results; almost at all age levels, the highest results are achieved by children from large cities; TMK is a better predictor of school results of girls than boys.

The length of children's pre-school education in years was defined by their parents in a survey[1]. The children's age was measured on the basis of the date of birth and the date of the study, converting it to the certificate age.

The results of the research presented in the article are limited to the data sets in the scope of the level of mental development measured with Raven's test. Finally, the analysis in this article involved 32,704 children and their parents studied in the spring of 2006 and 31,653 children together with their parents surveyed in the autumn of the same year (so 95.5% of all the children in the first study, and 94.2%, respectively, in the second one).

Test results

The studied children had their one-year preparation for school in school or kindergarten. In the first sequence, there were 42.7% of children in schools (57.3% in kindergartens), in the second one 43.8% and 56.2%, respectively. As stated in the report from this research, this showed a good coefficient of population coverage (Walasek 2007b: 18).

Figure 1 presents the length of pre-school education declared by the parents with the control of an institution type in which children had their one-year preparation for school.

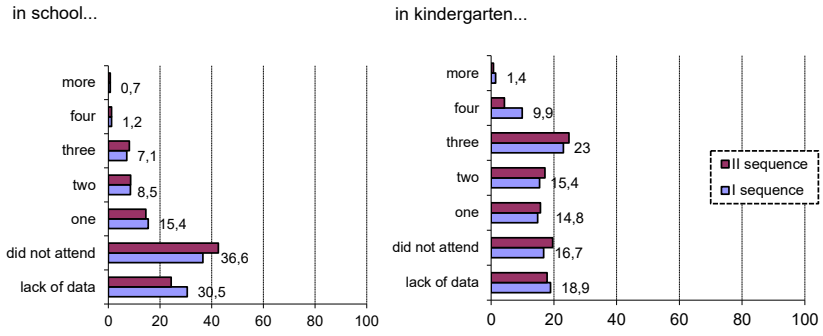

Figure 1. Children's pre-school education in the institution

[1] Parents not always filled in the survey following the instruction. In the case of the education, 'How many years (earlier) did the child attend kindergarten?', they also answered in months. In the presented analyses 6 months is not a year, and 1.5 years do not mean two years.

The type of institution clearly differentiates the surveyed. Longer pre--school education refers, first of all, to those children who had their one--year preparation in kindergartens. Figure 2 shows the relation between the levels of the children's eductive abilities.

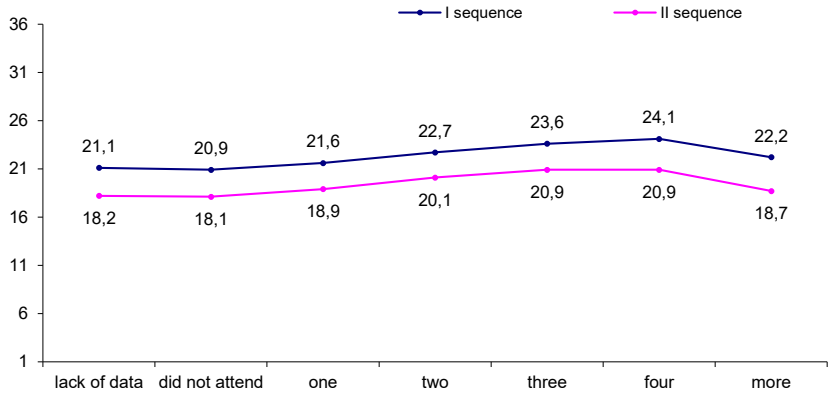

Figure 2. The general result of the test in groups of the pre-school education

Averaged in large children subsets, their test results show higher abilities of those six-year-old children who experienced a longer period of pre-school education. The tendency is maintained in the situation of 'precipitation' of the institution influence. The data is presented in Figure 3 and 4.

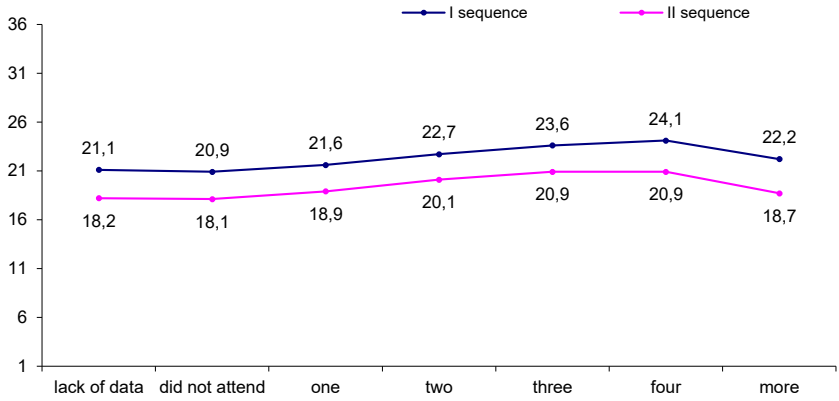

Figure 3. A general result of the test in groups of pre-school education in the school environment (sequence I: N = 13,951; sequence II: N = 13,805)

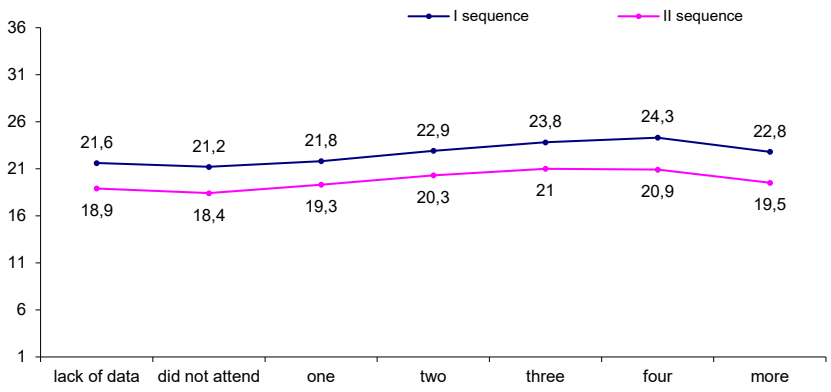

Figure 4. A general result of the test in groups of pre-school education in the kindergarten environment (sequence I: N = 18,753; sequence II: N = 17,848)

Similarity is also characteristic of the correlation between the test results and the length of education counted in number of years and months in groups of the institution type. This is demonstrated by the data in Table 1.

Table 1. Correlation between the test results and the pre-school education

X	Raven in total	Raven A	Raven B	Raven AB	Pre-school education
In total…					
Raven in total	1	as below	as below	as below	as below
Raven A	0,727/744	1	as below	as below	as below
Raven B	0,806/0,798	0,421/0,424	1	as below	as below
Raven AB	0,892/0,879	0,505/0,496	0,590/0,570	1	as below
Pre-school education	0,237/0,244	0,139/0,167	0,200/0,201	0,226/0,226	1
In school...					
X	Raven in total	Raven A	Raven B	Raven AB	Pre-school education
Raven in total	1	as below	as below	as below	as below
Raven A	0.744/0.740	1	as below	as below	as below
Raven B	0.808/0.788	0.405/0.402	1	as below	as below
Raven AB	0.882/0.869	0.498/0.480	0.575/0.551	1	as below

Pre-school education	0.134/0.194	0.062/0.138	0.121/0.162	0.134/0.170	1
In kindergarten..					
X	Raven in total	Raven A	Raven B	Raven AB	Pre-school education
Raven in total	1	as below	as below	as below	as below
Raven A	0.733/0.741	1	as below	as below	as below
Raven B	0.829/0.800	0.419/0.429	1	as below	as below
Raven AB	0.886/0.881	0.508/0.497	0.589/572	1	as below
Pre-school education	0.223/0.213	0.136/0.137	0.190/0.177	0.211/0.202	1

Legend: correlation of the chronology, p<0,01, sequence I/sequence II, as below – as shown below due to symmetry

Children's eductive abilities are determined not only by the type of institution which they attend, but also by the length of stay in this institution. At the same time, it is noted that the average test results in the groups of children's certificate age are subject to regularities in which higher results concern older children (this also refers to the results of the relations between the sequences). The data is presented in the following figures (5–8)[2].

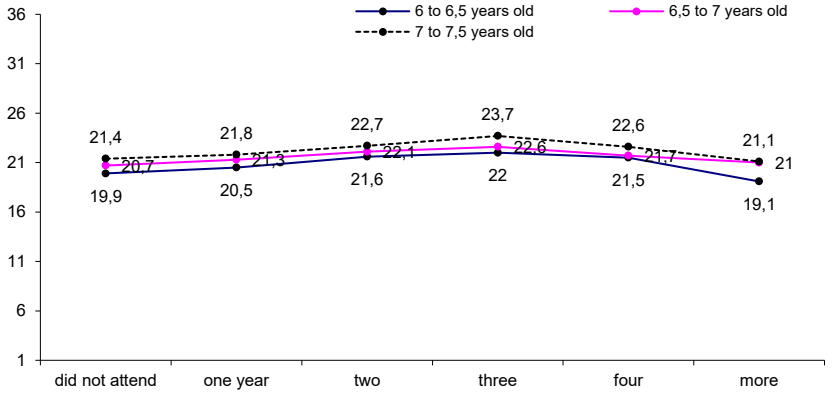

Figure 5. The general result of the test in groups of the pre-school education and certificate age in the school environment (sequence I)

[2] The charts present the data referring to the key, numerically highest children's subsets concerning their certificate age

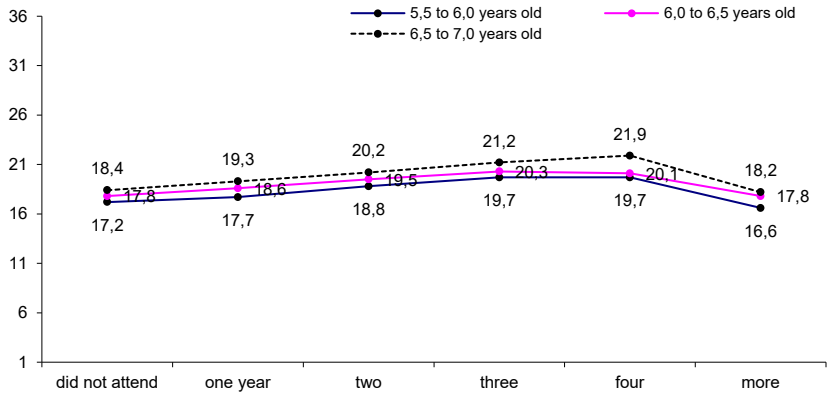

Figure 6. The general result of the test in groups of the pre-school education and certificate age in the school environment (sequence II)

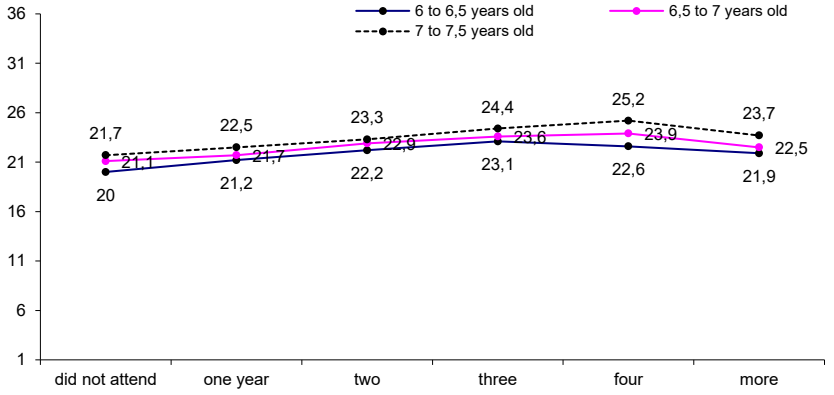

Figure 7. The general result of the test in groups of the pre-school education and certificate age in the kindergarten environment (sequence I)

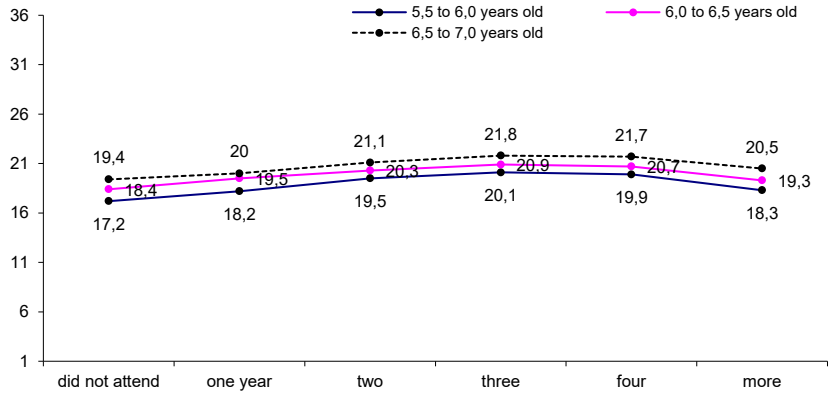

Figure 8. The general result of the test in groups of the pre-school education and certificate age in the kindergarten environment (sequence II)

Summary

The test TMK enables the measurement of eductive abilities of people who have not formed fully the ability to compare and reason by analogy yet, therefore, the test is often used for small children (aged 3 to 11). The test measures only the eductive aspect of the intellectual abilities of the studied person, which means that his abilities to reproduce are beyond observation. The scientific environments recognize the relative independence of test results from cultural factors. This means that only biological factors are important here.

This independence of test results from the cultural influences puts the results of research in an interesting light. Development of children is naturally a derivative of the phase of development, as the last figures show, but there is, at the same time, an obvious influence of the children's stay in pre-school institutions. In these institutions a child faces numerous 'occasions' stimulating his/her development.

Finally, therefore, the study results show:

1) school readiness of six-year-old children in Poland in 2006, measured by the level of mental development (high results of Raven's test), including higher performance of children in pre-school institutions, and the

increase of the mental level of six-year-old children in Poland in relation to the data obtained in the last decade of the 20th century, when Raven's test is the basis for it (Jaworowska, Szustrowa 2003: 21),

2) directly proportional relation of the pre-school education to the level of children's mental development, regardless of the institution type in which the research was conducted,

3) as a consequence, negative selection of children who do not experience primary socialization, and indirectly secondary as the bases for children's mental development, and, therefore, probably also not biological aspects of human mental development (maybe mutual socialization),

4) thus, entanglement of the practice of a small child's education in Poland in the cultural context in which the child is functioning.

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On the creation of components of pre-school children's competences in context

On the grounds of analyses of its historical development, 21st century society has articulated certain conclusions, instructions and recommendations concerning many different spheres of human life. Inter alia, society has set forth the rules governing an individual's acquisition of knowledge and its development. In the course of its existence, it has discovered a means to ensure the acquisition of knowledge, namely compulsory education mostly implemented as school attendance. Society has incorporated compulsory education and school attendance in the fundamental legal regulations of the state. It has appointed a place where knowledge has been cultivated, i.e. the system of schools and educational institutions. Society also observes whether the act which requires that knowledge be acquired in the form and place determined is adhered to, and sanctions failure to do so.

The still valid basic document formulating the Czech Republic's vision regarding the acquisition of knowledge in the early 21st century, i.e. *The National Programme for the Development of Education in the Czech Republic* notes that, over the past fifty years, Czech, European and global society has been undergoing extremely vast and profound changes, whose scope keeps widening and deepening and whose pace is constantly increasing. These changes stem from the development of sciences and technologies paralleled by the growth of the economy and affect all spheres of social life. This paper concludes that the demands upon all members of the society, their preparedness, skills, education, quality and efficiency of the educational system, are ever growing. The contemporary society is referred to as the knowledge society (the Ministry of Education, Youth and

Sports 2001: 10). In opposition to this, A. Veselý (2004), a sociologist, labels the contemporary society as a society of knowing.

The fundamental components of the contemporary **knowledge society** or **society of knowing** include individual knowledge. The shaping of the individual knowledge in the condition of school education is a pedagogic process which influences the very substance of the knowledge society and economy. The long-standing problem of pedagogy, i.e. its unsuccessful grasp of the optimum relation between the knowledge and command results in persisting unclearness of the concept of proposing the knowledge society (Průcha, Walterová, Mareš 2009: 647–6). There is no uniform terminology, which is true even in relation to components which facilitate the knowledge and understanding. However, everyone who participates in the education of children of pre-school age is interested in dealing with professional terminology, meeting and communicating issues related to the contemporary and rather ambiguous terminology with the intention of rendering it more precise and correct. This clarification, however, is not the aim of this paper.

The educational programmes for all levels and types of schools in the Czech Republic, i.e. also *The Framework Educational Programme for Pre-school Education* (hereinafter the FEP PE; MŠMT 2004), which has been in place since 2004 as the basic curriculum document regulating the pre-school education, have for the first time been defined as educational programmes. The knowledge and command, skills, attitudes, values and other categories play a crucial part in this programme as the components of the competences and have become one of the key targets at which the education of children attending nursery school (pre-school education) is aimed. If we ignore the knowledge that is transformed in the notions of "acquisition and education" and that lies at the heart of the process of the general cultivation of the child before the child begins compulsory education, the curriculum declares how the concept of the pre-school education deals with the children's acquisition of knowledge. This concept mentions the knowledge of pre-school children twice. Firstly, it is mentioned in connection with the creation of preconditions of the child's self-assertion in the knowledge society, and secondly, in connection with the process of the child's acquisition of the basics of the key competences. And the teacher's controlled interventions are also targeted at this knowledge in accordance with the area of education.

Other documents important for the education of children at the pre--school age (e.g. the alternative curriculum *Nursery School Promoting Health*) also employ the notions of knowledge, fact, skill, experience and understanding in certain contexts and relations, and do so in the same spirit as the FEP PE, i.e. in connection with the child's competence for learning, solving problems, communicating, social and personal competence as well as the civil competence.

Immediately after an infant is born, his or her social surroundings mediate the first elementary **information** of somatic nature in various ways so that the infant breathes it in. Later, the infant utilises its own will projected into stronger or weaker concentration and acquires, inter alia, information mediated by social and other influence of another person in the infant's surroundings and this information relates both to the child himself or herself and other people. This information is merely sensory. The infant primarily looks and sees. The child sees how the people around behave towards him or her, towards other children and adults. In healthy children, the visual information is supported by auditory sensations. A healthy child catches both the verbal information intended for the child and information which the people around communicate with other people and which is not intended for the child. The information acquired by the child is linked to personal and individual, variedly intensive perception, awareness and experience. An important part is played by the physical experience, which accompanies the process of the acquisition of information. It has a supplementary nature. This involves both the internal perception as the result of mental processes on the basis of the visual and auditory sensations as well as the perception of physical contacts with another person. The intensity of these may vary. They are usually accompanied by verbal expression of the acting person and evoke a certain kind of feedback from the child. The child thus acquires the first sensations which, if repeated frequently, shape the first experience; this, in turn, may be positive or negative, and its intensity may vary in different situations.

The child's knowledge is thus a result of the process of discovering and "learning". Both a piece of knowledge and the process of discovering and "learning" are individual processes further differentiated by the special features of the child's personality as well as social and cultural conditions under which the child is brought up. A child of pre-school age is usually unable to articulate the piece of knowledge he or she has acquired in the

process of individual learning. He or she lacks the vocabulary necessary to express this and the child's cognition is still below the level enabling such an articulation. As a piece of knowledge is not easy for a child to articulate, if the child attempts to do so at the pre-school age, this formulation has an individual nature, and its meaning is usually rather broad and inaccurate; children will often confuse notions because they have not gathered enough experience to test whether they are true, or apt to learn their true meaning. Any piece of knowledge has the character of an element of a puzzle put together by the child and invokes further mental activity of the child. The piece of knowledge which has the form of a piece of information processed by the child should not be isolated, but should fit in a complex framework; it should also be easy to grasp and use in practice. The child should acquire the so-called partial information through processes of spontaneous, immediate discovering as well as "learning" controlled by an adult. The knowledge mastered through learning, i.e. the information remembered, including the understanding of the relations between these, in the form of concepts, rules, laws, formulas etc., represents the fundament of the simple cognitive operations and thinking of the child.

Controlled learning of the world in pre-school age children who attend a pre-school institution follows an established plan, which is purposeful and systematic and should be considerate and individual in relation to the child. The activities that correspond to this concept include cooperative games and didactically targeted activities of many different natures. Therefore, a didactically targeted activity may help the child acquire knowledge of the changes of the state of water and a subsequent practical activity may provide the child with immediate experience of experimenting on his or her own but enjoying the support and supervision of the teacher. The child thus masters the elementary facts about people, culture, nature, technology and the surrounding world, its diversity and metamorphoses. The child's spontaneous playing also plays a part in the process of knowledge acquisition. The child may thus learn that when building a garage for a toy car of a certain size, s/he will need a certain number of blocks etc. If s/he repeats this activity for the second and third time, s/he will gather experience and learn how many blocks are necessary to build the garage for the toy car.

The gradual process of getting to know the world, which is based on the senses, social interaction and practical activities, thus helps the child

to collect the first partial **experience.** A piece of knowledge enhanced by personal experience is projected more deeply in the child's cognitive structures. The teacher then simulates learning and social situations where the child can utilise the acquired experience in practical situations and the further process of "learning" (MŠMT 2004).

The initial experience that the child gains in social interaction with other children in the course of didactically targeted and controlled activities, where the teacher encourages the children to enter into mutual cooperation, has a character that differs from experience that the child acquires in spontaneous activities selected according to his or her interest. In a social domain, the child soon learns what other children allow him or her to do and finds out that his or her possible requests towards other children differ in the kind, intensity and scope from requests the child may make towards parents, grandparents or siblings. For instance, a child whose toy has forcibly been taken away by another one is likely to refuse to play with this other child next time; therefore, this other child, instead of the praise which he or she may have been granted by his/her parents for asserting him/herself, may even get into a physical conflict with the child that has been "robbed". Social experience is influenced by the child's interest and experience that the child has acquired in practical activities. It is unique in an individual child. The child's experience in the real world then results in simple personal knowledge, which is individual, subjective and internal.

If a child's constructed knowledge is mastered through the process of "learning", it becomes **knowledge** (Průcha, Walterová, Mareš 2009: 384). In a pre-school institution, this process usually takes place in a situation induced by the teacher. The child's knowledge is thus the result of the process of "learning" the content of education that is offered to the child as an offer of educational options, which the child selects individually and takes an active part in. The knowledge of children at the pre-school age consists mainly of facts, notions in most elementary forms and contexts, which were mediated to the children in the course of controlled activities and which the child has mastered. It is the result of perceiving, discovering, thinking, remembering, attempting simple practical experiments, as well as of the child's first life experience (Průcha, Walterová, Mareš 2009: 337). If a child is to construct a piece of knowledge using the elements mentioned above, s/he must have a chance in the form of situation and time to do so. This procedure contributes to the deeper insight of the child into the

offer of educational content provided to the child; the child is then allowed to process any piece of information s/he comes across into an individual system of knowledge. It becomes the child's inalienable wealth, while the child's knowledge is mostly theoretical.

The experience also forms a part of another component of competences that represent the goal of the education of pre-school children in accordance with the FEP PE, namely skills. Švec (1998) defines skills as competences for the performance of a certain activity, which may be both intellectual (solving tasks of a certain type – the shortest way home), sensomotoric (doing up laces, inserting shapes into corresponding slots, walking up and down the stairs), competences satiated by abilities, experience, style of "learning", motives for solving tasks and problem situations, which are manifested by observable activities. Children do not master skills only through the controlled and induced process of "learning", but also spontaneously in games. T. Janík (2005) claims that skills are similar to the procedural knowledge where the child masters and, as necessary, exerts certain procedures to cope with various situations. According to the FEP PE, the child should acquire skills which are versatile and practically utilisable (MŠMT 2004).

Skills as potentials for acting on the grounds of procedural knowledge of "how", information as declarative knowledge of "what", experience as the aggregate on which the knowledge is based are all involved in the pedagogical notion of **knowledge**. T. Janík (2005: 25) also adds attitudes in the form of subjective theories or teaching methods (teachers' belief), which serve as a filter through which the knowledge passes, which, however, a pre-school child masters to a very little extent. Knowledge is a cognitive structure which rests on the fundament of acquired information and stems from experience. The didactical sense, which is one of the layers of the meaning of this concept, and is usually conceived of as more narrow, holds that the term of acquired information is *equivalent* to the term of knowledge. Knowledge involves mainly theoretical facts mastered through the process of "learning", chiefly in a school environment.

Bloom's taxonomy of learning objectives usually classifies knowledge according to increasing cognitive demandingness into:

– knowledge of terms;

– knowledge of particular principles (e.g. washing one's hands before a meal in the case of pre-school children);

– knowledge of trends and sequences;

– knowledge of sorting in line with a simple rule, in the case of pre-school children;

– knowledge of sorting criteria that have to be presented to the child, in a number not exceeding five;

– knowledge of methodological procedures;

– knowledge of laws and generalisations;

– knowledge of theories and entire knowledge structures (Průcha, Walterová, Mareš 2009: 384).

In the broader sense of the word, and as claimed by Průcha, Walterová, Mareš (2009: 385), which is only gradually being accepted by pedagogy, the term of knowledge includes not only acquired information, but also skills and competences for the performance of certain activities. At this moment we begin to speak about **practical knowledge** or working knowledge, the know-how. This is essential for the performance of many different professional and creative activities. Knowledge involves not only acquired information, but also the skills to apply it. The elementary pieces of knowledge mastered by pre-school children include painting, drawing, modelling, cutting with scissors, gluing, playing with many different construction kits, e.g. Lego, paper or natural materials in a creative way. A child has mastered a practical piece of knowledge if s/he is able to e.g. put plates, spoons, forks and knives, napkins, spices etc. on the table.

Knowledge forms a part of the key competences of children, together with skills, experience, developed interests and the foundations of attitudes. Declarative knowledge as static knowledge, i.e. knowledge that the children are taught at nursery school, involve mainly the names of animals, plants, trees, other children's names, names of towns and cities, traffic signs, geometrical shapes, names of car makes in the case of boys, etc.

Contextual knowledge is usually viewed as the knowledge of the purpose, context and conditions enabling the achievement of the required goal. It answers the questions of: why should I or should I not do something, when, where and under what conditions (Průcha, Walterová, Mareš 2009). Questions like: *Why are you tidying it up?* are usually answered by pre-school children in an expedient way, e.g. *So mom ... teacher ... won't get angry.* Yet, children at the end of the pre-school period definitely have some contextual knowledge. In winter, they will put on all the clothes that the parents have made ready for them because they already know that if

they intend to spend some time outdoors, they would feel cold outside if they did not put on the clothes prepared. Children reach contextual knowledge through the process of exploring, discovering, observing of connections and relations and experimenting. In this way they acquire personal experience which they can apply in practical situations as well as in the process of further "learning". This is conditioned by the processes of thinking that the child employs to understand objects, phenomena and actions going on around. At the pre-school age, the contextual knowledge has a simple form copying the child's world, reflecting the level of the development of cognitive functions that the child has reached, involving the tested and verified experience as well as logical procedures. As the pre--school children's knowledge is of an elementary nature, we will rather use the category of acquired information.

Given the fact that one of the basic requirements of the FEP PE calls for the application of an integrated approach in the process of education, children are offered educational contents in natural contexts, links and relations rooted in the child's life, and these contents are mutually interconnected in the educational offer of activities to children. In this way, the child does not acquire isolated information about phenomena and objects, but rather information in contexts, which has a more complex nature, is easier for the child to comprehend and can be transformed into practical knowledge as knowledge of an activity. For instance, if we enable a child to observe a crane on a building site, give him/her enough time and offer him/her a corresponding and functional construction kit with a sufficient number and size of parts, the child will project everything that s/he has observed and has managed to realise and remember into the play. And the child will do the same in an activity of an integrated nature focusing on planting a certain kind of vegetable or baking bread or pastries. The child does not master merely simple skills, but rather more continuous sets of skills, which, in connection with the knowledge conceived in a complex way and other utilisable elements, become applicable outputs, i.e. competences. One should always adhere to the principle requiring that an acquired competence, as a more complex category, be easier for the children to grasp and use in practice. The child realises them in the process of application, but cannot justify them or articulate a simple answer to the question of why s/he performs a certain partial act or an entire activity. Therefore, the activities should be meaningful and useful for the children.

