



Josip M. Lipeš¹, Sabolč Č. Halaši, Robert L. Pap

**University of Novi Sad, Teacher Training Faculty
in Hungarian Language, Subotica**

**Original scientific
paper**

Paper received: Jul 12 2017
Paper accepted: Feb 15 2018
Article Published: Sep 10 2018

The Significance of Motor Skills Development in Disadvantaged Pupils

Extended summary

Continuation of education has remained the driving societal factor in Serbia up to this day. According to international data, it is a well-known fact that children from sensitive social groups – poor families, uneducated parents – tend to be highly disadvantaged from the onset of their education (Hart–Risley, 1995; Lee–Burkam, 2002). Children living in inadequate conditions and lacking balancing factors can lag behind other children to such extent that not even 12 years of public education can help them catch up with others (Brooks-Gunn, 2003; Rolnick–Grunewald, 2003; Waiting Rarely Works, 2004; Heckman, 2006a, 2006b).

The content of Physical Education as a school subject should drive personality development, since individuals can be interpreted solely as psychosomatic entities, but can also be a functional part of upbringing if both their cognitive and affective domains are developed as well – their character in the first place, which later becomes an agent for creating important rituals. (Rókusfalvi, 1980, 276.)

The goal of the research was to compare and analyse the differences in the level of physical development and motor performance between socially disadvantaged children and other children, as well as to determine, if statistically significant differences were identified, how much the disadvantaged children lagged behind the majority children. Data collection was performed among the sample consisting of the first-graders attending a primary school in Horgoš, who were categorised as disadvantaged by the school psychologist and the pedagogue. The control group consisted of students who were not categorised as disadvantaged, and were selected randomly. The researchers measured the following anthropometric characteristics: height, body mass, skinfold thickness at the upper arm measured by using a caliper, skinfold thickness at the shoulder blade, skinfold thickness at the navel. By assessing the relative content

¹ lepes@tippnet.rs

Copyright © 2018 by the authors, licensee Teacher Education Faculty University of Belgrade, SERBIA.

This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original paper is accurately cited.

of fat tissue (body mass expressed in percentages), as well as looking at nutrition, we calculated the Body Mass Index (BMI) by using the In Body 230 device which determines the composition of the body. We conducted age-appropriate motor tests with the goal of determining the pupils' coordination and stamina. The SPSS 20.0. program was used for data analysis. We applied descriptive statistics with the aim of presenting the anthropometric group indicators. The groups were divided according to social standing, motor competences and ball-handling skills. Using descriptive statistics we were able to calculate the average and standard group deviation according to variables. To determine differences among the groups (socially disadvantaged status and normal skills) we applied a t-test for every variable. In the end, by using factor analysis (Varimax rotation), we isolated five factors whose influence we defined by using regression analysis for areas covered by the maturity test conducted before enrolling a child at school. After the data analysis was complete, significant differences were observed between the group of socially disadvantaged children and the majority of students with regard to their coordination and stamina. In every case, the disadvantaged students had the weaker score, which is especially relevant after taking into account that one's level of coordination and stamina has a direct impact on their ability to learn. The lag in stamina disadvantaged children experience points to their gradually slower development. This ultimately leads to a decrease in their ability to work and successfully keep up with their lessons and schoolwork. By using factor analysis, (Varimax rotation) we were able to determine 5 factors concerning first-grade students which influenced specific areas that were part of our research. This was determined by using regression analysis.

Regression analysis results (for each factor):

	Motor skills, coordination	Skinfold	Anthropometry	Balance	Kyphosis
	Beta				
Writing	0,638	0,001	0,123	0,405	0,143
Listening	0,419	-0,126	0,196	0,431	0,252
Fund of relational words	0,255	-0,264	0,225	0,188	0,232
Counting	0,377	-0,160	-0,019	0,292	0,326
Reading comprehension	0,322	-0,101	-0,111	0,040	0,205
Understanding related thoughts	0,297	-0,159	0,065	0,233	0,098
Socially adapted	0,488	-0,075	0,010	0,316	0,203

Beta-standardised regression coefficient. Link between dependent and independent variables is present at highlighted values (significance level $p < 0,05$).

We identified five separate factors. In this age group, coordination is the most important factor (writing $p=0,638$, listening $p=0,419$, counting $0,377$, social adaptation $p=0,488$). The second and third factors do not have any visible significance in regard to the measurements made by using the DIFER test. As for the fourth factor (balance), writing $p=0,405$ and listening $p=0,431$ are represented by the factor weight. The fifth factor (kyphosis) does not point to any correlation

Disturbances in motor development greatly affect everyday actions and schoolwork. This is why it is important to remember, both in preschool and primary school education, that disturbances during the circular observation process can occur at any point. These disturbances can later result in wrong reactions.

Based on the results of our research we feel it necessary to point out the importance of physical education and appropriate, sufficient movement. We can prove that motor skill development can contribute to the development of children's ability to learn at school and develop social competences. During motor development, we believe it is vital to determine the ways in which these competences and abilities constituting the implicit level of motor skills as early as preschool and early primary school can be effectively developed.

