

# Adaptation of a three-year old child to preschool environment

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The article presents the results of research aimed at verifying the hypothesis relating to the links between selected subjective and contextual factors and adaptation strategies of a three-year-old child to preschool environment. The research was conducted on a group of 40 children, who began preschool education in 2012. Children were tested with The Denver Developmental Screening Test (the Denver test) and with the Adaptation Strategy Questionnaire (ASQ) developed for the purposes of the research. The results indicate that there exists three strategies which simultaneously constitute the criteria for the level of adaptation of a child to preschool environment: positive (creative adaptation) and negative (anxiety and indifference). Significant statistical correlations between age, psycho-motor development, level of mother's education and the child's adaptation strategy have been established. Children of mothers who attained tertiary education, older children, children who achieved a higher level of psycho-motor development more often manifested a positive adaptation strategy. It was, however, revealed that only 15 out of 40 children subject to the examination applied the strategy of creative adaptation. The result is alarming and requires further research in order to identify the factors determining it.

KEYWORDS: adaptation strategy, preschool environment, child, adaptation, development.

In Poland, preschool education is not compulsory for children up to the age of 5. The report of the Central Statistical Office shows that in the school year 2010/2011, 19.1 thousand (18.3 thousand in 2009/2010) preschool institutions were formally registered, including 8.8 thousand kindergartens, 9.1 thousand preschool units in primary schools, 0.1 thousand groups for preschool care and 1.1 thousand preschool care-centres. Compared with the previous year the number

of institutions increased by 4.5%, half of which had been established in villages. The majority of kindergartens were located in the city (67.1%). Preschool education units were operated by 47.4% of primary schools, mainly those in villages (76.3%). In the school year 2010/2011 the number of children benefiting from preschool education increased by 65.1 thousand in relation to the previous year. Of all 3–6 year-old children, 69.9% were benefiting from preschool education (in comparison to 67.3% in the previous year). Most city children (83.6%) attended kindergartens (an increase of 2.1%), whereas 51.2% of children attended kindergarten in the countryside (an increase of 3.0%). Despite the fact that the percentage of 4 year old children

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in the education system is increasing annually (on average by 1% per year), it is still only half the average of the 27 EU member states (GUS, 2011). Accessibility, availability and quality of preschool education constitute issues that still require research and analysis.

The decision to enrol a child into kindergarten is conditional upon many factors. Often they are related to the availability of such institutions in the place of residence or with the economic status of a family. In smaller towns there is a greater number of multi-generational families where child care is provided by grandparents or other family members when the parents are absent. There is also a group of parents who are convinced that the age of three is too early to leave a child in the hands of caregivers, in a kindergarten or with a person from outside the family. Research (including Lubowiecka, 2000) shows that this conviction is erroneous and the decision to abstain from preschool education may lead to difficulties during school education, that would have been easier to correct with earlier intervention.

### **Conditioning of a child's adaptation to preschool environment**

The problem of child readiness for preschool education is the subject of few psychological and educational studies. Researchers interested in subjects intermediately related to the readiness of a child to preschool education write about the first days of a child's adaptation to preschool environment or they understand it as maturation, the main role being assigned to individual characteristics, mainly biological ones. Klim-Klimaszewska (2006) discusses the question of both the adaptation and the maturity of a child to preschool environment. The notion of psychological adaptation and its determinants in a three-year-old child has also been discussed by Lubowiecka (2000) and previously by Bolechowska (1978) who have examined preschool maturity of young

children. After Klim-Klimaszewska (2006, p. 9) preschool maturity may be defined as:

Adaptation of a child to the conditions and requirements of a new extra-familial environment in such a way that enables the child to cope with difficulties, to bear the limitations of the change in standards of fulfilling one's needs, to perform specified social roles in the environment and achieve contentment and inner satisfaction through performing these roles.

Research conducted by Lubowiecka (2000) indicates that tendencies manifested in the behaviour of a child in the early period of adaptation to a kindergarten persist over time. Simultaneously, the author claims that children who were included in a programme for early adaptation at a young age achieve better results in all three dimensions of adaptation to the school environment as analysed by the author: (a) verbal expressiveness/sociability (vs. self-effacement/intimidation), (b) kindness/consideration (vs. nervousness/obstinacy), (c) patience/concentration (vs. absent-mindedness/hypersensitivity).

According to researchers of this problem (e.g. Klim-Klimaszewska, 2006; Lubowiecka, 2000; previously: Sochaczewska, 1985) the process of adaptation to preschool environment is the effect of the influence of subjective and contextual factors; subjective, related to such characteristics of a child as age, gender, type of nervous system and temperament and contextual constituting the preschool and familial surrounding environment of the child. Neither of these factors acts in isolation. A child's behaviour depends upon the configuration of individual factors and the interactions between them. The authors acknowledge that a child's age and level of development are significant for the adaptation process. During the first months in kindergarten a child exhibits specific behaviours called adaptation strategies. They may assume varying forms, ranging from positive to negative (Sęk and Brzezińska, 2010). These strategies

