171 - ANALYSIS OF MOTOR DEVELOPMENT IN SCHOOL OF SEVEN YEARS OF AGE: A COMPARATIVE STUDY

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INTRODUCTION

Children need to move as a natural tendency to playing, and so they develop some motor skills. However, fundamental motor skills that are considered essential to the development of activities of movement from the perspective of active and healthy life, do not emerge naturally in childhood, they are the result of several factors in constant interaction, influence the development of motor child, including the context of education (GABARDO, 2000, NEWELL, 1984).

To promote itself successfully, ie to obtain effective participation in the expertise of specialized motor activities of dance and / or sports that contribute to a better quality of life, the child must learn certain level of competence in fundamental motor skills (VALENTINI, 2002).

More recent studies found the investigative interest in order to develop students in a variety of fundamental motor skills, as well as understand the influence of the context of standards development of more advanced skills (SOUTHARD, 2002, Hamilton, 2002).

The results of Brazilian research point to a basic development in different fundamental motor skills. For example, some studies with the fundamental pattern of the race (FERRAZ, 1992 and PELEGRINI E Catuzzi, 1998) show incremental stages of development in children that are very different (between 5 and 14 years). Mendes and Gobbi (1991) show few positive changes in the abilities of children receiving between 5 and 8 years after a period of time.

Zoppi and Ferraz (2004) investigated a systematic teaching of a program of physical education in early childhood education units of content: basic ability to throw, jump and balance, knowledge of body parts and, notions of physical education. Found in their study indicated the suitability of the goals of the program analyzed because this provided a basis for driving the children to engage in the future with success in physical activity.

Surdi and Krebs (1999), investigating six fundamental motor skills (walking on the beam, running, horizontal jumping, throwing, kicking and bouncing) found results mostly in the elementary level for students from 6 years of age, suggested by authors the lack of opportunities for diverse practices and the lack of education as factors in the performance of the children surveyed.

According to Ferreira (2000) movements learned during childhood characterize the basis for learning later. Motor skills that children acquire at an early stage are refined in adulthood.

Valentini (2002) discusses in her research that children and youths who engage frequently and vigorously in physical activity during the school years do not incorporate the practice of those in their adult lives.

Possible gender differences in the development of fundamental motor skills also are present in several studies. In general, these studies show that is typical for the boys show better motor development skills in object control.

Therefore, knowing the level of motor development of children is fundamental to the construction of motor programs that meet the needs of a variety of groups, allowing the development of more effective practices that lead children to construct patterns of movement and most advanced to ensure participation in activities of movement throughout life.

From this perspective, to diagnose psychomotor disturbance is being conducted this study to evaluate, by means of specific tests of a program, basic skills in children's first years of elementary school.

There is some hypotheses for this research: (1) girls and boys show similar performance in the skills of locomotion (running, galloping, jumping on the same foot, jump with both feet, jump up and race 1 side), (2) Boys demonstrate significant superiority in the skills of control objects (bounce, bounce, receiving, kick, throw and throw), (3) children of both schools have similar performance engines.

METHODOLOGY

The sample was composed of children of both sexes, aged 7 years enrolled in two different schools (schools A and B) the network of municipal education located in the city of Manaus.

We evaluated 62 children from school A, with 37 girls and 25 boys and 63 children from school B, 34 girls and 29 boys. The research approved by the CEP (Committee for Research Ethics) protocol 178/09 had the consent of school administrators and parents for each child's participation in this study. An interview was conducted with the direction in order to choose the class to be searched, because we can undertake this study to choose a class where the teacher is responsible for addressing problems with the room.

The process of sample selection was followed, initially, the following inclusion criteria: be regularly enrolled in school, have six years of age on average, be making use of medication acting on the central nervous system, absence of neurological and / or orthopedic disorders and has no visual, auditory, labyrinthine and / or mental. Subsequently, we conducted a lottery to select the children who participated in the evaluation.