At the pre-school age, all of the competence components that we have listed and that the Czech society is interested in invoking and developing in accordance with the child's age are at the beginning of a long and complicated process that will last the child's entire life.

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Summary

One of the key features of the contemporary knowledge society is the emphasis on the importance of individual knowledge acquisition. The Czech educational programmes, including the Framework Educational Programme for Pre-school Education, strongly emphasise that both the controlled education and spontaneous "learning" of children at pre-school institutions should help the children gain knowledge, skills and experience in the form of applicable outputs, i.e. competences. The educational offer observes the integrated nature of the mastery of the above-mentioned components of competences.

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CHAPTER IV

Kindergarten education as inspiration for searching the new routes in research methodology

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Traditional vs. contemporary inspirations to measure abilities of pre-school-aged children

"In many respects, multiple intelligences seem to be special gifts of childhood"
H. Gardner

Introduction

It is indisputable that intelligence plays an important role in human life. It helps an individual to adapt to the environment and facilitates taking opportunities offered by this environment. Various conceptions of intelligence have always been created; and the term "intelligence" itself has become a buzzword recently (Nęcka 2009: 8). Everyone attributes great significance to intelligence. It is not easy to define "intelligence", and experts' points of view on intelligence are highly diversified. Definitions of intelligence differ depending on the philosophy of a particular psychologist (Dembo 1997: 297). Accepting a specific definition determines the method of research. The working definition of intelligence based on the results of Sternberg and Detterman's conference of 1986 indicates that "intelligence is a capability of adaptation to circumstances thanks to perceiving abstract relations, making use of previous experience and effective control over one's own cognitive processes" (Nęcka 2005: 26). In 1994, fifty-two world-famous experts on intelligence proposed to accept that intelligence is a very general ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience" (Strelau 2009: 15).

Intelligence from classical vs. modern perspective

E. Nęcka (2005: 15–26) distinguishes three main groups of definitions of the term "intelligence": classical, modern and implicit. Classical definitions that concentrate on components of intelligence should be associated with such precursors of the research on intelligence as F. Galton, Ch. Spearman, A. Binet or W. Stern. Contemporary approach defines intelligence as an intellectual ability or a group of abilities. However, there is no consensus of opinions on the meaning of the term "ability". Implicit definitions of intelligence are colloquial and they do not involve theoretical foundations. They provide an important source of knowledge how the others understand the concept of intelligence. U. Neisser claims that intelligence is not a scientific term but a natural one, and as such does not require being specifically defined.

Howard Gardner has significantly contributed to extending the term "intelligence" owing to his theory of multiple intelligences. The conception suggested by Gardner differs from the traditional approach to intelligence and changes the line of its perception. "It is an extension of the term 'intelligence' over verbal, logical and mathematical abilities which used to be almost exclusive matter of interest for previous theories" (Vasta, Haith, Miller 1995: 394).

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

The theory of multiple intelligences has aroused worldwide interest but also reserve. It has numerous supporters, but in the world of omnipresent IQ, the theory of multiple intelligences has struggled for understanding and acceptance. "Traditionally, intelligence is understood as predisposition that globally determines human cognitive activities. At school this category is frequently applied in order to explain this sort of human behaviour which

involves mental processes" (Czaja-Chudyba 2005: 25). Gardner (2009: 17) extends traditional concept of intelligence, believing that it is considerably more diversified and polymorphous. In classical psychometric approach intelligence is defined operationally – as an ability to perform tasks included in intelligence tests (Gardner 2009: 17). According to the non-psychometric approach, which apart from the theory of multiple intelligences also deals with social, emotional and practical intelligence concepts, intelligence cannot be measured. As the author claims, the theory of multiple intelligences is more conformed to reality and it better reflects findings on human intelligent behaviour (Gardner 2009: 17).

Getting to know a child

Getting to know the students is an essential part of teacher's work. Identifying children capabilities facilitates adapting teacher's activities to the students' individual needs. It is also essential form a child's point of view. School assessment ought to trigger pupils' activity and give them an opportunity to derive satisfaction from their own achievements. It should also teach them how to cope with failures properly (Kopik 2009: 276). Practical diagnostics showed the necessity of thorough child observation during everyday activities and games, as well as in contacts with peers and adults. Thorough observation conducted in his/her natural environment is a basic method of getting to know a child. Gardner believes that during an assessment of child's abilities, such measurement tools should be used in which each sentence and question defining a type of intelligence will be expressed with the language and symbols suitable for the language of the intelligence it refers to. Each intelligence enables an individual to achieve success, but establishing borders between specific types of intelligences does not seem to be an easy task.

Gardner also notices the possibility of using standard measuring tools to assess certain aspects of development. He clearly emphasizes, however, that the results based on such tools cannot have the final word in the matter of a child's assessment.

There are a lot of tests which allow specialists to evaluate particular aspects of intelligence, but intelligence is such a complex and diversified phenomenon that it cannot be limited to a test (Armstrong 2009: 26).

During a child's observation, various methods of abilities evaluation should be applied. Measuring child intelligence quotient (IQ) by means of standardized tests may provide a lot of important information. It is necessary to remember that IQ tests measure only one sphere of a child's activity and reveal one aspect of abilities.

In Poland, tests measuring children intelligence are based on verbal abilities (Stanford-Binet Intelligence Scales, *Wechsler Intelligence Scale*) or non-verbal abilities – *Columbia Mental Maturity Scale*, *Leiter International* Performance *Scale,* Raven's Progressive Matrices, Draw-A-Person Test, Diagnosis of Intellectual Capabilities (Czaja-Chudyba 2009: 39–40).

IQ tests arouse controversy among psychologists and pedagogues. Measurement of intelligence based on standardized tests helps distinguish individual differences in intellectual capabilities. Concentration of the most IQ tests on school abilities indicates that the results are not adequate to other types of intelligences.

Raven's Progressive Matrices is a commonly known and accessible tool. The author created his research tool based on Spearman's concept of intelligence. "Raven's Matrices is a measuring tool for the assessment of this aspect of intellectual capabilities that Spearman refers to as the ability to educe, i.e. the capability of proper reasoning which is relatively independent of individual experience" (Szustrowa, Jaworowska 1992: 9). To measure children's intelligence, Coloured Progressive Matrices are applied. The booklet comprises 36 tasks, which are grouped in 3 series; each of them includes 12 matrices. In each of the series, matrices are arranged in the order of increasing (progressive) level of complexity. The colours applied support children's attention and interest (Gardner, Kornhaber, Wake 2001: 72).

Raven's matrices require completing gaps in a specific arrangement of geometric figures according to the internal logic of this pattern. This sort of task entails at first appropriate encoding of particular figures so that a child could later focus on some aspects only. Next, it is required to notice the relationship between separate figures, and finally to project this relation onto other figures, mainly on those which create so-called "*cafeteria* that is six possibilities of the correct solution. This task deals with acquiring experience, educing relations, and – at last – educing correlates" (Nęcka 2005: 20–21). Raven's test provides summary measurement of intelligence level without the possibility to analyse the profile of abilities. However,

the test is commonly applied to basic measurement for the reason that it may be used in group research. Raven's test is considered to be the most "culture fair".

Children have other numerous abilities that cannot be measured by means of tests. It is crucial to collect possibly accurate information on a child in order to obtain a precise picture of his/her abilities. Improper identification of child's possibilities by a teacher may lead to decreasing school requirements. Too high or too low requirements concerning children's school achievements can affect the standard and quality of educational activities. "When teachers' expectations are too low in terms of school requirements, there is a risk that these requirements may become a self-fulfilling prophecy" (Dembo 1997: 341).

Theory of multiple intelligences – modern inspiration

More than a quarter of a century ago, Howard Gardner published his book *Frames of Mind: The Theory of Multiple Intelligences* (1983) in which he presented the theory of multiple intelligences. The term "multiple" was used in order to point out that there is an unknown number of human abilities, from musical intelligence to the intelligence which requires self-understanding, whereas the noun "intelligences" in plural indicated that these abilities are as fundamental as those traditional ones which are "detected" by means of IQ tests (Gardner 2009: 10).

Gardner believes that a human being in the course of evolution has developed different abilities of information processing which enable him to solve problems or produce any goods. Therefore, in Gardner's theory, the term "intelligence" is defined as "bio-psychological potential to process specific forms of information in a particular way" (Gardner 2006: 27).

The concept of multiple intelligences seems to present completely different perception of the human mind. Gardner assumes that there are various independent aspects of cognition. He claims that "human cognitive competency or ability should be understood as a collection of abilities, talents or intellectual skills which are called intelligences" (Gardner 2009: 17). Each person possesses a certain range of all intelligences and uses them in accordance with the preferences and tasks performed. The theory

of multiple intelligences reveals how to recognise potential abilities and then apply them to support human development.

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

According to Gardner, particular intelligences are distinguished by their own unique mechanisms, which allow them to perceive processes and use the information from the outside world (Armstrong 2009: 255). It is therefore possible to attribute basic functions to each of them.

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

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

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

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

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

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

Interpersonal intelligence. The world is perceived from the angle of others. The characteristic features are understanding other people and being able to communicate effectively and interact with others.

Intrapersonal intelligence. The world is perceived through introspective and self-reflective attitude. The characteristic feature is ability to self--reflect on one's behaviour, motivation and emotions, as well as a deep understanding of the self and the ability to control one's behaviour.
Existential intelligence. The world is perceived from the angle of ultimate issues regarding life and death. The characteristic feature is ability to explore problems of human existence.

Everyone has natural predispositions towards certain type or types of intelligences. Particular intelligences are developed to different extent; they function in mutual connections, cooperate and form together an individual intelligence profile. Two significant, complementary implications result from the theory of multiple intelligences. Everyone has eight types of intelligences, but two persons with identical intelligence profile do not exist.

The developmental aspect of multiple intelligences should also be emphasized. Gardner noticed that particular competences within the area of intelligence ought to be developed according to a certain scheme – starting from the elementary level, they can reach expert degree (Armstrong 2009: 256). Intelligences are displayed differently at different stages of development. The natural line of development for each intelligence begins with the ability to schematise. This is the initial stage of developing raw intelligence, which occurs in the first year of life. During the next stage, intelligence is manifested through the system of symbols. Children reveal their abilities via acquiring various symbolic systems. In further development, intelligence is reflected by the system of signs. Children usually learn the system of signs in formal educational environment. In the period of adolescence and later in adult life, intelligences are expressed by a range of professional activities (Gardner 2002: 53).

Before a child begins school education, he assimilates general knowledge and acquires abilities through informal, incidental learning. During school education, a child masters symbolic notation systems which are preferred in a particular environment. At this stage of development diagnosis of intelligence should be based on understanding and acting within a specific system of symbols appropriate for a particular intelligence (Czaja-Chudyba 2007: 297).

Gardner (2009: 41) emphasizes that it is the matter of significance to recognise and develop all the types of intelligences and their different

combinations. It is also important to recognise early and support various cognitive abilities, to identify the child's individual possibilities and abilities, as well as to create proper conditions for their development.

Theory of multiple intelligences in educational reality

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

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

The possibilities for implementing the theory of multiple intelligences to modern education have been noticed by M. Suświłło. The author believes that Gardner's theory "can significantly change teachers' one-sided way of thinking regarding the process of school teaching, as well as contribute to the extended look at children development and the range of those teaching aspects which are essential in terms of children abilities" (Suświłło 2004: 53). The author pointed out many different ways of developing multiple intelligences at school, and presented a questionnaire which enables to identify not only a child's style of learning, but also the teaching aids supporting development of particular intelligence.

The problem of diagnostics for multiple intelligences was discussed by I. Czaja-Chudyba in her study. It is essential for identifying the profile of intelligence to observe a child's play as a natural form of expression. The author proposes an original package of games which allow diagnosing multiple intelligences. The tasks have been specially selected in order to determine whether a child is able to do certain categories of activities, as well as to evaluate the level of accomplishment and the method that s/he applies to accomplish a task. These tasks are based on the material set in the culture and environment that the child is surrounded by. The combination of games involves all types of intelligences. The author describes an appropriate method of interpreting the child's behaviour (observation report sheet) for each game. This enables to identify the child's individual intelligence profile, i.e. his/her strong and weak points (Czaja-Chudyba 2007: 299–300).

The theory of multiple intelligences has been an inspiration to draw up a conception of the project "First school experience as the road to knowledge". Its main idea was multi-faceted support for intellectual, emotional, social, physical and motor development of children who begin the first year of education in the primary school, and support for the acquisition of key competences. The authors of the project conception (Kopik, Zatorska 2009) suggested a model of education adapted to students' individual needs and possibilities. In accordance with Gardner's thesis, the assumption that each child is able has been established. Teachers should notice, develop and support their students' individual abilities, and school ought to provide all the students with opportunities for comprehensive development. The authors emphasize that it is important for children to recognize their abilities since early childhood, as well as to study conscio-

usly and live in the conditions which guarantee multi-intelligent learning about the world. An extremely significant element of the conception appears to be reliable diagnosis, which allows identifying and determining individual intelligence profile for each child, as well as supporting his/her educational development. The knowledge of strong and weak points is the basis for building high self-esteem. Identification of a student's intelligence profile should be based on the results of the teacher's thorough observation of a child and the information obtained from the parents by means of a survey. The questionnaire includes queries regarding child's behaviour in eight categories, which determine characteristic features of each intelligence type (Kopik, Zatorska 2009: 26–28).

Initial diagnosis of a child's intelligence profile should include the following information:

– "strong" points and child interests in general aspect;
– possibilities for making good use of "strong" points in order to support "weak" ones;
– directions of special abilities development;
– intelligences which need support;
– work directions and ways of developing child's abilities.

The conception which proved to be successful in the work with children at the early school age also finds application in the work with pre-school children. A. Kopik and M. Zatorska proposed to organise an inspiring educational environment in the form of the Lands of Play so that full individualisation of work with children could be possible (Kopik, Zatorska 2010). Numerous interesting suggestions concerning implementing the theory of multiple intelligences refer to foreign languages teaching. M. Pamuła (2010) points out the fact that teaching foreign languages has become increasingly common nowadays, but it is not always effective. The proposal to teach foreign languages as part of integrated early-school education supports individual approach to a child (Pamuła, Sikora-Banasik 2008).

Conclusions

Child intellect may be expressed in many different ways and various spheres of activities. Gardner's theory shows how measurement of intelligence contributes to identification and development of individual

abilities. It enables an individual to perceive himself/herself from a different perspective and to appreciate the significance of many-sided and all-sphered development. Gardner's theory creates a new different look at generally understood education. It is crucial to take advantage of the latest scientific achievements in contemporary educational system. Introducing H. Gardner's theory of multiple intelligences to education allows experts to identify accurately children's abilities and possibilities, as well as enables individualization of teaching methods, improving standards and effectiveness of teaching and facilitates, providing a fair and satisfying student's evaluation. Looking at children from the angle of multiple intelligences helps identify a range of their capabilities and facilitates their multiple development.

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Diagnosis in the kindergarten education

Diagnosis is the recognition of described "issues and developmental tendencies on the basis of symptoms and knowledge of general principles" (Ziemski 1973: 17). It is crucial for rational and valid conduction of practical activities, in various domains, among which are upbringing, education and self-education (Palka 1989: 16). It can't be the only one act of cognition, but the "process of gaining information about a child, its position in development" (Kościelska, Zalewska 1983: 61). "It enables both the capturing of magnitude and range of changes already made or being made and the description of what should be further done in order to support the development" (Waloszek 1994: 8).

The starting point for activities done by the teacher is the pedagogic diagnosis. It is used for getting to know the child, its individual developmental properties and rational projection of concrete solutions. It embraces:

1) Recognition (constant, systematic) of children's abilities,

2) Anticipation of changes, meaning description of the closest possibilities (these functions which are being displayed),

3) Provoking the creation of obstacles for one's actions, facing barriers, for improvement, seeking new solutions and ways of behaving (for different levels: material, "loudly – in speech, and silently – by thinking",

4) Developing the characteristics, traits, talents and tendencies specific for children.

Discreet, subtle help for children's effort put in discovering the world (Waloszek 1994: 14–15).

In kindergarten pedagogy, it is crucial to use:

– positive diagnosis, focused on what the child can do, wants to do and is able to do,

– functional diagnosis, made in the child's actions and with the child in different situations,

– diagnosis that supports the description of facts (Waloszek 1998).

The right diagnosis has three principal traits:

– **reliability**. It is bonded with the accuracy and refers to the stability of received outcomes in the case when the same research is repeated in a short period of time;

– **objectivity**. It concerns the perception and registering what is the subject of research. Thus the teacher must be unbiased, unprejudiced, and must describe the reality in a way that is free from his or her emotions and attitudes (very often teachers subjectively judge what they see, and even perceive only what they want to see. They may give personal opinions concerning the environment the child lives in, and that causes wrong, biased judgments, social categorization or labelling – often very harmful);

– **validity**. It is based on making judgments about very important characteristics of children behaviours. Fast generalizations, biased assessments of children and their parents in the diagnosis, and biased interpretations of the outcomes may be very damaging for the validity.

Teacher's diagnostic tasks

Since September 1st, 1997, kindergarten teachers are obligated to conduct pedagogical observations, which aim at recognizing and securing the children's developmental needs, as well as to document these observations (the teacher has the freedom to choose the way of documentation).

On January 30th, 2009 the Regulation of the Ministry of National Education from the day of December 23rd, 2008, in the matter of kindergarten educational programme bases as well as general education at particular types of schools came to force and was published in the *Journal of Laws*, No. 4, item 17, 2009. The new Regulation replaces the hitherto operating Regulation of the Ministry of National Education and Sports from the day of February 26th, 2002, in the matter of kindergarten educational

programme bases as well as general education at particular types of schools (*Journal of Laws,* No. 51, item 458, as amended).

In accordance with the new Regulation of the Ministry of National Education, the kindergarten diagnosis and the analysis of the children's preparation to learn at school are the teacher's task[1]. *This task has been described as "conducting pedagogical observations which aim at recognizing the possibilities and the developmental needs of the children and conducting analysis of the child's readiness to undertake education at school"*[2]*. The Regulation lays upon the principal of the kindergarten the duty to confirm the kindergarten education programme and the methods of diagnosis, which were chosen for execution by the teacher. Important contents, which should be described in the kindergarten education programme, are also – next to the method of diagnosis – "the ways of achieving goals of teaching and education, taking into account the individualization of work depending on the needs and the possibilities of the children".* The teacher is responsible for giving information to the parents and "elaborating an individual programme of support and correction of the child's development, which will be realized in the year preceding the beginning of elementary school education". The teacher's conclusions from the conducted observations are to be passed on to the specialists of a psychological-pedagogical clinic "in case of a need of a more profound diagnosis connected with special education needs"[3]. *A diagnosis is not a new task for kindergarten teachers, but – in accordance with the quoted regulations – it is supposed to be an integral part of the executed kindergarten education programme and the basis for actions which are to support the children's development and their preparation for school.*

Since from September 1st, 2012 there will be a school obligation implemented for children at the age of 6, and embracing the children at the age of 5 with a yearly obligatory kindergarten education, from September 1st, 2009, the kindergarten diagnosis has to include all children turning five years old at the end of the school year 2009/2010, as well as six-year-old children.

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1 Regulation of the Ministry of National Education from December 23rd, 2008, in the matter of kindergarten educational programme bases as well as general education at particular types of schools, published in the *Journal of Laws*, No. 4, item 17 on January 15th, 2009.

2 Ibidem.

3 Ibidem.

As stated in the regulations, teachers' tasks are to conduct pedagogical observations which aim at recognizing the possibilities and developmental needs of children, and to document these observations[4]. With the beginning of the school year preceding the child's education in the first grade of the elementary school (in October – November – preliminary diagnosis), the teacher has to conduct the analysis of the child's readiness to undertake education at school (kindergarten diagnosis). Afterwards, best in April, the teacher is to conduct the next diagnosis (a diagnosis summarizing the child's stay in kindergarten), which will be helpful for parents to make a decision concerning the child starting its education in the first grade of the elementary school.

Teachers can choose a way of diagnosis from among the methods proposed by different publishing houses, published on the Ministry of National Education's websites, they can choose a method elaborated and confirmed by themselves or by other teachers. The criteria of choosing a method must include: specificity of a diagnosis of a small child, the task, which is the evaluation of readiness to undertake education at school, and fulfilment of the formal criteria of correctness. It is important that the diagnosis of the child's readiness to undertake education at school should embrace all spheres of activity.

The teacher can receive the fullest information about a child by conducting an observation. It creates the possibility of taking into account the situational context of the occurrence of a given behaviour. Conducting an observation the teacher has to:

– obey specific procedures (precisely describe the reality): one cannot prematurely draw conclusions, yield to one's likes and dislikes, omit important facts, count only on one's own memory as it causes incompleteness and inaccurateness of the description of the observed facts, freely interpret the collected material;

– submit the conducted activities to reflection.

Often the teacher relies only on the observation of the children's behaviours, and creates general expectations in relation to them. It can result in:

[4] On September 21st, 2009, the Ministry of National Education gave an announcement to the teachers and kindergarten principals, explaining whom the kindergarten diagnosis includes.

– **the Galatea effect** – when children fulfil positive expectations of the teacher and use as best as possible their developmental possibilities. If a child receives a positive evaluation, then any kind of slips in the further run are evaluated more gently compared to other children;

– **the Golem effect** – when low expectations of the teacher restrain the child's development and because of that the child blocks the development of his/her possibilities.

Children who do not develop certain abilities in a particular time are often labelled as lazy, retarded, aggressive, emotionally immature, etc. Labels are a simplified method of social categorization. A child with such a negative opinion is perceived and treated as inferior. In such a situation, the child might stop trying, or, if s/he is trying, still no one will notice it.

It happens that "the teachers do not know what they are supposed to observe in order to get to know the child and accurately work with him. They often adjust the chosen parameters of the observation to their own hypotheses, which results in a mistaken opinion about the child, too categorical, or hurtful [...] they base their judgments on random actions of the children which were observed involuntarily and chaotically" (Al--Khamisy 2005: 11).

That is why it is good for the teacher when "aiming at recognizing traits of the individual development of every child to collect the material from two environments: family and kindergarten" (Grzeszkiewicz 2004: 117).

The family environment and the child alone can be known by using, among others: casual conversations and directed conversations with the child; individual conversations with parents, the initiators of which can be the teacher or parents; an anamnestic interview with the mother of the child; an analysis of the child's drawings on the family topic; an observation of causal play with paying particular attention to theme play, for example, "Playing house" and also using "Diagnostic Play".

However, in the kindergarten environment the teacher has to conduct an insightful observation of the child in various situations. They can be situations which are natural, inspired, or directed (Grzeszkiewicz 2004). The teacher also has to remember that every child is an individuality in regard to the configuration of genetic, neurophysiological, health, and environmental traits. These traits decide about the child's uniqueness.

Every child differs in:

– the level of competence, that is "the degree of advancement of ability, efficiency in its performance, the tempo and independency of actions. Although sometimes all children (besides visible disorders) in the range of basic competences achieve a specific level, their course, however, in achieving this state is clearly differentiated" (Klus-Stańska 2005: 26);

– the range of content of meanings. This results from various experiences of the children, their life conditions and biographical situations. A significant role is played by the environmentally conditioned communication code which they use (Bernstein 1990).

Every child in the same situation will react differently. The same child in similar situations can act differently, for example, because of the present health condition, mood, improper fulfilment of biological or mental needs. Due to these reasons, the teacher of a small child "should know how to create an individual diagnosis schema of the child's development and adjust to it the techniques of collecting data. Recognizing the child's experiences, which are the material of development, help in understanding life tasks and giving them sense (meaning) is an indispensible condition of the further enrichment of the child's experiences" (Uszyńska-Jarmoc 2005: 54).

Due to the frames of this article, I will omit the issues concerning the diagnosis of the child's school readiness in order to focus the attention on a very important issue, underestimated when it comes to diagnosing another area of the child's activity – play.

Playing and children diagnosis

Play has many functions, for instance the diagnostic one. It is a school of social learning for children at pre-school age.

During play activities children show their real needs, realize their motives, effective endeavours (Kielar-Turska 2000), they display: experiences, observation, knowledge about themselves and about the world, the problems and obstacles they encounter. Such factors as: the kind of play, its course, duration, the roles which are played, the way the child plays, etc. may indicate e.g. the range of vocabulary, the organization of play, the way problems are solved, the level of development of social behaviours, or the kind of child versus others relationship (aimed at consensus, partnership, obedience, compromise, autocratic behaviours).

The tutor who observes the child's play may notice what "is important for a child, how much s/he knows about the world, what is his or her attitude toward others, and how other people treat the child. The play is a sign, a symptom and a manifestation of fears, anxieties, or aggressiveness, which may influence the child's behaviour, when it freely displays itself in a play" (Dyner 1971: 359).

Special meaning is attributed to play activities referring to a given subject; they are, on the one hand, the reflection of conditions of children's life, and on the other hand a picture of progressing or not progressing physical development.

Thanks to playing activities, the kind of environmental influences can be described, as well as the level of the child's intrinsic development, his or her adaptation level, adjustment to the environment of the culture, personalization and individualization (Dyner 1971).

Much significant information about the home environment of a child may be accumulated by observation of the play which concerns the subject of "home". Children's utterances during such play have their sources in their personal experiences, which are being precisely transferred to playing activities (these utterances reflect the variety of situations which had occurred in the closest environment). Very important are also children's non-verbals, for instance, playing "the father role" after coming back from work, putting teddy bears or dolls to sleep and so forth.

The choice of the role, the way it is played, the way toys and other accessories are used, the vocabulary, non-verbal communication, the length of the attention span enables the teachers to get to know the child and to estimate the parents' attitude toward the child. It happens because the content of child's play is moderated by the culture of family living. While playing specific roles in playing activities, children may show such relations as: leadership, obedience, or equality. The educator may observe children who:

– want the most attractive role for themselves, and do not want to obey,

– want the most attractive role, but are able to compromise,

– play the role of the leader, but need support,

– reject being the leader, but want to participate in the game,

– reject participating in the game with other children and prefer to play alone (the reason for this is very often the lack of organizational

abilities, the lack of social competences, shyness, timidity, problems with adaptation, isolation or rejection by the rest of the team).

The play gives possibilities for teachers to observe the structure of the group, and even the interdependence between its members. As far as the interdependence is concerned, it may be observed that some children may be accepted, rejected or isolated.

The good knowledge of children mutual relations, which are created during the playing activities (which, in fact, are the core form of children's activities at the pre-school age) as well as a good knowledge about the influences of the group on a particular child enable the teacher to notice and to react to them (and to take some preventive steps). It is crucial to be aware of the fact that the child's functioning in the group and attitude toward other people mostly depend on his/her relations with carers and parents (especially on the relationship between the child and the mother). Another very important factor is the knowledge of and the ability to interpret the facts, gathered by the observation or sociometric methods, which in turn makes it easier to influence the education and to modify the position of the child.

The observation of the child during the playing activities must be an inevitable part of the diagnostic tasks of the nursery teacher.

Conclusions

In order to be able to realize the diagnostic tasks, which concern various spheres of the child's activities, teachers must possess the knowledge about:

– the conditions, factors, assumptions of the child's development in the pre-school age;

– the specific problems related with the pre-school period (playing activities, cooperation, working with other children, etc.);

– the family environment;

– the peer environment;

– the child's attitude toward the kindergarten, hobbies and interests;

– the child's leisure time activities;

– herself/himself.