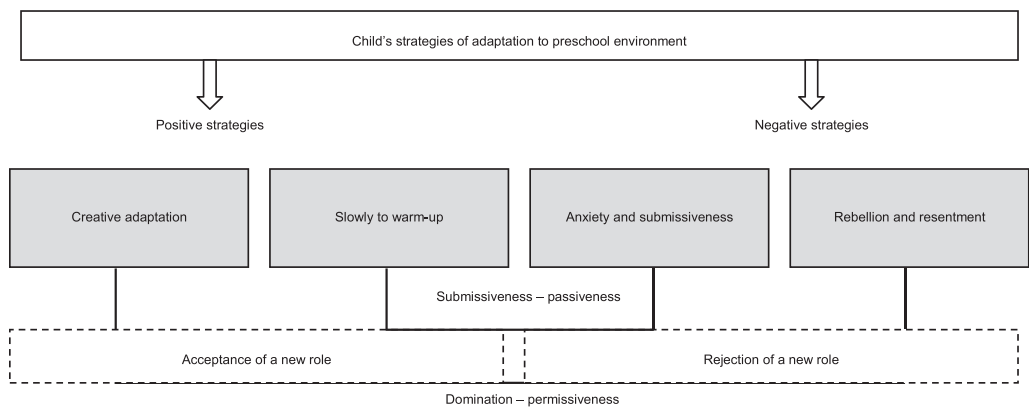


Figure 1. Strategies of child's adaptation to preschool environment (prepared by: Anna I. Brzezińska and Natalia Ożadowicz).

can be observed in everyday situations during a child's kindergarten attendance.

Adaptation strategies refer to specific cognitive and behavioural activities which a child exploits to cope with the new role of a preschooler and to adapt to preschool environment. For the purposes of this research a typology of adaptation strategies has been formulated that divides the strategies into the positive and negative in accordance with child behaviour described in the literature. These strategies are sometimes termed the criteria for adaptation and non-adaptation of a child to the preschool environment (c.f. Brzezińska, 2000; Klim-Klimaszewska, 2006; Lubowiecka, 2000). In this paper four adaptation strategies have been identified and divided into two groups:

- Positive strategies: creative adaptation and the so-called slow warm-up – in accordance with the temperamental constellation of slow-to-warm-up distinguished by Alexander Thomas and Stella Chess (1977);
- Negative strategies: anxiety and passive adaptation (submissiveness) as well as rebellion and resentment.

These strategies may be understood in the following dimensions: domination and

submissiveness as well as rejection and acceptance of a role (Figure 1).

The aim of the presented research was to verify the hypothesis related to the relationship between subjective and contextual factors and the adaptation strategy of a three-year-old child to preschool environment. Answers to the following five questions were sought:

- What is the level of psycho-motor development of a child?
- What adaptation strategies do children apply after the first semester of their stay in a kindergarten?
- Does the level of psycho-motor development of a child relate to the strategy applied for adaptation to the preschool environment?
- Are a child's age and gender factors that differentiate the strategies applied by the child?
- Do parental education, the number of children in a family and the position of a child (only child, the youngest child, the oldest child), domicile (village, small town) and nursery attendance, constitute the factors that differentiate the adaptation strategies applied in the kindergarten?

### Research tools

The research has been conducted with the use of two testing tools: The Denver Developmental Screening Test (the so called Denver test, DDST) and the Adaptation Strategy Questionnaire (ASQ) developed by the authors and based on indicators of preschool maturity of a child distinguished in line with Lubowiecka (2000) and Klim-Klimaszewska (2006) among others. Additional insight for devising indicators was provided by individual consultations with kindergarten teachers and psychologists. Basic classification was collected by questionnaire including parents' level of education, number of children in the child's family, the position of the child among siblings, nursery attendance and domicile.

The Denver Developmental Screening Test (DDST) is intended to detect child psycho-motor development disorders from birth up to the age of 6. It was developed by Frankenburg and Dodds (1967; after Michałowicz and Ślenzak, 1983). It can be used without a specialist background. As a screening test it allows preliminary identification of the level of a child's development and it suggests areas for in-depth study and areas that require support. The full version contains 105 tasks. The number of tasks used in an actual examination depends on age. The test covers four areas of interest: (a) individual and social domain (referring to a child's independence and ability to cooperate with others),

(b) visual-motor integration (adaptation and ability to grasp objects and manipulate them); (c) development of speech (speaking, listening, performing commands) and (d) locomotion and posture coordination (sitting, walking, jumping).

Based on the opinions of experts, for the purpose of this study, 31 tasks for all areas of interest were chosen. Two tasks were chosen for the individual and social (ISS), for the visual motor integration (VMI) – 13 tasks, for the active and passive speech sphere (APS) – 7 tasks, for the locomotion and posture coordination (LPC) – 9 tasks. Performance on each task was assessed on an all-or-nothing basis e.g. the test could be either passed or failed. Each child was awarded four component scores and these raw scores were transformed to z-scores.