All selected children were tested using the TGMD (Test of Gross Motor Development, Ulrich, 1985) which assesses competency in motor skills of every participant in this study. The TGMD is a test used to assess motor performance and includes 12 items of which 7 are locomotor skills (running, galloping, jumping on the same foot, jump with both feet, jump with 1 walk and run side) and 5 are skills control object (bounce, bounce, receiving, kick, throw and throw).

The TGMD test is a multiple that gets information about the capacity in the skills of locomotion and object control individuals. This test allows a separate evaluation of each subscale (locomotor and object control). However, the test does not allow the separate assessment of each motor skills as they are integrated into the statistical model that evaluates the test. The application of the test takes about 20 minutes per child. The application protocol suggests using a video camera to record and later analysis of motor performance. The analysis of video tape takes about 30 minutes per child. The scores reported in the test include the raw data for each of the two subscale TGMD (ability to control movement and object).

Whereas the raw data, the lowest score for each subscale is zero and the highest is 48 points maximum. The raw data are obtained through the sum of the scores received by the individual in the performance of each motor skill, considering how the movement performed by the individual in each trial. We call this data in raw score, and through them we get the motor age equivalent, in which we are able to compare the chronological age, category and quality of motor performance, which are provided

by the author of the test TGMD (Ulrich, 1985) as very poor, poor, below average, average, above average, higher and much more.

The data were presented by descriptive analysis and measures of central tendency (mean) and dispersion (standard deviation), suffering a first test of normality Shapiro-Wilking. The data showed a normal distribution we used Student's T test for independent samples to compare the groups, and those with a non-normal distribution test Krumam Wallis. All tests were performed in the computer software SPSS 14.0 for Windows, with the significance level of $p < 0.05$ for comparison between groups.

RESULTS

LOCOMOTION ABILITY

The results show (Table 1) that boys and girls from two schools have motor age (obtained from the raw score) of less than chronological age, that is seven years.

Girls and boys of the school obtained the raw score 34.52 and 33.69 respectively, this result indicates age of 5.6 motor and motor performance rated below average. We did not see significant difference ($p = 0.633$). The subjects of the school B found no differences, the motor age was 5.0 for girls and 5.6 for boys. The performance was poor and below average. However, we found a difference ($p = 0.04$), boys are older than the motor of the girls (Table 1).

When we compared the motor skills of movement of females from both schools there was a significant difference ($P = 0.003$). The girls of school age showed the motor (A = 5.6, B = 5.0) and superior engine performance when compared to school B. For the males the results showed no difference for these skills ($P = 0.609$). Children from both schools showed motor age (A and B = 5.6) and similar performance (Table 1).

ABILITY TO CONTROL OBJECTS

For movement of motor skill control of objects the subjects of both schools does not achieve satisfactory results, because they were classified as motor age below chronological age (seven years) (Table 1).

Girls and boys of school age had the motor of 5.3 and 4.9 and motor performance below average and poor, respectively. Comparing these results found no difference ($p = 0.854$). For school B the results of the motor age was 4.3 for girls and 4.9 for boys. There were differences ($p = 0.00$), the boys show better results (Table 1).

When comparing the female school was no difference ($p = 0.014$). The school girls show the best results. For men we found no difference ($p = 0.310$). The boys from both schools show similar results (table 1).

Table 1 PERCTION BETWEEN PERFORMANCE MOTOR GROUP RESULTS

GROUPS	SCORE GROSS/AGE MOTOR		MOTOR CATEGORY DESCRIPYIONS	
SCHOOL/ GENDER	LOCOMOTION A/DP	CONTROL OBJECTS A/DP	LOCOMOTION	CONTROL OBJECTS
A/F	34,52±5,58	26,72±5,49	Below average	Below average
B/F	31,16±4,73	22,24±5,25	Poor	Poor
A/M	33,69±6,97	28,65±6,36	Below average	Poor
B/M	34,84±5,22	28,84±4,40	Below average	Poor

Note: Seven categories of motor performance are provided by the author of the test TGMD (Ulrich, 1985) structured from the raw data: Very Poor, Poor, Below Average, Average, Above Average, High and Very High.

DISCUSSION

This study was conducted to investigate the level of motor development in children diagnosed psychomotor disturbance. To further the discussion we compare the results of boys and girls of the same school and the genres of both schools.