Keywords: motor skills, living conditions, physical development, physical education, learning.

References

- American Federation of Teachers (2004). *Waiting Rarely Works: „Late Bloomers“ Usually Just Wilt*. Washington, DC: American Educator.
- Annett, J. (1995). On knowing how to do things: a theory of motor imagery. *Cognitive Brain Research*. 3 (1996), 65-69.
- Balogh, L. & Tóth, L. (1998). Fejezetek a pedagógiai pszichológia köréből II. *Tanulmánygyűjtemény* (351). Debrecen: KLTE.
- Benő, Cs. (2001). A kognitív képességek szerepe a tudás szervezésében. In: Báthory, Z. & Falus, I. (szerk.). *Tanulmányok a neveléstudomány köréből* (270–293). Budapest: Osiris Kiadó.
- Borkovits, M. (2013). Szocálisan hátrányos helyzetű gyermekek testnevelési teljesítményének vizsgálata. *Iskolakultúra*. 23 (1), 3–9.
- Brooks-Gunn, J. (2003). Do You Believe In Magic? What We Can Expect From Early Childhood Intervention Programs. *Social Policy Report*. 17 (1), 8–11.
- Carroll, W. R. & Bandura, A. (1982). The role of visual monitoring in observational learning of action patterns: making the unobservable observable. *Journal of Motor Behavior*. 14, 153-167.
- Carroll, W. R. & Bandura, A. (1987). Translating cognition into action: The role of visual guidance in observational learning. *Journal of Motor Behavior*. 3, 385-398.
- Central Office of Statistics (2005). *Statisztikai Tájékoztató*. Borsod-Abaúj-Zemplén, Heves, Nógrád, 2005/4. Central Office of Statistics. Retrieved on November, 2006. from: www.ksh.hu.
- Egressy, J. (2005). *Társadalmi esélyegyenlőtlenség a versenysportban az úszás példája* (doctoral dissertation). Budapest: Semmelweis Egyetem, társadalomtudományi Intézet, Testnevelési és Sporttudományi Kar.
- Fitts, P. M. (1964). Perceptual motor skill learning. In: Melton, A. W. (ed.). *Categories of human learning* (244–284). New York: Academic Press.
- Frostig, M. & Horne, D. (1964). *The Frostig Program for the development of Visual Perception*. Chicago: Follett Publishing, Co.

-
- Gardner, H. (1983). *Frames of mind*. Basic Books, A Division of Harper Collins Publishers.
 - Gyarmathy, É. & Telegdi, Á. (1995). *Ceruzaforgató. Segédanyag a tanulási zavarok azonosításához és megelőzéséhez*. Budapest: MTA Pszichológiai Intézete.
 - Hallahan, D. P. & Cruickshank, W. M. (1973). *Psychoeducational foundations of learning disabilities*. Englewood Cliffs, NJ, Prentice Hall.
 - Hart, B. & Risley, T. (1995). *Meaningful Differences in the Everyday Experience of Young American Children*. Baltimore: Brookes.
 - Heckman, J. J. (2006a). *Catch'em Young*. New York: Wall Street Journal.
 - Heckman, J. J. (2006b). *Investing in Disadvantaged Young Children Is An Economically Efficient Policy*. New York: Committee for Economic Development, Pew Charitable Trusts.
 - James, W. (1890). *The principles of psychology 1*. New York: Henry Holt and Company.
 - Józsa, K. (2007). *Az elsajátítási motiváció*. Budapest: Műszaki Kiadó.
 - Keogh, J. & Sugden, D. (1985). *Movement skill development*. New York: McMillan.
 - Kephart, N. C. & Roach, E. G. (1966). *The Purdue Perceptual – Motor Survey*. Columbus, Ohio: Merrill Books Inc.
 - Kertesi, G. & Kézdi, G. (1998). *A cigány néesség Magyarországon (dokumentáció és (adattár)*. Budapest: Sociotypo Könyvkiadó.
 - Király, T. & Szakály, Zs. (2011). *Mozgásfejlődés és a motorikus képességek fejlesztése gyermekkorban*. Budapest: Dialóg Campus Kiadó.
 - Kirk, S. A. & Bateman, B. (1962). Diagnosis and remediation of learning disabilities. *Exceptional Children*. 29, 73–78.
 - Krombholz, H. (1997). Physical performance in relation to age, sex, social class, and sports activities in kindergarten and elementary school. *Perceptual and Motor Skills*. 84, 1168–1170.
 - Krombholz, H. (2003). *Motorische Kompetenzen. Bayerisches Staatsministerium für Arbeit und Sozialordnung, Familie und Frauen & IFP (Hrsg.)*. München: Was Horte Schulkindern zu bieten haben.
 - Lee, V. & Burkam, D. (2002). *Inequality at the Starting Gate. Gate: Social Background Differences in Achievement as Children Begin School*. Washington, DC: Economic Policy Institute.
 - Lipeš, J., Ivanović, J. (2012). Interkulturalno obrazovanje učitelja kao preduvjet uspješnog obrazovanja romske djece. U: Posavec, K. & Sablić, M. (ur.). *Pedagogija i kultura – svezak 3. – Znanstvena monografija – Interkulturalna pedagogija: prema novim razvojinama znanosti o odgoju* (208–221). Zagreb: Hrvatsko pedagoško društvo.
 - Lipeš, J., Halaši, S. & Ivanović, J. (2016). Motor abilities and school readiness at disadvantaged children. *Croatian Journal of Education*. 32–42 (in print).
 - Makszin, I. (1994). Az oktatás és tanulás folyamata. In: Báthori, B. (szerk.). *A testnevelés elmélete és módszertana* (87–127). Budapest: Magyar Testnevelési Egyetem.
 - Malina, R. M. (1980). *Biosocial correlation of motor development during infancy and childhood*. New York: Academic Press.

