

## 135 - STUDENTS' FINE MOTOR SKILLS OF PUBLIC ELEMENTARY SCHOOLS LOCATED AT RIO DE JANEIRO

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### INTRODUCTION

The school physical education is a discipline that is part of basic education teaching covering public and private schools. Since beginning in early childhood education, and finish high school. This practice has the characteristic of students in promoting motor development, playful, emotional, physical and cognitive development, through activities or exercises that work to complement the human body. Is also paramount in the learning of children and adolescents in the flight of its daily requirement (SOUZA; PEIXOTO, 2006).

Physical Education for many it just means the gain in motor learning and physical, but rather the application generates a range of possibilities in promoting the health of their students.

The physical education professionals are very concerned and committed to training of body and mind of the student. Today we can say that the contribution of school physical education is of paramount importance in building the youth service, social and citizen who seeks his ideal knowing their rights and duties towards society. It is the obligation of schools and physical education professionals a duty and highly complex human to continue the educational process, family priority in their teaching moral and ethical values, integrating knowledge and education to generate citizenship (MARQUES, 2009).

According to Tani (2005), when the child interacts in the motor activities freely and naturally, where the play is present, it just stops moving when its forces are over.

Second (LDBEN, 1996) in the Law of Directives and Bases of National Education (LDB), Article 26, paragraph 3, says that physical education is mandatory instrument in early childhood education curriculum; Article 27, Clause I says discipline promotes the sport in basic education and also in non-formal sports activities.

According to the National Curricular Parameters (PCN, 1997), which are reference works, since they have the goal of improving physical education in order to shift the focus on physical fitness and performance standard by making a more extensive physical education in the diverse practices body that can simplify the forms of learning and teaching, allowing students to further develop conceptual and practical introduction to affective, cognitive and sociocultural forms. It is the duty of school physical education, ensuring students access bodily practices, encouraging the construction of identity in a way to exercise them, providing materials capable of producing such a practice.

The Physical Education for a long time, your work was directed toward the development of aesthetics, is faced today with a specific view of movement within the physical activity, which is practically impossible, because the body is directly connected to mind. This movement is paramount in the psychological development of children and adolescents, since they can be with the relations of the medium. Thus there is a huge importance in the work that integrates the motor task with the psychic, the intention to improve the performance that helps students in learning (CEZÁRIO, 2008).

The child who is enrolled in elementary school, brings with quirks and habits that make you knowledgeable about the body itself, being part of their culture genetics. So is the school and teachers to create situations that promote and increase awareness of the child in solving problems, making the students adapt to a variety of manners, avoiding the removal and inhibition participation in school physical education (NEIRA, 2007).

The sport has always been ingrained in daily life of people and especially teenagers. The school activity is a mechanism used constantly in the public and private school in Rio de Janeiro. Often private schools are seen as a major benchmark in sports practice, and that helps a lot in the visibility and dissemination of school. Sometimes the school appears as a means of promoting physical activity and health through sport, besides benefiting the change in character.

A fact reported that participation in said activity brings important improvements in the lives of individuals. The school is where it is held the child's first contact with the sport, because the big cities and centers do not offer courses for the realization of collective practices effectively (SANTOS; SIMOES, 2007).

Currently young people to take up a lot, and are designed less time for sports practices, either for lack of space to promote these activities or have no interest in doing any activity whatsoever. Thus, the school must work in disseminating information to address concepts related to health, idleness and inactivity, apart from the participation of professional practice in physical education classes, helping to increase daily physical activity levels in children and adolescents (CELESTRINO; COSTA, 2006).

Disclosing to the active professional, students, critics and interested in the study in question, such as physical education can help in generating social development of pupils, contributing to the growth of the profession, recognition and credibility that is lacking in the physical education professionals in schools and society.

The present study is justified by the lack of work and papers in the area of physical education. Encourage professionals in this area, to have more dedication and attention for his profession, in respect to planning, developing and implementing their lessons in school, working mainly in kindergarten that is displaced due to the lack of commitment and creativity many professionals. Insert sports, cultural and social in order to enhance skills in the child's life at the beginning of school learning.

The study aimed to compare the levels of development oculomotor responsible for fine movements of praxis, students of both genders aged between 10 and 13 years, practitioners of physical education, identifying where there is significant difference between the praxis thin both.

### METODOLOGY

The study was exploratory and descriptive. Description for use as a tool for data collection testings at one time, generating a collection of information and does not intend to generate interference in the studied group, only done description of the situation he found (Thomas, Nelson and Zimerman, 2007).

This study meets the Standards for the Conduct of Human Research, Resolution 196/96 of the National Health

Council, of 10/10/1996.

The study subjects were intentionally selected, not probabilistic. There were 70 children of both sexes, apparently healthy individuals (ACSM, 2002), aged between 10 and 13 years, 35 boys and 35 girls, all belonging to the 4th and 5th year of elementary education at the same school of public education located in the Barra da Tijuca, Rio de Janeiro.