The Adaptation Strategy Questionnaire (ASQ) is a tool created by the authors for preschool education teachers to assess the adaptation of two and three-year-old children to the preschool environment. It is intended for individual examination. The questionnaire lists 36 positive statements which describe a child's behaviour in kindergarten. These statements have been developed based on the criteria of preschool maturity and psychological and social adaptation of a child to the preschool environment (Klim-Klimaszewska, 2006; Lubowiecka, 2000). The form is completed by selecting *yes* or *no* answers. The questionnaire contained three scales

Table 1  
*Scales in the ASQ questionnaire and their reliability indicators*

Scale name	Scale symbol	Number of items	Cronbach's Alpha value	Item number in the questionnaire
Creative adaptation	CA	14	0.88	1, 2, 4, 6, 9, 11, 12, 14, 15, 18, 24, 27, 28, 29
Anxiety and submissiveness	AS	12	0.88	3, 5, 7, 17, 19, 22, 25, 31, 32, 33, 34, 36
Rebellion and resentment	RR	10	0.86	8, 10, 13, 16, 20, 21, 23, 26, 30, 35

Table 2

*The content of the ASQ questionnaire items with division into three categories of adaptation behaviours*

No.	Item No.	Item content
Scale 1: CA – behaviours indicating creative adaptation		
1.	1	A child participates in activities proposed by a teacher.
2.	2	A child is creative in their actions because they add something from themselves.
3.	4	A child likes to show off with their new abilities.
4.	6	It happens that a child does not want to go home immediately when parents come to collect him/her.
5.	9	A child spontaneously communicates with a teacher.
6.	11	A child easily establishes contact with their peers.
7.	12	A child performs teacher's tasks exactly.
8.	14	A child willingly attends kindergarten.
9.	15	A child successfully performs activities connected to the kindergarten activity schedule.
10.	18	A child plays with other children.
11.	24	A child is open and curious of what is happening around him/her.
12.	27	A child is self-sufficient in respect of basic self-service activities.
13.	28	A child is capable of expressing his/her needs.
14.	29	A child is capable of expressing his/her likes and dislikes.
Scale 2: AS – anxiety and submissiveness		
1.	3	A child is difficult to soothe even after a longer period from parting with parents
2.	5	A child is unwilling to participate in new activities.
3.	7	A child is unwilling to cooperate with other children in different situations.
4.	17	A child often plays in the same way (chooses the same play).
5.	19	A child manifests behaviour that indicates weak contact with adults.
6.	22	A child prefers to play alone than with other children.
7.	25	A child seems anxious and afraid of something.
8.	31	A child expresses his/her needs significantly less often than other children
9.	32	A child is reticent and silent.
10.	33	A child performs hyper-obediently all teacher's orders.
11.	34	A child is passive, lacks initiative in performing activities.
12.	36	A child is obedient, never opposes a teacher.
Scale 3: RR – rebellion and resentment		
1.	8	A child cries, is easily offended and pouts in contact with their peers.
2.	10	A child is anxious.
3.	13	A child contacts with peers through anger and aggression.
4.	16	A child broods over their mishaps for a long time.
5.	20	A child's emotional reactions are often too strong in relation to their source.
6.	21	A child expresses their discontent through anger, irritation, scream, throwing themselves on the floor.
7.	23	A child refuses to participate in activities proposed by a teacher.
8.	26	A child refuses to perform an activity although they are able to.
9.	30	A child establishes contacts with adults through anger and aggression.
10.	35	A child discharges their anger on surrounding objects.

Source: developed based on Ożadowicz (2011).

(Table 1), thus a child tested obtained three scores (raw results included in the calculations presented below have been transformed into *z*-scores). All scales were characterised by high indicators of reliability.

The initial set of items related also to the “slow warm-up” strategy (Figure 1), however the factor-based analysis conducted after the pilot examination with the participation of 120 teachers only allowed identification of 3 and not the full 4 factors corresponding to child adaptation strategies. A full description of all stages of the questionnaire construction process was presented by Ożadowicz (2011). All questionnaire items and their assignment onto the three scales are included in Table 2.

### Subjects

Sampling for the examined group was purposive (Brzeziński and Zakrzewska, 2010) and three-year-old children who entered kindergarten in September, 2010 were selected. Tests were conducted in two kindergartens (with permission from principals and parents) in two groups of the three-year-olds. The first group numbered 24 and the second, 16 children.

Tests were carried out from November 2010 to March 2011. On the basis of observations, tests and discussions with teachers, in November and December of 2010 the DDST form was completed. It was assumed that several weeks was sufficient for teachers to get to know their pupils and provide reliable information about them. The functional examination of children in was conducted from January to March 2011. While completing the ASQ form, teachers were asked to take into account the way a child behaved currently i.e. at the time of examination. It was assumed that the period from September 1<sup>st</sup> was sufficient for shaping a certain tendency in the behaviour of a child, which may be classified as a specific strategy of adaptation to the preschool environment.

Forty children, including 18 girls and 22 boys were examined altogether. Almost all the children (except for one) were 3 years old in the calendar year 2010. The age range was 24 to 46 months. Almost half of the children (19) were the youngest in their families. About 25% were only children. Other children were the eldest or occupied a middle position among their siblings. Children with siblings and being the youngest members of their families were dominant. The majority of children (36) had not previously had any contact with a preschool institution. Only four children had attended nursery (2 girls and 2 boys). The majority of mothers had attained tertiary (47%) or secondary education (32%). Similar distribution of education was observed in the group of fathers, among whom none had only primary education. In the group of mothers only one had finished education at primary level.

