

THE CONCEPT “PLAY - PHYSICAL ACTIVITY - DEVELOPMENT” AS A RESPONSE TO THE CONTEMPORARY TEACHING METHODS IN PRESCHOOL EDUCATION

(Preliminary communication)

Jera Gregorc¹ and Maja Meško²

¹University of Ljubljana, Faculty of Education, Ljubljana, Slovenia

²University of Primorska, Faculty of Management, Koper, Slovenia

Abstract

This article aims to present the efficiency of a contemporary teaching concept »play - physical activity – development« in Slovenian kindergartens. The concept considers the principles of child development and is oriented towards the holistic development of a child. It is based on the theory of the inseparable interrelation of play, physical activity and development in the broadest sense. The teaching method that follows all the principles of this concept is known as play way method, in other words, professionally structured (directed) play. It incorporates and interrelates all curriculum areas and all the areas of child development. Moreover, it enables a child to have freedom. While a preschool teacher leads and directs the learning process through a carefully structured play, a child spontaneously and unobtrusively participates in the process. Our pedagogical research aimed to investigate convince of applying the new approach in different kindergartens according to the different age groups of children. We employed an experimental pedagogical exploratory method (causal and plural type) on a sample of 37 Slovenian kindergartens. The analysis of the completed projects and the researchers' opinions showed that children were quickly engaged in the new approach, while preschool teachers lacked further training to be able to teach according to this concept, especially in the area of understanding and monitoring the child's development. The analysis also showed that introduction of the concept requires systematically assistance over a longer period.

Keywords: *concept »play - physical activity - development«, holistic development, preschool children, learning process, kindergarten*

INTRODUCTION

Contemporary researchers in the area of preschool child development repeatedly highlight the importance of the integrity of child development which was already stressed by Ismail (1976.). Different areas of child development (physical, motor, cognitive, emotional and social) are interrelated in the way that a change in one area affects the changes in all other areas. Several researchers investigated the relations between different areas of child development, such as between motor and cognitive development (Cotič, Zorc & Kozlovič, 2004; Pišot & Zorc, 2003; Thun - Hohenstein, Largo, Molinari, Kunduc & Duc, 1991; Gardner, 1993; Zaichkowsky, Zaichkowsky, & Martinek, 1980), between motor and emotional development (Planinšec, Fošnarič & Pišot, 2004; Fagot & Obrien, 1994; Walker, 1992; Graziano, Jensen - Campbell, & Sullivan - Logan, 1998, Zaichkowsky et al., 1980), between motor and physical development (Bala, Popovič & Jakšič, 2009), etc. They all established that the areas are closely interrelated. According to this

analogy, it is thus impossible to investigate the areas of child development separately.

Another view that indicates the importance of the holistic approach in investigating preschool child development is the view of integrity and complexity of particular areas of child development. In this respect, Siegl & Payne Bryso (2011) investigates the integrity of brain response in a child and present several useful exercises for interrelating the areas of child development. Furthermore, Vehovar (2009) establishes the complexity and incomplete differentiation of the space of motor abilities in preschool children. In his research, (Horvat, 2011; according to: Vehovar, 2009) states that the integrity and constant changing structure of the motor abilities in the course of a child's development presents a significant challenge for the researchers. He also established that the space of motor abilities in preschool children differs from the one in adults.

On the basis of recent research on the positive effects of physical activity on a child's development

(Bregant, 2010; Burns, 2011) and the principles of preschool child development, we established a theory of the inseparable interrelation of motor abilities and development. The motor abilities enable a child to start communicating with the outside world. It starts receiving his first information which the processes and stores in his brain. At first, he starts to get to know himself and then also the world around him. Bregant (2010) emphasizes that physical activity is indispensable for a normal physical development of a child. In addition to this, the synapse formation is most intense in the first years of our lives and depends on the physical activity (Burns, 2011). According to this analogy, and the fact that a change in one area affects changes in all other areas of child development, the theory of the inseparable interrelation of physical activity and development proves to be completely suitable. World Health Organization (WHO, 2010) adopted higher standards for adequate physical activity for children which should be beneficial for a healthy physical and mental development of a child.

Physical activities in children are more than just skills (Bregant, 2010). They influence the development and maturation of the entire motor system, the development and maturation of sensory systems and their integration at the level of the central nervous system. Physical activity is thus indispensable for a normal child development.