The instrument used was composed of two sub-tests of the modified protocol of Bruininks-Oseretsky (ALBERGARIA 2008). The sub-tests 7 and 8, selected to match the visual and motor control, and are composed of three items that assessed the ability to coordinate precise hand movements with visual movement.

In this study we will call the sub-tests protocols 7 and 8 sub-tests, as sub-tests A, B test sub-sub-sub-test C and test D consecutively in order of teaching, to perform the tasks by the subjects considered from simple to more complex.

The first sub-test A, was drawing a line through a straight path, with the preferred hand (maximum score = 4.0 points).

The sub-tests B and C were similar. These students should use the preferred hand to copy geometric forms (circle and two overlapped pencil, respectively), with a maximum score of 2 points. There will be only one attempt in all sub-tests 3.

In sub-D test, students should make points in circles with the preferred hand in 15 seconds (with 130 special form small circles with a diameter of 1.1 cm, where the performer must mark them with a dot inside).

The points should be made from left to right and from top to bottom, without the evaluation form (Appendix 4) of this test rotated more than 45°. Student was allowed to make an experience before testing. Will be considered incorrect when the points are on the edge or outside of the circles. As the number of correct circles, there will be second to score a table referenced in the protocol (maximum score = 10.0 points).

The data collected were treated by means of quantitative procedures of descriptive statistics, mean and standard deviation, and a second step through inferential statistics, paired t test  $p < 0.05$ .

**DATA ANALYSIS**

Volunteered for the study 70 children, 35 were female, mean age of  $10.89 \pm 0.96$  years old, and 35 male, mean age  $11.2 \pm 1.05$  years old, public school students in the district of Barra da Tijuca in Rio de Janeiro.

In carrying out the sub-test of the Fine Praxis, where they should, with his hand "preferred", draw a straight line through a predetermined path, girls scored an average of one error and an average score of  $3.2 \pm 0.93$ , while boys had an average error less than one (0.86), totaling an average of  $3.29 \pm .83$  hit points. Both groups then received a score close to maximum possible score according to the protocol, which would be 4 points (Figure 1).

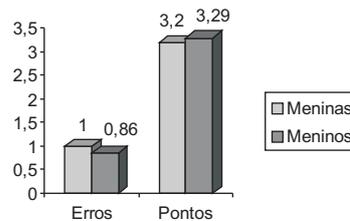


Figure 1: Results of Fine Praxis (Sub-Test A)

These results run counter to findings by Abreu (2009), with respect to the points obtained in both sexes. However, when comparing girls with boys, the results of this study agree with the study of Abreu (2009), where boys scored higher than among girls.

In Sub-Tests B and C of Fine Praxis, the achievement of these is similar, where the subjects had to copy by hand "preferred" geometric shapes comprising a circle and two overlapping clips, respectively. Without lifting the pencil and paper using only one attempt, the girls had an average score of less than one ( $0.89 \pm 0.32$ ) in Sub-test B (circle), close to the average obtained by the boys, which was  $0.91 \pm 0.28$  points. In sub-test C (two clips), both girls and boys achieved the same score of  $0.11 \pm 0.32$  points (Figure 2).

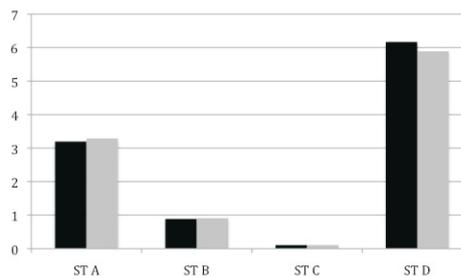


Figura 2: Points average of each Sub-tests (ST) by gender.

The results are differing with the one found by Abreu (2009), with respect to the points obtained in both sexes and in girls compared with boys. In the study by Abreu (2009), the number of points earned by the boys tested is higher than girls.

In Sub-D Fine Praxis test, the subjects were asked to score points with his hand in circles "preferred" using a special form with 130 small circles with a diameter of 1.1 cm, where the guy will score a point in its interior, scoring the highest number possible in 15 seconds. The girls had a mean score of correct answers between  $6.17 \pm 1.04$  points, higher than boys who have attained the average score of correct answers between  $5.89 \pm 0.93$  points.

These results are in line with that of Abreu (2009), with respect to the points obtained in both sexes. However, when comparing girls with boys, the results of this study disagreed with the study of Abreu (2009).

In the tests above-mentioned above, both genders had more balanced scoring average in the sub-test B and C (circle and clips), which obtained the highest score would be 2 points. Considering that this was a test with a mean score low compared to other tests, it is observed that the average score was relatively balanced between the two clips at ( $0.11 \pm 0.32$ ) and a slight superiority of boys in the circle ( $0.91 \pm 0.28$ ) than girls ( $0.89 \pm 0.32$ ).