The examination was conducted on children from villages and small towns. The group of children (26) who came from a village located in the close vicinity of a large city was more numerous. 14 of the children lived in a small town.

### Examination results

#### The level of psycho-motor development of the children

The results obtained on the DDST scale indicated moderately high and harmonious levels of psycho-motor development. Significant differences between mean values of the four areas of interest were not observed (Figure 2). However, a relatively high standard deviation ( $s = 2.16$ ) was observed. Standard deviations for speech ( $s = 1.77$ ) and for locomotion and posture coordination ( $s = 1.78$ ) were similar. The lowest standard deviation was observed for the individual and social domain ( $s = 0.82$ ). The results show that children were similar in the individual and social measurements, so it could be asserted that they achieved similar

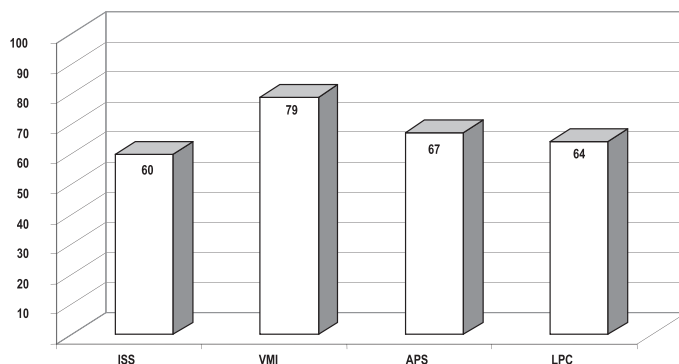


Figure 2. Level of psychomotor development of examined children on the DDST scale; Raw results,  $n = 40$ . Based on: Ożadowicz (2011).

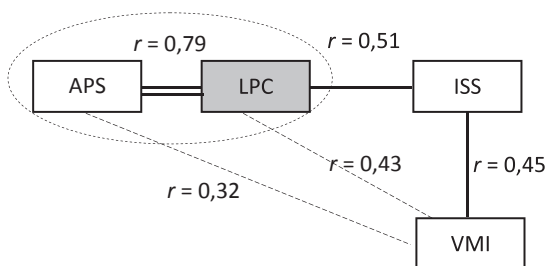


Figure 3. The structure of links between the examined areas of children's psychomotor development in line with the Wrocław taxonomy method (Brzezińska, 1979). Based on: Ożadowicz.

developmental goals in that domain. The most significant differences were observed in the visual-motor integration domain, which may be associated with the diverging pace of their biological development and also with diverging patterns of stimulation provided by the social environment (e.g. availability of toys, play with adults).

Correlations were significant ( $\alpha = 0.05$ ) between the domains of psycho-motor development except correlation of "the individual and social domain" with "active and passive speech" ( $r = 0.27$ ). The strongest links were observed between locomotion and posture coordination (LPC) and active and passive speech (APS) ( $r = 0.79$ ), and between the LPC and the individual and social sphere (ISS) ( $r = 0.51$ ). The structure of these correlations is presented in Figure 3.

### Child adaptation strategies to kindergarten

The frequencies of behaviour suggesting (a) tendency to creative adaptation to preschool environment (CA), (b) submissiveness and tendency to anxiety (AS) and (c) tendency to rebellion, stubbornness and resentment (RR), were established for each child, based on the data obtained in the ASQ. After standardising the results (standardized z-scores) no significant differences were revealed in the intensity of these three dimensions in the examined group, which suggests that the tendencies are equally probable in the behaviour of children. However, the quality-based analysis of the completed questionnaires showed significant differences between individual children in the proportion of behaviours characteristic for the three dimensions examined. It is possible



to observe that children who achieved high and moderately high results in the CA dimension, simultaneously achieved low results both in the AS and RR dimensions. This observation was confirmed by the correlation analysis conducted on the whole group: the stronger the CA dimension, the weaker the AS dimension ( $r = -0.64$ ) and also the RR dimension ( $r = -0.38$ ). The AS and RR dimensions were independent (orthogonal –  $r = -0.02$ ). Such results served as the basis for introduction of a new variable to the analysis – “the strategy of adaptation”, based on the cluster analysis conducted on cases using the k-means method.

*The influence of a child's age and gender on the level of psycho-motor development.* The age of children subjected to examination was between 34–46 months at the time of the examination, and the average for the whole group was 41 months. The age difference was not statistically significant. Despite this fact, the scores in the individual and social domain achieved by younger children were significantly lower than the results of older children (value of the  $r$ -Pearson's correlation coefficient between the results of the ISS sphere and age was 0.35;  $p = 0.03$ ). Correlations of age and the three other domains were shown to be insignificant. This suggests that age does not account for differences between children (the biggest differences in the visual and motor integration). Differences between boys and girls in respect of the four dimensions of psycho-motor development and of the general index of development were statistically insignificant. Only the standard deviation for visual-motor integration among the girls ( $s = 1.23$ ) was significantly higher ( $p = 0.05$ ) than among the boys ( $s = 0.79$ ), suggesting that some girls are developing faster and some slower than the boys in this respect.

