# 83 - MOTOR PROFILE OF STUDENTS IN THE PRIVATE SCHOOL SYSTEM OF MACAPÁ

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## INTRODUCTION

The changes in the last decades have significantly transformed life of people who live in the Brazilian cities. The physical natural space has been taken by great buildings, depriving children from appropriate places for physical, social and ludic activities. Bergmann (2005) states that the scientific and technological advancements produced significant and undiscussable improvements in life quality of society. Nevertheless, they also produced a decrease in the involvement of citizens on physical activities, reflecting negatively on the levels of health.

Due to the these changes, the human being needs to be adapted to this new reality, interacting with the environment in constant change, modifying his way of living. Ferreira Neto (1999) says that the sedentary life and deprivation of movement experiences and ludic adventures due to the economy of space, require the needs for attention on the biological conditions of the body and validation of education through motricity. Leite (2002) states that the study of motor development opens a window for investigation on the motor behavior and development of individuals in different times of their life, with special concentration on their childhood.

The motor development in childhood is characterized by the acquisition of a variety of significant motor abilities, which facilitate to the children to dominate his body in different situations. Tani (2000), concluded that the acquisition of motor abilities is a cyclic and dynamic process which results in increasing complexity. Barela (1999) declares that the motor repertoire goes through a great change in life. Since intra uterine life, we make movements that form structures producing a better relationship and communication, printing our presence on the world.

These changes happen usually in an order, expressing a progressive sequence of difficulty on the simple movements and not organized for the execution of complex and elaborated movements. Through this sequence, there is the formalization of motor activity which allows the manipulation and the exploration; it is the opening for the world of objects. The child at first is able to act on the object and without it later.

According to Lopes et al (2003), the study of motor development has great importance in several scientific disciplines like the motor learning, the motor control and the motor development itself. Valentini (2002) states that knowing the levels of children's motor development is fundamental for the structures of motor programs which facilitate the design of more effective practices that lead the children to the construction of more advanced movement standards and guarantee the participation in activities of movement all over his life. Souza (2007) says that the child is born with potential skills and needs ideal conditions for convenient development.

Observing the importance of appropriate stimulation in this period of life, the Motor Development Scale (MDS) was used, proposed by Francisco Rosa Neto (2002) to investigate the motor profile of students between 7 and 8 years of age who participate in physical activities in public schools of Amapá.

## MATERIAL AND METHODS

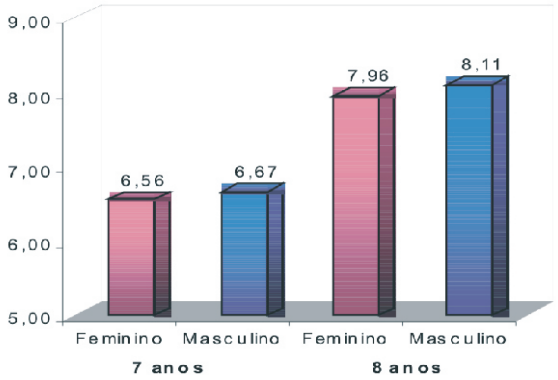
The sample was represented by 162 students, between 7 and 8 years of age, from public schools in Macapá, with 81 boys and 81 girls. Macapá was divided into north and south. In the north, 62 students were evaluated, 28 boys and 34 girls, and in the south 100 students were evaluated, 53 boys and 47 girls. The study was approved by the National Committee of Ethics on Research (Resolution 196/96), number 0118/2008.

To check the motor development of the students, the Motor Development Scale was used, of Francisco Rosa Neto (2002), and the basic elements of motricity were evaluated as follows: fine motricity, global motricity, balance, body scheme, space organization, time organization and laterality. This scale comprises a set of diversified and graduate difficulty tests leading to a careful exploration of the different motricity elements.

The general motor quotient was calculated with the data of chronological age and general motor age, classifying the students in a scale which varies from very low up to very high.

The data were analyzed with the help of the statistics softwares Excel 2003 and Stata 9.0. The nominal variables of Laterality and Motor Development Scale were transformed into interval scale. At first, a descriptive analysis was made as a way to identify the motor profile of the students. Additionally, the motor development as a function of gender and age was compared with the help of t-test of Student. The results, originally in months, were transformed into years.

RESULTSGraphics 1 – Fine Motricity of students at private schools in Macapá considering age and gender.