This knowledge may not be useful in children's assessment, but may be used to understand the phenomena occurring in the assessment process

and to foresee the outcomes of the undertaken actions. It must not be seen as an aim, but as a means to reaching that aim. Before one starts to learn about the child, s/he must be aware of what this learning process is really about, what the real aim and the possible methods are.

The diagnosis in the kindergarten should concern psychophysical traits and child's properties, which are displayed during the developmental stages (these traits are described on the basis of the activities undertaken by the child, and not always properly realized), and the differences between the level of task accomplishment with the supervision and support of adults, and the independently accomplished tasks.

After making the diagnosis the teacher must "differentiate the tasks and demands to particular children in the same age, treat their accomplishments accordingly to the competences they possess" (Kielar-Turska 2005: 11).

The diagnostic actions of the nursery school should consist in the systematic, objective and repetitive observation of children in the pre-school age, gathering the knowledge about the environment in which the children are educated, gathering the products, looking for the methods that may verify child's abilities and so forth (Grzeszkiewicz 2004: 121). Recognizing child's abilities is a crucial condition to direct its development. " The child needs tutors who have fluent diagnostic skills, and who offer such support that it is further possible for the child to create his/her own vision of the self or the vision of the external world" (Andrzejewska 2010: 11).

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Problem of distinguishing and naming colours by pre-school-aged children

Distinguishing and naming colours by children is inscribed into pre-school kids' development. Analysis of the literature discussing developmental psychology (Adams 1995: 344–360; Frankenberg 1970: 343–344; Kielar-Turska, Białecka-Pikul 2000: 57; Kasatkin 1951: 95; Kistiakowska 1955: 96) enables the presentation of the following facts of **colour distinguishing** by children.

The first year of children's life is a period when they learn to distinguish chromatic colours from achromatic ones, they distinguish the colour red from other colours, such as green, distinguish yellow from green, and learn to distinguish primary colours. This is where divergences in studies results appear. The ability to distinguish primary colours, according to M.I. Kistiakowska, is characteristic of three- and four-month-old children. The opinion of A.A. Lublińska is different. She says only children in their twelfth month of life can do that[1]. A.R. Stamples found such achievements in children between the second month of life and the second year of life (Stamples 1932: 119–141).

The research of Ch. Büchler (in: Babska 1967: 455) proves that a one and a half-year-old child was able to follow colour as objects' characteristic and to find this object in one of two boxes different in colour, hidden in one of them while the child was watching (in: Babska 1967: 456). However,

[1] Research by A.A. Lublińska in 1959 is quoted by M. Przetacznikowa, H. Spionek, *Wiek niemowlęcy*, [in:] M. Żebrowska (Ed.), *Psychologia rozwojowa dzieci i młodzieży*, Warszawa, p. 311.

the research of Z. Babska did not prove these results. This task could be achieved by three-year-olds only.

P.S. Dale (1969: 1135–1144) found that competences of colour distinguishing were much greater and 34% of children between the third and the beginning of the fifth year of life were able to complete the task of distinguishing 14 colours. A contemporary study by N.J. Pitchford and K.T. Mullen (2002: 1249–1370) shows that 4–5-year-olds made almost no mistakes at differentiating 11 colours.

The analysis of literature on study results on the ability to **differentiate colour shades** also shows significant differences of these results (Table 1).

Table 1. Results comparison of studies on children competences to differentiate colour shades based on gathered literature

	W.M. Cook	J.A. Gilbert	E.I. Istomina	S. Popek
Two-year-olds	45% of children			
Three-year-olds				
Four-year-olds			30% of children	30% of children
Five-year-olds			50% of children	65% of children
Six-year-olds	97% of children	33% of children		

For example, the research by W.M. Cook (1931: 302–320) shows that skills to differentiate saturation and brightness of samples have been achieved by 45% of two and a half-year-olds, and by 97% of six and a half-year-old children. The research by J.A. Gilbert proves that only 33% of six-year-old children have such abilities (in: Gibson, Olum 1970: 346). E.I. Istomina (1957: 101–104) concludes that this ability is already found in 30% of four-year-olds and in 50% of five- and six-year-olds. Yet different results are obtained in the study by S. Popek. It is stated that only 30% of four-year-olds and 65% of five-year-olds can distinguish brightness and saturation (Popek 1999: 191). To summarize all research results differences, we can quote M. Kielar-Turska (2000: 86), who wrote that "ability to distinguish colours and colour shades increases between the fourth and sixth year of life".

Association of names to particular colours depends on the ability of colours perception. The statement that colour vision has explicit impact on the ability of colour distinguishing seems obvious but this subject was researched only by E. Lewandowska (2008: 157–163). Children who presented deficit of colours perception also experienced difficulties in distinguishing the presented samples of named colours. Possibly, the ability of colours perception in children is also the reason for differences between the presented studies' results.

The superior form of colour distinguishing is **naming colours**. Here, some research results differences can be observed, too (Table 2).

Table 2. Comparison of research results on children competences in naming colours, based on gathered literature

	R.S. Illigworth	W.M. Cook	A. Gesell	L.M. Terman	E.M. Istomina
2-year-olds	Children able to name one colour	25% of children able to name four primary colours			
3-year-olds					
4-year-olds			74% of children name one colour, usually red	50% of children name four primary colours	100% of children name four primary colours
5-year-olds			61% of children name four primary colours	75% of children name four primary colours	100% of children name four primary colours and derivatives
6-year-olds		62% of children name four primary colours			

R.S. Illigworth states that two and a half-/three-year-old children can name one colour. According to W.M. Cook (1931: 302–320), 25% of two--year-olds and 62% of six-year-olds can name primary colours. Results of a study by A. Gesell (1973: 235) show that 74% of four-year-olds

name correctly one colour (usually red). Four primary colours are named correctly by 61% of five-year-olds, which is a year earlier than what W.M. Cook claims. Yet different results are shown by L.M. Terman: 50% of four-year-olds and 75% of five-year-olds are able to name correctly four primary colours (in: Przetacznikowa 1980: 439). Results of Istomina are yet different – she states that all four-year-olds can name correctly four primary colours, and five- and six-year-old children can name derivatives (Istomina 1957: 101–104; Babska 1957: 456). The research by E.G. Jonson (1977: 308–311) shows only that as years go by, the ability of naming colours increases. This statement is proven by studies results by N.J. Pitchford and K.T. Mulle (2002: 1249–1370) and S. Popek (1999: 192).

The results of the presented research show that ability of differentiation, distinguishing and naming colours in children develops very quickly. Yet, doubts arise in relation to the period when children achieve particular competences, and in the majority of studies the uncertainty is caused by small test groups used as the basis to formulate general statements. The studies mentioned show one fact unmistakably: pre-school age is the period of growing abilities of distinguishing and naming colours in children.

What is the place of distinguishing and naming colours in pre-school education and pedagogical practice? Allocation of contents of programmes concerning colours is presented in Tables 3, 4, and 5. The selection of programme substance of pre-school education is presented starting from the oldest Polish programme to present day.

Table 3. Comparison of topic contents concerning colours in pre-school education programmes published between 1933 and 1992

Advice and indications for pre-school teachers (day--nurseries) 1933	Introduction to two colours: red and yellow, when children are at least four years old, also blue, then green, for six-year--olds and for seven-year-old children – violet and orange. Fulfilling simple orders, like: hand me the red box, give me the blue…; naming colours of apples, leaves, etc; Visual exercise on distinguishing and naming colours; Paying attention to drawing, painting in real colours. Elder children (from the 5th year): learning mixing colours and creating derivative colours (green, orange and violet)			
Temporary programme. Pre-school lessons 1957	Attempts at naming colours (red, yellow, blue)		Naming four most common colours (red, yellow, blue, green)	Naming most common colours; distinguishing shades (pink, azure, other); Utilizing backgrounds of various colours and shades; Using rich colour scale and covering surface with colour spots
Pre-school education programme 1981 (linked programmes from 1973 and 1977)	Attempts at classifying objects by particular qualities, gathering objects having the same particular property, e.g. colour; Development of colour sensibility	Objects classification by one or more properties; Operating various colours of chalk, crayons, paints	Distinguishing full colour range; Object classification by quality properties, e.g. colour	Classification and segregation, e.g. by colour; Comparing and setting up colours (with correct names of seven colours of the rainbow, brown, white and black); Attempts to mix colours and distinguish saturation
Pre-school education programme 1992	Experience of elementary visual sensibility, such as colour; Development of colour sensibility	Widening artistic--constructional experience developing colour sensibility: including operating colour chalk, crayons, paints	Utilizing full colour range in artistic works; Attempts to mix colours	Comparing and confronting colours (with correct names of seven colours of the rainbow, brown, white and black); Attempts to mix colours and change the level of saturation; Using full scale of colours in artistic works; Attempts to mix colours

Table 4. Comparison of programme contents concerning colours contained in pre-school education programmes in accordance with Programme Base dated 26.02.2002

Age group / Programme name	Three-year-olds	Four-year-olds	Five-year-olds	Six-year-olds
Together with a child. Pre-school education programme A. Bojakowska, A. Fiedorowicz, E. Kozłowska, M. Krawcewicz DKW-4013-1/01	Noticing eye colour difference; Creation: one colour and multicolour batiks (on paper); Creating black and white scratch-outs and colour compositions made of strings and colour wools; Classification by colours; Colour flags.			
Pre-school education programme. The world of a pre-school child H. Bednarczyk, M. Królica DKW-4013-4/01	Distinguishing and naming primary colours and creating derivatives; Distinguishing colour intensity; Free use of the whole colour range; Emotional state expression by colours; Distinguishing source of colours (light, light refraction); Using white and black; Distinguishing and naming colours in cold and warm range; Conscious use of colours and various shades in one's artistic work and daily life; Feeling-expression by colours (aggressive and calm colours); Decoding symbolic representation of colours (e.g. red – warning, love; black – mourning; white – innocence; etc.).			

Pre-school education programme supporting development of artistic activity of a child. I am part of the world K. Nowak-Grobelska, B. Pilecka DKW-4013-6/01	Perception of colour range in the environment; Knowledge of primary colours and association with names.		Perception of colours in the environment; Experiments with colours spots; Observing colours' dissolving, effects of mixing, and creation of derivatives (naming) and various degrees of saturation.	
ABC ... Pre-school education programme of the 21st century A. Łady-Grodzicka, E. Bełczewska, M. Herde, E. Kwiatkowska, J. Wasilewska DKW-4013-1/00	level I Utilizing primary colours of decided shades (once from 1 to 3 colours) while painting.	level II Comparing colours with things known to a child; Attempts to define own emotional relation to colour (e.g. yellow – warm, nice as sun, or: I like green colour because it reminds me of grass); Utilizing a wide range of colours while painting.	level III Utilizing whole range of colours during painting; Attempts to mix colours and name shades and colour saturation.	level IV Creating derivative colours and naming them; Creating colour value by adding white or black in various shades.
Primer. Integrated education. Standard 0 work programme M. Lorek DKW-4013-14/01				Composing and mixing colours; Researching sources of light and effects related to shade, reflection and light colour.

Pre-school education programme for 3–6-year--old children H. Czerniawska DKW-4-13-2/01	Watching colour pictures, Classification of objects also by colours.	Watching colour pictures and illustrations in books for kids; Classification of objects also by colour; Drawing with various colours of chalk and crayons; Knowledge of the Polish national colours and emblem.	Watching colourful pictures and illustrations in books for kids; Understanding opinion about your work marked with colours, e.g. red circle – work done very well, blue circle – partly well; Classification based on properties such as colour; Attempts to mix colours.	Distinguishing colours of fruit and vegetables; Decoding opinion about turn of duty marked with colour symbols; Classification based on qualities such as colour; Comparing and composing colours and: naming seven colours of the rainbow and brown, white and black, Attempts to mix colours and distinguish level of saturation.
Child mathematics Pre-school, standard zero and integrated scholes programmes E. Gruszczyk--Kolczyńska, E. Zielińska DKW-4013-5/01	Comparison of objects, e.g. watching bears which differ in colour.		Grouping words and naming such groups, e.g. red, green, white and yellow – names of colours.	Segregation and defining objects by possessed properties, such as colour.

Table 5. Comparison of pre-school education programmes contents conformable to Programme Base dated 23.12.2008

<table>
<tr>
<td>Towards the child.
Pre-school education programme
B. Bilewicz-Kuźma,
T. Parczewska</td>
<td colspan="3">Grouping in a sensible way (classification) and generalization, such as: this fits that, pointing out similar and different objects, classification based on quality properties such as colour;
Development of speech in regard of vocabulary and grammar (…) enriching speech in collocations and fixed expressions, e.g. as white as…;
Expression in various artistic techniques an using elementary forms of expression (such as shape and colour);
Experiencing colour diversity; colours in nature during various seasons and periods of the day; primary colours and derivatives, warm and cold, comparing colours, mixing colours and distinguishing their saturation;
Projecting emotions by colours;
Experimental games and simple experiments, e.g. with light;
Distinguishing and understanding symbols.</td>
<td>Distinguishing colours of fruit and vegetables;
Decoding opinion about turn of duty marked with colour symbol;
Classification based on quality properties, e.g. colour;
Comparing and mixing colours including: naming seven colours of the rainbow and brown, white and black;
Attempts at mixing colours and distinguishing level of saturation.</td>
</tr>
<tr>
<td rowspan="2">Together in the Kindergarten.
Pre-school education programme
J. Andrzejewska,
J. Wierucka</td>
<td colspan="3">Naming primary colours, derivatives, chromatic, shades of colours.</td>
<td rowspan="2">Recognizing and perceiving colour harmony in artistic work of known artists;
Recognizing and naming symbols (e.g. flag, emblem);
Searching for relations and similarities between colours, e.g. white – snow;
Creating word galleries related to colours; grouping objects on the basis of one to four properties.</td>
</tr>
<tr>
<td>level I
Recognizing, distinguishing and naming primary colours.</td>
<td>level II
Defining properties of rocks and stones: colourful – monochromatic;
Experiments with colours (mixing colours).</td>
<td>level III
Using names of parts of face, e.g. defining colour of eyes, hair;
Discovering relations between colour of hair, skin complexion and climatic zones;
Learning expressions related to skin, e.g. alabaster, ruddy, pale, etc.;
Expression of visual sensations in artistic works, e.g. “shade of yellow paint”, “blue painting”;
Understanding feeling through phraseological expressions, e.g. “turned green with anger”;
Observing sensations related to seasons, e.g. changing colours of animal fur in autumn;
Recognizing signs and symbols, e.g. flags;
Perceiving harmony of colours in nature, seasons of the year, atmospheric sensations, searching relations in surroundings between colour, shape and sound;
Comparing and mixing colours.</td>
</tr>
</table>

Programme *From pre-school to primary school* I. Broda	Distinguishing primary colours and some derivatives, naming them; Experiments with mixing colours.	Distinguishing primary colours and derivatives, naming them; Experiments with mixing colours.	Expanding contents; Naming colours created in result of mixing colours; Providing names of colours which need to be mixed to create colour: green, orange, pink, violet.
Our kindergarten. Pre-school education programme supporting development of child activity M. Kwaśniewska, W. Żaba-Żabińska	Younger children (3-, 4-year-olds); Naming primary colours.	Elder children (5-, 6-year-olds); Naming primary colours (red, blue, yellow) and derivatives; Naming warm and cold colours; Mixing colours, naming created colours; Creating solutions of colours of various intensity, classifying them by colour intensity; Participating in games with colour spot, expressing own emotions with colours.	Children of particularly high level of development; Distinguishing colours of various saturation.
Before I become a pupil E.Tokarska, J. Kopała	I stage of achieving skills of perception of works of art.	II stage of achieving skills of perception of works of art; Naming colours which are used to paint the picture; Painting, using the whole range of colours; Recognizing colours red, blue, yellow, green during diagnosis.	III stage of achieving skills of perception of works of art; Distinguishing mood, colouring works of art.
Discover Montessori R. Czekalska, A. Gaj, B. Lauba, J. Matczak, A. Piecusiak, J. Sosnowska	3-, 4-year-old children; Naming primary colours.	5-, 6-year-olds; Naming derivative colours; Recognizing primary colours and some derivatives during diagnosis.	
Good beginning. Pre-school education programme M. Rościszewska--Woźniak	Comparing shapes, colours of leaves; Creating classes having one common property.		

The analysis of pre-school education programmes clearly shows that distinguishing, naming and classifying colours is imprinted into pre-school education. Independently of whether this knowledge area is attributed to development of cognition or artistic skills, the period between the third and seventh year of life is remarkable, as this is when children acquire knowledge of physical phenomena related to colours, and try to acquire, understand and feel the emotional value of the colour. This knowledge is also an indicator for the teacher in pedagogical diagnosis.

The changes taking place in pre-school education started in 2003, when six-year-old children were included into obligatory education, and in 2009, the process of lowering age of school education has started. This imposes on teachers of pre-school education the duty to conduct school diagnosis. Lower school age and universal survey of school maturity is one of priority tasks of MEN package "school friendly to kids". Naming colours by children is strongly connected to development level by psychologists, teachers and parents. In result, the exercises on naming colours are part of school maturity tests and development scales. Such diagnosis is obligatory and is regulated by instructions of the Ministry of National Education dating 23rd December, 2008, on the basis of pre-school education programme and general education of particular types of schools (pre-school diagnosis).

Pre-school age is the period when children learn colours names. Therefore, independently of changes and reforms, pre-school education programmes emphasize the importance of acquiring competences in naming colours. The analysis of pre-school education programmes shows clear lack of knowledge on the matter of when (at what age) children should have learned to name colours. This may be the result of the fact that publications on developmental psychology and pedagogy do not discuss this matter. Furthermore, this creates cognition dissonance; on the one hand, children are expected to name colours and this way information on their intellectual potential is collected, and on the other hand – it is not known when children should begin to distinguish and name colours. Therefore, it seems to be important to identify real competences of pre-school children in the matter of naming colours. This gap in teaching methodology and pre-school education programmes should be filled.

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Computer use by nine-year-old children

One of the important phenomena accompanying contemporary globalization processes is forming of the information societies. In my opinion, this phenomenon is unavoidable and general. The access to modern media (Internet, television, radio) dynamically develops forming of these processes. Today, both Internet and television are the "universal" sources of information and knowledge. From the theoretical point of view, they seem to be the most important tools of contemporary education (Izdebska 2007; Bernát, Bernátová 2011; Czaja-Chudyba 2009; Tanaś 2007; Kłosińska 2006). This text is a presentation of computer use by 9-year-olds in the process of their education (learning) and in other activities. It also shows readers both the positive and negative aspects of computer use by children (in the context of research questions and children's answers).

The research process

120 children (60 boys and 60 girls) – pupils of the 3rd grade (of the elementary schools in the Malopolska region) were tested – in the context of research questions:

1. *How much time do children spend using the computer*?
2. *Why do children use the computer*?
3. *What motifs inspire children to play computer games*?
4. *What are the positive effects of computer use* (*by children*), *in the opinion of the tested nine-year-olds*?
5. *What are the negative consequences of computer use* (*by children*), *in the opinion of the tested nine-year-olds*?

Analysis of the results

Regarding question 1: 61 children (50.8% of all the children tested), 42 boys and 19 girls declared that every day they spend more than three hours of their free time with the computer. Therefore, it can be interpreted as an actual fact that play with the computer fills all of the children's "free time" after their school lessons.

The results show that children spend their free time every day passively, in the physical sense. It "inspires" faulty posture of children's bodies.

Regarding question 2: Computer games are the nicest form of boys' relationship with the computer (37 boys' answers). Other boys use the computer for learning (13 boys' answers) and for listening to music (10 boys' answers). Girls use the computer first of all for listening to music (29 girls' answers), for playing computer games (19 girls' answers) and for learning (12 girls' answers). The children surveyed spend the least time with the computer for writing their homework. Only 25 nine-year-old children (20.8% of all tested children) use the computer for learning (or rather *primarily* for learning).

Regarding question 3: 118 children (98.4% of all children tested), 60 boys and 58 girls declared that they like computer games. In the context of children's answers, the tested boys are interested in action games (24 boys' answers) and "fighting" games (20 boys' answers), and the tested girls like adventure games (32 girls' answers) and logical games (14 girls' answers). Adventure games and logical games have little popularity among the tested boys, just as "fighting" games and strategic games have little popularity among the tested girls.

Having fun is an important factor inspiring the tested boys for playing with the computer (43 boys' answers) as well as satisfying boredom is a major initiator of girls' playing with the computer (42 girls' answers). 20 tested children (10 boys and 10 girls) suppose that knowledge is a factor inspiring them to use the computer.

Regarding question 4: The presented research shows that 110 children playing with the computer (91.7% of all children tested), 52 boys and 58 girls have come across educational games. This fact shows that computer- and Internet-assisted education develops dynamically in contemporary Poland. It also proves that learning with the support of the mass media

and multimedia allows the expansion of children's knowledge and skills. Computer and Internet use in children's education shows that these media combine learning and play, and also utility and pleasure, and they are attractive instruments for children's education.

85 children (43 boys and 42 girls) declared that educational games help them in their learning[1]. In the context of the children's answers, I suppose that educational games as well as properly selected Internet portals in fact may help children in their learning. Internet is an attractive tool for developing children's interests and helping in children's learning. Among those who have proposed attractive educational games for the tested boys and girls are teachers (41 boys' answers and 38 girls' answers) and parents (15 boys' answers and 17 girls' answers).

Regarding question 5: In the context of the presented research, I suppose that parents of the children tested are not aware of the potential evil in computer- and Internet-activity of their children. The tested boys and girls are not supervised by their parents when they play with the computer, also when they are using the Internet (46 boys' answers and 56 girls' answers). It seems that parents, especially parents of girls, do not restrict their children the computer access, and they do not control the time that children (especially girls) spend playing the computer. That fact was pointed out above when I presented the time that children spend playing the computer.

The research results show that 77 children (64.2% of all children tested), 28 boys and 49 girls feel tired after playing with the computer. Many hours of interaction with the monitor and the keyboard leads to back--pain and eye fatigue, and in effect to faulty posture of the body and to eye defects. Children playing with the computer forget about what is important and appropriate for them. They often neglect home duties, school duties, hygiene and even physiological needs.

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[1] We ought to remember that in Poland, the package of textbooks (for pupils of the elementary schools) is often supplemented by a useful CD-ROM which allows stress-free repetition of the content of school lessons using educational games, cross-words, puzzles, songs, etc. Also Internet portals provide pupils education in various fields of knowledge (Polish language, history, geography, mathematics, physics, biology, etc.). Today, Polish children may use the Internet encyclopedias and dictionaries, virtual textbooks and books, and also audio-e-books (virtual books to listen to), etc.

67 tested children (41 boys and 26 girls) declared that they neglect their school duties (e.g. reading texts of children's literature). 20 tested children (10 boys and 10 girls) declared that they limit their meetings with peers. 2 tested girls felt asleep at time of the computer meeting.

The children surveyed use mostly the Internet communicator "Gadu-Gadu" (44 boys' answers and 34 girls' answers). Boys like on-line playing (29 boys' answers) and girls like web browsing (25 girls' answers). E-mail is not popular among nine-year-olds (only 3 boys and 6 girls have used e-mail).

29 boys (48.4% of all boys tested) and 15 girls (25% of all girls tested) have admitted that they did browse Internet sites "targeted" only at adults, with erotic images and also with pornographic images. The real number of the tested children who have browsed sites with erotic and pornographic images is probably higher. The erotic and pornographic images cause sexual excitement in nine-year-olds. Children's interest in sex (inspired by the Internet) is too early. This "adult" interest displaces other interests, which seem to be appropriate for children at this age. Incidentally, 24 tested boys and 31 tested girls perceive the alarming danger of Internet erotic and pornographic portals. Other children (64 tested nine-year-olds) rather do not perceive this danger.

Some children are also aware of computer addiction, others do not understand that they may become subordinated to the computer as a machine, or in reality to their sensations experienced during the play with the computer.

Polish teachers ought to be obliged to organize valuable computer education in Polish schools, which would show all children the positive effects of computer use (e.g. for learning) as well as its negative consequences.

(Translation: M. Muchacki)

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CHAPTER V

Contexts and conditions of reflection over child and childhood

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Reflective practice at kindergarten – child, teacher and parents

Understanding the reflectiveness – definitions and conceptions

Reflectiveness is a phenomenon fascinating philosophers, sociologists, psychologists and educationalists. Reflection is a kind of theoretical reasoning that is connected with constant consideration, inquiry, analysis of different sides to a problem, and selection of contexts. In literature, it is usually assumed that reflection is deeper wondering, analyzing something, thinking over an idea. Reflectiveness may also be understood as searching for the sense, i.e. the value and meaning. It includes continual consideration of acting within the light of the new knowledge and the assumptions made, makes it possible to modify the actions, and is coupled with openness, responsibility and individual initiative.

One of the precursors of psychological basis for reflectiveness/non-reflectiveness problems, E. Langer (1993: 139), assuming that reflectiveness may be described as creation (noticing) numerous perspectives or becoming conscious of the context, states that reflectiveness is activated when situation requires high effort, when factors do not allow for non-reflective sequence and consequences of behaviour are contradictive enough to the previous experiences. Langer (1993: 149) couples reflectiveness with having inner locus of control, with tendency to taking risk and adaptation to unforeseen situations as well as with pro-health attitude or even longevity, and states that reflectiveness evokes sensitivity to contexts, while non-reflectiveness results in submission to contexts. The process of reflection is conceptualization and articulation of wondering (Czerepaniak-Walczak 1997: 11), and consciousness of reality ambiguity. That is why the basic

factor of reflective thinking is *"remaining in the state of doubt and avoiding premature drawing conclusions while continuing systematic research"* (Woronowicz 2003: 14). Reflective thinking is thus continuous thinking with defined sequence, based on rules of outcomes, active and attentive consideration of particular judgement or knowledge within the light of arguments, conclusion basis, often requiring suspending of judgement for the time of investigation.

Reflection that includes constant consideration of one's own action within the light of new knowledge and assumptions made, with possible modification of operations, is connected with openness, responsibility and activity. Usually, it is identified with the way of thinking, but J. Dewey (1988) mentions reflective activity being the opposition of routine and automotive acting, which have their roots in traditional, fundamental or non-democratic systems. Similarly, self-reflection is also considered in two aspects: a) reflection connected with subjective conditions that makes the knowledge possible, and b) reflection understood as freeing the individuals from the hidden restrictions. Close to reflectiveness is the term of emancipation potential, seen as the subject effectiveness for critical recognition of one's own restrictions and for their conscious crossing (Witkowski 1990). Hence, self-reflectiveness is systematic, every-day examining of one's own practice, containing consideration of one's own development (intellectual and emotional) and strategies used, subjecting to doubts personal assumptions and testing them in practice.

Basing on conducted research, Hatton and Smith (1994) distinguish three levels of reflections present in the subject literature: technical, practical and critical (which is also defined by some researchers as constructive criticism). In the opinion of F. Down (1995), reflection contains four levels: **description** (analysis of actual behaviour, judgements and opinions), **searching for the meaning** (finding the value), **confrontation** (looking for social, political and cultural context) and **re-construction** (considering the alternative solutions). The analysis of this conception is illustrated in Fig. 1.