*The influence of age and gender on the dimension of adaptation to preschool environment.* The age of the children was associated with two dimensions of adaptation to

preschool environment. Among older children, the results in the creative adaptation sphere were significantly higher ( $r = 0.52$ ;  $p < 0.001$ ) and significantly lower in the tendency to anxiety ( $r = -0.48$ ;  $p = 0.002$ ) than for younger children. The tendency to rebellion was not related to age ( $r = -0.16$ ;  $n = 40$ ;  $p = 0.312$ ). Whereas gender differences in terms of all three adaptation dimensions were statistically insignificant.

*The influence of the level of psycho-motor development on the dimension of adaptation to preschool environment.* Children who achieved high results in terms of creative adaptation were characterised by significantly higher indicators of psycho-motor development in the individual and social domain ( $r = 0.39$ ), visual and motor integration ( $r = 0.38$ ) and the locomotion and posture coordination domains ( $r = 0.37$ ), as well as in general index of level of development ( $r = 0.45$ ). An association between the latter and active and passive speech was not established, whereas children showing a high score for tendency to anxiety were characterised by low results in the level of general development ( $r = -0.34$ ). The rebellious behaviour dimension was not associated with the psycho-motor characteristics of children.

*The influence of parental education on the psycho-motor development and adaptation to kindergarten.* Education of both parents was only significant for one area of psycho-motor development – locomotion and posture coordination (LPC). Children of mothers and fathers who had attained tertiary education achieved significantly higher results than children of parents who had attained secondary education (for mothers:  $t = 2.77$ ;  $p = 0.009$ ; for fathers:  $t = 2.05$ ;  $p = 0.049$ ). Moreover, children of mothers who had attained tertiary education achieved higher results in active and passive speech ( $t = 3.20$ ;  $p = 0.003$ ) and in the tendency to creative adaptation ( $t = 2.36$ ;  $p = 0.025$ ) than children of mothers who had completed secondary education.



*The influence of the number of children in a family and position of a child among their siblings on psycho-motor development and adaptation of a child to kindergarten.* The number of children in the family and the position of a child among their siblings was insignificant in the four areas of psycho-motor development and the three dimensions of adaptation to kindergarten.

*The influence of the place of residence of a family on psycho-motor development of a child and on adaptation of a child to kindergarten.* Children from a rural environment achieved significantly higher scores in active and passive speech ( $t = 5.24$ ;  $p < 0.001$ ) and locomotion and posture coordination ( $t = 4.55$ ;  $p < 0.001$ ) than their peers from a kindergarten in a small town. Differences in respect of the other areas were statistically insignificant.

*The influence of Nursery attendance on psycho-motor development and on adaptation to kindergarten.* In the examined group of 40 children only four had attended nursery. These children scored better for creative adaptation than other children ( $t = 2.35$ ;  $p = 0.024$ ). In three cases both parents had attained tertiary education and in the fourth

family the mother had attained vocational education and the father had attained secondary education.

### **Differentiation of children in respect of a dominating strategy of adaptation to kindergarten**

The analysis of results conducted on the whole group ( $n = 40$ ) showed that it was a group differentiated both in terms of the three dimensions of adaptation to kindergarten and in terms of social and familial variables. Additional analysis was performed. Cluster analysis (conducted on cases with the use of the  $k$ -means method) allowed to distinguish three homogeneous subgroups of children significantly different in respect of psycho-motor development and strategies of adaptation to preschool environment. The strategy was established empirically on the basis of the three dimensions: tendency to creative adaptation, tendency to anxiety and tendency to rebellion. The analysis of variance (ANOVA) showed that classification into one of the three subgroups (clusters) is related to all psychological characteristics of children apart from one – the tendency to rebellion (Table 3). A pattern of three dimensions of

Table 3

*Results of the analysis of variance (ANOVA): the level of psycho-motor development and the child's adaptation to kindergarten ( $n_{gen} = 40$ ; grouped in line with the  $k$ -means cluster analysis method)*

Variables		Between SS	df	Inside SS	df	F	p
Dimensions of psycho-motor development							
ISS	Individual and social sphere	17.53	2	21.47	37	15.11	< 0.001
VMI	Visual-motor integration	9.40	2	29.59	37	5.88	0.006
APS	Active and passive speech	21.68	2	17.32	37	23.15	< 0.001
LPC	Locomotion and posture coordination	27.00	2	11.99	37	41.63	< 0.001
Dimensions of a child's adaptation to kindergarten							
CA	Creative adaptation	17.29	2	21.71	37	14.74	< 0.001
AS	Anxiety and submissiveness	27.58	2	11.42	37	44.69	< 0.001
RR	Rebellion and resentment	2.07	2	36.93	37	1.04	0.365 ns.

Source: research data in Ożadowicz (2011).