Holistic child development requires a holistic approach. Therefore, we tried to establish how to influence child's development. For this purpose, we followed the latest discoveries in the area of understanding child development. We began to develop the concept »play - physical activity - development« by studying traditional and contemporary pedagogical concepts and approaches (e.g. Reggio Emilia, Maria Montessori, HighScopek etc.). However, we applied only the positive characteristics of the studied concepts and approaches, and used the theory of the inseparable interrelation of physical activity and development as well the theory of holistic development in its broadest sense in order to overcome the shortcomings of the concept. The concept is a response to the process-development based curriculum for kindergartens and is consistent with all global goals and principles. It stresses the importance of child's participation in the learning process, the priority of learning over teaching, and the importance of the interrelation of different disciplines and expertise. It is based on sensorimotoric integration and the inseparable interrelation between the physical activity, development and play.

Child's play is always based on physical activity and every physical activity affects child development. Batistič-Zorec (2002) claims that play is a spontaneous, creative activity that is a part of our lives in different life periods, not only in childhood. However, in the preschool period, play is a predominant activity and not only a pastime. Thus, in the preschool period, motor responses to sensory inputs enable the child development. Intrinsic motivation with play is required. A child's play

is an activity performed for the sake of the activity and comprehends all the essential elements of learning (revision, intrinsic motivation, open-mindedness, following the rules, agreeableness, research, long-term memory, development, etc.) and is thus essential for the normal development of a child. Despite a strong emphasis on play and playfulness, and experts' common opinion that play is an inseparable part of growing up, several experts still contradict the idea to introduce a play as a predominant activity in kindergartens. In this paper, we discuss the structured play method and playfulness. Numerous concepts, approaches or methods lack an essential component, namely, how to turn a certain play or activity into a physical play activity. The concept »play - physical activity - development« provided a solution to this problem and proved to be successful in a 13-year longitudinal action research (Gregorc & Cemič, 2013).

However, the aim of this research is to establish whether the concept »play - physical activity - development« is applicable to all kindergartens, no matter the program or method carried out in kindergartens or the age group of the children. We also aimed to establish the weaknesses of the concept and the weaknesses that might occur due to unsatisfactory comprehension.

METHODS

In our research we employed an experimental pedagogical exploratory method (causal and plural type) on a study of 37 kindergartens in order to investigate convince of applying the new approach in different kindergartens according to the different age groups of children.

Our sample includes 35 female preschool teacher assistants and 2 male preschool teacher assistants (*performers* in continuation) who are employed in 37 kindergartens from all over Slovenia. All performers received additional professional education from the Faculty of Education and were already familiar with the concept »play - physical activity - development« which was presented to them at the lectures of Movement and Inter-subject Connections. The average age of the performers was 31.4 (\pm 3.9). They all held at least a university degree in some pedagogical profession. 27% of them worked with 5-6 year old children, 21.6% with 3-4 year old children and 18.9% with 2-3 year old children. The rest of them worked with mixed groups. All the performers carried out a 5-day learning process according to the concept »play - physical activity - development«. Following the concept's principles, they chose between a play way method (75%) and polygon method based on playfulness (15%). In the learning process they upgraded at least 3 areas of the curriculum.

In our research we employed qualitative methods of data collection and determined 3 different types of variables. The first variable is a finished product (network analysis and a comparison of different realizations of the particular 5-day learning processes) recorded by the performers after the completion of the projects. The second variable is an informal, semi-structured interview with

the performers that included questions on usefulness of the concept, its errors, deficiencies and the problems the performers encountered. The third variable is a questionnaire completed by the performers after the completion of the learning process. The questions were close-ended and related to the entire research as well as to the performers' opinions on the concept before and after the realization of the learning process.

In qualitative data processing, we employed network and thematic analysis and compared the data with the longitudinal case study research. Quantitative data was processed with the statistical package SPSS 20.0 for Windows. The application »Frequencies« was used to calculate the frequency of individual answers, the application »Descriptives« was used to calculate the descriptive statistics and the applications »Crosstabs«, »Corelate-bivariate« and t-test was used to test the hypotheses. The hypotheses were tested at the 0.05 level of significance.

RESULTS

The results will be presented separately according to the data collection method. The qualitative results will be presented in the form of an in-depth network and thematic analysis of the performers' finished products, while the quantitative results will be presented in tables and charts.