Graphics 2 – Global Motricity of students at private schools in Macapá considering age and gender

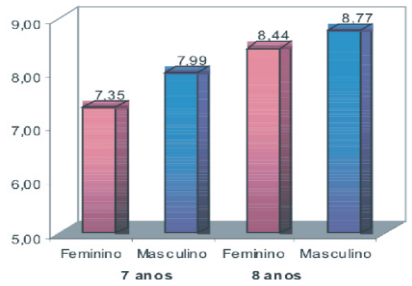
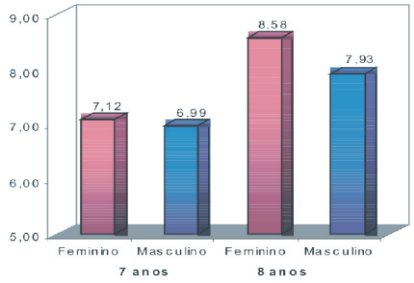
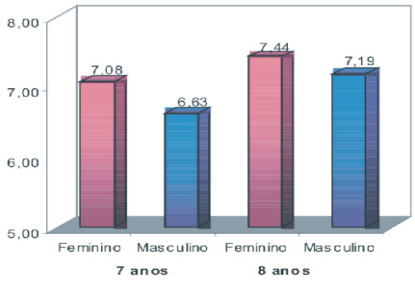


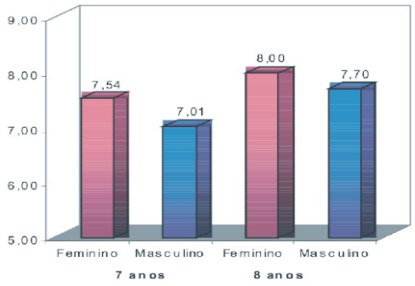

Gráfico 3 – Balance of students of students at private schools in Macapá considering age and gender.



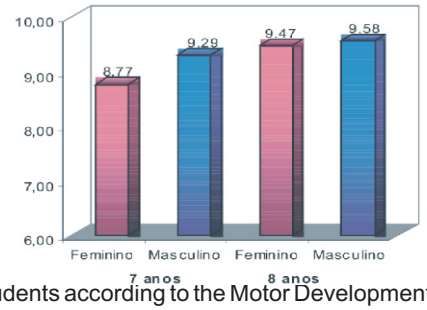

Graphics 4 – Body Scheme of students at private schools in Macapá considering age and gender.



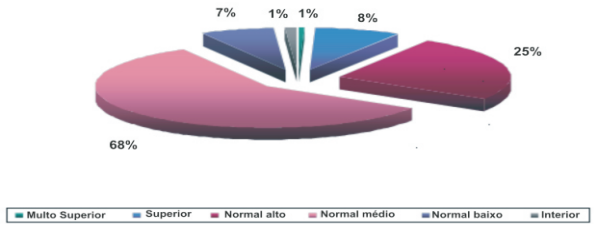

Graphics 5 – Space Organization of students at private schools in Macapá considering age and gender.




Graphics 6 – Time Organization of students at private schools in Macapá considering age and gender.




Graphics 7- Classification of Students according to the Motor Development Scale



Graphics 8 – Result of Laterality test considering age and gender

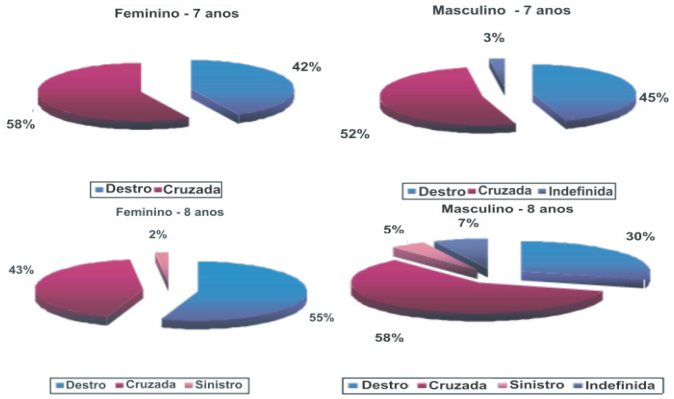



TABLE 1 – Comparison between chronological age and general motor age of students between 7 and 8 at private schools in Macapá

| Escolares | Média - IC | Média – IMG | Teste t | Significância |
|---|---|---|---|---|
| Feminino – 7 anos | 7,08 | 7,45 | -2,98 | 0,00* |
| Feminino – 8 anos | 7,90 | 8,32 | -1,88 | 0,03* |
| Masculino – 7 anos | 7,15 | 7,43 | -3,57 | 0,00* |
| Masculino – 8 anos | 8,01 | 8,18 | -1,48 | 0,07** |

Note: (*) Statistically significant at level 5%. (**)Statistically significant at level 10%.