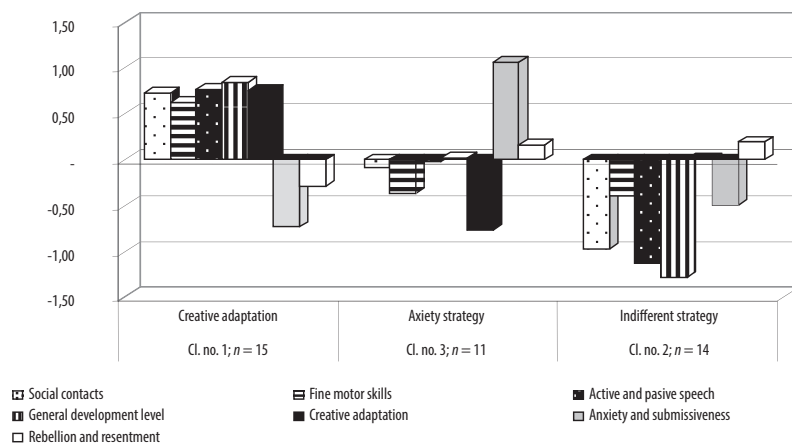


Figure 4. Subgroups of children distinguished based on kindergarden adaptation strategy (concentrations analysis on cases with the use of the  $k$ -means clustering algorithm,  $n_{\text{gen}} = 40$ ). Based on: Ożadowicz (2011).

a child's adaptation to kindergarten characteristic for each of the subgroups allowed for specification of the three following strategies of adaptation: subgroup 1 ( $n = 15$ ) – the strategy of creative adaptation, subgroup 2 ( $n = 15$ ) – the anxiety strategy and subgroup 3 ( $n = 10$ ) – the indifferent strategy (Figure 4).

Children who applied the strategy of creative adaptation (37.5% of the sample examined), manifested a high and harmonious level of psycho-motor development (the so called “flat profile” – with a lack of significant differences in the level of development in the four areas). The tendency to creative adaptation was very rarely accompanied by anxiety and rarely by rebelliousness (on an average level in relation to the whole group). This group may be said to be adequately performing normative developmental tasks with appropriate support from the environment – both familial and kindergarten, so their process of adaptation to the new environment is successful.

Another subgroup of children (37.5%), who apply the anxiety strategy, was characterised by an average level of psycho-motor development (similar to cluster 1 – flat profile) against the whole examined sample. The level

of visual and motor integration was, however, relatively low. This sphere may constitute an area of risk and may need support from adults. Very rare appearance of behaviours characterised by creative adaptation among children in this subgroup was alarming – this area of their functioning requires support on the part of adults, parents and kindergarten caregivers. This concentration included younger children (average age 39.8 months against average values: 41.9 months in the indifferent group and 42.5 in the creative adaptation group), who need more support than older children.

Whereas the children who applied the indifferent strategy, constituting the last subgroup (25% of the examined sample), were scattered and scored very low (against the whole sample) in the individual and social domain, active and passive speech, as well as the locomotion and posture coordination. There was also a low level of visual-motor integration, similar to the anxiety strategy group. Such a pattern of results in this group may be the consequence of significant neglect to upbringing in a family and failure to create conditions and opportunities in the kindergarten for appropriate actions that promote

Table 4

*Subjective and social conditioning of the adaptation strategy applied by children (differences between the three specified subgroups or clusters)*

Category	Variable	Statistics	Decision	Description
Subjective factors	sex	$\chi^2 = 51,33$ ; $df = 39$ ; $p = 0,089$	-	boys and girls are not significantly different in strategies of adaptation to kindergarten in all three clusters the number of boys and girls was equal
	age	ANOVA Kruskal-Wallis test ( $2; n = 40$ ): $H = 14,07$ ; $p = 0,001$	+	younger children ( $m = 39,8$ months) were included in the group that mostly applied anxiety strategy, and older ones – in the group that applied the creative adaptation strategy ( $m = 42,5$ months) and in the indifferent one ( $m = 41,9$ months) age insignificant ( $p = 0,482$ ): creative adaptation/older vs. indifferent/older age insignificant ( $p = 0,011$ ): creative adaptation/older vs. anxiety/younger age significant ( $p = 0,024$ ): indifferent/older vs. anxiety/younger
	number of children in a family	ANOVA Kruskal-Wallis test ( $2; n = 40$ ): $H = 0,213$ ; $p = 0,898$	-	the number of children in a family is not connected to the adaptation strategy applied by a child
Social and family factors	position of a child in a family	$\chi^2 = 37,67$ ; $df = 39$ ; $p = 0,531$	-	the position of a child in a family (sibling position) is not connected to the adaptation strategy applied by a child
	education of the mother	$\chi^2 = 62,83$ ; $df = 39$ ; $p = 0,009$	+	creative adaptation group – 80% of children of mothers who attained tertiary education anxiety group – 33% of children of mothers who attained higher education, and 53% – secondary education indifferent strategy group: 50% of children of mothers who attained primary and vocational education, 20% of children of mothers who attained tertiary education, 30% of children of mothers who attained secondary education primary/vocational education of a mother is linked to the application of the indifferent adaptation strategy by a child
	education of the father	$\chi^2 = 57,00$ ; $df = 39$ ; $p = 0,031$	+	creative adaptation group – 73% of children of fathers who attained tertiary education anxiety group – 53% of children of fathers who attained tertiary education, 33% of children of fathers who attained secondary education (contrary proportion among mothers) indifferent group: 60% of children of fathers who attained secondary education, 30% of children of fathers who attained vocational education, 10% of children of fathers who attained tertiary education vocational education of a father is not connected with any specific adaptation strategy
	place of residence	$\chi^2 = 50,67$ ; $df = 39$ ; $p = 0,101$	-	place of residence of a child's family (village vs. small town) is not connected to the adaptation strategy applied by a child
	nursery attendance	$\chi^2 = 70,33$ ; $df = 39$ ; $p < 0,001$	+	all children that had attended nursery applied the creative adaptation strategy