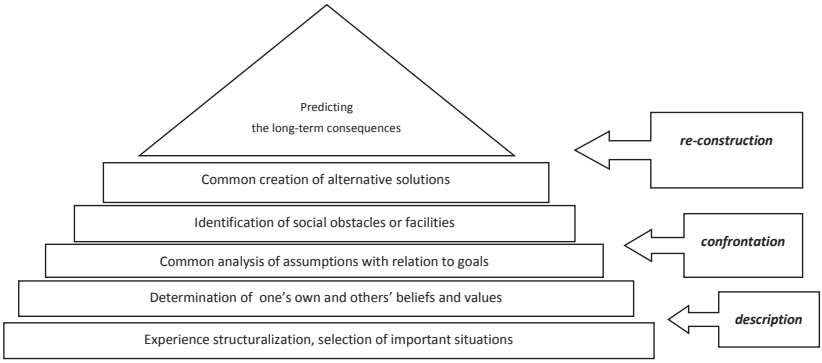

Fig. 1. Reflective transformation of experience – the author's study based on F. Down (1995)

The process of reflection is described slightly differently by R.J. Sternberg, L. Jarvin and E.L. Grigorienko (2009), who couple reflectiveness with abilities connected with wisdom (*wisdom-based skills*). It includes thinking, being the form of thinking of an individual's own functioning, judging and acting. In the authors' opinion "wise" decisions require *reflective thinking* – selection of meta-cognitive strategies, checking how the applied strategy works, and having an idea how to change it when it does not succeed in practice. Questions supporting reflective thinking understood in this way refer to individual experiences, beliefs, opinions, judgments and pre--assumptions. Such form of reflectiveness is also connected with the ability of imagination and creative invention. Another type of abilities coupled with such understanding of wisdom is *dialogical thinking,* which takes into account different points of reference and numerous perspectives in order to reach the best solution. The third process activated while reflecting is thinking of *dialectic type,* in which the effort is made to join and integrate contradictory points of view, to reach the consensus, to make synthesis of different references. Quite similarly, M.E. Gorman and J.A. Plucker (2003: 276) name the aspect of reflectiveness as the "process of intra-personal criticism" while the "process of inter-personal criticism" is connected with the reflection over the individual's abilities and knowledge, and by that is frequently joined with the social context. J.-C. Kaufmann (2004: 179) proposes the model of "dialectic square", for which the corners are:

individual reflectiveness, individual habits legacy, social reflectiveness and socialization frames.

J. Habermas (in: Nowicka 2009) popularized three types of reflection: empirical, interpretative and critical, relating to three types of rationality – technical, practical and emancipative. Basing on J. Habermas's views, Max van Manen (in: Dylak 1996) worked out a hierarchic system of reflectiveness levels in teachers' practice, describing the following reflection types: 1) *technical* – where mainly efficiency and effectiveness of means applied for reaching the particular goals are analyzed, and which themselves are not subject to critic or change; 2) *practical* – including examining not only the means, but also aims and their assumptions, as well as the actual results of actions; reflection of such type contains linguistic analysis and negotiation of meanings; 3) *critical* – where, beside the already mentioned, moral and ethic criteria of activities taken are included. Analysis is here settled in a wide historical, social, political and cultural context. Continuing such a general approach, J.R. Ward and S.S. McCotter (2004) distinguish four types of reflection: normal, technical, dialogical and transformative, while J.K. Jay and K.L. Johnson (2002) propose three different types – descriptive, comparative and critical. Reflectiveness is also supported by actions in social-constructivist practice paradigm. In the programme for mastering students' reflective competencies, B.D. Gołębniak (1999) described three reflection types: monitoring, estimating and evaluative, while D. Klus-Stańska (2004b: 31–32) distinguishes interpretative, critical, self-creative and projective reflections.

In conclusion, it should be noticed that reflection includes two different meanings: the first one is connected with thinking over the world of things, actions and problems, while the second one, according to K. Illeris (2006), is coupled with "mirroring" – the experiences and understanding are reflected into "the self" (identity) of the person learning (such understanding is often defined as a feature of reflectiveness or self--reflectiveness). W. Woronowicz (2006: 158, 160) states that "ability to reflect guarantees the person most of all the individual freedom to choose both the values and their concerns in life practice. Reflection allows for certainty that neither values nor their inner hierarchy in the consciousness are imposed in any way, and we follow them owing to the ability to differentiate what is important and valuable, and owing to our free will. Reflection allows not only for inner analysis of mind rightness, but also

for thinking over if and to what extent we are driven by emotions, features of our personality and will". If we decide to accept this thesis, we may conclude that reflection is the attribute of mature personality. One should then think about factors supporting development of reflectiveness already in the practice of kindergarten/pre-school education. The following sections of this paper are devoted to the presentation of chances and possibilities of this process, as well as barriers and restraints in the context of the bringing--up process with three subjects.

Teacher's reflective practice – possibilities and restraints

The basis for reflectiveness is searching openness (Bloom 1997), which serves looking for knowledge and certainty, connected with discovering the basis for individual knowledge. A. Giddens (2002: 29) ascribes an important role to "reflexivity" and "the reflexive project of the self" of individuals, and recognizes that "Modernity's reflexivity refers to the susceptibility of most aspects of social activity, and material relations with nature, to chronic revision in the light of new information or knowledge". Philosophy of reflectiveness described in the previous section also reflects the conviction that there exists a wide spectrum of factors and influences which, when treated in a holistic manner, may result in the development of teacher's reflective practice. As noticed by S. Dylak (1996), reflectiveness, both in a teacher's activity context and with regard to education, is the compulsory paradigm of the modern pedeutological writings. The conception of reflective practice consists in the application, in a teacher's work, of the ability of critical reflection and deliberation not only to the teacher's own behaviour, but also to the multi--dimensional context in which it occurs. In the case of school, reflection may also concern the pupils (looking for the sense of pupil's own activity and presence in school – understood by S. Dylak (2009) as the basic dimension of engagement into the process of self-education). Children's self-reflection at school may take on the dimension of consciousness as to the goal of an activity, the realization what they may learn as the result of actions taken, awareness of the criteria of evaluation of particular actions, and of the means taken as their consequences. In reference to pre-school practice, self-reflection is often connected with the teacher's activity. It

may contain the reflection over the teacher's own knowledge, abilities or attitudes towards the conception of teaching, planning and evaluation. The concept of the teacher as a reflective researcher of his own experience and educational practice is presented most completely in the works by Carr and Kemis, Pollard, and in the "reflective practitioner" concept by Schon. Carr and Kemis (1986) assume that the subjects of reflection may be frustrations, restraints and pressures; habits, routines, dogmas, ideologies, prejudices, pre-assumptions connected with behaviours; interpretations and judgements constituting cognitive level that may be the subject of reflection.

Reflective teaching and educating of teachers as reflective practitioners are categories mostly connected with D. Schön (1986); the works of this author according to S. Dylak (1996) are the synthesis of "reflection over reflection". Most frequently, reflection is understood as searching for solutions that can be met while doing practical actions and while solving problems by the teacher, connected with the analysis and estimation of action conditions and their consequences. With regard to teacher's practice, reflection takes place in connection with a particular activity and is oriented onto solution of actual problems (Dylak 1996). Category of reflective practical experience (Pearson 1994) thus contains the situation when teacher faces the necessity of modification or change of the intended actions due to his own beliefs. S. Dylak (1996) states that many authors who undertake the critical analysis of "reflective practitioner" refer to the term of *self-determination* created by J. Habermas, defining reflection as the process of realizing the sociological and ideological context of restraints, previously treated as determined, and taking control over this influence. But reflective pedagogy is a conception connected with three types of reflective knowledge: about the language, about the myths, and poetic knowledge (Krüger 2000), and in creating the knowledge on education it uses critical educational research. The attitude of a reflective practitioner is perfectly characterized by M. Czerepaniak-Walczak (1997: 94): "reflective practitioner constantly and systematically decodes and creates the meanings of the facts and events. It requires courage and readiness to take responsibility for the results of such decoded and created meanings. Vast and constantly increasing general knowledge supported by its common accessibility places reflective practitioner against the necessity to make choices of information sources and critical interpretation

of newly presented facts and phenomena. It also requires the necessity to actualize one's own knowledge and beliefs". Reflection in action plays a critical role, leading to formulation of questions as to the structure of assumptions, and being the foundation for particular activity in reference to the thinking method that led to it (Day 2004). Going beyond automatisms or spontaneity is named by D. Schön as "reflection within the action". The opposite of reflective practice is technical rationality, defining knowledge as specialized, standardized, scientific and within the particular domain.

Reflective practice coupled with "reflection within the action" assumes the social attitude of a teacher who takes information from self-reflection and from pedagogic and psychological knowledge, and who develops by co-operation and dialogue with the colleagues. Critical reflection shows the influence of ideology and power on the learning process. On the part of the teacher, it is making sense of one's own functioning at school (teacher's ideologies) and understanding the sense of the knowledge presented – its social, ideological and individual (practical) roots and reference. In the case of teacher's self-reflection, what becomes important is the dimension of self-evaluation of one's own professionalism, taking into account the judgements of oneself, but also reflecting the social expectations of the role of a teacher (a guardian of values, tradition transmitter, cognitive and moral authority). V. Švec (2000) presents the components of professional teacher's self-reflection understood as a type of inner dialogue, including thinking over the social changes and their reflections in education.

Following J. Dewey, A. Pollard (1998) presents the features of reflective teaching. Continuing his ideas, M. Czerepaniak (1997: 20–23) distinguishes the following premises motivating teachers' reflectiveness: 1) changes in relations between social life and education – "a reflective practitioner faces the necessity of making it possible to get access to information and to use it critically, instead of getting the knowledge of facts and having the ability to use it" (p. 21); 2) popularization of the alternative theories and educational movements and the multiplicity of human being concepts and conditions of development; 3) tendency to limit central administration of education – teachers by themselves make choices being the basis for pupils' development – "knowledge independently discovered and constantly verified" (p. 22); 4) expectations and vision of the professional role in the contemporary society; 5) responsibility for the results of work with the pupils and parents; 6) view of the pupil and his

place within the education and the bringing-up process. M. Czerepaniak (1995: 141) convinces that we can speak of two types of reflectiveness: manifested and potential. Observation of the school's every-day practice rather seldom proves the presence of both these reflection types in teachers' work. Thus it seems to be a matter of great importance to pay attention to the sources of this situation. The causes of barriers may be found in external conditions in which teachers function, as well as in subjective predispositions and limitations resulting from the faulty selection and education process of future teachers. From this perspective, the lack of reflection may be explained as an insufficient number of cognitive schemes, cognitive non-competency barriers (under-evaluation), fear of novelty and unclear situations, the feeling of obviousness of knowledge and application of non-flexible and simplified cognitive heuristics in the reality interpretation. Other barriers that restrain teachers' possibility of reflective analysis of one's own practice are (Dylak 2000): ideology of the type "it does not apply to me" – avoiding and denying the difficult situations; ideology of the only proper method and of correctness; lack of time, patience and inquisitiveness with the related non-reflective acceptance of authorities; the so-called Horatio dilemma, when teachers underline and exaggerate objective difficulties piling up on the way to the realization of the goal; ideology of quantitative approach to teacher's thinking, resulting from the faith in the importance of practice and routine despite the level of critical reflection and intelligence. It should be noticed that teachers more affirmatively treat practical realization and execution tasks than interpretation, as well as most frequently understand their duties as transmitting information and bringing up through persuasive or directive arguments and rules. The aforementioned beliefs and stereotypes of teachers can play a role of regulators of their attitudes towards reflectiveness and criticism. Amongst theoretical propositions forming the contemporary Polish analysis of this problem, we should note the recently formulated postulates of D. Klus-Stańska and J. Kruk (2009) on reflective designing of learning environment instead of traditional – according to the authors – inert methods of creating and interpreting school activities.

Reflective child at pre-school – chance or barrier for education

Numerous researchers point to the fact that children indicate higher cognitive abilities than assumed by classical Piaget researches. Accepting this perspective, it may be assumed that the process of gaining reflectiveness starts early – even 4- or 5-year-old children ask questions aiming at understanding the reality. It becomes an imperative here to reach for the truth, determine cognitive choices and activate children's curiosity at the period of medium childhood. A child expresses autonomy and independence – in an unstoppable manner voices objection, asks questions, explores, and creatively experiments. But a child lacks in cognitive instruments, especially in logical and analytical abilities to conduct constructive/fair criticism and reflection. In a child's behaviour and thinking egocentricity dominates, manifested by the inability or reluctance to see the others' points of view, and by rejecting ideas that are incompatible. In extreme cases, it may be a desire to have 100% right, and a strong conviction that everybody else is completely wrong; it may also be the lack of self-consciousness of thinking processes. For example, E. Martens (1996a, b), in many of his publications, presents the arguments for children being able to carry out philosophical reflection, and states that children ask free, inquisitive and even difficult questions. The author also points to the importance of activities starting from quiz questions, Aristotelic wondering, and asking questions or stating "I do not know" that may enrich the process of natural wondering of children (Martens 1996b). Hence, we should admit the conviction of educators and psychologists who, as J. Bruner, think that children are capable of understanding complicated intellectual activities under the condition of appropriate didactic influence.

In the opinion of W. Woronowicz (2006: 19), the aim of reflective education is bringing up a reflective human being, accustomed to "deep consideration before making decision or activity, especially those having morally ambiguous features, according to high values system accepted in the society". Within the years 2001–2003, the author carried out two experiments proving that in children of medium childhood it is possible to form reflectiveness. In the conducted undertakings, W. Woronowicz (2006: 20–22) pointed the importance of implementing the following principles of reflective education by teachers of pre-school education:

1. A child is a free individual (hence it is not allowed to impose upon the children a particular way of thinking or ideology – they should have a chance to form their judgements by themselves);

2. A child constitutes the subject of education (children ought to be supported, not controlled);

3. Relationship between the teacher and children ought to be characterized by partnership (the teacher should not use categorical commands or non-disputable directives);

4. Communication between the teacher and children is carried out by educational dialogue (the teacher stimulates questions and does not demand answers);

5. Education is associated with consequent getting used to reflection.

The basis for reflective education is focusing on one's own emotions, thoughts and states (emotional self-consciousness, control over emotions, productive use of emotions, decoding the emotions). Hence, for children the most important stimulators for thoughts development are: curiosity, the act of examination, searching for facts confirmation or rejection, as well as contradictory or difficult feeling and postponing the judgement. Children's features of reflective thinking are distinguished by states of embarrassment, concern, uncertainty, or doubt. That is why during activities at pre-school age it is possible and it is really worthwhile to consider particular subjects, look for evidence, confirm it or point out its senselessness.

Similar conclusions are formulated by B. Curtis (1996) while presenting the effects of realization of the one-year course programme "Philosophy for children". In all groups subjected to the programme, progress was noticed within the following domains: *focusing attention* (children with engagement took part in discussions lasting 30–40 minutes); *showing respect for the inquiry process* (children fluently changed the subjects from thoughtless and humorous statements to serious discussions); *thoroughly identifying the major ideas of texts*; *expressing opinions in discussions*; *understanding philosophical issues* (gradually grasping the subtleties of thinking and meaning); *giving individual answers* (taking responsibility for their own judgements and opinions); *formulating original statements* (change from imitative answers to original ones); *giving justifications*; *co-operation of thoughts – referring to others' thoughts* (in the process, starting from creation of statements describing children's own individual experiences, to adding those statements to others' expressions – formulating

opinions on the general level); *sensing what is philosophical* (children indicated "philosophical sense" – they were interested when important ideas or meanings were analyzed); *holding on to the subject* (children tried to maintain the selected direction of discussion); *discovering what is important and being satisfied with understanding*; *taking a stance* (children could take a stance and defend it); *criticism* (usually in the form of counter-example, but also in the polite form, without hostility); *defending the opinion* (replying to criticism); *proving advantages of the view-point* (but also noticing its weak points); *attitude towards criticism* (children could back out from the position they stood at and give the right to others' opinions); *communicating with other children* (even if in the beginning they addressed each other through the teacher); and at the end of the experiment, the elements of *continuing the autonomic discussion* were even observed – which was performed by children independently. During such activities, children were satisfied with self-creation, but only when they noticed the teacher's real interest and confidence in their competencies and abilities.

A.J. Starko (2005) also proposes numerous strategies aiming to support children's ability to ask questions, and assumes that the basic factor is to create climate in which children could feel comfortable (especially when through questions they report lack of understanding – they should not be afraid of punishment and negative evaluation, and these questions should not be ignored). The climate of freedom supports asking critical and creative questions. Another method of supporting questions is change in the form of their formulation. A.J. Starko (2005: 344) proposes the change of the phrase "I do not understand" into "I wonder". This author describes five strategies (Starko 2005: 345–346) that may encourage children to asking productive questions: 1) paying attention to differences between asking open and closed questions – creating such situations in which children notice that even the teacher does not know the answer to the question; 2) attributing surprise, curiosity to the problems under consideration, teaching children engagement and appropriate attitude towards knowledge (using comments like "is it not interesting that...?"); 3) creating visual activities that popularize importance of questions, revealing the reasons explaining why asking questions is important in particular professions; 4) treating children's questions with attention and respect; 5) independent deep examination of particular domains. Questions stimulating reflective

thinking, formulated during activities, may be aimed at: explanation, specifying the details (*"could you be more specific? could you give more details? could you be more accurate?"*), determination of connections and coherency (*"how it is connected with the problem at issue? how does this describe the problem?"*), estimation of accuracy and reliability of knowledge basis (*"how do we know that it is true?"*) and examination of the problem from different perspectives (overcoming the children's egocentricity). Similarly, N. Postman (2001: 174) defines five different proposals how to teach children the art of asking questions, logical thinking, rhetoric and grammar in such a manner that it could help forming reflective thinking and coping with propaganda and information noise, shaping such a view of the world that includes not only declarative knowledge (facts). Strategies of development and support of critical thinking may rely on: searching for the questions, clarification, explaining or describing with one's own words the definitions of ideas and meanings, formulating predictions, comparing, stimulating discussions, collecting arguments. Such activities should use texts specially selected and adapted for children's knowledge and intellectual level – philosophical tales or social problem texts that may confront children with values. Activities stimulating reflectiveness should also make it possible to experiment freely, take risk or look for different solutions to the problem.

But the effect of intellectually and methodologically poor education as well as the lack of selection for teacher's profession is the situation when teachers feel endangered meeting children whose intellectual abilities are different (or even higher) then their own. Also quite frequently, teachers' reflection is limited only to the analysis whether children's behaviour or question constitutes a breach of discipline or a symptom of different (faulty) view of the reality. Another barrier in supporting children's reflectiveness is the fact that education often enforces on children the acceptation of defined, traditional behaviour patterns, and they quickly resign from the resistance and with no objection follow the provided examples. Then a child, instead of questioning, is taught how to accept, and instead of thinking – repeats with no reflection. Another barrier that often appears is the lack of respect for individuality – promoting the children that are "polite", "well-behaved", but without initiative and predictable. This is confirmed by the research on teachers conducted by M. Węglińska (1989) and R. Wiechnik (1999), from which it may be concluded that teachers are mainly focused on the work

with average children. In the hierarchy of pupils' perfection, disciplined pupils are located higher than original and creatively thinking individuals. A child displaying non-stereotypical thinking, asking questions, is often treated as trouble, breaks the fixed course of activities or statement, attracts attention, and occupies the time intended for other children. Evaluation of teacher's work is also formulated on the basis of the average, standard abilities acquired by children and is very seldom connected with the effects in the form of development of creativity, reflectiveness or criticism. Little attention is paid to the achievements of single pupils, especially when they refer to unconventional domains and fields of interests, not covered by the programme basis for the defined level of education.

Reflective parents – out of concern for children subjectivity and autonomy development

Development of children's reflectiveness depends on their potential and motivation, but also, to a great extent, on environmental resources and the closest surroundings' activities. Adult persons, introducing a child into the world, mark the first traces for intellectual wandering. This problem is well characterized by B. Muchacka (2007: 10) who states: "An adult should help children to discover the principle of order, to be able to appropriately structuralise the knowledge of the world and of themselves". An important sphere for stimulating or inhibiting the natural children questioning, creativity and reflectiveness is thus the family. A determinant factor is parents' attitude towards reflectiveness, whether they support children or stop them, whether they take an active role in the kindergarten, in local surroundings, in culture.

Some researchers, for example E. Landau (2003: 159), underline the meaning of emotional and motivational factors of relations between the child and the family, which release the courage to accept the child's own abilities and feeling of efficiency (*"I can"*), as well as the motivation for inner development and surrounding exploration (*"I want"*). Adults, thanks to providing the intellectual patterns, encourage children to take responsibility for their own thinking, thus supporting children's independence in constructing the knowledge. Hence, M. Lippman (1996) postulates that in contact with children parents not only pay special attention

to what is known and what others invented, but most of all encourage to independent experimentation and formulating judgements.

Discussing the importance of family relationship supporting creativity, G. Mendecka (2003: 93) notices that the most optimal conditions are formed by coherency and high adaptability of the family, which offers a possibility for individual development by allowing for autonomy and introducing the elements of order connected with co-existence and confrontation of different points of view. Also G. Lewis (1994) stresses the significance of parents' mobilizing the perseverance, freedom in thinking and activities, as well as developing independency adjusted to the child's age.

It is recommended that children should adopt habits of appreciation and respect for their own ideas by adults' reflective activities, and express courage in undertaking and solving difficult tasks. Parents ought to support kindergarten in stimulating intellectual anxiety, encouraging to take cognitive risk, to be attentive and critical towards authorities and experts, in developing children's constructive/fair criticism as well as in creating chances for being independent. Only the parents who are examples of being tolerant of new ideas can teach tolerance, providing the climate of safety based on trust and minimization of fear in social contacts (Czaja-Chudyba 2008).

In effective help in constituting the reflective attitude of children, dedication of sufficient time plays an important role. Owing to being together, plays and conversations, parents have a possibility to observe their children and to diagnose their abilities (Smółka 2010). Family is a place for natural situations, in which children in an unhindered manner may express the upper limits of their abilities. In such understanding, parents' reflection should also refer to children's abilities level, their motivation and attitudes, and personality development. Yet it should be kept in mind that numerous practitioners (Czaja-Chudyba 2009) emphasise that children's evaluation made by parents may be completed, but sometimes not necessarily objective. And the other way round, also quite often family environment becomes the source of barriers and limitations for children's reflectiveness. The basic negative factor for building mental obedience is children's dependence on the adults. From the early years, children's sources of information are restricted and controlled – children, by having constant contact with the parents, unconsciously adapt the habit of being influenced, and in searching for identification feel the need of following the parents'

way of acting. Children's wondering in everyday natural situations may activate imagination and fantasy, may be the factor intensifying actions and may create conditions for the complete development of personality, but also may be stopped by quick and unpremeditated answers or signs of disapproval and impatience. Adults frequently interpret children's questions as requests for immediate answer, while they may be caused by the need of a common riddle solutions. Very often adults treat the questions as a threat to their status and educational habits. Barriers are manifested also through stiff noticing of family situations, through the lack of reactions for novelty, action done according to schemes, fixed rules, low cognitive aspirations, conventional social expectations (*"how can reflectiveness be useful in my life?"*), insufficient cognitive pre-dispositions and lack of engagement.

Research by B. Bloom (Eby and Smutny 1998) indicates, however, that carers of children who succeeded in their future life devoted them a lot of time, energy and funds to support their abilities, trainings and career. They recognized the children's achievements as a value, appreciated them and encouraged children to work and exercise, often spending a lot of money on them. Similarly, outstanding scientists in their biographies describing the beginnings of their careers (Brockman 2007) point out the importance of intellectual and emotional encouragement they received at home.

Conclusions

Generally, dominant in the analysis of reflective education is the pressure on cognitive and affective aspects of learning and on meta--cognitive processes. At this point, within the scope of understanding the reflective teaching, consensus ends. It is quite well understood in the context of shifting from the culture of certainty to the culture of uncertainty (Hargreaves 1993: 98), unlimited process of information spread, dimensional and time information compression (Muchacki 2006), multi-cultural migrations as well as acceptation of individual's autonomy (Hargreaves 1993: 101). A statement representative of this trend of thinking over the present may be the formulation by W. Dróżka (2005: 25): "Reflectiveness of modernity refers to the principle of methodological doubt, around which the new epoch develops. According to this principle, almost every human activity is constantly subjected to revision due to

newly received information or knowledge acquired. [...] The knowledge is impermanent, highly problematic and does not provide the feeling of certainty". This short analysis of contemporary changes in pre-school education indicates both positive tendencies – numerous educational projects underlying the importance of reflectiveness (for teachers and for children); tendencies in pre-school education pointing to the significance of cognitive independence, reflectiveness and creativity of children as well as the necessity to diagnose the potential strong and weak sides of children that are included in the *Programme Basis*, − and barriers and difficulties inhibiting the process of stimulation of reflective practice. With regard to the process of education, reflectiveness takes into account most of all the uniqueness of experiences of children, parents and teachers, the importance of problem solving and critical experience analysis, as well as active and independent examination of activities within the constant deliberations and in co-operation with others (Bar 2009). It is not the question of the so-called festive learning – festive reflection (Rutkowiak 2003), but of everyday reflectiveness in a wider meaning, when critical attitude towards the reality becomes the natural (however not easy) attitude towards the world.

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Philosophizing with children – from reflections towards practice

In the thinking pertinent to pre-school and early school education, more and more ground is gained by **constructivist** argumentation; nevertheless, as D. Klus-Stańska (2009: 47) has it, in occurs mainly *on the level of rhetoric and time-formed aims.* Contrary to the behaviourist concept, constructivism assumes active participation of individuals who, instead of assimilating 'ready-made' knowledge prepared for them, will face an issue, which will induce them not only to formulate questions and to look for solutions by themselves, but also to co-operate with others, to learn from them, to attribute meanings and in the end – to reconstruct the knowledge already possessed through new experience. An example of learning moulded according to that concept is philosophizing with children.

The idea of philosophizing with children appeared as a reaction to the phenomenon observed among kids and young people who exhibited inability to think, and due to the inefficiency of the traditional school which does not rely on pupils' or students' intellectual potential, but rather thwarts their inborn and natural interest in the world. The most known syllabus of philosophy for kids appeared in the USA in 1969, and its author was Matthew Lipman, who set the following question: *can we philosophize with kids who are at least six years old in a reasonable and useful way, and if so, how should such activities be arranged from the didactic viewpoint?* (Freese 2008: 104). According to M. Lipman, philosophizing lessons should follow the pattern: 1) kids sit down in a circle so that they may see one another; 2) then, an appropriate text is being read; 3) the kids ask questions induced in them by the text they have just heard;

4) a discussion takes place, which comes into exist by making references to an interlocutor's statements, by attentive listening to someone else's and formulation of one's own arguments; 5) a summary, which does not settle any issue, but spurs the participants on to continue their reflections. The syllabus is supplemented by fictional texts, also compiled by M. Lipman, which constitute the basis for philosophical discussions. The syllabus is known in a few dozen or so countries worldwide. In Poland, it has been modified by Anna Pobojewska, who deems it to be a method of didactic activities and labels it *a workshop of philosophical inquiries.*

According to experts, the method of philosophizing is good also for kids younger than six. Kids aged 4 or 5 are ready for such methods, which is corroborated by their questions addressed at adults. Most of them are philosophical questions, viz. are aimed at finding a meaning and at understanding a piece of reality which is often pertinent to issues fanthomed out by philosophers over the centuries.

Nowadays, in view of substantiated, successful research, there is no doubt that the kids said can philosophize. Refuted were various psychological, pedagogical and philosophical reproaches of those who used to be sceptical about this matter (Martens 1996: 40).

Refuted was also J. Piaget's opinion according to which philosophizing would be good only for kids of 11, because only this stage of intellectual development is sufficient to perform formal operations. More recent studies have proved that children younger than 11 (as J. Piaget has it) are endowed with fundamental competence in logical thinking. In everyday tasks performed spontaneously, kids aged 5 or even younger exhibited higher *competence in thinking* than in experimental conditions in which mental errors resulted rather from the lack of logic, not from having failed to understand the task and/or *weakness of memory* (Freese 2008: 56–57; Donaldson 1976). Although the way of thinking of children is considered 'naìve', it can impress us with ingeniousness, an unconventional approach to solving problems and the courage of statements. A mythical aura, typical of children's way of thinking, has been appreciated lately, and acknowledged as a way of interpreting the reality.