Qualitative analysis of 37 records after the realiza-

tion of the projects showed that performers with completed training were able to relate curriculum areas in a sufficient way (24.3%) or in an excellent way (75.7%) and to upgrade them through 5 consecutive learning methods with regard to a certain topic. The performers' ability to relate the curriculum areas was thus sufficient or excellent; however it lacked originality (13.5%). The performers lack ideas for interrelating, which is particularly evident when upgrading all the areas at the same time. In analysing the building of the learning process, the performers need additional and profound knowledge, especially in the area of physical activity, i.e. Knowledge on motor abilities and knowledge on identifying/monitoring motor ability development in a preschool child.

On the basis of the data presented in Table 2a. in Table 2b., which shows some results of the semi-structured interview, and discussions with the performers, we can establish that the performers assessed the concept as useful. However, in 35.1% of the cases, they could not apply it in kindergarten due to different reasons which were mostly subjective: e.g. unsatisfactory comprehension of the concept, the change in some subjective theories on teaching and learning, etc.). Other performers believed that the concept can be applied only in certain groups, especially in those where the teachers adopted a different approach and were willing to change together with the children. We also established that 35.1% of the performers showed unsatisfactory comprehension of the

Table 1. Network analysis of the final project records of all performers

| Variable | | Insufficient | Sufficient | Excellent | Total |
|--|-------|--------------|------------|-----------|----------|
| Interrelation of curriculum areas. | f (%) | 0 (0%) | 9(24.3%) | 28(75.7%) | 37(100%) |
| Original approach to playfulness and play way method. | f (%) | 5(13.5%) | 19(51.3%) | 13(35.1%) | 37(100%) |
| Building a learning process on the basis of physical activity. | f (%) | 19(51.3%) | 12(32.4%) | 6(16.2%) | 37(100%) |

Table 2a. Network analysis of the semi-structured thematic interview

| Usefulness of the concept »play-physical activity-development« | Completely inadequate for our kindergarten | Adequate but cannot be applied yet | Applicable (only in certain groups) | Total |
|--|--|------------------------------------|-------------------------------------|----------|
| Answers of all performers in percentage | 0(0 %) | 13(35.1%) | (24)64.8% | 37(100%) |

Table 2b. Network analysis of the semi-structured thematic interview

| Deficiencies, errors and problems | It was difficult to plan and interrelate everything at the same time | We did not have enough time, we needed more expertise and we needed additional directions | Children did not respond as we expected (unsatisfactory comprehension of the concept) |
|-----------------------------------|--|---|---|
| Percentage | 28(75.7%) | 30(81.1%) | 13(35.1%) |
| Total | 37(100%) | 37(100%) | 37(100%) |

Table 3. Median values and standard deviations of performers' opinions on selected statements regarding the transition of the theoretical concept into practice

| | Statement | Min | Max | Median value | Standard deviation |
|---|--|-----|-----|--------------|--------------------|
| 1 | Physical activity is important for normal and healthy child development | 5 | 5 | 5.00 | .000 |
| 2 | Concept »play - physical activity - development« gives priority to learning over teaching | 4 | 5 | 4.86 | .347 |
| 3 | Concept »play - physical activity - development« enables the realization of process-development based curriculum | 3 | 5 | 4.68 | .580 |
| 4 | Play way method is a working method that requires a transition from the traditional way of teaching to teaching through play. This method is child-based | 3 | 5 | 4.68 | .580 |
| 5 | Concept »play - physical activity - development« enables children to actively participate in the learning process, to have freedom and to take decisions, while the teacher pursues the goal of the concept. | 4 | 5 | 4.65 | .484 |

Table 4. Differences in the median values of performers' opinions before the beginning of the project, after first learning unit and at the end of the project

| Opinion on the theoretical efficiency of the concept | Median value | Standard deviation |
|--|--------------|--------------------|
| After the presentation of the theory (1). | 4.22 | 0.85 |
| After first learning unit (2). | 4.32 | 0.75 |
| At the end of the project (3). | 4.43 | 0.65 |

Table 5. Comparison between the frequency of physical activity and their relation to upgrading the expertise on physical activity and child development

| | | Frequency of physical activity | |
|---|-------------------|------------------------------------|----------------------------------|
| | | Insufficient for healthy lifestyle | Sufficient for healthy lifestyle |
| Relation to the constant upgrading of professional expertise. | I do not wish to. | 7 (50 %) | 8 (34.8 %) |
| | I wish to. | 7 (50 %) | 15 (65.2 %) |
| Total (according to 37 performers) | | 14 (100 %) | 23 (100 %) |

concept in practice, even though they understood it in theory. More than 75% of all performers needed help in planning. However, they were aware they needed more expertise and more time to be able to plan the realization properly.