**DISCUSSION AND CONCLUSION**

As it can be seen on the results, with the increase of CA, there is also an increase in the quality of execution of motor actions, confirming the results found in the research of Silveira (2005) that, using the MDS of Rosa Neto (2002), suggests that with the increase of the CA, the children are able to do the same motor task with more ability. Caetano, Silveira and Gobbi (2005) also confirm with results of studies that in the first years of childhood, there are many changes in the motor development every year.

We observed that among the students researched, the highest average was found in the Time Organization variable and the lowest was found in the Fine Motricity variable, going against the result presented by Sabbag (2008) who found among students of 10 and 15 years of age, at the public school system, the Time Organization variable as the lowest and the Body Scheme variable as the highest. But in studies made by Crippa et al (2003), between students of 4 and 5 years of age, the variables Fine Motricity and Body Scheme presented the lowest results.

The results of Fine Motricity test presented in Graphics 1 show an increase in the motor development related to the increase of age, and this is in agreement with the studies of Rosa Neto (2002).

Graphics 2, representing global motricity, shows male superiority in both age groups. We can also see in the same gender an increase in the average values followed by an increase in age. So, these results confirm the results of Silveira et al (2005), in studies made with children of 2 and 6 years of age.

With the Balance variable, presented in Graphics 3, we can see a superiority of females in both age groups, and this was also seen in studies made by Rodrigues (2000) with students of 5 and 6 years of age. As to the comparisons made between the two age groups, the results confirm that the older children present a higher performance than the younger one, proving that with the increase of age, the child shows more qualified motor skills.

Graphics 4 shows the results of Body Scheme variable, in which the firls also demonstrate a superior performance compared to the boys in both age groups. Nevertheless, it can also be seen that in this variable we found the lowest average among boys and girls of 8 and among the boys of 7.

In the tests of Space Organization, represented in Graphics 5, we observed that the results obtained by the girls were higher than the boys in both age groups. In studies made by Rosa (2002), with students of 7 and 8, in Spain, it was found the prevalence of the lowest average in this variable.

In Time Organization variable, Graphics 6 shows better results, opposed to the ones presented by students of 7 and 8, in research made by Rosa Neto (2002), that in this variable presented the worst results. Ferreira (2007), studying students between 7 and 10 with difficulty to learn, revealed the classification Low Normal in this variable, suggesting that the item concentration is very important for the learning of students.

According to Rodrigues (2000), we know that the motor possibilities of the child increase widely with their age and become more varied and complex as long as they grow up. We can see in Graphics 7 that the results of this research are similar to the ones studied by Neto (2002) in which the average of students of 7 and 8 were classified according to the Motor Development Scale as normal average.

Contrary to the results of this research, the results found in the studies made by Lopes (2003), among students of 6 to 10, in which he found the results of average values tend to increase with age, and in both genders the generalized tendency of children show this profile of motor coordination lower than their CA.

Crippa et al (2003), also in studies made with students of 4 and 5, found considerable delay in the variables Fine Motricity and Body Scheme when related to chronological age of the students.

As to the tests of laterality, seen in Graphics 8, we saw that in both age groups studied, most of the students presented crossed laterality, followed by right skills, indefinite and last, casual laterality, confirming results contrary to the statement of Gallahue e Ozmun (2005), that in this age group: "the manual preference is firmly established, with about 85% of children who prefer right hand and 15% prefer left hand".

The result of this research didn't confirm the research made by Rosa Naeto (2002) in which 77% of the students of 7 and 8 presented complete right hand laterality, 18% presented crossed laterality and 6% indefinite. In the results presented by Crippa et al (2003), in students with 4 and 5, the indefinite laterality was the most present. And among students of 5 and 6 studied by Rodrigues (2000), the results of tests of laterality indicated a high level of crossed dominance.