After the descriptive statistical analysis was conducted on the inference by T-Student test for different groups. There was no significant difference between age groups comparing the sexes that is, the group was homogeneous in age. In all sub-tests no significant difference ( $p < 0.05$ ). When assessing the difference between the averages of boys and girls in each sub-test we obtained P values shown in Table 1.

	Sub-teste A	Sub-teste B	Sub-teste C	Sub-teste D
Meninas X Meninos	0,34	0,34	0,50	0,11

Table 1: Values of p resulting from the comparison between the average points of the sub-tests between genders.

According Galatti and Paes (2006), the best time to explore some physical and motor, is aged between 12 and 13 years, where is the fundamental change of stimuli, for at this age the child is able to understand the games and tasks in a logical, exploring their multiple intelligence in this sense.

The child could have a body surgery, able to carry the action of the field in producing body gestures engines from 12 years of age (Le Boulch, 1982), quoted by MATTOS and Kabariti (2005). The group seemed to be in terms of coordination than that expected for age soon, and may undermine the achievement of specific gestures and fine motor activities.

## CONCLUSIONS

According to the study, significant differences between genders for the sub-test A and B. sub-test However the sub-C test scores were similar in both sexes. In sub-test D was no difference between genders, whereas the girls with a higher ranking among the points. Observing the high average age and experience of pre-school events that could generate better responses to test battery

Probably, the specificity of gestures has impeded the tests covered the students' responses. It would be critical that the study group had more fine motor activities involving praxis in their physical education classes for school, are already in an age that assumes control visomotor up even for everyday activities like writing.

## REFERENCES

- ABREU, P.A.A., Universidade Estácio de Sá, Rio de Janeiro, 2009.
- ALBERGARIA, M.B. Comportamento e Controle Motor. Notas de Sala de Aula, Universidade Estácio de Sá. Rio de Janeiro, 2008.
- BRASIL, Lei de Diretrizes e Bases da Educação Nacional (LDB; 1996). Lei nº. 9.394. 20 de dezembro de 1996: [http://www.planalto.gov.br/ccivil\\_03/Leis/L9394.htm](http://www.planalto.gov.br/ccivil_03/Leis/L9394.htm) Acesso em 03/09/2010. 18:43
- BRASIL, Lei 2619/98 | DISPÕE SOBRE A ESTRUTURA ORGANIZACIONAL, PEDAGÓGICA E ADMINISTRATIVA DA REDE PÚBLICA, Lei Nº 2619 de 16 de janeiro de 1998 do Rio de Janeiro: <<http://www.jusbrasil.com.br/legislacao/269274/lei-2619-98-rio-de-janeiro-rj>> Acesso em 15/09/2010. 17:18
- CELESTRINO, J. O. ; COSTA, A. dos S. A prática de atividade física entre escolares com sobrepeso e obesidade. Revista Mackenzie de Educação Física e Esporte, v. 5, n. esp. São Paulo, 2006: <<http://www3.mackenzie.br/editora/index.php/remef/article/viewfile/1896/1368>> Acesso em: 01 set. 2010.
- CEZÁRIO, A. E. S. Influência da atividade física no desenvolvimento motor e rendimento escolar em crianças do fundamental. 2008. 28 f. Monografia (Licenciatura em Educação Física) – Universidade Estadual Vale do Acaraú, Caucaia, 2008: <<http://boletimef.org/biblioteca/1740/influencia-da-atividade-fisica-no-desenvolvimento-motor-e-rendimento-escolar>> Acesso em: 20 set. 2010.
- GALATTI, L.R.; PAES, R.R., Movimento & Percepção, Espírito Santo do Pinhal, São Paulo, v.6, n.9, jul/dez, 2006.
- GALLAHUE, D.L.; OZMUN, J. C. Compreendendo o Desenvolvimento Motor: bebês, crianças, adolescentes e adultos. São Paulo: Phorte, 2001.
- MARQUES, M. N. et al. Os desafios da prática pedagógica na Educação Física Escolar para a construção da cidadania. Congresso Internacional de Educação Popular e Seminário Internacional de Educação Popular, v. 9, n. 18, Santa Maria, 2009: <<http://boletimef.org/biblioteca/2417/os-desafios-da-pratica-pedagogica-na-educacao-fisica-escolar>> Acesso em: 01 set. 2010.
- MATTOS, VERA L.; KABARITE, ALINE. Perfil Psicomotor: Um olhar para Além do Desempenho. Universidade Estácio de Sá: Ed. Rio, 2005.
- MONTEIRO, M. XI Congresso Ciências do Desporto e Educação Física dos países de língua portuguesa. Desenvolvimento Motor em contexto: um desafio de pesquisa para profissionais de Educação Física. Revista Brasileira de Educação Física Esportiva, São Paulo, v. 20, s. 5, p. 121-23, set. 2006: <<http://citrus.uspnet.usp.br/eef/uploads/arquivo/v%2020%20supl5%20artigo29.pdf>> Acesso em: 02 set. 2010.
- NEIRA, M. G. Valorização das identidades: a cultura corporal popular como conteúdo do currículo da Educação Física. Revista Motriz, Rio Claro, v.13, n.3, p. 174-180, jul/set. 2007: <<http://www.periodicos.rc.biblioteca.unesp.br/index.php/motriz/article/view/820/885>> Acesso em: 20 set. 2010.
- NOBRE, F. L. A influência da Educação Física no estilo de vida lúdico-esportivo de jovens do ensino médio. Revista Ciência Online, Rio de Janeiro, v. 3, n. 9, set. 2009.
- OSERETSKY, BRUININKS; Testes de proficiência motora. 1974. Modificado em 1986.
- Parâmetros Curriculares Nacional: Educação Física/ Secretaria do Ensino Fundamental-Brasília: MED/sep, 1996: <<http://www.zinder.com.br/legislacao/pcn-fund/EF12.htm>> Acesso em: 03 set. 2010.
- SANTOS, A. L. ; SIMÕES, A. C. A influência da participação de alunos em práticas esportivas escolares na percepção do clima ambiental da escola. Revista Portuguesa de Ciência do Desporto, Porto, v. 7, n. 1, Jan / Abr, 2007: <<http://www.scielo.oces.mctes.pt/pdf/rpcd/v7n1/v7n1a04.pdf>> Acesso em: 03 set. 2010.
- SOUZA, M. P. ; PEIXOTO, R. C. A contribuição da Educação Física para alfabetização. EF Deportes Revista Digital – Buenos Aires, Rio de Janeiro ano 11, n. 99, ago, 2006. Disponível em: <<http://www.efdeportes.com>> Acesso em: 27 ago. 2010.
- TANI, G. ; et. al; Educação Física Escolar: fundamentos de uma abordagem desenvolvimentista. São Paulo: EPU, 2005.