On the basis of Table 3. we can establish that performers put high value on physical activity for a normal development of a child. Through the study of their own projects they were able to realize that the concept enabled them to give priority to learning over teaching and to implement process-development based curriculum. The performers defined the play way method as a working method that requires a change in the way of teaching. In the fifth statement which follows as a logical result, performers confirm that the concept enables children to actively participate in the learning process and to have freedom, while the teacher can pursue his educational goals.

The performers expressed their opinion on a five-point Likert scale according to the different stages of

the concept's transition from theory to practice. Table 4. shows that opinions differ according to the stage of the concept's transition from theory to practice. T-test showed statistically significant differences ($t = 2.4$, $sig. = 0.00$) between the variables »after the presentation of the theory« (1.) and »at the end of the project« (3.). The correlation between the variables was tested using Pearson's correlation coefficient and was statistically significant at the 0.05 level of significance.

Table 5. shows that performers who do not want constant upgrading of their professional expertise are more numerous among those who lack sufficient physical activity. Among 37 performers, 37.8% lack sufficient physical activity for maintaining a healthy lifestyle. Furthermore, 50% of them believe that they do not need constant upgrading of their professional expertise. Among those who are sufficiently physically active (62.2% of 37 performers), only a third would not consider additional upgrading of their expertise. The results were also examined using chi-squared test. However,

the test showed no statistically significant differences between the variables.

DISCUSSION AND CONCLUSIONS

To ascertain the suitability of the new concept or approach into kindergartens that implement different educational programmes, we used an experimental pedagogical exploratory method (causal and plural type). In our research we wanted to establish the effectiveness of the theory in practice by employing action research, studying 37 examples of projects based on the new approach.

To be able to apply the theory into practice, we trained 37 performers attending permanent professional training for 50 hours. Provided with professional help, they developed a 5-day learning process following the concept »play - physical activity – development« taking into account the materials, personnel, organization and content. The project was implemented in kindergartens from all around Slovenia. Completing the project, they made comparison (analysis) of different kindergartens and age groups, as well as they also collaborated in semi-structured open interview and filled in the questionnaire.

A qualitative analysis of 37 records written after the completed projects showed that the performers were able to appropriately (24.3%) and excellently (75.7%) relate the curricular areas after their training and to develop them, according to a certain topic, through 5 consecutive learning methods. The performers were able to relate particular areas (mathematics and science, social education and mathematics, arts and language), however, they had problems with the new approach studying these areas through physical activity and play. The problem arises, above all, when learning is supposed to replace teaching, when traditional teaching methods should be changed into permitting freedom by appropriate leading through the play. Only 13.5% of the performers were original in these activities, and they proved their complete comprehension of the concept in their projects. We are aware of the fact that we helped a lot in the project design, namely with more than 75% (Table 2), which means that the duration of the project should be longer, the number of participants *should be smaller* and that we should monitor the *replacing* of traditional teaching with the new approach in order to appropriately *transfer the change*. We also noted that the performers did not pay proper attention to child development and special characteristics of particular groups. Poor knowledge in the area of identifying child development phases was ascertained also by Gregorc & Cemič (2013). Such poor knowledge results in *educators' instinct reactions*. Nevertheless they are frequently successful, even though they do not have theoretical knowledge. Gregorc & Cemič (2011) call attention to the necessity of a professional approach and the importance of educators' role in directing the process.

The implementation of the concept requires a great deal of expertise, patience and permanent training. Ac-

ording to the results presented in Table 5., educators are not aware of the importance of permanent training. Nevertheless, Table 1. and Table 2. show that such training is needed. The data presented in Table 2. show that the performers assess the reasonableness of the presented *concept*. However, they cannot start implementing it, above all, due to subjective reasons, related to the knowledge or expertise of other participants (educators) in their kindergarten. *It is above all the subjective theories* that Batistič - Zorec (2004) considers as one of the key questions in every curricular *modernization*. She believes that comprehension, experience and accomplishing the purposes are fundamental to implementing a different kind of approach.