Source: research data in Ożadowicz (2011).

achievement of developmental tasks related to shaping attitudes of independent functioning in the physical domain (low level of development in the locomotion and manipulation sphere) and in the social domain (low level of development in the speech and cooperation sphere). The pattern of dimensions related to adaptation to kindergarten points to an average, compared with the whole group, level of behaviours characterised by creative adaptation (it may be regarded as an advantage of the children in this subgroup), relatively low level of anxiety behaviour (this may also be regarded as an advantage) and similar to the subgroup 1 and 2 level of rebellious behaviour. It may suggest that in the children from this group, a clear strategy of adaptation to a new environment has not yet been shaped or that the indifferent strategy, which is variable and which easily adjusts to circumstances, is used for adaptation. It is possible that these children are not at the centre of a teacher's attention (low results relating to examined dimensions of psycho-motor development support this claim) and try to draw attention to themselves using different means. Notwithstanding the true explanation, it is a high-risk group in relation to disorders in performance of normative developmental tasks and difficulties in realization of the kindergarten curriculum, including meeting a teacher's expectations or demands.

### **Determinants of a child's strategy of adaptation to kindergarten**

Another question was related to differences in subjective and socio-familial determinants between individual groups of children who are different in both the level of psycho-motor development and adaptation strategy. The results of this analysis are shown in Table 4.

The two subjective factors that have been shown to be related to the strategies of adaptation to preschool environment were age and the level of psycho-motor development.

The older the child and the higher their level of development, the more often the creative adaptation strategy was applied, as compared with showing anxiety or adopting the indifferent strategy. Included among the contextual factors, education of both parents and a child's nursery attendance were significant. Children of parents with tertiary education and those that had attended nursery school applied the strategy of creative adaptation more often.

### **Discussion**

This exploratory research was conducted on a small group of children and its goal was to initiate discussion about factors promoting or disrupting the process of child adaptation to kindergarten and in the longer-term to the school environment.

The results of research indicate that children aged three, after six months in a kindergarten, display significant differences in their functioning. They manifest both constructive and anxiety and rebellious behaviours. For some children the process of adaptation to the new environment and a new role was successful, while some were still trying to find their place and yet others could not cope with the initial tension or were still experiencing some problems in adaptation to kindergarten, to the new adult – teacher or to peer group.

Taking into account the pattern of the three groups of adaptation behaviours examined, three groups of three-year old children who applied different strategies of adaptation to preschool environment were identified. The strategies were creative adaptation (37.5% of the group examined), anxiety (37.5%) and indifferent strategy (25%). The fact that only 15 children out of 40 applied the creative adaptation strategy – positive and constructive, which should allow finding one's own niche in relations both with peers and teachers and for an adequate attitude to

the tasks performed, is alarming. The alarming nature of these results is intensified if we take into account that it was the teachers, not the parents, that completed the questionnaire relating to adaptation of a child to kindergarten. If the answers provided by the teachers were reliable, a question arises about why so many children apply anxiety and indifferent strategies. If fear of the opinion of a person from outside kindergarten is an influence here, the number of children who apply non-constructive strategies of adaptation may be even higher.

In accordance with the results obtained by other authors, this research showed the important role of subjective factors – age and the level of general development of a child in the process of the positive adaptation to a new environment. Even in such a poorly differentiated (age 2;10 – 3;10) and small group, younger children function in a different way. They were included in the group that applied the anxiety strategy, despite the fact that the profile of their psycho-motor development indicates that all examined areas were at an average level against the whole group. Thus these children had the required psychological resources for successful performance of the developmental tasks of the childhood. It may mean that application of the anxiety strategy is conditional upon a situation, i.e. that these children do not experience enough support from their teachers in the kindergarten or their parents or carers at home. Thus it may seem that younger children require more effective support from adults because despite having acquired many skills, they are characterised by demonstration of the majority of anxiety behaviours and apply the anxiety strategy.