Refuted was as well the assumption that philosophy is a science too complex for kids to deal with. At the initial stage of philosophizing, the objective is to stimulate a creative approach to problem solving, reflections on the surrounding world as well as improving and training an efficient

way of thinking. "Philosophizing with kids should be fun: we should spin daring fantasies and consider what would happen if they came true, discover relations and associations, play with thoughts and words, find new possibilities and try to carry out new ideas", writes E. Zoller (2009: 13). Therefore, philosophizing is in no case taking away one's childhood, leisure time, but on the contrary, it is a reaction to a child's need of investigating and researching into the world's mysteries, which is reflected in so many questions asked by kids, starting with *why?*.

Pedagogical objections to philosophizing with kids were put forward thousands years ago, by Plato, in Book VII of *The Republic,* in which he states that pupils trained in discussions may adopt various evasive ways to prove the falsehood, whereas a philosophical debate might be for them an opportunity for presenting eristic devices rather than a way leading to find the truth. Nowadays, the syllabus of philosophy for kids also has some opponents (Zubelewicz 2001). All warnings should be taken into consideration and make teachers – who conduct the activities with kids – more aware, so that philosophical discussions which are assumed to favour children's development should not prove counterproductive. However, those who have been practicing activities of philosophizing with kids for years do not share such fears. On the contrary, they state that due to the participation in philosophical discussions, children learn how to be tolerant of different beliefs, how to regard opposite viewpoints while evaluating an issue, and how to conduct an in-depth analysis of a given case. They discern the significance of moral issues, and develop critical and creative practical attitudes, which is indispensable at today's stage of rapid transformations in order that children can make good choices and control their life in a conscious way (Czaja-Chudyba 2009).

It is quite difficult to evaluate progress in philosophizing. B. Heesen (1996: 57) makes a distinction between the evaluation on the level of a pupil and on the level of a lesson unit. Heesen warns against evaluating kids basing upon their activity in a discussion, viz. how many times they take the floor, because some kids often speak a lot, but without thinking, whereas 'taciturn kids' speak rarely, but sometimes their voice can exert an appreciable influence upon the course of investigations. The following criteria are recommended to be applied in the case of kids aged approx. 8: 1) taking one's own view; 2) defence of one's standpoint; 3) reception of critical remarks formulated by class-mates; 4) finding a solution of

a problem; 5) presentation of an original idea. "An evaluation made basing on such criteria allows to find out what a pupil is best at" – writes Heesen (1996: 58). "Not each single skill is developed to the same extent in every kid. So, it would be worth checking which skill has been successfully developed in a kid over a one year's time".

In the case of smaller kids, other criteria should be adopted, and the recommended set is the list compiled by Curtis (1996: 51–56).

Practical philosophizing with children

The method of holding philosophical conversations depends on whether they are held with one or more children. Thus, two methods of philosophizing can be distinguished:

– Informal – a proposal of such a kind of philosophizing appears spontaneously in different everyday situations. It can be put forward either by children who are fascinated by the world and ask their relatives about the existence of various phenomena, or by adults, who make use of various circumstances to develop a reflexive and creative attitude in a kid;

– Formal – organized for a group of kids who are assumed to meet in order to philosophize. Such conversations depart from the aforesaid scheme, because their venue, term and subject are fixed. The person who holds such activities is properly qualified and has a syllabus to be followed.

E. Zoller (2009: 12) recommends that the following three tools should be used for philosophical talks with kids:

– Eyes – to perceive precisely; E. Zoller makes a symbolic reference to the eyes, but the problem is a comprehensive, multi-aspectual perception of the reality. Perception does not mean philosophizing, yet it is useful, because it supplies preliminary, fundamental information to constitute the base for ratiocination. If perception is imprecise, even if it should be followed by correct ratiocination, the result will not be correct. Through various exercises, kids should sharpen their sense of sight, hearing, taste, smell and touch. In order that perception could be more comprehensive, kids should also train *internal perception*, for example, which impressions and moods are generated by an object being seen, what would the body say if it were given the floor, etc.

– Reason – to secure correct ratiocination; a good way of helping kids arrange their way of thinking and learn creative thinking is the so-called Socratic dialogue, which consists in using adequate questions to start with a single case which we try to generalize later on, then draw conclusions, and eventually return to the case said. The basic technique helpful in holding such a type of dialogue is comparison without evaluation. "When we apply comparisons, we will be taught to perceive more accurately and in a more diversified way (valid also for inner images, thoughts and feelings!), to think and speak more accurately and critically, to make decisions being more aware, and to act by selecting from the possibilities aplenty" – those are arguments of Zoller (2009: 107).The technique of comparisons without evaluation is utilized in basic methods of philosophizing, viz. upon challenging and investigating with questions, specifying ideas and while justifying and arguing for or against something.

– Hands – in order to 'get the hang' of a matter; the conclusions kids will eventually reach due to a philosophic view of a problem should orient them towards their own way of living and to help them make correct choices pertinent to personal matters. Owing to a philosophical reflection, a kid will find it easier to answer the following questions: who am I, what do I know and can do, what is good, bad for me, etc. As K. Jaspers states, a large number of psychotherapeutic techniques are based not only on medicine, but also on philosophy.

Experts in philosophizing of children underline that we should not rush to answer kids' questions, but first we should read out the intention that has driven them to put forward such a question, because an asking child often wants to get more attention and contact with an adult than to gain a reliable reply. A desirable method is answering a question with a question. It turns out that kids themselves look for an answer to the problem under analysis and use creative thinking. An example of such a strategy can be a conversation between a granny and her grandson:

Grandson: *Why do all people have navels?*

Granny: *Well, why?*

Grandson: *To know where the centre is.* (Zoller 2009: 17)

It does not matter whether a kid's explanation is of importance from the academic viewpoint; more important is that the kid has lent a meaning to an issue, which is the point. As time goes by, the kid will discover the truth. "In philosophical discussions the most important thing is" – as Zoller

has it (2009: 68) – "neither arriving at factual knowledge nor going through a syllabus, but discovering the sense of what is going on around us". If a kid is provided with a ready, exhaustive reply, they may be falsely impressed that all mysteries and secrets have already been revealed, there are no more of them left to be discovered, and adults must have full knowledge of the world. Therefore, E. Zoller (2009: 47) gives the following advice: "Get rid of the belief that you must know all. Instead of 'force-feeding' a child ready pieces of information, show them how to get at sources of knowledge", and postulates that the youngest kids should be exposed to answers abundant in poetry and gentleness. For example, if a kid asks you: *What does a star mean?*, you can formulate the following answer: *You know, stars are like your eyes – they shine and look at the surrounding world. But they do so only at night.* Such kids exhibit only a temporary, changeable interest, and their poor concentration prevents them from focusing upon long disquisitions so popular among some adults.

In the introduction to *Philosophy of kids. Information on the syllabus* (1996), we can read: "There is no point in teaching kids philosophy in the academic sense. Like in the case of reading and writing, kids can deal with philosophy as with something they rather do, not know. They should genuinely philosophize and improve their way of thinking". An inspiration for starting a philosophical dialogue with small kids may be an appropriate text, drawing figures, or playing with one's imagination.

H.-L. Freese (2008: 148) underlines that a text must be understandable to a kid, this is to say, concise, diversified, succinct, full, witty and full of fantasy. The smallest kids prefer most texts on other kids, animals or adventures. M. Dagiel (2005: 95) pays attention to a great power of versified works: "poetry reveals and triggers emotions, opens up and shows new possibilities for words to exist and to be arranged, new potential of a language due to polyphony and multilayered structures of poetic messages. The reception of a poem is not restricted to one possibility: there is a literal (actual), contemplative and symbolic reception […] There is no unauthorized realization of a poem; neither is there any universal key for all texts".

Kids find it easier to reveal their thoughts and perception of the world while drawing. In a figure, children present what they have not expressed because they are lacking in adequate words. This attribute of kids can be utilized by starting a friendly philosophical chat with them while they are

drawing. Also Edward de Bono (1998: 288), who applied this method among kids aged 4 and 5, points to the drawing method as one which is simple and at the same time valuable for shaping the skill of thinking. The work a kid has drawn need not be artistically perfect, but is rather a scheme to illustrate the kid's view on an issue. An adult, while looking at a figure, can always ask the child some additional questions about details. It is also important that kids who have illustrated an issue in a drawing will have a stronger sense of success than if they should express it by words. A drawing constitutes the basis for talks between a kid and an adult. The attention of two persons who look jointly at a drawing will focus on a specific topic. Each of them can have different views on a question, and their respective opinions can be exchanged, too.

Recently, in reaction to the demand for knowledge concerning the development of the child's way of thinking, many works on this subject have been published. Apart from research papers, also some articles appeared which treat of extremely instructive talks between adults and kids; kids can surprise us with their wordings, unconventionality and perceptiveness. (Tischner 2010; Janda 2008). People who have tried to perform philosophical investigations with children declare that "they are en extremely fascinating experience, worth any and all effort and continuation" (Buła 2004), they keep up the natural craving for knowledge among kids, improve their skill of unassisted thinking, and favour the intellectual, social and personal development of a kid.

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Anthropological aspect of the concept of the circle as a geometric figure (in the context of pre-school children's education)

Pre-school children do not know the transcendental number ϖ [pi], denoting the ratio of the circumference of the circle to its diameter, just as they do not know the mysterious mathematical symbol πr^2, which is the basis for calculating the area of the circle (a geometric figure). Still, pre-schoolers show the circle (as a form) on illustrations of their books with no longer thought from their earliest years. Children aged from two/three to five/six years also learn about the world around them through their perception of different "images" of the circle. The phrases *in the circle* and *on the circle* express existence of someone (or location of something) in the circular space enclosed by a circular line (or on a circular line), as well as conceal a significant sense and a symbolic value. Sometimes, the phrase *in the circle* presents mythical (or sacred) value of that existence or that location. Mariusz Dobkowski (2002: 92–93) has explained both the essence of the circle and the symbolism of that figure. He tries to show that the circle is a religious symbol and a cultural symbol. The circle closes a space (by a circular line) and simultaneously it orders that circular space according to the centre (the central point) of the circle. Dobkowski (ibidem) has written that the circle is the symbol of infinity and also a representation of perfection, the transcendental Absolute[1] as well as the World (the Universe) because it separates the order of the known area from the chaos of the unknown space (Kopaliński 1999: 154). He (ibidem) has also written that the circle symbolizes the Sky (Biedermann 2001: 161; Cirlot 2007: 201)

[1] G. Ferguson has written that the circle is a reminiscence of the Perfection of the Lord and it is a representation of the Eternity of the Lord (1961: 153) – see: S.F. Fincher (1994: 152).

and the Spirit, in opposition to the square, which represents the earth and the world of the matter. Mircea Eliade (1993: 356), the eminent philosopher of religion, has written that a circle of stones (surrounding sacred space) is one of the earliest "architectural" structures of the sanctuaries.

Carl Gustav Jung (1983: 24) has also presented the meaning of the magic circle as a talisman to protect the space *in the circle* against the evil. We know the *temenos* and the circular antique temples (*Panteon* and *Tempio di Vesta*) as well as the Christian churches (*San Vitale* in Ravenna, *Hagia Sophia* in Constantinople) located on a circular plan. Susanne Foster Fincher (1994: 24) noted that the space *in the circle* changes the usual space into sacred space, which protects (all men *in the circle*) against demons and souls of the dead[2].

Piotr Kowalski (2007: 231) has written that the circle is the basic geometric figure and it serves organization of the world. This view, that the circle is the basic geometric figure, was inspired by the existential experiences of man (observation of the solar disk and the circular motion of the Sun) and these experiences play an important function in creating the cultural meaning of the circle.

Both the circle as a "full" circle (in Polish: "koło") and the circle as an "empty" circle (in Polish: "krąg" or "okrąg") express the anthropological aspect of culture. Distinguishing that aspect of the circle, Barbara Greszczuk (2000: 153) states that man has always been in the centre of the Universe, presented as a circle (a horizon) or a sphere (the Universe). Jerusalem and Rome (in mediaeval representations) as well as the *ideal cities* were presented as the city located on a circular plan[3].

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[2] W. Szafrański (1979: 246–247) states that the stone circle on Mount Ślęża (in Lower Silesia) was "the holy place"/"the sacred space" in the magical rituals of the Celtic-Germanic Lugians. See also: G. Domański (2002). Both A. Kokowski (1987: 63–78) and T. Makiewicz (2002: 94–97) inform about megalithic stone circles in Odry (a village in northern Poland) as the burial place for Germans or may be also as the »*tingi*« (the meeting-place) for all free members of their community. J. Strzelczyk (2007: 50) has also written about the circular "protection" of the Slavs' sanctuary in Trzebiatów (in West-Northern Poland) in honour of Biały Bóg (White God). See also: K. Bracha, Cz. Hadamik (2009; 2010).

[3] See: L. Benevolo (1995: 14, ill. 1). *Sforzinda*, the ideal city described in the treatise *Tratatto* by Antonio Averlin[o], who is known as Filarete, is a space inscribed in the circle (Benevolo 1995: 113, ill. 42) and the ideal cities in the architectural

The semantic content of the word *krąg* (the perimeter of the circle) conceals the formative core *ker-* (or may be *kr-*[*en*]*-g*), of meaning: "the circle". This core indicates the specific movement: the rotation around the axis. In the sphere of cultural symbolism, the rotation is correspondent to life (as an existential category). In this context, the interior of the circle determines the space of human life as well as the space of meeting between the man and the Absolute (sanctity).

Children of pre-school age, through the observation of different objects and through their active participation in everyday life of their family, are familiar with the popular images of a "full" circle (in Polish: "koło") and an "empty" circle (in Polish: "krąg" or "okrąg"). They meet the shapes of a circle from their earliest years, but children do not consider these shapes as something unusually interesting for them. Nevertheless, different circular or spherical objects are associated with something nice by children because their toys (rattles, balls and others) often have the shape of the circle and the sphere. Children also often hear the phrases: *in the circle* and *on the circle* but children of pre-school age are not conscious of the mathematical essence of the circle as a geometric figure, neither can they see the circular shapes in the real world. In the family, the child hears more often the word *koło* (a "full" circle or a wheel) than the words *krąg* or *okrąg* (an "empty" circle)[4] and s/he may apply the word *koło* to different objects which "surround" the child from birthday. Many of Polish children cannot see the subtle difference between these two concepts (a "full" circle or a wheel and an "empty" circle), and between the words *koło* and *krąg* or *okrąg*. Polish teachers working with pre-school children ought to use – in our opinion – only one word: ***koło*** in the meaning a "full" circle or a wheel as well as in the meaning of an "empty" circle or a ring. The child also often hears the words *kółko* (a little circle/a little wheel) and *kółeczko* (a very little circle/a very little wheel) because Polish adults use diminutive forms, speaking to the little child. Thus, the child often uses the words ***kółko*** and ***kółeczko***.

In the childhood period, the circular form becomes a universal form (representation) for different things. Victor Lowenfeld and Betty

treatise by Giorgio Martini are (theoretically) planned as the cities located on a circular plan.

[4] A "full" circle (a disk or a wheel) is something concrete for the child. An "empty" circle (a ring) is something abstract for her/him.

Edwards state that a child aged two/three years can copy the circle (and circular forms) in her/his drawing on paper. We know (Gloton, Clero 1988; Szuman 1990; Wallon, Cambier, Engelhart 1993) that the youngest children create their "works of art" that contain circular or rounded forms (representations). Polish children, as well as children of other nations (aged from two to three/four years), present the figures of people usually with **the circles** for their heads (Lowenfeld, Edwards; Szuman 1990; Wallon, Cambier, Engelhart 1993).

During meals at their family home and in their kindergarten, children see the circular shapes of plates and cups. At home, they may see the "circles" of CDs. They see that water swirls and forms circular waves and flows down to a round "hole" of the washbasin. When children soap their hands, they perceive the little bubbles with spherical surface. They see the traffic lights, which have the shape of a circle. In their kindergartens, children learn that **round** shapes of the **road signs** denote the **injunctions**. Literature for children also gives pre-schoolers a possibility to hear the words: "circle", "disk", "wheel", "ball", "drop", "dew drops", "rain drops", "snow-balls" and the phrases: "the **circular** Sun", "**it is round as**…", etc.

From the first day of children's stay in the kindergarten, pre-schoolers participate in different play activities which involve the concepts of the circle and the sphere (Dorance 1997: 78, 122–123, 134–135, 174–175, 184–185; Nęcka 1999: 215–219). The youngest children participate in play (play activities) organized in the form of a circle, such as *Kółko graniaste*… (*The angular circle*), *Mam chusteczkę*… (*I have the embroidered handkerchief*), *Stary niedźwiedź*… (*The old Bear*), *Stoi różyczka*… (*The little Rose stands*), *Balonik* (*A little balloon*), *Dwa kółeczka* (*Two little disks*). Children form the circle for their play and sing a song. They also perceive circular shapes when they play with toys (they see car wheels, wheels of trolleys, spheres of balls, circular blocks as well as "rounded" eyes of their dolls, clowns and teddy bears). During the artistic activities in kindergartens, children experience visually (and also aurally) the concepts: a "full" circle (in Polish: "koło"), an "empty" circle (in Polish: "krąg" or "okrąg") and also a sphere (in Polish: "kula")[5].

[5] Children model balls of plasticine, paint the **circle** of the Sun, as well as use the little **circular** containers (with poster-paints) and the coloured **circles** (**disks**) of water-color-paints (Buszkowski, Michalec 2009).

The older pre-school-children use the terms a circle, a disk, a wheel in practice. They know that a car must have wheels, which are round. Children also produce **mandalas** or stained-glass, and they know that the circle is the basic figure for their works (Dorance 1997: 184–185). Sometimes, they cut the circle out of a sheet of paper.

In the kindergarten, children sometimes learn folk dances because they like to dance, especially with music. The dance gives them joy and it facilitates the process of their socialization. The folk dances (in their choreographic form) often involve the movement of the dancers along a circular line and/or the rotation around the dancer's axis. They are the echo of old "circular" dance pageants and other "circular" dances[6].

Each kindergarten teacher may show her/his pre-schoolers different examples of how a circle can become a wheel (Dorance 1997: 122–123, 134–135, 174–175, 184–185). S/he may also present the circle as a symbol of modern democracy or a symbol of human discussion, where no one has a more prominent "position" than anyone else[7]. Each kindergarten teacher should also show her/his pre-schoolers how they should stand "in the circle" (together with her/him). S/he tells her/his name and next all children also say their names. In the situation of standing "in the circle", the teacher does not favour anyone. The figure of the circle gives children the sense of equality and all pre-schoolers know that they are accepted as they are. So they may feel well as heroes of the stories of King Arthur and the Knights of the Round Table. The circular shapes also give children "security" and "acceptance" in the group of peers.

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6 K. Moszyński (1968: 2, 369, 371) has noted the "circular" pageants in the culture of the Balkan Slavs and the northern Slavs. J. Kowalska (1991: 83) writes about "harvest dances" with the archetype of the journey of the life-giving Power of the Sky, symbolized in the dancer's rotation around her/his own axis and their movement along a circular line. She (ibidem: 95) has also noted such forms of dances "in the circle" which were known in the southern Slavonia, in Ukraine and maybe in Lithuania.

7 The circle may be interpreted also as the (preferred) form of "an assembly of »*equals*«": the camp-fire circle, the council circle and King Arthur's circle (King Arthur's »*round table*«) and the Polish »*round table*« of 1989. See also a view of Bożena Muchacka on human intercommunication in the age of globalization – B. Muchacka (2007: 74–75). Her view may be also presented in the form of a circle.

We suppose that the concept of the circle is very important in the education of pre-school children as the symbol of equality (in the system of values), but first of all as the geometric figure and as a religious symbol. The circle presents "a parallel between mathematical and religious symbols, mathematical and religious thinking, between religious dogma and mathematical axioms, between mathematical and religious ideas, etc." (Dejić, Radovanović 2009: 145). The transcendental number ϖ [pi], which is – if it may be said so – a "circular" number, was found "in the description of washbasins which are in the yard of Solomon's temple" (ibidem: 143).

Children will like art and geometry, mathematics and religion, and they will be interested in symbolism of different objects when adults (parents and teachers) tell them about some interesting details of the reality and show them some interesting objects. Andrzej Pluta (1998: 46–47; 1999: 77–78) has presented pre-school children's play as a "magical" way of their participation in culture. In this paper, we present **the circle** (one of the elements of the World/the Universe) as a "magical" object which may be a **subject of educational process** and it may be an attractive subject of discussion and reflection for pre-school children.

(Translation: Z. Baran)

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CHAPTER VI

Kindergarten education as inspiration for searching new directions in the practice of early school child education

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How does a graphic sign come into being in the child's drawing creation?

Research views concerning fine arts creation of the child

Observing artistic creation of children fills us with admiration – the freshness of view, original form, type of deformation, power of appeal, use of colours, composition, etc.

Thus, can the child's drawing creation be analyzed as a sign production? In which moment in the development of children's drawing does a sign appear? These are questions to which answers will be sought in the presented text. At first, different research approaches to the child's drawing creation will be presented and then the notion of sign from the semiotic standpoint will be discussed, as well as the following issues: speech as a system of conventional signs which influence creating the semantic side of the image that the child draws of an object; developmental stages of the child's drawing creation with due regard to the phases of sign production and the resulting conclusions for pedagogy of the child.

As it is widely assumed, children's fine arts creation is an important aspect of the development of their mentality. It is most frequently analyzed as:

– both a reaction to stimuli and the interiorisation of the child's experience and knowledge (G.H. Luquet, S. Szuman, R. Arnheim, S. Kościelecki, H. Krauze-Sikorska, U. Szuścik. M.P. Stasiakiewicz),

– a symptom of the development of higher mental functions referring to artistic activity (L.S. Wygotski, J. Piaget, J.S. Bruner, V. Lowenfeld, W.L. Brittain, H. Gardner),

– a specific form of manual behaviour (S. Szuman, L.S. Wygotski, J. Bruner),

– one of many forms of expressing the child's experience (H. Read, R. Gloton, C. Clero, I. Wojnar, A. Trojanowska, T. Marciniak, W. Limont, B. Didkowska),

– a non-verbal indicator of the child's creative development (drawing tests, J.P. Guilford, W. Limont, S. Popek, R. Popek).

The suggestion to analyze children's drawing creation from the angle of semiotic knowledge as producing an artistic sign generates a new research perspective, which broadens the methods of stimulating the child's creativity. It was a Polish psychologist, Stefan Szuman (1931), who drew attention to shaping the meaning in the child's drawing in his scientific exploration of the development of the ability to understand and use symbols by children and youth. According to S. Szuman (1931), symbolic thinking consists in seizing the relation between the sign and meaning. Maria Tyszkowa (in: Wallon, Cambier, Engelhart 1993: 6–11) claims that the child's drawing creation can be studied as an evolution of graphic signs and their meanings and as a form of the child's communication with the environment. This is viewing the child's drawing (graphic) activities in the categories of development of sign activities (in: Wallon, Cambier, Engelhart 1993: 9). Such a research approach necessitates taking into account the knowledge of linguistics, semiotics and semantics in the required degree (knowledge of signs).

An analysis of drawing creation of the six-year-old child in the aspect of semiotic activeness was also undertaken by Maria P. Stasiakiewicz (2000). Her studies aimed at specifying the potentialities of visual prototype models and their semantic spatial location in the child's drawing.

The key assumptions applied in this article are as follows:

1. The assumption of the relationship between cognitive processes and the processes of the child's drawing competences in the course of shaping the relation between the meaning of a word and the meaning of a drawing.

2. The assumption concerning the existence of the child's developmental dynamics in constructing graphic forms of an image of an object.

Children's drawing creation is considered here as the process which results in shaping a graphic sign and attributing meaning to it in the course of their development. In the pedagogy of the child's creation, I apply the psychological approach, as it emphasizes the dynamics

and development of the child's cognitive processes. This approach is associated with the notion of development, which means changing. Change is viewed as a difference in the state of an object or of the structure of organization, which is observed over a certain period of time. The notion of developmental change usually comprises "unidirectional (monotone), irreversible, permanent and autonomous changes (i.e. caused by the factors which entirely or in the prevailing part belong to the inside of a particular evolving system). Developmental changes have both the quantitative and qualitative character" (in: Przetacznik-Gierowska, Tyszkowa 1996: 49).

The significance of psychology in constructing the foundations of pedagogy is highlighted by Zbigniew Kwieciński (1991) and Janusz Gnitecki (1991). They point out that contemporary change in the approach to the analysis of educational results should consist in diagnosing the development "of cognitive structures, moral and vital needs and the possibilities of every child" (1991: 7). This ought to stimulate the development of higher cognitive structures consecutively in their four areas: interpretation, balancing, cohesion and transfer (Gnitecki 1996).

The constructivist approach to the development of drawing creation allows for viewing it as a dynamic and active process of the child's learning, in which, by generating a graphic sign as a specific cognitive construct, children express their knowledge of themselves and of the world in the field of building the meaning of a drawing.

Therefore, a drawing is a structure which undergoes transformation along with the child's development. According to J. Piaget, the structure has a triple character of: the whole, transformation and self-steering. An analysis of the birth of this cognitive pattern was presented by Piaget (1966; 1981) in the theory of balancing of cognitive structures, in which he explored the process of the individual's adjustment to the reality through assimilation and accommodation. Assimilation is responsible for quantitative changes, whereas accommodation for qualitative ones. At each stage of the child's development, the processes of assimilation and accommodation are controlled by a self-regulating mechanism of balance.

The dynamics of the child's development in the course of education is presented by L.S. Wygotski (1978) in his concept of the area of the nearest development. According to his concept, the area of the nearest development creates and indicates the child's developmental and life space. This process takes place in the child as a result of facing various symptoms and forms of

life and as an effect of the child's own activeness and its stimulation. Each higher form of behaviour (to which children's drawing activeness also belongs), including cultural behaviour, results from directing the process of associating current and new reactions with the acquired experience on a new and higher level.

The process of producing a sign by the child is related to the acquisition of appropriate tools (adequate for the sign). For this reason, Wygotski (1971) approaches the child's development in the aspect of "cultural behaviour forms", which belong to "the area of the nearest development". These are complex behaviour processes, which Wygotski treats as the natural history of signs.

The Polish psychologist, S. Szuman, also claims that the child's drawing creation is a certain type of activeness, however – on a more complex level of the development of activity. This graphic creation is associated with the use of drawing tools and the application of their potentialities. Activity based on manipulation is indispensable in the development and in shaping observations, as well as images of objects are in the child's mind.

Wygotski puts forward the thesis that "in the higher structure, the sign and the way it is used is the central link of the whole process, which also functionally determines the whole" (1971: 97). Forms of symbolic activity (speech, drawing), which determine the development of upper mental functions of man, are systems of psychological categories. New specific forms come into being as "a new structural unity, distinguished by new functional relations" (1978: 95) which are linked with symbolic (sign) activity.

Sign and meaning. Selected approaches

Various definitions of sign (C.S. Peirce, Ch. Morris, F. de Saussure) seem to prove that a sign carries semantic information, indicating something beyond itself, and being dependent on the interpretation of the subject. Analyzing the definition of sign confirms that a sign indicates an object and specifies its meaning. Each sign is an interpreter of another sign and it has its own interpreter. Thus, what occurs here are the relations of interpretation. A sign has a creative character, because it gives birth to another sign. This is related to the mediating role of the sign, which

opens a sequence of mediation acts and broadens the cognitive chain of the person's experience and knowledge (Buczyńska-Garewicz 1980: 20).