The ages of the children studied are 7 years old, according to the Model Two-Dimensional Phases of Motor Development of Osmun and Gallahue (2005), children in this age group should be in the mature stage of fundamental motor skills. At this stage the skills of movement, handling and stabilizer should already be fully developed to stimulate motor skills specialist. Therefore, the results of the skills of movement and control objects of study subjects should be presented with a minimum driving age of 7 years and the category average motor.

However, the results suggest a performance engine below average and poor for all subjects analyzed. Most motor age obtained was 5.6 (five years and six months) for the subjects of the school for the locomotor skills. So, boys and girls from both schools are with delayed motor development.

Valentini (2002) also obtained similar results to the above discussed when examining the fundamental motor skills of movement and control objects children of various age groups. The subjects of seven years of age examined in his research showed delays engines.

In assessing the effect of a physical education program of ten weeks with an emphasis in dance to develop fundamental motor skills and expertise, Souza et al (2008) found that most of the children's group (7 to 8 years old) showed poor motor performance and very poor in the pre-tests, however, the post-test was advancing engine, because these guys showed, for the most part, motor performance average and below average.

Gallahue and Osmun (2005) argue that child to achieve the mature pattern of motor development of fundamental motor skills activities, instructions are essential. The recreational activities such as play games and contribute to its development, but without the instruction of the movement patterns of the development of basic skills is unlikely to be conducted with as much certainty and accuracy.

Children from both schools need to experience in their daily practice activities that give them an understanding of the motor patterns of the skills of manipulation, stabilization and transportation to obtain age appropriate motor to your chronological age.

Still Valentini (2002) showed no difference in their research skills to significant mobility between genders, this was only the motor skills to control objects, girls performed better. Other studies confirm this trend (Urich, 1987; GOODWAY, 1997).

In relation to motor skills of locomotion did the same when comparing the subjects of the school, however, we found gender differences in school B. Girls from school B obtained the worst results for these skills compared to boys of the same school. These results confirm in part our hypothesis that we would not find significant difference between genders in the same school. However, we believe that the girls from school B have very strong motor delay.

For motor skills control objects, we observed similar results only for school B, which confirms our hypothesis. The results of the school did not confirm our hypothesis, we believe that school girls have performed better than found in current research.

Children from two schools participate in physical education classes twice a week, therefore not expected to find

differences when comparing their results. But we found when comparing the female gender. The girls from school B showed inferior results for all the motor abilities examined.

Although the maturational factors exercise direct influence in the sequential order of motor development, (TANI et. AL, 1988) the degree and speed with which it progresses in this sequence are influenced mainly by teaching activity during physical education classes, taught and stimuli.

A systematic teaching of a program of physical education in early childhood education units of content: basic ability to throw, jump and balance, knowledge of body parts and concepts of physical education have been investigated by Zoppi and Ferraz (2004). They found in their study indicated the suitability of the goals of the program analyzed because this provided a basis for driving the children to engage in the future with success in physical activity.

We must analyze the planning of physical education classes taught by teachers of the schools studied to ensure that they are planned and conducted with the objectives of providing for the needs of these students motor.

CONCLUSION

Among the objectives of physical education classes in kindergarten is to give children contact with a wide variety of experiences of movement.

The physical education curriculum in this series involves the structuring of a learning environment that assists the children to incorporate the dynamics of problem solving, as well as the motivation for the discovery of the cultural manifestations of the movement, also building opportunities for development in the performance of fundamental motor skills that enrich their quality of life (FERRAZ, 1992).

However, among other things, that physical education should do is to link theoretical and practical knowledge to provide students with information it needs to ensure autonomy in the future can manage its own motor activity in health objectives, to adequately address their needs and desires in the movements of everyday life and meet their aspirations related leisure culture movement (FERRAZ, 1996).

Matriz de Oliveira (1991) to explore the child's motor skills during childhood generate necessary changes in their psychomotor development which will affect the adult, otherwise you can create a shortage in the motor domain by the lack of content and principles laid down in the physical education.