Table 1 presents the averages of chronological and general motor ages and the results of t-test for dependent samples confirm the rejection of hypothesis H0 and leads us to conclude that, at levels of usual significance, the general motor age is superior to the chronological age for all the categories of age and gender of students studied. With this criterion, there is an indication that the students studied are found within the normal parameters of motor development according to the protocol of Rosa Neto (2002).

The students researched indicated they are enjoying the group of physical activities proposed by the schools, and this leads us to conclude that probably these activities are important instruments that help in the development of motor skills. The instrument used allowed a verification of the relationship between the motor age and the chronological age, scoring that the motor development of the students in this stage of their lives is happening.

By analyzing the results obtained in the tests of basic elements of motricity, we can see a balance between the genders, that is, the boys presented superior results, in others the girls went over the boys. By relating the Chronological Age with the variables researched, we could see that the female students of both age groups showed results higher than the boys'.

Despite the positive results, we verified a variation in the results of the tests, some approaching the minimum parameters suggested by the protocol used and other going beyond those parameters, leading us to conclude that the components of motricity present different rhythms of development and suggesting that these changes can be influenced by different experiences which the child have.

We can see that the students presented better results in the tests of variables that required more concentration and less waste of energy and the worst results in the variables that required more motor actions. This result is probably justified by the fact that these students spend most of their time at home or apartment, in front of videos.

So, we can conclude that it is important for the child to have access to activities focused for their satisfactory motor development. It is essential that both in the school environment and in the family there is a concern to provide the necessary structures for he stimulus and practice of control of fundamental abilities of movement.

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**MOTOR PROFILE OF STUDENTS IN THE PRIVATE SCHOOL SYSTEM OF MACAPÁ**

**ABSTRACT**

The present studying had as an objective draw the motor profile of students from seven to eight years old, coming from the private teaching net in Macapá city. Made part of the sample 162 pupils, being 81 males and 81 females. The instrument used to collect the datas was the motor development scale (MDS), proposed by Francisco Rosa Neto (2002), that permit the verification of the motor age, having this like an indicative of the motor development where the children belongs to. After the realization of the tests we observed that the majority of the students were classified as medium normal (58%). The elements evaluated: the thin motriciy, the global motricity, the equilibrium, the corpore scheme, the space organization and the tempo organization demonstrated that the students are into of the normal parameters indicated by the protocol, suggesting the difference in some variable by sex. It was taken the student T test, to reassure these differences and the results reassured that the general motor age is superior to the chronological age for all the categories of age and sex analyzed. Among of the students of seven years old it was confirmed a difference statistically significant between boys and girls in global motricity and corporeo scheme, while among the students of eight years old the difference was reassured at the equilibrium variable. The investigation

supplied us a general view of the motor profile of the researched pupils, and even so the knowledge about the evolutive stagium of a child. We hope that the results of this research can contribute for the improvement of planning and pedagogic actions of professionals that deal with children and also can promote knowledge supplying subside for new studying.

**KEY WORDS:** Motor Development. Motor Activities. Motor Tests.

**ÉCOLE DE RESEAU D'ÉDUCATION SPÉCIALE MOTRICE DE LA VILLE DE MÁCAPÁ.**

**RÉSUMÉ:**

Cette étude visait à évaluée le profil moteur des écoliers âgés de 7 et 8 ans, des écoles de l'enseignement privé de la ville de Macapá. L'échantillon se composait de 162 étudiants parmis 81 hommes et 81 femmes. La méthode utilisée pour recueillir ces données a été le moteur du développement Scale (EDM), proposé par Francisco Rosa Neto (2002), qui permet la vérification de l'âge moteur, ce qui est révélateur pour l'état de développement dans lequel se trouve l'enfant . Après les essais, nous avons observé que la plupart des étudiants ont été classée avec une moyenne normale de (58%). Les évalués varient em une Fine Motion Global , un Equilibre, um shéma corporel de l'Organisation Spatiale et Tempoelle ont signalé que les étudiants étaient dans le paramètre normal indiqué par le protocole, ce qui suggère une différence de certaines variances selon le sexe. Nous avons effectué le test t de Student pour démontrer ces différences et les résultats ont prouvé que l'âge moteur général est supérieur à l'âge chronologique pour toutes les catégories d'âge et de l'analyse de genre. Parmi les élèves de 7 ans Il a été révélé une différence statistiquement significative entre les garçons et les filles dans la motion du schéma global et le corps, tandis que ceux de 8 ans La différence âge a été vu em um varible équilibre. La recherche a donné un aperçu du profil moteur des écoles étudiées, ainsi que la connaissance des stades d'évolution de l'enfant. Il est prévu que les résultats de cette recherche contribuera à l'amélioration de la planification et les actions des professionnels qui s'occupent des enfants et aussi offrir dês subventions à de nouvelles études.