The research results show an important segment of the concept presentation. The implementation of the theoretical grounds of the concept in practice and perseverance after the failure of first attempts proved to be not only an important indicator but also a statistically significant conclusion (Table 4). The performers stated that both, them and the children, had to adopt the concept step by step. Semi-structured interviews showed that the children were faster to adopt the play concept and they »forgave« the mistakes of performers who had difficulties in accepting the priority of learning over teaching and children's participation. With reference to the concept Reggio Emilia, Turnšek, Hodnik - Čadež & Krnel (2009) claim that changes in the viewpoints of teacher are needed so that they could be able to accept the priority of learning over teaching and children's participation. However, they believe further professional training is required to achieve this. Furthermore, our research did not confirm that performers were explicitly aware of the importance of the constant professional training. According to research that stressed the key role of the immediate environment in developing behavioural style of a child (especially preschool teachers, preschool teachers' assistants and parents) and consequently the quality of life of an individual (Makuc, Videmšek & Štihec, 2010; Plomin, Chipuer & Neiderhiser 1994.; Pišot, Kropelj, Završnik, Zorc & Strel 2005; Pišot & Kropelj 2005), and has proved that subjective theories affect the teaching style (Gregorc, et al., 2012), we anticipated there would be a connection between the lifestyle of the performers (especially their relation to physical activity) and their relation to additional professional training. Despite the differences between the groups, the differences were not statistically significant (Table 5).

Implementing the theory into practice is a researcher's fundamental right and obligation. In this study, we aimed to establish if the theoretical concept which is child-based can be disseminated to other kindergartens. In our research, we also found out what kind of problems can arise while implementing such practice. The research confirmed that the process can be implemented in various kindergartens (irrespective of material, content, personnel and organizational factors). The project which is presented only theoretically requires a longer

period of time a lot of patience to be fully adopted, especially in the early phases.