However, for this purpose to take place is important that the lessons are well planned and executed. It is for the educator role and the coach teaching the school monitor, ensuring the development and learning fundamental skills.

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ANALYSIS OF MOTOR DEVELOPMENT IN SCHOOL OF SEVEN YEARS OF AGE: A COMPARATIVE STUDY

ABSTRACT

The aim of this study was to diagnose changes psychomotor children of both sexes, aged 7 years enrolled in two different schools of the network of municipal education located in the city of Manaus. We evaluated 62 children from school A, with 37 girls

and 25 boys and 63 from school B, 34 girls and 29 boys. All subjects were assessed by TGMD (Test of Gross Motor Development, Ulrich, 1985) which assesses the motor performance of motor skills of locomotion and object control. The data were presented by descriptive analysis, mean and standard deviation. The data showed a normal distribution we used Student's T test for independent samples to compare genders, for non-normal distribution the Krumam Wallis test, significance level p <0.05. The results suggest that: (1) boys and girls of both schools are older motor than chronological age, which is seven years for all skills assessed, (2) To skills locomotion girls and boys from the school did not detect the difference significant, since the school was no difference B, boys are older than the motor of the girls, (3) For the management skills of objects girls and boys from the school showed similar results, with no difference. The school B showed a difference, boys achieved better results, (4) When comparing schools was no difference for females, the results of the girls are lower than B for the skills assessed. The boys showed similar results. Among the objectives of physical education classes is to give children contact with a wide variety of experiences of movement. For this to happen we need the lessons are well planned and executed, thus ensuring the development and learning fundamental skills.

WORD - KEY: fundamental motor skills, Gender, Performance engine.

ANALYSE DE MOTEUR DE DÉVELOPPEMENT À L'ÉCOLE DE SEPT ANS D'AGE: A COMPARATIVE STUDY

RÉSUMÉ

L'objectif de cette étude est de diagnostiquer les enfants changements psychomoteurs des deux sexes, âgés de 7 ans inscrits dans deux écoles différentes parties du réseau de l'enseignement municipal situé dans la ville de Manaus. Nous avons évalué 62 enfants d'une école, avec 37 filles et 25 garçons et 63 B de l'école, 34 filles et 29 garçons. Tous les sujets ont été évalués par TGMD (Test of Gross Motor Development, Ulrich, 1985), qui évalue les performances du moteur de la motricité de locomotion et de contrôle d'objet. Les données ont été présentées par l'analyse descriptive, la moyenne et écart-type. Les données ont montré une distribution normale, nous avons utilisé le test de Student pour échantillons indépendants pour comparer les sexes, par la non-distribution normale du test KRŪMANE Wallis, niveau de signification p <0,05. Les résultats suggèrent que le moteur: (1) les garçons et les filles des deux écoles sont plus âgés que l'âge chronologique, qui est de sept ans pour toutes les compétences évaluées, (2) Pour les filles les compétences de locomotion et les garçons de l'école ne détecte pas la différence importante, puisque l'école avait pas de différence B, les garçons sont plus anciens que le moteur des filles, (3) Pour les compétences en gestion des objets filles et les garçons de l'école a montré des résultats similaires, sans différence. L'école B a montré une différence, les garçons obtenaient de meilleurs résultats, (4) Lorsque l'on compare les écoles avait pas de différence pour les femmes, les résultats des filles sont inférieurs à B pour les compétences évaluées. Les garçons ont montré des résultats similaires. Parmi les objectifs du cours d'éducation physique est de donner aux enfants un contact avec un large éventail d'expériences de mouvement. Pour cela nous avons besoin des leçons sont bien planifiées et exécutées, assurant ainsi le développement et l'apprentissage des compétences fondamentales.

MOTS CLÉS: les habiletés motrices fondamentales, entre les sexes, les performances du moteur.