**MOTS CLÉ :** Développement Moteur. Activités Motrices. Tests Moteurs.

**PERFIL MOTOR DE LOS ALUMNOS DE LA RED PARTICULAR DE ENSEÑO DE LA CIUDAD DE MACAPÁ**

**RESUMEN**

El presente estudio tuvo como objetivo investigar el perfil motor de los alumnos de 7 a 8 años, de las escuelas de la red particular de enseño de la ciudad de Macapá.Hicieron parte de la muestra 162 alumnos, de los cuales 81 del sexo masculino y 81 del sexo femenino. El instrumento utilizado en la colecta de datos fue la Escala de Desarrollo Motor (EDM), propuesta por Francisco Rosa Neto (2002), que permite la verificación de la edad motora, siendo esta un indicativo de la practica de desarrollo motor en la cual los niños se encuentran. Después de la realización de las pruebas observamos que la mayoría de los alumnos fueron clasificados como Normal Medio (58%). Las variables evaluadas: Motricidad Fina, Motricidad Global, Equilibrio, Esquema Corporal, Organización Espacial y Organización Temporal señalaron que los alumnos se encuentran dentro de los parámetros normales indicados por el protocolo, sugiriendo diferencia en algunas variables por sexo. Fue realizada la prueba t de Alumno para comprobar esas diferencias y los resultados comprobaron que la edad Motora General es superior a la edad Cronológica para todas las categorías de edad y sexo analisadas. Entre los alumnos de 7 años fue comprobado una diferencia estadísticamente significativa entre niños y niñas en Motricidad Global y Esquema Corporal, mientras tanto que a los 8 años la diferencia fue comprobada en la variable equilibrio. La investigación nos proporcionó una visión general del perfil motor de los alumnos investigados , así como los conocimientos sobre las practicas evolutivas de los niños. Se espera que los resultados de esta pesquisa contribuyan para una mejor planificación y acciones de los profesionales que tratan con niños y que también proporcionan subsidios para nuevos estudios.

**PALABRAS LLAVE:** Desarrollo Motor. Actividades Motoras. Pruebas Motoras.

**PERFIL MOTOR DOS ESCOLARES DA REDE PARTICULAR DE ENSINO DA CIDADE DE MACAPÁ**

**RESUMO**

O presente estudo teve como objetivo investigar o perfil motor de escolares na faixa etária de 7 e 8 anos, das escolas da rede particular de ensino da cidade de Macapá. Fizeram parte da amostra 162 escolares, sendo 81 do sexo masculino e 81 do sexo feminino. O instrumento utilizado na coleta de dados foi a Escala de Desenvolvimento Motor (EDM), proposta por Francisco Rosa Neto (2002), que permite a verificação da idade motora, sendo esta um indicativo do estágio de desenvolvimento motor em que a criança se encontra. Após a realização dos testes observamos que a maioria dos escolares foi classificada como Normal Médio (58%). As variáveis avaliadas Motricidade Fina, Motricidade Global, Equilíbrio, Esquema Corporal, Organização Espacial e Organização Temporal sinalizaram que os escolares encontram-se dentro dos parâmetros normais indicados pelo protocolo, sugerindo diferença em algumas variáveis por sexo. Foi realizado o teste t de Student para comprovar essas diferenças e os resultados comprovaram que a Idade Motora Geral é superior à Idade Cronológica para todas as categorias de idade e sexo analisadas. Entre os escolares de 7 anos foi comprovada uma diferença estatisticamente significativa entre meninos e meninas em Motricidade Global e Esquema Corporal, enquanto que aos 8 anos a diferença foi comprovada na variável Equilíbrio. A investigação nos forneceu uma visão geral do perfil motor dos escolares investigados, bem como os conhecimentos sobre os estágios evolutivos da criança. Espera-se que os resultados dessa pesquisa venham contribuir para a melhoria de planejamentos e ações dos profissionais que lidam com crianças e que também forneçam subsídios para novos estudos.

**PALAVRAS CHAVES:** Desenvolvimento Motor. Atividades Motoras. Testes Motores.