Language and sign are related to meaning. The meaning of a sign is a carrier of particular information. This meaning consists of characteristic features of objects, phenomena or people that are named by this content. Meaning depends on the context, the communication situation, the sender and the recipient. It provides the information about an object, phenomenon, person, or notion (Podlaska, Płóciennik 2004). The sign occurs in particular and different contexts, called semantic fields.

Depending on the object, relations between an object and a sign might be different. Therefore, what may take place between a sign and its object is a conventional (artificial) or natural relation. Natural signs are configurations of the things or phenomena which are generated by the observer's associations with certain contents through natural, causative relations, even though there are no semantic principles which would specify such, not any other, links between the content and a particular sign. The conventional character of relations between a sign and an object is established by rules which function, for instance, in language, art, and religion (semantic rules) – in other words, in the symbolic culture in which the child is educated, in law (appropriate legal norms), or in tradition (Żegleń 2000: 41). Signs are the contents of the interior of human mentality, expressed by a word or a visual form (Moniuszko 1982; Zwolińska, Malicki 1974: 356). What can also be frequently distinguished are spontaneous signs, which come to being through associations in the course of man's developing experience.

Speech as a system of conventional signs and meaning in the image of an object in the child's drawing

In the cognitive sphere, language is one of the most effective tools for processing and transforming the world by man, it is a tool of man's development and socialization. "Language is an organized system of word (verbal) signs occurring along with the rules of their usage" (Żegleń 2000: 160). Due to the form that language can have, the spoken language (speech) and written language (writing) are distinguished (Żegleń 2000: 171). Ida Kurcz (2005) states that two basic functions are usually attributed to language: the representative function (the introducing function in referring

to the physical, mental and social reality) and the communicative one (referring to the users of a particular language). The child has to take control over both of them in the course of language acquisition (2005: 80).

One of significant, commonly recognized theories of language learning is Noam Chomsky's evolutionary concept of generative and transformational grammar – the Universal Grammar (Chomsky 2000; Kurcz 2005). N. Chomsky assumed that a child has an inborn ability to pick up the structure of the native language – a kind of inborn linguistic knowledge. He introduced the notion of LAD (*language acquisition device*) – an inner mechanism which allows children to make hypotheses concerning the language they speak (1982). The author emphasizes the inborn nature of certain language patterns, which, owing to appropriate stimulation, are activated as the mechanisms of language acquisition. Chomsky promotes the thesis that language aims at associating the sound with the meaning and that the essence of human speech is expressing meanings. In this way, the representative function of language is fulfilled (Kurcz 2005).

J.S. Bruner represents the pragmatic or socio-cultural current in the psychology of language, which stresses the communicative function of language. He introduces LASS (*language acquisition socialization system*) – a system of acquiring the language through socialization. According to this socio-interactive standpoint, the child acquires language owing to the mediation and support of others, not only as a result of the child's own mental activity, which is oriented towards processing the language of adults. What turns out to be necessary is interaction, not only a contact with the language.

A verbal (linguistic) sign – a word – is an element of language (Żegleń 2000: 13). Verbal signs constitute the most important type of signs. They form separate sign systems, which people use, in this way creating various languages. The word content is the set of all significant features of what the word names. The semantic range of the word is the whole set of objects named by this word. A verbal sign (a word) outlines the meaning of the drawing. Children attribute meaning to a drawing with the help of the meaning of the words which they use to describe its content.

In Wygotski's opinion, the meaning of a word is the unit which determines the unity of thinking and speaking. It is an indivisible unit of both processes. L.S. Wygotski (1989) explains the sense of the word treated

as a complex of psychological facts which are born in our consciousness owing to words. This process is of dynamic, complex and open character.

Thus, speech is the foundation of the child's mental development and becomes a factor which regulates children's behaviour (L. Karczmarek, L.S. Wygotski, S. Szuman, J. Piaget).

Human development in the field of the verbal and iconic code was presented by A. Paivio (1986) in his theory called DCT (*Dual Coding Theory*). It concerns mainly the process of learning and memory and also the conditions of development and the influence of verbal and non--verbal representation. Paivio claims that the development and shaping of man's cognitive system occurs through coding verbal and non-verbal (notional) information. The code of verbal information specializes in processing linguistic and abstract information, whereas the code of non--verbal information – in creating and processing notional images. Both codes derive from perceptive, motor, and emotional (affective) experience. These are processes specifically modal in development, i.e. they maintain (in their structure and course) the qualities which they acquired from their experience sources.

A. Paivio's theory is based on the assumption that the type of code is the foundation of organizing the cognitive system. The systems distinguished by Paivio are two symbolic systems which act in cognitive processes of the man. The author assumes that the two systems are separate and at the same time linked with each other and that they represent the corresponding kind of (verbal and non-verbal) information.

Szuman states that the child's proper mental development takes place along with the development of the child's ability to acquire speech.

Building knowledge of the world by the child is related to the development of semantic memory. These issues are tightly connected with the development of language and thinking. Enriching vocabulary and the growing ability to construct semantic structures provide the child with linguistic means to fulfil the semantic structures "here and now" and later – to fulfil the intentions which are independent from the context and which manifest the child's general knowledge of the world.

Meaning is one of the areas of sense, which a word acquires in the context of speech. Meaning is permanent despite the changes of sense in different contexts (Wygotski 1989). Meaning is the feature which constitutes words. Studies on the development of notions were approached

by Wygotski as semantic and systemic shaping of awareness. He treated the functional use of a word or another sign as important in generating notions. Meanings of words develop into higher and higher types until a real notion is generated. The mediating stimulus is a sign (word) which triggers changes in the structure of the whole process. Children in the course of their development discover the significative function of words. Speech is described by Wygotski (1978, 1989) as the child's "developmental ladder", which restructures children's activity and behaviour, their "mental field". A word fulfils the function which is averaged between the child's perception and activity and the language of adults. The averaging of information takes place both in drawing and speech, which is associated with the use of signs. This results in the birth of new forms of behaviour and it influences the process of tool operating. A sign provides orientation for changes in the child's reactions and behaviour, including the language and drawing.

Meaningfulness in the child's drawing is understood here as attributing particular contents to images of objects drawn by the child, when the content is adequate to the meaning of the word which describes it. Evolution of the drawing form in the child's creation is viewed here as generating iconic signs with particular meanings. In the fine art creation of pre-school children, the process of graphic projection of language (words) occurs, which is reflected in their drawing production. This is a period of the intensive development of both the child's speech and drawing.

The dynamics of development of sign and meaning in the child's drawing creation

In expert literature on the child's fine arts creation, general considerations concerning the relations between speech and drawing can be found (Trojanowska-Karczmarska 1971; Szuman 1990). Their mutual relations are indicated and the research into verbal activeness, which accompanies the child while drawing, is presented (Krywult 1982). In the light of the existing knowledge, it can be assumed that there is a relation between the development of children's drawing and their linguistic development, i.e. between a verbal sign and a graphic one.

Jean Piaget's concept of the child's development allows for viewing the development of the child's drawing production in the categories of balance. J. Piaget's model is functional and dynamic. The author (Piaget 1966) points out that the change and development of the child's needs give orientation to each action, thought or feeling. A *sine qua non* of development is a "temporary state of balance", which indicates the next state which the child must reach. These changing structures are "forms of the organization of mental activity" (Bruner 1978) in the motor (enactive), intellectual (symbolic, iconic) or effective aspect (Kielar-Turska 1992).

It has been assumed in this study that a word implicates the semantic side of a drawing, specifying its contents in this way. Another assumption has been made here, that the child's drawing creates a system of iconic signs and that it is a recording of graphic signs, which are averaged meanings of words. Owing to this, they are a form of children's communication with the environment and with themselves. In the course of development of the child's drawing creation, a drawing means "something" and a word adds an experience, which builds the form of the drawing. A word specifies the semantic (meaning-related) context of a drawing in a more precise way. It re-constructs its structure. Speech is a system of conventional signs which has influence on building the semantic side of the image of an object in the child's drawing. A graphic sign is an iconic sign and it constitutes an image of the drawn object characterized by simplified similarity, which is a drawn diagram (Szuścik 2006).

Applying the distinction of signs into natural and conventional to fine arts creation, it may be assumed that in the period of childish scribble (age 1.6 – 3) we deal with natural signs – traces created by the child spontaneously and with mono-subjective range (legible to one person, e.g. the child him/herself or a person from the nearest surroundings). Following Wygotski, in the present work, these first drawing structures in the development of the child's higher mental functions will be called primitive. They are emotionally loaded and their characteristic feature is the superiority of the whole over the parts. Scribble is characterized by syncretism in the graphic representation of an object and its two kinds can be distinguished – non-controlled and controlled scribble. The scribble period is the time of the development of the child's proper speech (at the age of 1.6–1.9 – the stage of word, above that age – the stage of sentence) – the acquisition of an elementary set of words and the basics of the grammar system in the native

language. At the age of 2 and 3, the child becomes a talking creature, who communicates with other people by verbal contacts. Children discover the significative function of the word and they name their scribble. They attribute meaning to scribble, although the drawn lines do not show the adequacy of the graphic form to the verbal meaning. At the age of 2, the child discovers that every object has its name, which is a very important fact in the child's development. Since that moment, "speech gradually intellectualizes and thinking verbalizes" (Kielar-Turska 1992). Children's drawings exhibit big expressiveness – the dynamics of drawing. They are forms of syncretic and spontaneous nature. What starts to appear are the graphic forms of scribble with properties of the object pictured, which the child talks about, such as: colour, texture, a piece of shape, etc. I would call them pseudo-diagrams, which means that they still have graphic properties of scribble and already some elements of the future diagram of the object. From the functional point of view, speech at this age has situational and synpractical character – in utterances the child does not cross the circle of directly performed activities, and objects and people with whom the child is in a direct contact in that particular moment. The child creates more and more graphically conscious drawing forms, which are also named: head--and-legs and head-and-trunk. Head-and-legs is a graphic image of senses, owing to which children gain information about the nearest environment and about themselves – they draw a head and mark eyes (the sense of sight), the nose (the sense of smell), the mouth (the sense of taste), ears (the sense of hearing), arms and legs (the sense of touch), and they omit the trunk in their drawing. Out of all these experiences, the child constructs the image of the world and of the object, e.g. big, small, rough, smooth, red, yellow, etc. Children do not draw the trunk as they understand it as a whole in the drawing. Children distinguish the trunk in their mind but, in that particular moment, it is not important, as R. Arnheim (1978) claims. However, S. Szuman is of the opinion that the child is not aware of the trunk as a part of the body. I tend to agree with R. Arnheim's standpoint and my suggestion is to call this stage of graphic development "generalized concretization".

At the age of 5–6 years, simplified graphic diagrams appear (affective transformations, symbolically simplified, generalized – approaching the form as a whole). Since the age of 5–7, egocentric space turns up in drawing and in the 6th year – the distinction of sexes appears. I suggest calling this period of the child's drawing "particularized concretization" towards the

simplified diagram. The child at the age 6–11 draws enriched diagrams of objects, i.e. images of objects with typical attributes (their characteristic features). The child aims at achieving more and more complete adequacy between the meaning of a verbal sign and the meaning of a graphic one. It is not earlier than in the diagram period that the child tends to create a conventional sign. Both simple and enriched graphic diagrams presented by the child are conventional signs. They are communicative for other people, e.g. the child's parents or teachers. These diagrams are determined by semantic rules in the graphic representation of the image of an object. These principles inform that the image of the object looks in this (and not any other) way and that this image allows for adequate interpretation of the form of the object, its meaning and the content of the drawing.

In the kindergarten age, children gradually broaden their vocabulary and manage the phonetic and grammar rules increasingly better. At the age of 6–7, the child reaches fluency in colloquial, direct and indirect speech, and communicates freely with other people. The symbolic function of language is developed and the relation with thinking becomes more and more tight – dialogue speech is transformed into inner speech.

Complex designata of words, which mean particular objects, with time become graphic signs of objects and they reflect the level of experience and the concept of an object in the child's mentality.

In my opinion, in the course of the child's development, the word enhances the restructuring of its graphic form from simple to more and more complex shapes. The word means niejasne and the perception of an object transforms and gives orientation to the child's drawing activeness – it also specifies and consolidates the contents of the drawing. At the same time, in the development of speech the drawing stimulates the child's narration both at the beginning of the drawing process and in its course or after performing the drawing, when the child talks about it. In this way, the drawing and the word stimulate each other. In the course of development, the child creates structures of meaningful systems with the help of drawing. Children's abilities of deep semantic analysis gradually and unconsciously increase. Thus, the child's drawing may be treated as a kind of specific sign organization.

Therefore, it might be assumed that semantic values in the child's drawing are shaped as a result of the integration of the system of verbal signs (words) with iconic signs (picture).

Conclusions

If it is true that a process of mutual stimulation takes place between the development of the child's word and drawing: **verbal sign (word) ↔ graphic sign (drawing)**, and that these are the processes which determine the level of the integrity of the child's activity and experience (though it is possible that these processes can occur independently from each other), in the current system of artistic education of pre-school children, particularly the youngest (aged 3–4), we tend to shape the ability to generate diagram drawing – conventional graphic sign – too soon. In this way, we deprive the children of chances for independent development of experiences, which inspire them to further independent artistic attempts and solutions in the field of integration of the word and the meaning of drawings. I think that this cognitive skill of the child prepares children for activity in the field of letters and other signs, with which they familiarize in the course of elementary education.

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Neuropsychological maturity to learn

Reaching **neuropsychological maturity to learn** means obtaining a proper level of the maturity of the central nervous system (the CNS), which conditions the correct course of psychological and motoric processes, participating in learning. Maturing of the central nervous system is a dynamic process, involving the correct development of cells, forming connections between them and between brain structures, forming proper myelin on neural tracts at the right time, as well as the correct development of the primary reflexes and postural and sensory integration.

It is formed over several years – one might say that it begins in the period of foetal life and lasts for many years later, even during the school period. A different picture of neuropsychological maturity to learn will be observed in the case of a 6–7-year-old child, and a different one in the case of an adolescent, when abstract thinking is developing; yet another will be observed in the case of students. Maturity of this kind varies at every stage of psychomotor development, dependent on maturing of the central nervous system and forming connections between neuron cells and various structures of the brain. The more nerve endings and synapses are formed by a nerve cell, the more synaptic connections there are, and the stronger and more lasting the transmission of a nerve impulse is. Thus, teaching interpreted in a neuropsychological manner consists in forming new connections between nerve cells and strengthening them by means of manifold repetition.

For a child to reach a certain level of neuropsychological maturity to learn, the level of intelligence and thinking must be developed sufficiently. This depends, among others, on the rapidity of travelling of nerve impulses in cells and the strength of connections between various structures of the brain, particularly the frontal lobes. What also matters is environmental conditions, such as friendly atmosphere in the family and creating situations in which a child's needs may be fulfilled. Neuropsychological maturity to learn will be reached when, at the CNS level, a sufficient number of nerve connections between nerve cells and their structures controlling neural processes exist, and when they are characterized by proper strength, duration and rapidity of the impulse transmission.

Some emphasize the significance of the properly functioning vestibular system for a child's development. This system is the first to develop and influences all the others. It also has a major impact on the development of the Moro reflex, the tonic vagal reflex, the asymmetric tonic neck reflex and the vestibular-oculomotor reflex. It is the foundation of correct sensory integration, and is located in the inner ear and connected directly with the cochlea, in which auditory receptors are found. This small structure (the size of a rice grain) has extremely important functions. According to J. Ayres (1986), this system is the most important one of all, and influences (through numerous neural connections) the functioning of the other ones. According to St. Konturek (1998), the activities of this system are closely connected with other senses, particularly sense of vision, proprioceptors of muscles and joints, touch and pressure receptors.

"The properly developed vestibular system facilitates coping with the problem of gravitation, which gives a good sense of centre in space, in time, in movement, the sense of depth or the sense of self-awareness. It is like a core from which everything begins" (Goddard 2004: 83).

The vestibular system consists of the osseous labyrinth, which constitutes the osseous foundation of the membranous labyrinth and is made up of **three semi-circular channels as well as the utricle and saccule**. In the system, there is a liquid called endolymph. Semi-circular channels – frontal, posterior and lateral – are in mutually perpendicular positions and thanks to that receive turning movements of the body in a different positioning. Thus, they are adapted to detect angular (or rotative) acceleration. The utricle, in turn, is located beyond the saccule; both of these organs are the receptors of linear accelerations. The utricle

reacts to horizontal linear acceleration, e.g. during accelerating or braking in a car. If stimulations are processed incorrectly, car sickness of different severity appears. The saccule receives vertical linear stimulation and reads the earth gravitation field. Receiving stimulation from the gravity field is unconscious. The labyrinth, along with the cochlea, is a paired organ; thus, it is located in the left and the right ear, and are positioned in mirror reflection to each other. Therefore endolymph circulates in opposite directions in the semicircular channels of the left and right labyrinth. This fact makes it possible to identify the direction of rotations (Ciechanowicz-Lewkowicz 2005: 95). Stimulation from the vestibular system is conducted by the vestibular-cochlear nerve VIII mainly to the vestibular nuclei and to other places in the CNS. It is connected with several brain structures, and because of this, it influences the functioning of the entire human organism.

Most numerous connections of the vestibular system are those with the vestibular nuclei. They are varied and complex (Makowski 1998: 51–84), and include connections with the motor nuclei of eyeballs in the form of the vestibular-oculomotor tract, with the nuclei of the cerebellum, with reticular formation and with the thalamus and the cerebral cortex. Through its connection with the spinal cord, the vestibular system influences various motor mechanisms of the spinal cord, modulates myotonus, influences body balance and ensures reflex reactions which accompany active movements. In turn, connections with the cerebellum have an impact on the regulation of tonus of the muscles ensuring the vertical body posture, programme rapid movements, coordinate body posture and influence the ability to fixate eyesight upon a given point while performing a movement. The next connection, the one with the reticular formation, helps influence vegetative parasympathetic centres connected with the nerve nuclei III, VII, IX and X and the centres regulating functioning of the heart and breathing. There are also connections with the thalamus, through which emotions are influenced. This system is also connected with cerebral cortex in parietal and temporal lobes, and thus ensures conscious spatial orientation. Apart from the connection between the vestibular system and vestibular nuclei, there are also direct connections with the reticular system and the cerebellum, thanks to which an immediate reaction to a current stimulation, e.g. rapid correction of movements, takes place.

The vestibular system, along with the cochlea, an organ of hearing, develop very early and constitute the so-called static-auditory organ.

Through close anatomical connections and the common **vestibular--cochlear nerve VIII**, they exert a strong influence on the organ of hearing. Incorrect functioning of this system interferes with the auditory system. A child may thus have problems with various sounds, and hence – linguistic difficulties.

According to Hardy (Bień, Kukwa 1998: 30), the saccule, i.e. part of the vestibular system, apart from the radicles of the vestibular nerve, receives innervation from the cochlear part as well. These anatomical connections cause mutual interactions between the organs. What is also worth paying attention to is the connection between the vestibular and oculomotor muscles, responsible for the vestibular-oculomotor and the optical-oculomotor reflex. Thanks to these connections, fixation of eyesight upon a point during head movement occurs, and spatial orientation is possible (ibidem: 110).

The vestibular system also influences the development of the early-childhood reflexes. Research in the field of the development of movement activities and reflexes, understood as constant ingredients of the development of a child's movement, was pioneered by Rudolf Magnus (Czochańska 1995: 41). A reflex, according to J. Czochańska (1985: 155), should be interpreted more broadly, and thus not as an unchanging stereotypical reaction to a stimulus active at the moment, but as part of a child's motor development. These reflexes shape a certain movement pattern and thanks to it, in the first and second year of a child's life, they are developed similarly. Rudolf Magnus called the reflexive reactions with which a child is born and which help maintain the proper body positioning **the postural reflexes**, and the other ones, serving to maintain a vertical body posture, **the straightening reflexes**. The former remain observable in the first six months of life, while the latter are formed in the second six months of life. Thanks to them, a child becomes quadrupedal, and later on – bipedal. In the second six months of life, **the balancing reflexes** are also developed; this process begins in the period between the 6th and 8th month of life, and should be fully completed between the 18th and 20th month of a child's life. The vestibular system and neck receptors participate in forming the postural and the straightening reflexes (ibidem: 154).

Apart from posture and straightening group, several tens of other motor automatisms have been described. However, according to J. Czochańska (ibidem: 53–60) and other authors, only some of them have clinical

importance. It is possible that they have not yet been fully researched. They include: the Moro reflex, the hand grasp reflex, the foot grasp reflex, the sucking reflex, and the seeking reflex.

The straightening reflexes help overcome the force of gravity, are the basis of gradual verticalization, and initiate the development of bipedality. Gradually, in the course of maturing of the nervous system, the straightening reflexes weaken and are virtually integrated by the fifth year of life. They are replaced by balancing reactions, which appear after the 6–8 month of life, and express cooperation of the cortex, subcortical nuclei and cerebellum. The function of the balancing reactions consists in positioning the body properly in relation to the centre of gravity.

As it can be seen, until recently the role of the early childhood reflexes was treated as that of a certain movement pattern, which appears at a proper time and is supposed to train a movement scheme. The role of reflexes was interpreted solely as practising a certain movement pattern, thanks to which a child may acquire vertical body position.

P. Blythe and S. Goddard-Blythe (2004; 2006) have significantly extended the meaning of the infantile reflexes and shown their influence on various psychological functions and on learning. Several-year long research conducted by these authors and other scientists shows that a given reflex opens and activates neural tracts, conducting an impulse to various brain structures. That is why their concept includes an assumption that if the primary reflexes (namely those with which a child is born and which are gradually integrated by the sixth month of life) survive beyond the physiological period of being observable, they will interrupt psychophysical development. It is, then, called **a perennial reflex**. In the concept of these authors, such a reflex causes functional rather than organic disturbances. Differentiating between these two meanings is important because in medical nomenclature a perennial reflex is formed by organic damage to the brain (Michałowicz 2000). Therefore, the author of this article suggests introducing the term "**trace form**" of a given perennial reflex for functional disturbances, e.g. the trace form of the Moro reflex or the trace form of a perennial Moro reflex. Such a shape of a perennial reflex does not cause organic interruptions and intensity of the remains is small, and thus it is a trace.

The primary reflexes, according to P. Blythe and S. Goddard, include:

The Moro reflex – formed in the 9th–12th week of foetal life and developed throughout the period of pregnancy. It is integrated between the 2nd and 4th month of a child's life. It appears as a response to a sudden stimulus, such as a noise, a sudden movement or a change of light in the field of view, stimulation of labyrinth by a change of head position, pain, change of temperature or abrupt movements of another person. Reaction of a newborn involves abrupt abduction of hands and bending the head, along with bending legs and making a loud scream; next, the hands gradually return to the close position. Abducting them facilitates abrupt inspiration, and bringing into the previous position – an exhalation. The entire organism is abruptly stimulated. The Moro reflex is an unintentional reaction to a danger. It acts like the earliest form of the fight or flight reaction, appearing in the later periods of life. The role of the reflex is to alert, wake up and call for help. The trace form of the Moro reflex causes exaggerated reactions to being surprised (oversensitivity of one of the sensory channels). A child has an elevated level of fear, tends to overreact and seems to be immature emotionally or overactive psychomotorically. It may behave in one of the two following ways:

1. timidly, with reservation and an elevated fear level, showing inclination to neuroses;

2. aggressively, irritably and easily losing its temper.

The trace form of the perennial Moro reflex influences emotional functioning, causes lack of stimuli selection and increases adrenaline and cortisol production, lowering the organism's immunity. It, thus, results in being infection- and alergy-prone. Frequently, a child is oversensitive to loud sounds or only some sounds because its trace form causes interruption of the development of the stirrup muscle in the middle ear. This muscle, when a loud noise is heard, moves the auditory ossicles away from the tympanic membrane. It also influences the ability to fixate eyes upon a chosen figure among other figures in the field of view. It develops as the first reflex and because of this, it may interrupt the development of the following ones.

The palmar reflex (i.e. the palmar grasp) is formed in the 11th week of pregnancy, and integrated during the 3rd month of life. Its feature is palm grasp movement. A gentle touch or pressure on the palm of a newborn causes clenching fingers. In the period between the 4th and 6th months of life, this reaction starts evolving into the reaction of grasp by a thumb and

an index finger. The trace form of the palmar reflex causes: awkwardness, hindering the development of independent thumb and fingers movement, destroying grasp, which causes poor handwriting, and through Babkin loop (a neurological connection between the palmar and sucking reflex) interrupts articulation. The children, experiencing this problem, move their tongue and lips while writing and drawing. Oversensitivity of palms may also be observed.

The asymmetrical neck tonic reflex (ANTR) appears in the 18th week of foetal life and is gradually integrated by the 6th month of a child's life. It consists in a child turning its head to the side and at the same time causes straightening of the hand and leg on the same side in the direction of which the head has been turned, as well as bending limbs on the opposite side. During foetal life, this reflex develops kicking movements and movement of a child in the mother's womb, develops muscular tonus and stimulates the vestibular system. This reflex ought to be fully developed in the period of childbirth because it participates in it actively, and this is so because a child's movement and turning cooperates with uterus contractions. S. Goddard and others claim that it does not only play a major part in childbirth, but is even strengthened by this event. In the period of infancy, this reflex increases myotonus of the extensors, in turn practising each half of the body and lateral movements, forming the basis of reaching movement. What is also ascribed to it is the development of motor-optical coordination, which will make it possible for a child to touch objects under the control of sight in the future.

The trace remain of the ANTR hinders alternating movement during crawling and walking on all fours, which has a negative influence on motor coordination, integration of the vestibular system with other senses and forming too weak connections between the right and left brain hemisphere, which are located in *corpus callosum*. The development of lateralization is weak or results in cross lateralization, which in this approach should, in my opinion, be treated as a failure to reach the proper maturity of the ANTR. What is also made difficult is following objects with the eyes, which results in dyslexia, interrupted convergence and accommodation. Handwriting is poor, and grasp incorrect; there is no automation of writing, and thus it is difficult to express thoughts in a written form.

The sucking and seeking reflex appears in the 24th–28th week of foetal life, and is integrated in the 3rd–4th month of life. The trace form of the

sucking and seeking reflex causes problems in articulation and moving the tongue forward, which may result in difficulties in chewing foods and may cause dribbling, and then oversensitivity around the mouth. Through Babkin loop, it also influences manual dexterity.

The Galant reflex is formed in the 20th week of foetal life and is active no longer than until the 9th month of a child's life. It consists in bending with concavity directed towards a stimulus if lateral part of a child's torso is touched or irritated. The reflex ought to be equally intense on both sides. It also has supportive function during childbirth. The trace form of the Galant reflex results in the oversensitivity in the area of the back between the shoulder blade and hips, and thus children are reluctant to wear clothes with a belt, find chair back rests uncomfortable, keep twisting on a chair, have weak short-time memory and troubles with controlling the urine bladder. Such children frequently suffer from enuresis.

The vagal tonic reflex (VTR) is divided into: 1. the vagal tonic reflex in the upright position (posterior), 2. the vagal tonic reflex in the bending position (frontal).

The frontal reflex of this kind appears gradually during foetal life through adopting the bending position, and is integrated in approximately the 4th month of life. The other one, in turn, appears when the child enters the birth canal and is fully present after childbirth; it is gradually integrated between the 7th week and the 3rd year of life. Automatism of the first reflex means that when a child bends the head, it results in bending the arms and legs as well. The automatism of the other one results in a child bending the head to the back below the spinal cord line with simultaneous extension of arms and legs. Action of this reflex is complex. It certainly influences the proper positioning of myotonus in the body. J. Ayres points, in turn, at disturbances in sensing gravitational stability, resulting in the lack of ability to assess space (up-down, right-left, front-back), depth, distance and rapidity. Lengthening action of this reflex slows down the development of head stabilization. The weak control of the head muscles results in eye activity disturbance and proprioception. It will also make crawling and walking on all fours more difficult. A non-integrated tonic frontal vagal reflex will make it difficult to form the proper body posture. The child will show tendency to stoop, bend the head forward, and bend the knees. Movements while running and walking will be less harmonious and more

rigid. Weak balance of the entire body causes fear of heights. An ability to form sequences and time sense are also disturbed.