-
- Marton Dévényi, É., Jordanidis, Á. & Horváth, I. (2007). *Gondolatok a diszlexia végső okairól. Az Alapozó Terápia hatása. Esettanulmányok.* Budapest: Alapozó Terápiák Alapítvány.
 - Mészáros, J., Mészáros, Zs., Zsidegh, M., Prókai, A., Vajda, I., Photiou, A. & Mohácsi, J. (2006a). Nemzedékenkénti növekedési különbségek és utánpótlás-nevelés. *Magyar Sporttudományi Szemle.* 7, 3-6.
 - Mészáros, J., Mohácsi, J., Frenkl, R., Szabó, T. & Szmodis, I. (1986). Age dependency in the development of motor test performance. In: Rutenfranz, J., Mocellin, R. & Klimt, F. (eds.). *Children and Exercise XII Illinois* (347-353). Champaign: Human Kinetics.
 - Mészáros, Zs., Vajda, I., Mészáros, J., Photiou, A. & Zsidegh, M. (2006b). Leányok testösszetétel- és motorikus teljesítményváltozása. *Sportorvosi Szemle.* 47, 62.
 - Mészáros, Zs., Kiss, K., Szmodis, M. B., Zsidegh, M., Mavroudes, M. & Mészáros, J. (2009). Effects of attending elevated level school physical education in 7-to-11-year-old boys. *Acta Physiologica Hungarica.* 96, 349-357.
 - Nagy, G. (1972). A cselekvéstanulás néhány pszichológiai és ezzel összefüggő módszertani problémája. In: Nagy, G. (szerk.). *A testnevelés néhány tantárgypedagógiai problémája* (185-213). Budapest: Országos Pedagógiai Intézet.
 - Nagy, J. (1980). *5-6 éves gyermekeink iskolakészültsége.* Budapest: Akadémiai Kiadó.
 - Nagy, J., Józsa, K., Vidákovich, T. & Fazekasné Fenyvesi, M. (2004b). *Az elemi alapkészségek fejlődése 4-8 éves életkorban.* Szeged: Mozaik Kiadó.
 - Parizsková, J. (1961). Total body fat and skinfold thickness in children. *Metabolism.* 10, 794-807.
 - Photiou, A., Anning, J. H., Mészáros, J., Vajda, I., Mészáros, Zs., Sziva, Á., Prókai, A. & Ng, N. (2008). Lifestyle, Body Composition, and Physical Fitness Changes in Hungarian School Boys (1975-2005). *Research Quarterly for Exercise and Sport.* 79, 168-173.
 - Porkolábné Balogh, K. (1992). *Kudarccal az iskolába.* Budapest: Alex-Typo.
 - Rókusfalvy, P. (1980). *A sporttevékenység regulációs felfogása. A teljesítmény motiváció és a döntés kísérleti vizsgálata a sporttevékenységben.* Budapest: Akadémiai Kiadó.
 - Rolnick, A. & Grunewald, R. (2003). *Early Childhood Development: Economic Development with High Public Return.*
 - Sziva, Á., Mészáros, Zs., Kiss, K., Mavroudes, M., Ng, N. & Mészáros, J. (2009). Longitudinal differences, in running endurance and body mass index – a 25-year comparison. *Acta Physiologica Hungarica.* 96, 359-368.
 - Tatár, A., Zsidegh, M., Mészáros, Zs., Ihász, F., Prókai, A., Vajda, I. & Mészáros, J. (2003). Physique, body composition and motor performance in Hungarian and Roma boys. *Revista Portuguesa de Ciências do Desporto.* 3, 122-124.
 - Vuilemin, A., Boini, S., Bertrais, S., Tessier, S., Oppert, J. M., Hercberg, S., Guilemin, F. & Briancon, S. (2005). Leisure time physical activity and health-related quality of life. *Preventive Medicine.* 41 (2), 562-9.
-