An entirely different perspective for interpretation is opened by the analysis of results of the group of children who apply the indifferent strategy. This group includes children who are slightly older than the children who apply the anxiety strategy and slightly

younger than in the group that applies the strategy of creative adaptation. The majority of parents of children in this group had achieved vocational and secondary education. Simultaneously a very low level of performance in developmental tasks in all examined domains, especially locomotion and speech was observed as compared with other children, i.e. the two basic instruments that allow a child to behave autonomously. The evidence obtained in the examination does not establish whether these children applied the anxiety strategy because their competence was not adequately developed (i.e. at the very beginning they were at a lower position than their better developed peers) or whether a low level of competence resulted from application of such a strategy (changeable, chaotic, undifferentiated). In all events these children are neglected and require urgent intervention by means of a change of treatment by the teacher in a kindergarten and close cooperation with parents and other relatives.

The period between ages three and four is described by many authors (c.f. Brazelton, 2002; Ilg, Ames and Baker, 2000; Smykowski, 2005) as a time when many serious changes take place in the functioning of a child and when new challenges emerge from the environment. It may be assumed that the children examined presented a lot of differences in their individual development and that many factors that were not included in the research had a significant influence on their strategy of adaptation to preschool situation.

The reasons why a great number of older children applied the indifferent strategy, experiencing prolonged difficulties in adaptation to preschool environment, requires further research. On the basis of the existing literature on the subject (e.g. Cicchetti, Toth and Maughan, 2000; Czub 2003, 2009; Masten, 2001; Sroufe, 1995) and similar findings in this field (Cowan, Cowan and Barry, 2011; Sroufe, Egeland and Kreutzer, 1990) it may

be assumed that an important area of future research should be early emotional development of a child and its consequence for future psychological and social functioning, including cognitive functioning.

Much research in this area points to an especially important role of early childhood attachment and the ability to control emotions in adaptation to a new, extra-familial environment (Arend, Gove and Sroufe, 1979; Booth, Rubin and Rose-Krasnor, 1998; Cowan, Cowan and Barry, 2011; Sroufe, Egeland and Kreutzer, 1990).

Research relating to the influence of attachment experience on further functioning of children shows that among children characterised by secure, ambivalent or avoidant attachment there are significant differences in self-esteem, coping with emotions in difficult situations, means of searching for support and in respect of social competence (peer relations, dependence on adults, empathy) (Arend, Gove and Sroufe, 1979; Bretherton, 1985; Weinfeld, Sroufe, Egeland and Carlson, 1999). Longitudinal studies conducted from infancy until puberty indicate that an ambivalent pattern of attachment is more often connected to anxiety disorder, whereas an avoidant attachment is connected with aggressive behaviour or repressing emotion (Czub, 2005; Goldberg, 2000).

While analysing the results of the study and the research of other scholars mentioned above, a tentative hypothesis may be proposed, that the three groups of children identified may be associated with the different patterns of attachment they manifest. Creative adaptation may be associated with the secure attachment, the anxiety pattern with ambivalent attachment and the indifferent with the avoidant attachment. This hypothesis requires further in-depth study. Such research would be worth conducting because research already conducted lacks clear identification of factors to explain the observed differences in adaptation strategy.

An important aspect of the research findings is the establishment of the importance of education of parents, especially the mother's for the adaptation strategy of a child. The finding that the majority of children of mothers who have attained primary and vocational education applied the indifferent strategy, is thought-provoking and requires further research. Confirmation of such a state of affairs would suggest the need to support both parents and children of lower economic and social status during preschool. It would require creation of a free-of-charge integrated education (for children and parents) which would allow children to make early social contacts with groups of children at different competence levels (so-called peer tutoring), and parents for acquiring new competence in childcare, upbringing and education as well as for developing existing competence in these domains.

The established lack of association between gender and the adaptation strategy to kindergarten requires further research in this respect. Taking into account that other research in this field shows contradictory results (Lubowiecka, 2000; Sochaczewska, 1985), it is impossible to show whether the lack of correlation indicates a real lack of association or whether it results from the small sample size of the study group.

Taking into account the results obtained in the context of functioning of kindergartens and previous experience of the children as well as the variety of familial environments from which they originate, we may observe the importance or even essential nature of appropriate adjustment to conditions in a kindergarten to the abilities of children (in all dimensions: infrastructure, organisation, social atmosphere, teachers' competence, quality of educational offer). Adequate subject-matter preparation is therefore essential not only for teachers but also other kindergarten workers who come into contact with "new" children, especially younger ones who only begin to adapt to the institution.



It is then important to mention institutional maturity to kindergarten. This subject have been discussed e.g. by Michalak and Misiorna (2006). The authors discuss a proper sensitivity at the kindergarten to different experiences that the child acquires at home. This sensitivity is reflected by appropriately designed schedules of kindergarten activity as a whole in relation to the youngest children. These schedules must be in line with knowledge in the field of developmental psychology aimed at promoting spontaneous and independent child activity: "A kindergarten sensitive to a child accepts the specific logic and the specific pace of development of a child, creates safe conditions for a child in which they may confront the first truths about themselves and the surrounding world" (Michalak and Misiorna, 2006: 5).

The readiness of the institution to take responsibility for taking care of young children and providing early preschool education constitutes a problem that requires detailed analysis and research to establish factors determining the supportive requirements of educational institutions that are important from the child perspective.

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