The tonic posterior vagal reflex, apart from the symptoms mentioned above, may cause a tendency to walk on one's toes and rigid jerking movements due to the domination of extensors and weak organizational skills.

The trace form of this reflex interrupts myotonus of flexors and extensors. A child may stoop or become excessively rigid, performing jerking movements and walking on its toes. The disturbed sense of balance and car sickness are observable because this reflex is connected with the labyrinth. A child may suffer from weakened visual perception (figure-ground) and problems with spatial orientation, time sense, forming sequences, as well as weak organizational skills. Such children often experience fear of heights as well.

The symmetrical tonic neck reflex (STNR) is a temporary reflex which appears in the 6th–9th month of life and is integrated in the 9th–11th month of life. It facilitates opposing forces of gravitation by lifting the body on hands and knees from the lying position on the abdomen. It also facilitates integrating the VTR. It separates the body into halves along the central line, making it easier for upper and lower pairs of the limbs to move independently of each other. It practices looking further in the distance and makes it possible to follow an object approaching a child.

A trace form of the STNR influences forming an improper body posture. A child stoops during a lesson and while writing, and excessively lowers the head and bends upper limbs; it results in the so-called "writing with a nose". At the end of the lesson, the child is tired, which is reflected in the necessity to support its head with the elbows, placed on the bench. Frequently, it moves awkwardly, experiences problems in P.E. lessons and has weak coordination of hand and eye movements. It cannot participate in ball games because it cannot follow the ball while it is moving. The STNR may also cause excessive motor overmobility and disturbance of concentration due to difficulties in sitting in one position at a bench. A child, thus, begins to turn and wriggle, which prevents it from concentrating on a lesson.

The Babiński reflex appears approximately in the first week of life and is slowly integrated by the second year of life, which is connected with maturing of the corticospinal tract. Slight trembling of the external edge of

the feet causes dorsal bending of the big toe and spreading toes. This reflex slows down the plantar reflex and helps a child in crawling by placing toes on the surface and pushing with its feet.

The plantar reflex is a primary grasp reflex. It is observed until the 7th–9th month of a child's life. It appears after slightly pressing the foot soles, after which there appears the movement of bending and grasping with toes. The function of this reflex is not entirely clear. Lengthened presence of this reflex may influence forming a tendency to bend toes in the standing position, which will result in the lack of feeling of safety and uncertainty in the field of gravity. It also may, through the nervous loop connecting the palmar reflex and the plantar reflex, interfere with manual development.

When the primary reflexes begin to disappear, the postural ones take their place. What the authors include into this group is the straightening reflexes and balancing reactions. They do not disappear, and remain in existence throughout the entire life. The function of the postural reflexes is complex.

For a child to reach neuropsychological maturity to learn correctly, sensory integration should also occur. **Sensory integration** is a process owing to which the brain receives information from all senses, segregates it, recognizes, then integrates with other information and with previous experience, and responds to the acting stimuli with an adequate reaction. The theoretical basis, diagnosis and therapy were formed by J. Ayres (1986). She was the first to discover a major role of the vestibular system in psychomotor development. She also differentiated four early childhood reflexes: the Moro reflex, the asymmetrical tonic neck reflex, the tonic neck reflex and the symmetrical tonic neck reflex, which have a significant influence on learning, and their survival beyond physiological period of being observable causes the interruption of sensory integration.

J. Ayres described in detail deficiencies of sensory integration, occurring in children with learning difficulties. They include disturbances in registering and processing stimuli, mainly within the three fundamental sensory systems: **vestibular**, **proprioceptive and tactile**.

Their symptoms are dysfunctions in the field of postural, defensive and balancing reactions, ocular-motor and acoustic functions, myotonus, and apart from that – an incorrect body pattern, difficulties in movement planning, dysfunctions in bilateral motor coordination and sequentiality. These disturbances result in difficulties in learning to read, lowered level of

graphic skills, mistakes while writing, which consist in substituting similar letters, but positioned differently in space, e.g. "b-d", "p-b", "p-g" and so on, difficulties in coping from the board, trouble in differentiating between directions (right – left), or weaker bilateral motor coordination. These typical difficulties are frequently accompanied by emotional disturbances, difficulties in concentration and psychomotor oversensitivity as well.

The process of development integration takes place at several levels. J. Ayres emphasizes that adequate integration is the basis of normal learning. Highly complex perception processes such as optic or auditory perception, speech, ability to read and write are dependent on the integrative processes in terms of basic sensual systems, i.e. receptive, vestibular, kinaesthetic, optic and acoustic.

J. Ayres emphasizes the importance of vestibular nuclei located in the brain stem. In the vestibular nuclei, all the information coming from muscles, tendons, skin, hearing and eyesight receptors is processed.

It cooperates closely with the motor system. Deficiencies of these systems in connection with deficiencies of proprioception result in **dyspraxia**, i.e. disturbances of movement planning and performing. A child suffering from dyspraxia moves awkwardly, frequently trips and keeps jostling objects. Dyspraxia may differ in intensity, from small to significant. Sometimes, it causes difficulties in precise movements, e.g. dressing up, writing and DIY. In other cases, it affects gross motorics, e.g. jumping, climbing, running, etc.

Another system important in sensory integration is the **tactile system**. Touch is a sense developing most early and influencing the proper emotional development of a child. Receptors of this system are located in the skin, where they receive sensations of slight and deep touch, pressure, vibration, warmth, cold and pain. Emotional sensations reach the brain from all over the skin, the largest body organ of our body, and lead to virtually all other areas of the brain, be it directly, or indirectly, travelling through the reticular formation. Sensory impulses are conducted in two ways along the nerve to the brain. One of them is connected with the proprioceptive kinaesthetic system, while the other one conducts pain and temperature sensations. It reaches the reticular formation and exerts major influence on its functioning. Tactile information is important for human motor reactions. In the cerebral cortex, receptive and motor fields are next

to each other, forming the belt, frequently called sensory-motor or somato--sensory cortex.

Touch is extremely important in mastering the sensory-motor activities and praxis. It also has a major influence on the development of eyesight and hearing. It also has niejasne that deficiencies in the ability to differentiate emotionally correlate with reading difficulties.

Children with lowered tactile perception level suffer from disturbances in sensory integration. The central nervous system localizes, segregates and manages the provided information. When the information reaching the brain is correctly integrated, it can be used to formulate proper perception, behaviour, or to learn (Maas 1998; Ayres 1986; Przyrowski 2000; Grzywniak 2006).

In every sensory system, there may occur **oversensitivity** and **undersensitivity**. Oversensitivity is observed when the threshold of necessary stimulation is lowered and not much strength and a small number of stimuli are enough to activate a given system. Undersensitivity is observed when the threshold of necessary stimulation is elevated and a lot of strength and a large number of stimuli are needed in order to stimulate a given system.

The symptoms of oversensitivity in the vestibular system include: reluctance to swinging, going on a merry-go-round, climbing gym ladders and car sickness. Undersensitivity**,** in turn, is manifested by a strong tendency to swinging, turning round, riding down a slide, and always wanting to keep playing in this way. He child does not feel fear of real dangers, which may lead to dangerous situations. Other dysfunctions of this system include **gravitational uncertainty**, **movement intolerance** and **postural-ocular disturbances**. Among symptoms typical of children with **gravitational uncertainty**, there are: fear of falling and heights, reluctance to swing, climb gym ladders, go down a slide, jump from the higher to lower surfaces, make somersaults, travel by car rapidly; a child is also afraid of abrupt breaking and displays dislike of free-time activities in which legs must be separated from the surface. In turn, movement intolerance consists in a child's intolerance of all accelerated movements, such as swinging, going by bus, going on a merry-go-round and so on.

It is also in the tactile system that oversensitivity occurs. This is manifested by reluctance to be touched, avoiding certain textures of fabric (e.g. a child is oversensitive to woollen fabrics and clothes labels and does not like touching any clothes), and possibly also the physical

proximity of other people. Most frequently, it is only observed on certain body parts, namely e.g. the head, palms and abdomen. This is caused by misprocessed nerve impulses of the tactile system, which may as well cause oversensitivity and feeling of discomfort. **Undersensitivity**, in turn, is constant willingness to have skin receptors stimulated, however, with a touch that must be stronger by far. Thus, a child provokes situations in which it could experience a stronger touch, i.e. being hit. It may, then, appear to be aggressive and truculent. It is so because undersensitivity is observed, among others, in children with behaviour disturbances and with autism. Yet another system, which according to J. Ayres influences the development of the others, is the **deep sensation system**, also called **proprioceptive**. These receptors are located in muscles, tendons and joint capsules. Proper functioning of this system is necessary for the development of reflexes, planning and making movements, regulating myotonus and coordination. Disturbances of the processing of nerve impulses coming from this system result in dyspraxia, dysgraphia and postural-ocular disturbances.

Summary

In this paper, I meant to present the new term, neuropsychological maturity to learn. Introducing this term in the light of new expertise in the field of neurobiology and neuropsychology is justified because it emphasises the importance of forming connections between nerve cells and periods of life in which forming of such connections needs to occur. If they are weak and not numerous enough, transmission of an impulse is hindered. In this case, a child's behaviour will display certain difficulties in functioning. Actual symptoms will depend on the part of the CNS in which the transmission of the nerve impulse is weaker, e.g. weak connections of certain structures in the limbic system with frontal lobes cause the domination of emotional behaviour over rational behaviour.

Thus, noticing the entire set of symptoms, which occur along with difficulties in learning is important, because this will allow for choosing the adequate therapeutic method. I would like to attract attention to two such methods and their theoretical basis: the A.J. Ayres sensory integration method and the method of development of the early childhood reflexes according to P. Blytha and S. Goddard. J. Ayres' method is based upon the

assumption that proper physical exercise and stimulation of the vestibular system allows for the development of the postural reflexes and facilitates the integration of primary reflexes. "If, however, activity of the primary reflexes is too strong, the stimulation with the postural reflexes in itself rarely results in the overall improvement of coordination of small motorics, functioning of the oculomotor system, processing visual information and academic achievements" (Goddard 2005: 65). In order to integrate the primary reflexes, a special relevant programme should be applied, consisting in repeating movements which are performed by a child since birth in accordance to the stages of its development.

Thus, for a child to be able to reach neuropsychological maturity to learn, its CNS has to form a proper number of nerve connections between the structures of the brain and transmitting a nerve impulse must take place with proper strength and rapidity. Forming networks of nerve connections between nerve cells and the structures of the brain is nearly a life-long phenomenon, but it is the most intensive in sensitive periods and in childhood (Blakemore, Frith 2008).

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The 'Logopedicus' Project – experiences in searching for new directions in practice of a small child education

In the 21st century, the care of a child has undergone significant transformations. This process has a historical continuity – in the second part of the 20th century, initiatives and activities aiming at exclusively subjective child's treatment appeared. In Poland, at the end of the 20th century, a small child education also changed its image: people started to respect the Convention on the Rights of the Child (1991), all children were provided with compulsory education, also the handicapped ones (1997), reception classes as the obligatory preparation for school learning were introduced (2004), the school age was lowered. Statutory solutions and transformations which result from them are not the only changes which followed and have been occurring since. One can notice: a stimulating influence of different environments, a fundamental role of kindergartens, schools, mass media, and widely understood local environment. Child subjectivity became not only a declared idea, but also an actual truth. The bases for the early intervention and child's development support were created. Unfortunately, the experience quality of the children of the 21st century is clearly differentiated, because they come from different environments. The crucial differentiating factors are: disability, family violence, dysfunctional families, no access to pre-school education, or no access to specialists who support a child's development. A lot of researchers emphasize that pre-school education is a decisive factor affecting the further education (Putkiewicz, Wiłkomirska 2004). Accessibility and commonness of the pre-school care are not only low in Poland, but also very differentiated between cities and rural areas. According to the data

from 2006, 62% of the 3–5-year-old children attended kindergartens in the cities, and only 19% in the rural communes.

While in the cities the kindergartens accessibility has been improving quite fast, the situation in the rural areas has been changing much slower (www.innowacyjnosc.gpw). The common, good-quality and relatively long-lasting pre-school education is the key to support children's development, especially those who have limited possibility of fulfilling their basic needs of personal and social development. Support on this level is important because of the intensity of a child's development, his/her being open to changes, easiness to learn and strengthening behaviour patterns (Piwowarski 2007). These arguments appeal for a complex and continuous intervention into a small child's development. It is also essential to take into account variable forms of family aid, which can be in the form of psychological and specialist support, and also information, counselling, or improving competences in different forms (briefing, workshops, etc.).

In accordance with this idea, the 'Logopedicus' Project came into existence. During the preparations for this project, according to the data obtained from the "Report on the education state in the Świętokrzyskie province", about 12% of children had access to the pre-school education. The number of kindergartens in the rural areas was decreasing systematically, especially due to economic reasons. The results of the screening tests of speech and hearing, conducted between 2002 and 2004, proved that speech therapy activities had been undertaken too late, or there was limited access to them and also insufficient parents' awareness. The tests results showed that in the Świętokrzyskie province speech disorders affected 15.5% of the tested children population. In the group of disorders occurring most often there were: articulation disorders – 75%, phonemic hearing disorders – 23%, and motility disorders of the speech organ – 20%. Therefore, a reasonable necessity to intensify work over the right development of children's speech in the planned pre-school education appeared.

The 'Logopedicus' was an innovative regional project implemented on the territory of the Świętokrzyskie province. The purpose of this Project was to increase educational opportunities for children at the age of 3–5 years, living in the rural areas, by means of creating educational centres in those places where there had been no kindergartens so far. The activity of these centres was based on the identical work programme entitled

"Alternative forms of kindergarten care, including the specific character of 3–5-year-old children education, concentrated on speech development".

The innovation of the Project was an active participation of speech therapists in the educational process; they were responsible for conducting programme classes concerning the speech development and speech education, and also carrying out the children's speech therapy diagnosis, which became the basis of the research conducted by the School. The novelty of educational activities on the territory of the Świętokrzyskie province was a close cooperation with parents, among whom the children carers staff was prepared in the framework of the qualification course which was conducted. During the Project, a wide psychological and pedagogical support for the staff and parents was realized, by means of cascade training. The Internet portal, established for the Project needs, performed not only an informative and promotional function, but also became a discussion forum for the educational environment in the scope of alternative forms of pre-school education.

Fig. 1. A map of kindergarten centres of 'Logopedicus' on the territory of the Świętokrzyskie province

In the limelight of the Project authors and implementers there was the teacher employed in the alternative forms of pre-school education. A series of trainings and the possibility of advisors' support were aimed at widening the educational and methodological skills of teachers, especially in the range of: work with a group of different age, work with a difficult child, children's observation and stimulation in the development spheres: emotional, social, cognitive and physical, documenting changes in development, constructing individual development plans, and partnership cooperation with parents. A model of the teacher promoted in the Project was a reflective teacher who was aware of 'his/her own theory'. The teacher uses the theory continually. Each activity, each intention, each idea results from a generalized social world (and especially the educational one), which has been constructed during the teacher's life experience. The unawareness of the contents and even the fact of having his/her own theory makes the teacher incapable of a reflective reconstruction. S/he passively submits to the others' orders and loses the sense of responsibility and commitment. It could be said that in this case, s/he is not in control of the theory, but the theory is in control of him/her (Klus-Stańska, Szatan, Bronk 2007). A 'Logopedicus' teacher in his/her professional experience built a children-friendly kindergarten whose programme was based on a didactic play and research play, creating in this way an active, resolute child whose rights, aims, expectations and needs are noticed and taken into consideration. The 'Logopedicus' centres documentation, apart from notes in the register, contains complementary data of a child's development in the initial and final stages in separated 4 spheres:

I SPEAK, I PAINT, I SING, I PLAY

The idea of the promoted 'information society' includes involving in the information infrastructure all the members of the society, irrespective of age. Therefore, the possibility of the Internet use in school and pre-school education is playing a gradually more important role. A wide offer of available multimedia programmes can be used in the practice of the alternative pre-school education as long as they are prepared in accordance with the specific needs of 3–5-year-old children. Well prepared multimedia programmes, thanks to their attractive, funny and colourful form, can entertain and teach. A computer with great patience will repeat a given exercise the sufficient number of times. A child can be encouraged to work

by means of awards, for example, a tune or a picture. Therefore, a computer is an irreplaceable tool of work for a pre-school education teacher.

Concerning the above findings, in the framework of the 'Logopedicus' Project, an obligatory 10-hour computer training workshop was provided for the employed teachers. Taking into account the initial skills of the workshop participants, it was decided to concentrate mostly on *Application programmes* including: word-processors, graphics editors, spreadsheets, and on the ability to use the Internet (including email and forum). These programmes enable achieving the basic aim of practical computer study education, that is: delivering messages and shaping skills in the scope of analyzing and solving problems and collecting, searching and transforming information with the use of computer methods and tools. The advantage of the computer use with the Internet access could be seen as:

1. A fast communication tool with 30 alternative pre-school education centres.
2. An easy access to the Internet resources (searching for and gathering information).
3. The possibility of using the prepared multimedia packages.
4. The possibility of creating and editing sounds and images.
5. Accustoming children to using a computer, which will be helpful in further school education.
6. Creating a discussion forum for sharing the experience in the scope of alternative pre-school education forms implementation.

The aim of the Project was to provide kindergarten teachers with the basic knowledge and skills which would enable them not only to make use of the huge Internet resources to obtain didactic materials, but to create new, own didactic aids as well.

From the initial survey carried out during the organizational meeting on the 15th March 2007, it was found that 80% of the teachers possessed their own computer, but only 10% declared their abilities to prepare their own materials in an electronic version (Fig. 2). The initial survey data has a declarative character, as the computer knowledge presented by the teachers employed as part of the Project was not tested. During the course classes, the initial knowledge level turned out to be, in fact, much lower than it had been shown in the survey. Within the framework of the workshops no tests checking the substantial knowledge of the participants were carried out. Only a self-assessment survey was conducted.

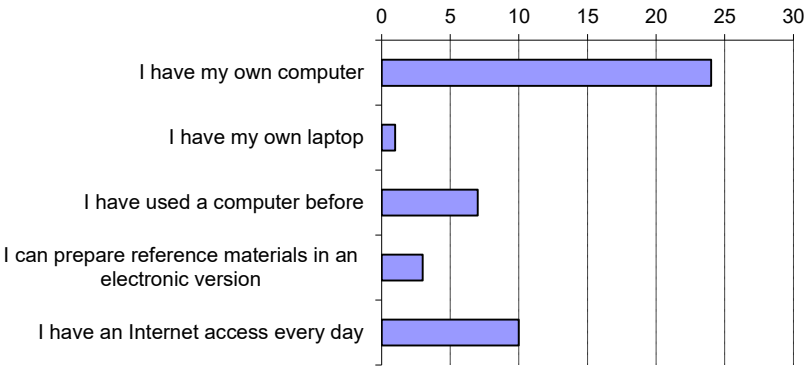

Fig. 2. Absolute distribution of the answers on the basis of the initial survey

Source*:* based on *the report of 'Logopedicus'* by M. Suchańska, K. Żłobecki; documentation of the Project in the College of Economy, Tourism and Social Sciences in Kielce

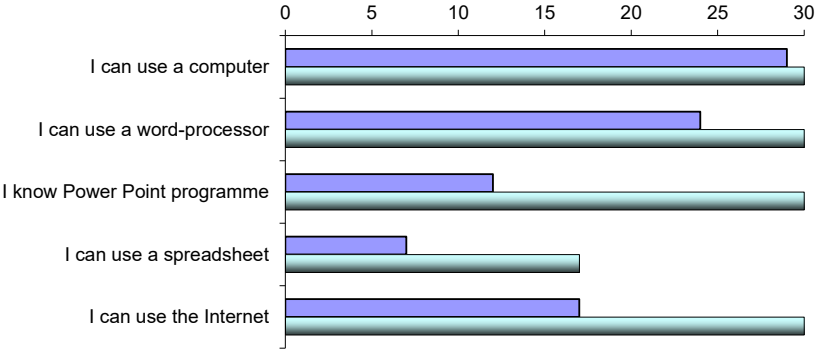

Fig. 3. Comparison of findings of the evaluation research on teachers, absolute distribution

Source*:* based on *the report of 'Logopedicus'* by M. Suchańska, K. Żłobecki; documentation of the Project in the College of Economy, Tourism and Social Sciences in Kielce

Figure 3 shows that all the teachers have acknowledged that the workshops turned out to be very useful as they widened their knowledge and skills in the scope of the computer use during the classes with children.

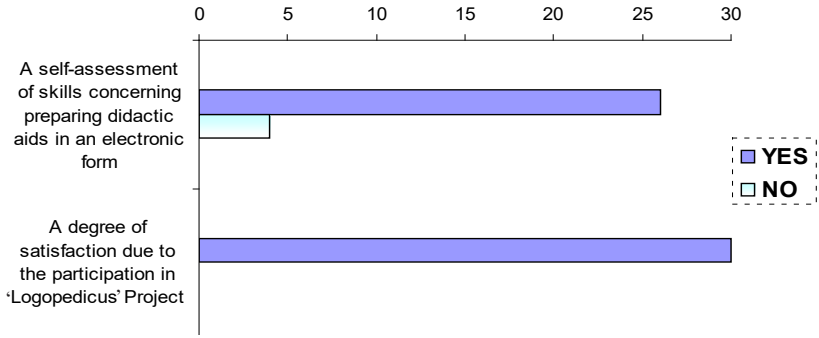

Fig. 4. Assessment of the Project use by the questioned teachers (N=30)

Source*: based on the report of 'Logopedicus'* by M. Suchańska, K. Żłobecki; documentation of the Project in College of Economy, Tourism and Social Sciences in Kielce

The above data (Fig. 4) shows that 85% of the respondents think that they can prepare on their own didactic aids for classes in an electronic form. On the basis of the class scripts sent by the teachers, it can be stated that the level of the authentic skills is very different. However, enthusiasm and willingness to learn make a good prognosis for the future. It must be emphasized that all the teachers were satisfied with their participation in the Project and they positively assessed both the reference materials and cooperation with experts. The computer equipment in the 'Logopedicus' Project was used, first of all, for educational activities, correcting and improving activities, and also making the effort of a small child more dynamic through an interactive play. A special role was played by the computer in the therapy of speech disorders in children at the age of 3–5. It turned out that it was absolutely necessary to buy the appropriate equipment and software (educational and diagnostic speech therapy programmes, biofeedback apparatus).

EEG biofeedback trainings can be applied in mental and psychosomatic disorders, e.g.: in concentration disorders, memory disorders, psychomotor hyperactivity, aggression (in ADHD syndrome), in school problems, stage fright, internal emotional strain, lowered self-assessment, etc. The aim of these trainings is to improve concentration, the speed of the thinking process, or memory. The method is safe and pleasant for the child.

Photograph 1. A child from a 'Logopedicus' kindergarten during the biofeedback therapy (the presence of his mother provides comfort and safety)

The 'Logopedicus' Project, out of the concern for the quality of the pre-school education and development of the staff's computer competences, provided trainings for the teachers in the scope of computer use so that they would be able to prepare their own materials and didactic aids. The use of Information Technologies appeared to be the strong side of the Project. Speech therapists and clinical speech therapists employed in this Project carried out specialist diagnosis and children's therapy. The number of children who used the specialist help in development deficiency compensation increased. The Project created better conditions for the personal development of a small child, activated local environments, especially parents, and established the foundations for the development of a small child's educational forms in the Świętokrzyskie province.

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Computer play-activities as a support in preparing the child to read and write

For the child the most important kind of activity is play, which not only predominates over other activities, but also changes them so that work or educational activities become play. It is the easiest, most accessible way to know the great, unclear and mysterious world and to experience events and situations as easy, simple and pleasurable. At an early age, play is not just a predominant form of the child's activity, but the most important line of development and a necessity that guarantees the child's full development (Wygotski 1995: 72). Carrying the elements of the ease and creativity, play makes it attractive and intensive. The emotional strain in play raises learners' motivation and aspirations, and results in work effectiveness. With its supportive role, play integrates the educational and pedagogical processes, combines the cognition, experience and activities of the learners, and thus it stimulates their perceptual, assimilative and exploratory activity. In learning through fun, all essentials of multilateral education are present (learning through cognition, experience and activity).

Education through fun activities is one of the most important arguments for using the computer in work with a little child. Many programmes implement the rule 'learning by fun' so effectively that children do not even realise that they participate in a learning process (Muchacki 2005: 169–177). Fun-activities with the use of the computer are very interesting for children and the educational programmes used develop many skills and help to overcome different difficulties. Appropriately chosen programmes, such as 'Click teaches reading' (1996), help to preserve the acquired knowledge and develop a number of partial skills that are of fundamental

importance as far as acquiring the ability to read and write is concerned. Introducing the computers in kindergarten education brings many advantages. Apart from the fact that the child gets familiar with a new form of communication, it produces motivation for improvement of partial skills that are helpful in acquiring counting, reading and writing skills, and, what is more, it is the source of emotional and aesthetic experiences and a basis to acquire knowledge in the future (Watoła 2002). Experts claim that children at kindergarten age can have contact with the computer only if they have a natural interest in it (Kucharská 2001: 9). During computer play-activities, they learn how to use the keyboard and the mouse. They also get to know simple computer terminology. The computer is a device that stimulates multilateral activity. Through frequent interactions, it makes the child act and does not allow him or her to be passive. This activity may involve supporting graphic, musical or intellectual creativity, and dexterity-stimulating games as well. Computer activities teach by offering fun and thus they make learning pleasurable and attractive. In this situation, the computer may play the role of a teacher who is full of patience and demanding at the same time, and it can also be helpful for children with specific learning difficulties – dyslexia, or dysgraphia (Pulak 2002). Playing with the use of this device offers possibilities that cannot be provided by traditional games and television. It has also been proved that the computer improves language and word-formation skills and it gives children the knowledge about the world they live in. The research shows that children playing for half a year with specially designed educational programmes are more efficient linguistically than their two-year-older friends (Thouvenelle 1994; Li Xiaoming, Atkins 2004: 1715–1722). Taking into consideration the research and observations made so far, one can claim that computer play-activities provide various graphic possibilities that can intensify children's psychomotor development stimulation, and thus enhance the maturity to learn how to read and write (Surowaniec 1991: 131; Reitsma, Wesseling: 301–320; Siraj-Blatchford, Siraj-Blatchford, http://www.ioe.ac.uk/cdl/datec/finawebCopy.pdf). According to J.S. Bruner, the readiness for learning to read and write: "is not a state one just waits for but it needs to be trained or provided with favourable development conditions [...]; the readiness defined in this way consists in mastering easier skills that will make possible to master higher ones" (Bruner 1985: 153). According to

J. Taylor, the following symptoms are characteristic of a child that is ready to learn reading and writing:

– s/he realises what the reading is and how it differs from telling something, s/he can also tell the difference between 'a picture' and 'a word';

– s/he knows how to read in the mother tongue (reading direction);

– s/he knows why people learn to read and write;

– s/he has rich vocabulary and can easily express his/her opinion in different situations;

– s/he can distinguish colours, shapes and sounds.