REFERENCES

- Bala, G., Popovič, B., & Jakšič, D. (2009). Trend of changes of general motor ability structure in pre-school children. In M. MikalaĚki (Ed.), *Proceedings Book of 1st International Scientific Conference Exercise and Quality of Life* (pp. 113-118). Novi Sad: Faculty of Sport and Physical Education.
- Batistič-Zorec, M. (2002). *Psihološki vidiki otrokove igre*. [Psychological aspects of children's games. In Slovenian.] Retrieved October 4, 2013, from <http://www.pef.uni-lj.si/~vilic/gradiva/1-rp-t4-igra.doc>
- Batistič-Zorec, M. (2004). Subjektivne teorije vzgojiteljic in kurikularna prenova vrtcev. [Subjective theories of teachers and curriculum renovation of kindergartens. In Slovenian.] *Journal of Contemporary Educational Studies*, 1(2), 90-101.
- Bregant, T. (2010). *Razvoj možganov*. [Brain Development. In Slovenian.] *Proteus*, 73(4), 168-174.
- Burns, T. (2011). *Možgani so mišica, ki jo je treba krepiti*. [The brain is a muscle that needs to be strengthened. In Slovenian.] *Dnevnik*, 9.4.2011, interview. Retrieved October 4, 2013, from <http://www.dnevnik.si/objektiv/intervjuji/1042436769>
- Cotič, M., Zorc, J., & Kozlovič, D. (2004). Celosten pristop pri zgodnjem poučevanju – vloga gibalnih aktivnosti pri pouku matematike. [A holistic approach to teaching early - the role of physical activity in mathematics. In Slovenian.] *Didactica Slovenica*, 19(2), 32– 46.
- Fagot, B. I., & Obrien, M. (1994). Activity level in young-children – cross-age stability, situational influences, correlates with temperament, and the perception of problem behaviours. *JSTOR: Merrill Palmer Quarterly*, 40(3), 378-398.
- Gardner, H. (1993). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basis Books.
- Graziano, W.G., Jensen - Campbell, L. A., & Sullivan - Logan, G. M. (1998). Temperament, activity and expectations for later personality development. *Journal of Personality and Social Psychology*, 74(5), 1266–1277.
- Gregorc, J. & Cemič, A. (2011). Prepletanje zdravega življenjskega sloga in subjektivnih teorij vzgojiteljic in otrok v vrtcu. [Interplay between a healthy lifestyle and subjective theories of teachers and children in kindergarten. In Slovenian.] In Hočevar, A. Kovač - Šerbat, M., Mažgon, J., Štefanc, D., Vidmar, T. (Eds.), *Kakšno znanje hočemo?: vrtec, šola in koncepti znanja v sodobnem času*. [What skills do we want?: Kindergarten, school and the concept of knowledge in the modern era. In Slovenian.] *Proceedings from International Scientific Conference, Žalec, 2011*, (pp. 476-484). Ljubljana: Zveza društev pedagoških delavcev Slovenije.
- Gregorc, J., & Cemič, A. (2013). Svoboda igre in igrivosti v avtonomiji načrtovanja izvedbenega kurikuluma v vrtcu. [Freedom of games and playfulness in the autonomy of planning the curriculum in kindergarten. In Slovenian.] In BREJC, M., WEISSBACHER, P. (Eds.), *Vodenje učenja: zbornik povzetkov*. [Leadership Learning: Book of Abstracts], 46. Kranj: Šola za ravnatelje.
- Gregorc, J., Videmšek, M., Štihec, J., Karpljuk, D., Tušak, M., & Meško M. (2012). The lifestyle of pre-school teachers and their assistants as an element of subjective theories. *SJPH*, 51(2), 95-104.
- Horvat, V. (2011). Latent Structure of Motor Abilities in Pre-School Children. *US-China Education Review A*, (6), 781-790.
- Ismail, A. H. (1976). Integrirani razvoj: teorija i eksperimentalni rezultati. [Integrative development: theory and experimental results. In Croatian.] *Kineziologija*, 6 (1-2), 7-28.
- Makuc, N., Videmšek, M., & Štihec, J. (2010). Enrolling 6-8 year old children in alpine skiing courses in Slovenia. *Acta Univ. Palacki. Olomuc., Gymn.*, 40(1), 15-22.
- Pišot, R. & Zorc, J. (2003). Influence of out-of-school sports/motor activity on school success. *Kinesiologia Slovenica*, 9(1), 42–54.
- Pišot, R., & Kropelj, V. L. (2005). Relations between physical activity, life style and life quality indices of children and youth. In Novotný, J. (Ed.). *Sport a kvalita života: sbornik článků a abstrakt mezinárodní konference konané v Brně: proceedings of articles and abstracts of International conference, 2005, Brno*, (pp. 1-16). Brno: Masarykova univerzita.
- Pišot, R., Kropelj, V. L., Završnik, J., Zorc, J., & Strel, J. (2005). Child's spare time in the context of gender and environment. In Moris, T. (Ed.). *Promoting Health and Performance for Life* (pp. 1-4). Sydney: International Society of Sport Psychology.
- Plomin, R., Chipuer, H. M., & Neiderhiser, J. M. (1994). Behavioral genetic evidence for the importance of nonshared environment. In Hetherington, E. M. Reiss, D. in Plomin, R. (Eds.). *Separate social worlds of siblings: The impact of nonshared environment on development*, (pp. 1-31). Hillsdale, NJ: Erlbaum.
- Planinšec, J. Fošnarič, S., & Pišot, R. (2004). Physical self-concept and physical exercise in children. *Studia Psychologica*, 46(2), 89-95.
- Siegel, D.J., & Payne Bryson, T. (2011). *The Whole-Brain Child: 12 Revolutionary Strategies to Nurture Your Child's Developing Mind*. Mind Your Brain. New York: Random House, NY.
- Thun - Hohenstein, L., Largo, R.H., Molinari, L., Kundu, S., & Duc, G. (1991). Early fine motor and adaptive development in high-risk appropriate for gestational age preterm and healthy term children. *European Journal of Pediatrics*, 150(8), 562-569.
- Turnšek, N., Hodnik - Čadež, T., & Krnel, D. (2009). Projektni pristop kot strategija spodbujanja participacije otrok v učenju in soustvarjanju življenja v vrtcu. [The project approach as a strategy for promoting children's participation in learning and creating a better livelihood in kindergarten. In Slovenian.] In T. Devjak and D. Skubic (Eds.), *Izzivi pedagoškega koncepta Reggio Emilia*. [The challenges of teaching approach Reggio Emilia. In Slovenian.] (pp. 209-233). Ljubljana: Faculty of Education.

- Zaichkowsky, L. D., Zaichkowsky, L. B., & Martinek, T. J. (1980). *Growth and Development: The Child and Physical Activity*. St. Louis, Toronto, London: The C. V. Company.
- Vehovar, M. (2009). *Povezanost strukture telesnih mer z izbranimi gibalnimi sposobnostmi petinpolletnih otrok*. [Physical dimensions of structure with selected impairments, five and a half children. In Slovenian.] (Unpublished master's thesis, University in Ljubljana) Ljubljana: Faculty of Sport.
- Walker, N. R. (1992). The gesell development assessment: Psychometric properties. *Early Childhood Research Quarterly*, 7(1), 21-43.

Correspondence:

Jera Gregorc
University of Ljubljana, Faculty of Education
Kardeljeva ploščad 16, 1000 Ljubljana, Slovenia
E - mail: jera.gregorc@pef.uni-lj.si