ANÁLISIS DE MOTOR DE DESARROLLO EN LA ESCUELA DE SIETE AÑOS DE EDAD: UN ESTUDIO COMPARATIVO DE

RESUMEN

El objetivo de este estudio fue diagnosticar cambios psicomotor de los niños de ambos sexos, de 7 años inscritos en dos diferentes escuelas de la red de la educación municipal ubicado en la ciudad de Manaus. Se evaluaron 62 niños de una escuela, con 37 niñas y 25 niños y 63 de la escuela B, 34 niñas y 29 niños. Todos los sujetos fueron evaluados por TGMD (Test of Gross Motor de Desarrollo, Ulrich, 1985), que evalúa el rendimiento del motor de las habilidades motoras de locomoción y control de objetos. Los datos fueron presentados por el análisis descriptivo, media y desviación estándar. Los datos mostraron una distribución normal, se utilizó la prueba t de Student para muestras independientes para comparar los sexos, por la no distribución normal de la prueba de KRŪMANE Wallis, nivel de significación de p <0,05. Los resultados sugieren que el motor: (1) niños y niñas de ambas escuelas son mayores de edad cronológica, que es de siete años para todas las competencias evaluadas, (2) Para las habilidades de locomoción niñas y niños de la escuela no detectar la diferencia significativo, ya que la escuela había ninguna diferencia B, los chicos son mayores que el motor de las chicas, (3) Para la capacidad de gestión de objetos de los niños y niñas de la escuela mostraron resultados similares, sin diferencias. La escuela B mostró una diferencia, los niños obtuvieron mejores resultados, (4) Cuando se comparan las escuelas hubo ninguna diferencia para las mujeres, los resultados de las niñas son inferiores a B para las competencias evaluadas. Los muchachos mostraron resultados similares. Entre los objetivos de las clases de educación física es dar a los niños el contacto con una amplia variedad de experiencias de movimiento. Para que esto suceda tenemos que las lecciones están bien planificadas y ejecutadas, garantizando así el desarrollo y el aprendizaje de habilidades fundamentales.

PALABRA CLAVE: las habilidades motoras fundamentales, de género, el motor de rendimiento.

ANÁLISE DO DESENVOLVIMENTO MOTOR EM ESCOLARES DE SETE ANOS DE IDADE: ESTUDO COMPARATIVO

RESUMO

O objetivo desse estudo foi o de diagnosticar alterações psicomotora de crianças de ambos os sexos, com idades de 7 anos matriculados em duas escolas diferentes da rede de Municipal de ensino situadas na cidade de Manaus. Foram avaliadas 62 crianças da escola A, sendo 37 meninas e 25 meninos e 63 da escola B, 34 meninas e 29 meninos. Todas os sujeitos foram avaliados através do TGMD (Teste of Gross Motor Development, ULRICH, 1985) o qual avalia o desempenho motor de habilidades motoras de locomoção e controle de objeto. Os dados foram apresentados através da análise descritiva, média e desvio padrão. Os dados que apresentaram uma distribuição normal foi utilizado o teste T-student para amostras independentes para comparar os gêneros, para os de distribuição não normal o teste de Kruman Wallis, nível de significância p<0,05. Os resultados sugerem que: (1) meninos e meninas das duas escolas possuem idade motora inferior a idade cronológica, ou seja, sete anos para todas as habilidades avaliadas; (2) Para as habilidades de locomoção meninas e meninos da escola A não evidenciamos diferença significativa, já os da escola B verificamos diferença, meninos possuem idade motora superior aos das meninas; (3) Para as habilidades de controle de objetos meninas e meninos da escola A evidenciaram resultados semelhantes, sem diferença. Os da escola B evidenciaram diferença, os meninos obtiveram resultados superiores; (4) Quando comparamos as escolas verificamos diferença para o gênero feminino, os resultados das meninas da escola B são inferiores para as habilidades analisadas. Os meninos evidenciaram resultados semelhantes. Dentre os objetivos das aulas de Educação Física está o de proporcionar às crianças o contato com uma grande variedade de experiências de movimentos. Para que isso ocorra é preciso que as aulas sejam bem planejadas e executadas, garantindo assim o desenvolvimento e aprendizagem das habilidades fundamentais.

PALAVRA – CHAVE: Habilidades motoras fundamentais, Gênero, Desempenho motor.

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