Generally, it can be assumed that although a child ready to learn reading and writing has not acquired the ability to do that yet, s/he knows what it is and realises that the printed word presents more than 'what can be seen', just like the spoken word (Brzezińska, Burtowy 1985: 159). The state of readiness for learning to read and write can be defined in three aspects:

– psychomotor readiness, the existence of which is indispensable to master the reading and writing techniques. It is the 'I know how' readiness. It is essential to teach the child the abilities and skills that are crucial to master the reading and writing techniques. The expected partial abilities are as follows: identifying varied characters and classifying them according to important features, identifying and differentiating between graphic symbols, connecting graphic marks with sounds, pictures or other marks according to a particular rule, noticing mistakes in graphic marks, knowing the letter names, copying various marks, writing selected letters, pairing of small and capital letters or letters written in different fonts. Creating the mentioned abilities depends on the so-called psychological conditioning of reading and writing readiness – i.e. correct pronunciation, certain lateralization, high dexterity of the dominant hand as far as movement precision and speed are concerned, a correct level of visual perception and hearing, correct visual, auditory and motor coordination, the ability to concentrate longer, the right capacity of the so-called short-term memory.

– linguistic-conceptual readiness, which is connected with a number of psychological and linguistic experiences, and conditions the correct understanding of the meaning of explicit and implicit type. It is the 'I have got possibilities' readiness and concerns recognizing the meanings of graphic or sound symbols. To understand a text with no aid, the child needs to have a rich linguistic experience, which means that s/he has a varied

vocabulary. Moreover, s/he can freely and spontaneously speak his or her mind in different situations requiring the language, so s/he is able to match the way of speaking to the situation skilfully. Exemplary partial abilities on the level discussed may be the ability to explain the content of notions, or attempts to cope with words in situations new and difficult for the child, for example the interpretation of metaphors or proverbs. It is connected with teaching the child to handle situations in which not everything is clear. Summing up, it may be claimed that the core of the level discussed is the capacity to use various psychological and linguistic experience. This capacity gives the child the possibility to understand the texts correctly (in the beginning – spoken texts) and it is indispensable for developing the skills of conscious reading and writing.

– emotional-motivational readiness, the essence of which is to discover the existence of written speech and its rules, as well as to understand its meaning in the process of communication between people and the cultural experience transmission. It is the 'I want' readiness. On this level, it is essential that the child understands what reading and writing is, and comprehends their role in the process of communication between people. Not only must a correct attitude towards a book and interest in it be developed, but also such high motivation for learning to read and write should be raised that it will allow the child to search on his or her own and "explore the secrets of these two skills" (Brzezińska 1987: 46).

Due to this kind of motivation, the child will aim at understanding the essence of reading and writing.

In order to present the influence of computer play-activities on the level of readiness for learning reading and writing, a natural pedagogical experiment was conducted. The subjects of the research were five-year-old children attending a kindergarten, divided into two groups: a control group (n=25), with a traditional kindergarten curriculum, and an experimental group (n=25), in which the educational process was supported by using intentionally selected computer programmes. The children chosen for the pedagogical experiment came from two neighbouring villages in the Silesian voivodship (the Wodzisław poviat). From November to June, the experimental group participated in workshops with the use of computer play-activities and computer games that aimed at supporting the development of the readiness for learning to read and write. Moreover, the behaviour of children during the play and workshops was recorded. In

June the readiness for learning to read and write was measured with a 'Test to measure the readiness for learning to read and write' in two parallel groups. The test was constructed on the basis of the set of tasks, prepared by A. Brzezińska (Brzezińska, Krzyżostaniak 1987: 190–196; Szempruch 1997: 261–262) and H. Cybulska (Cybulska 1997: 250–258).

The first stage of the result analysis was to test if and to what extent the use of computer play-activities in the experimental group differentiates the results in two groups in three aspects of the reading and writing readiness. While comparing the mean values obtained by both groups in individual readiness aspects, the differences were proved only in the case of the linguistic-conceptual readiness (Fig. 1).

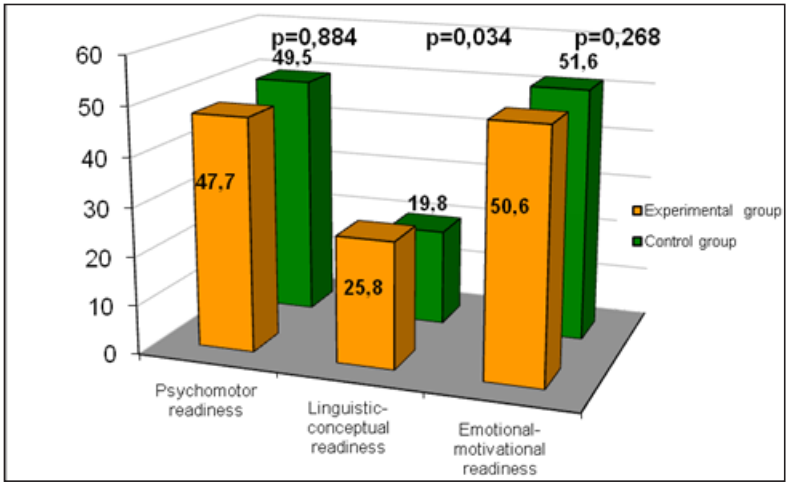

Fig. 1. Mean readiness values in individual aspects

Source: author's calculations on the base of research results

With the maximal psychomotor readiness set as 100% (55 points), the children from the control group scored 90.03% (mean = 49.5 points), and the children from the experimental group scored 86.76% (mean = 47.7 points). Favourable and high results were gained by the children tested as far as the readiness in the emotional-motivational aspect is concerned (control group – 86%, mean = 51.6 points; experimental group – 84.3%, mean = 50.6 points; max = 60 points). The linguistic-conceptual readiness was the lowest. The children in the control group did not even score 50% of the points to gain

(49.6%; mean = 19.84 points; max = 40). The readiness was higher in the experimental group and was 64.6% (mean = 25.84 points)[1].

Psychomotor readiness

During the research, special attention was paid to the development of visual perception and visual and motor coordination, which play a fundamental role in perceiving the letters (Cackowska 1984: 21). The child acquires these abilities when s/he operates on objects and is given opportunities to pick the elements from the whole and then to put them together, differentiating between the objects according to their shared and different characteristics, and noticing more or less significant details. Play--activities with the programmes 'Memory', 'Xixit', as well as graphic editor 'Paint' and 'My first ABC' gave the children from the experimental group the possibilities to conduct these operations. General visual perception and visual and motor coordination were researched with the use of copying tasks. To solve each of the suggested tasks, a child had to make the analysis and visual synthesis of the elements of the task. The level of the visual and motor coordination determined the level of graphic copying.

Analyzing the results of particular tasks, no significant differences were found between the control group and the experimental one (p=0.88). The lack of differences concerns all the characteristics of the research.

Various computer play-activities influenced the motivation of the children from the experimental group. It was observed that the children who were not interested in tasks on the sheet of paper, got excited when offered the possibility to do the same task on the computer. Although many of them encountered problems using the mouse, they started doing the drawing and colouring activities with the help of the mouse with great excitement. They were offered to do many activities with the use of programmes that teach how to differentiate between symbols and signs and to notice significant characteristics, differences and similarities. The 'Memory' game, consisting in matching the same pairs of picture cards, was helpful in performing the mentioned activities. This game provided the children with exercises that develop the visual and motor coordination (the

[1] The mentioned results are part of a bigger research project.

necessity to 'click a mouse' on the right picture cards), and distinguishing the shapes and colours, geometric figures and forms. Moreover, it enhanced the visual memory and reflex as well as spatial orientation. Thanks to the 'Xixit' game, the children could train the capacity of logical thinking and concentration on shapes and colours, and develop visual memory and spatial orientation. The children undertook all these activities willingly and passionately. Although the children were clearly observed to get involved in all of the activities, no significant differences between the two research groups were found after a year. Thus, it cannot be claimed that play-activities with the use of educational computer programmes influence the development of the readiness for reading and learning in the psychomotor aspect.

Linguistic-conceptual readiness

In this aspect, there were differences between the control and the experimental group (p=0.03). Here the children from the experimental group proved to have higher readiness, which was on the average level (mean = 25.8 points). In the control group, the readiness level was low (mean = 19.8 points). The tasks connected with explaining the etymology of concepts was the most difficult for the children. Basing on collected empirical material, significant disproportions between the understanding of particular concepts were found in the control group, which indicates poor vocabulary of the children tested.

Three of them proved to lack the linguistic-conceptual readiness. These children can have many problems with reading comprehension in particular. As far as the experimental group is concerned, 56% of the children (n=14) demonstrated a very high and high level of the readiness, which proves that they are well prepared to comprehend the meanings in the text and particular fragments of the text in the whole context. Multimedia encyclopaedias were used during many workshops in the experimental group (*Encyklopedia przyrody* 1996; *Encyklopedia wszechświata* 1997; *Jak to działa? – encyklopedia techniki* 1996) and they introduced new and rich vocabulary along with correct Polish and scientific language more than once. The children often asked the teacher to explain the meaning

of some words they did not understand[2]. The workshops with the use of educational programmes were also a chance for the children to start talking about the issues they had been introduced to. The issues were very often beyond the level of knowledge of an average five-year-old child. They willingly participated in art activities, during which they drew the natural habitat they had seen on films. The children asked for writing captions on their works then. They dictated the captions themselves, which proves that their language had been improved with the words they had found in the encyclopaedias. To illustrate some of the captions: '*Parrot Ara in the rainforest', 'A tanker is leaving the port for a cruise', 'A koala is eating the sprouts of eucalyptus', 'A polar bear is walking around the Arctic'.*

The results of the research justify the claim that the use of the computer during the workshops had a beneficial influence on the child's linguistic and conceptual scope.

Emotional-motivational readiness

Both research groups proved to have similar emotional-motivational readiness (p=0.27). The children had many problems answering the questions concerning the essence of reading and writing. Both in the experimental group and the control group some of the children were not able to answer the question: 'What is writing, reading and speaking?' The question about the differences between writing and drawing as well as reading and telling stories was much easier. The question: 'What do you need to learn in order to be able to read/write?' was also a problem. In both groups, there were children who did not answer these questions. In most cases, the answers were as follows: '*learn the letters*', '*you need to know all the letters, even the difficult ones*', '*you need to be able to arrange letters into a word*', *'you need to learn how to hold a pen correctly'*. One answer in the experimental group was *'you need to learn to arrange the letters quickly so that you know what is written and what is being written'*. This kind of answer may prove that the child realized it is important to comprehend a written text and reading. It is satisfactory that most of the children from both groups proved to have a high and very high emotional-

[2] Among the other words were: climate, atmosphere, species, environment, territory, horizon, and many more.

-motivational readiness. Only few of them proved to have an average and low readiness, and it concerned only the children from the experimental group.

Apart from the encyclopaedias and games mentioned above, the programme 'My first ABC' was used in the experimental group. Thanks to it, the children practised the processes of analysis and visual synthesis as well as visual and motor coordination. It also enabled to consolidate the letters and sounds, so that introducing the children to the world of writing was an attractive play for them. Animated and voiced letters were remembered and associated by the children to a higher degree.

The lack of differences between the groups does not prove that there is no relation between using the computer to support elementary reading and writing capacity and acquiring the readiness by the children. The research shows that using educational computer programmes is conducive to developing the readiness for learning how to read and write, especially in situations in which it is done systematically and in an oriented way, just as in the case of the experimental group. It concerns the psychomotor readiness (gamma p=0.005), the linguistic-conceptual readiness (gamma p=0.002) and the emotional-motivational one (gamma p=0.000). The situation is different when the children use these programmes sporadically, irregularly and with no support concerning the content. This happened in the case of 11 children from the control group who had access to such programmes at home. This way of using them did not influence the psychomotor development (gamma p=0.16), linguistic-conceptual development (gamma p=0.06) and emotional-motivational development (gamma p=0.19).

The work with the child in the phase of preparing him or her to learn reading and writing consists mostly in raising his or her positive motivation to do creative things. The child's conscious activity is based on his or her own ideas and it is the activity that the child undertakes most eagerly and continues with pleasure (Kujawiński 1990: 113). Reading a fairy tale, watching a theatre play, being on a trip or watching a computer animation may be the source of inspiration for a creative kind of action. The workshop observations allow us to claim that in both research groups the workshops based mostly on arranging such situations in which the child started learning on his or her own and searched for the best solutions to most of the problems connected with mastering the ability to read and write. In the control group, the teacher's attention was focused on teaching the children manual skills and phonemic audition. The workshops were

the playtime with didactic plays, musical and active plays as well as constructive-manipulative ones. Much time was devoted to art workshops, which not only helped to improve manual skills but also to develop imagination and creative invention. Such variety of forms and methods, along with didactic materials, had an unquestionable influence on the level of readiness for learning to read and write in children from the control group. It was admitted that the method of conducting the workshops in this group influenced the fact that there were no differences in psychomotor and emotional-motivational types of readiness between the control group and the experimental one, in which the experimental factor was introduced.

Final remarks

Observing the behaviour of the children during the computer workshops, it is easy to believe that the computer is an instrument at work, an attractive toy as well as the source of acquiring new and interesting experiences. The children do not fear it and do not resist it. Whenever they have a possibility to play on it, they react with excitement and, most of all, very emotionally in situations when some other child exceeds the time limit or wants to use the computer several times a day. Computer software, when used skilfully in the didactic process, influences the development of psychophysical skills connected with developing the readiness for learning to read and write, i.e. visual dexterity, auditory analysis and synthesis as well as manual dexterity. The presented reflections show that a greater emphasis should be placed on using the media along with the computer in didactic-pedagogical work, and the process of learning to read and write ought to be updated, becoming creative and individual in order to satisfy children's interests and curiosity about the surrounding world. However, using the computer in kindergarten and elementary education is still paved with difficulties. The main reason for that is the constant shortage of computer equipment in kindergartens and primary schools, the lack of access to computer labs for the children from lower grades, and poor

school equipment, as far as the right software designed for this age group is concerned.

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Dynamic pictures technique as a stimulus for imagination and thinking development

A child is active from the beginning of his/her life – various forms of activities are organized and developed during the first years of life. Educators and professionals involved in the development and education of children at the pre-school age seek ideas and methods which will help them to prepare the child for the next stages of education in an optimum way. Creating proper conditions for identifying and stimulating imagination as well as creative thinking and skills of the child during various development tasks may therefore be essential for the preparation of the individual for an active and creative life (Szmidt 2007).

The role of dynamic pictures in the development of a child's ability

Pictures activate the situation niejasne, they evoke curiosity and the ability to carry out tasks on one's own. To understand an illustration, one should see many things which are not visible in it. The illustration is a fragment of life (or a fantasy novel), stationary at some point in its lifetime – one has to imagine the movements and actions of a person being motionless in the picture, guess what preceded the depicted moment, in order to draw the right conclusions on the topic, content, and "thoughts" of the presented image. Its understanding is therefore the result of perception as well as complementation of the content by imagination, abstract thinking and reasoning.

Children do not limit their perception of a picture to mere naming the depicted object and creatures. They imagine different events and situations connected with the picture, in which both the objects and creatures act,

reason and investigate against the background (Szuman 1951). The mind of a small child does not only copy the picture's individual elements, but explores the image: notices different things, classifies and combines them, which finally makes the child create his/her own ideas and draw conclusions (Szuman 1936/1937). Thus, working with a picture should be directed to "explain" the image (and not just enumerate the objects or describe and name the activities of the people), which means spotting the details, making comparisons, detecting possible relations and identifying the main and most important subject of the picture.

Images teach concentration, memorizing and reasoning, which support the intellectual development of a child. They provide the material for creative work and stimulate the motivation to use the material to do something original. Tests, trainings and techniques applied in psychometrics, which incorporate the elements of perception, reproduction and transformation of images, show the importance of imagination and visual thinking used for determining the individual's current level of abilities development (Matczak 1994; Karwowski 2006).

The above-mentioned abilities and skills are developed primarily by dynamic pictures. These are the images of situations in which the content may change under the influence of imagination (Młodkowski 1998: 23).

The dynamic pictures technique

The technique of dynamic pictures, developed by the author of this article, is based on a set of images, some of which depict scenes or events whose content may change under the influence of imagination. Due to partial indeterminacy, ambiguity and allusion in the content of these images, they require not only description, but also explanation of the cause-effect relations, some interpretation and complementation. With the above-mentioned advantages, these pictures can be a stimulus for a child to create his/her own stories on the basis of imagined or anticipated events, which are initiated or determined by the illustrated situation. What is more, they may also inspire children to invent their own titles, characters, stories, adventures, unusual architectural features, vehicles, objects and events.

I believe that the content of the proposed illustrations can serve as a source of artistic inspiration, and multidirectional cognitive, social and

operational activity for both teachers and children, which may contribute to comprehensive development of the children and the achievement of objectives.

This dynamic pictures technique should be used in a special way to develop a child's imagination and thinking:

1) The first step is "**introduction**": some playful activity which makes children open to new ideas, and more bold in talking to others.

2) The second step is "**picture demonstration**": the analysis of the picture's visual content with the use of perception, and spotting details in the whole picture (the foreground and the background of picture).

3) The third step is "**interpretation**": children ask questions by themselves and answer them, using their imagination and individual thinking, and they invent noises, smells or other sensory impressions that may be perceptible in the picture.

4) The fourth step is "**drawing one's interpretation**": children draw (paint or use some other artistic form) invented situations, objects or picture stories individually, in pairs or in a group, depending on the task or the objectives of the activity.

5) The fifth step is "**talking about the picture**": children invent titles for their own drawings, show them to other participants, combine their own pictures with pictures of others and also enrich the stories with humour, sometimes with light horror (Płóciennik, Dobrakowska 2009).

During the implementation of this technique, it may be noticed that creating an image-inspired stories by children can provide a teacher with some information about the child's vocabulary, speech abilities, attention span, memory, and above all – about the child's understanding of the visual content, the degree of his/her imagination being stimulated, cause and effect thinking, and involvement in the content perceived in the picture.

The related research, which was carried out in a kindergarten, was aimed at verifying the effectiveness of these techniques in a scientific way.

Verification of the effectiveness of the dynamic pictures technique in stimulating creative abilities

The developed dynamic pictures technique became an essential element of a pedagogical experiment. The main objective of this pedagogical

research was to investigate and describe the effect of the dynamic pictures technique on the development of creative abilities in children in their late pre-school age.

Therefore, the following research problem was formulated: "What is the impact of the dynamic pictures technique on the development of selected creative abilities of 5- and 6-year-old children?" This problem was divided into more specific issues: "What impact does the dynamic pictures technique have on the development of:

- the ability of generalization of verbal and visual content (logical thinking),
- the ability of inference (logical thinking),
- the ability to give reasons (critical thinking),
- imaginative capacities (imagination),
- commitment and perseverance in the task (motivation),
- readiness to take cognitive risk (motivation),
- flexibility, originality, and elaboration (divergent thinking)".

It was assumed that the improvement in at least one issue mentioned above would prove the positive effect of the pedagogical research conducted in a natural environment of the kindergarten. As a result of mutual interaction and interrelation of all components in a theoretical model of creative behaviour by J. Renzulli, each component of creative abilities has an impact on the overall level of an individual's creative capacity, including pre-school children (Renzulli 1998). The dependent and independent variables were reformulated in the following way:

To obtain optimal, reliable and comprehensive results, it was planned that the experiment should be conducted according to the plan of Solomon (Brzeziński 2000: 71), i.e. according to the four-group plan with one main experimental group, pretest in two groups, and posttest in four groups.

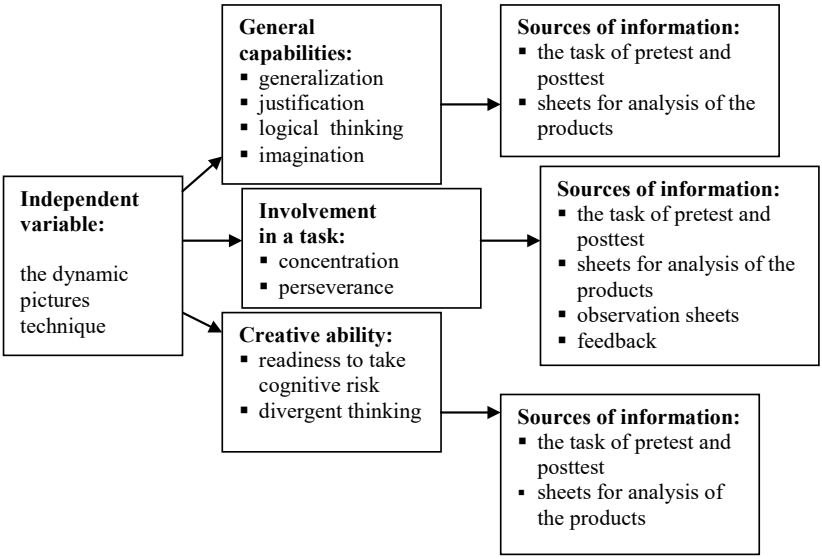
For the analysis of the experiment results, the following were used:

– T-Student test for dependent and independent groups, testing the significance of differences obtained in the pretest and posttest results,

– analysis of ANOVA variance using the Fisher test to eliminate the pretest impact on the growth of creative abilities,

– Cronbach method used both for comparing a consensus of opinions of competent judges and calculating the correlation of the judges' ratings with raw results obtained in pretest and posttest.

Test tasks became an essential element of the planned experiment, to explore the pretest and posttest components of dependent variables. In order to obtain optimal results in the study of selected general, creative and motivation abilities of pre-school children, both verbal and graphic tasks were used in the initial and final tests. These tasks were based on visual as well as auditory perception, taking into account different psychophysical abilities of children, different forms of expression and ways of individual learning. It contributed to the increase of the accuracy and reliability in testing[1].



Source: own elaboration

Complementary techniques of data collection were as follows: surveying teachers, surveying parents of the children participating in the pedagogical research, observation, quantitative and qualitative analysis of the collected data, and techniques used for obtaining feedback. A variety

[1] A detailed description of the experiment can be found in: E. Płóciennik, 2008, *Identyfikacja i stymulowanie zdolności twórczych dziecka za pomocą techniki obrazków dynamicznych,* [in:] J. Łaszczyk, M. Jabłonowska (Eds.), *Uczeń zdolny wyzwaniem dla współczesnej edukacji*. Warszawa; E. Płóciennik, 2008, *Skuteczność techniki obrazków dynamicznych stymulujących wyobraźnię i myślenie twórcze dzieci przedszkolnych – opis eksperymentu*, „Przegląd badań edukacyjnych", No 1(6).

of research methods and techniques aimed at obtaining accurate and comprehensive data were applied.

The results of the pedagogical research

The presented pedagogical research primarily contributed to providing the answer to the defined research problem and confirmed the hypothesis, both in a quantitative and qualitative way. It was proved that the designed technique stimulated development of creative abilities of children at pre--school age through classes conducted once a week for five months in two different kindergartens. The development was manifested by an increased verbal and graphical activity of the children who took part in the experiment, when performing open, divergent tasks, both during classes and tests used in the pretest.

After applying the dynamic pictures technique, higher ideational fluency and originality of children's ideas in comparison with the control group was noticed in posttest studies. It was visible both when the children invented titles, formed associations to the content of the pictures, came up with epithets, analogies and comparisons of selected objects, as well as when they developed interesting ideas to complement the content of the pictures with probable and improbable events. However, it was also confirmed by psychologists that a child at this age is very closely related to the surrounding reality, and rarely produces unrealistic, abstract ideas. They are usually based on acquired knowledge, experience and already known literary works and films.

The studies also confirmed that older children at pre-school age are willing to get deeply involved in interesting and stimulating tasks proposed by a teacher. They are also able to focus their attention on the analysis of the picture's content, making hypotheses about what might be outside the image, or considering cause and effect relations between the pictures, provided that they are motivated by an attractive, positive activity.

Experimental activities and tests stimulated the participants to produce more sophisticated statements, which also improved the quality of the products (higher ratings of competent judges in assessing the flexibility of thinking). They also inspired the participants to ask questions and give answers. Furthermore, they concerned cognitive skills such as focusing

attention on the available information, remembering and reconstructing the information, analyzing the existing information, and generating new information based on the information possessed. Thus, the activities stimulated children to process information through its acquisition, storage, sorting out and usage (Niemierko 2002).

Pre-school children who took part in the experiment learned how to respect different opinions of their peers because everyone was able to present their own version of the story and suggest an idea how to solve the problem. Owing to that, the pre-schoolers developed their own abilities to perceive the needs, emotions, and points of view of others. Work with dynamic pictures technique resulted in improving the children's self-esteem and their performance, because each statement and idea was accepted both by the children and the teacher. It was also observable in the children's increased courage and independence in carrying out other tasks proposed by the teacher. The results of working with dynamic pictures were also original graphic works, which additionally boosted the participants' expressive activities, improved manual dexterity, spatial orientation and eye-hand coordination.

The research also confirmed J. Renzulli's thesis claiming that creativity should be developed and diagnosed among all school children because revealing and activating potential abilities is only possible when they are stimulated in accordance with the dynamics of their development in different fields and different areas of the undertaken activity. In addition, the studies also confirmed the dependence of divergent thinking on other skills and motivation – their development occurs through the use of different and varied methods of problem and heuristic learning, which foster integration and development of all cognitive processes and mechanisms on the foundation of motivation to act.

The studies confirm the findings of other studies conducted in the past:

• M. Runco (2005): on the effectiveness of training works to increase the ideational fluency (number of ideas);

• T. Amabile (1996): on the effectiveness of wider integration of creative abilities and environmental conditions for improving product quality;

• N.N. Podjakow and L. Vygotsky (1989): on the effectiveness of the environmental conditions to stimulate thinking in relation to pre-school children;

• W. Limont (1996): on improving the results of "image-visual" thinking through the integration of imagery and verbal systems during tests;

• W. Ligęza (2000): on the effectiveness of creativity training in relation to creative competences acquired by pre-school children in the course of learning;

• I. Adamek (1989): on selection of learning conditions for a child to match the goals or objectives set or planned by a teacher of elementary education, and ways to monitor children's work and to activate them.

The research described in this paper confirmed the role of individual experience, education and culture in cognitive development. It also supported the thesis that the development and identification of potential creativity is relatively easy if you use heuristic techniques, ask questions, stimulate curiosity, and make associations. Children's minds were stimulated by transformation of ideas and images, handling issues from different perspectives, playing with ideas, information, and inventing new and unusual things. As a result, their minds improved and developed during the course of experimental activities, especially in the ability to perceive relations, to understand the hidden meanings, and to reason with the use of inductive, deductive and divergent thinking.

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Monografia zawiera dwadzieścia artykułów, poświęconych problematyce edukacji i wychowania. […] Pojawiają się w niej ważne pytania i problemy, które wyznaczyć mogą kierunek refleksji teoretycznej i poszukiwań badawczych. Ich opis jest zwarty i kompletny, a jednocześnie otwarty i zapraszający czytelnika do dyskusji. […] Zabieg ten stwarza płaszczyznę do refleksyjnej wymiany doświadczeń pomiędzy wieloma podejściami i paradygmatami naukowymi; teoretykami oraz praktykami edukacji, a także umożliwia prezentację i upowszechnienie wyników badań, autorskich programów i strategii wspierania rozwoju dziecka w okresie przedszkolnym.

Doc. PaedDr. Adriana Wiegerová, PhD.

Autorzy tekstów zadają kontrowersyjne pytania, wyznaczają nowe kierunki badań, podejmują (lub wznawiają) problemy istotne dla kreowania nowych standardów edukacji. […] Poruszane w pracy zagadnienia mają szczególne znaczenie w czasach współczesnych, gdy nieustannym przemianom ulega polski system edukacyjny. Nauczyciele i specjaliści pracujący w przedszkolu często spotykają się z problemami, na które brak odpowiedzi w literaturze. Należy mieć nadzieję, ze publikacja ta pozwoli pomóc w zrozumieniu i rozwiązaniu wielu z nich.

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