**STUDENTS' FINE MOTOR SKILLS OF PUBLIC ELEMENTARY SCHOOLS LOCATED AT RIO DE JANEIRO****ABSTRACT**

Physical education develops critical role in the lives of children and adolescents in and out of school because their activities make possible the generation of a citizen in the fullest development of motor skills, cognitive, affective and social which is extremely important during the pre-school. thus this study has characteristics of type descriptive, comparative field and objectively compare the fine motor skills of children at preschool. the instrument used was the Bruininks-Oseretsky protocol, praxis tests fine (oculomotor). we selected 70 children (35 of each sex), aged between 10 and 13 years. All of the same public high school that offers physical education. students selected physically inactive targeted outside the school environment. Students selected physically inactive targeted outside the school environment. From these peculiarities is intended to call into question the interference in the development of fine motor skills of praxis in children who have access to physical education. The results were that no significant differences between genders for the sub-test A and B sub-test, considering boys score better. However for the sub-test C, both had the same score. In sub-test D, the difference was not significant between genders, whereas the girls with a higher ranking among the points. Considering the high average age and experience in preschool, the score obtained in this study was significantly lower in both genders.

**KEYWORDS:** Fine motor coordination. Elementary school students. Motor assessmen.

**LA COORDINATION MOTRICE FINE D'ÉLÈVES DE L'ÉCOLE PRIMAIRE DANS LES RIO DE JANEIRO****RÉSUMÉ**

L'éducation physique développe rôle essentiel dans la vie des enfants et des adolescents dans et hors de l'école parce que leurs activités permettent la génération d'un citoyen au plein développement de la motricité, cognitif, affectif et social qui est extrêmement important au cours le pré-scolaire. Ainsi, cette étude présente des caractéristiques de type descriptif, comparatifs sur le terrain et de comparer objectivement la motricité fine des enfants à l'école maternelle. L'instrument utilisé est le protocole Oseretsky Bruininks, tests praxis fine (oculomoteur). Nous avons sélectionné 70 enfants (35 de chaque sexe), âgés entre 10 et 13 ans. Comme tous la même école secondaire publique qui offre l'éducation physique. Les étudiants sélectionnés physiquement inactifs ciblées en dehors du milieu scolaire. A partir de ces particularités est destiné à remettre en cause l'ingérence dans le développement de la motricité fine de la praxis chez les enfants et les adolescents qui ont accès à l'éducation physique. Les résultats ont été qu'il n'y avait pas de différences significatives entre les sexes pour la sous-test A et B sous-test, compte tenu de garçons obtiennent de meilleurs résultats. Toutefois, pour les C sous-test, les deux avaient le même score. En Afrique sub-test D, la différence n'était pas significative entre les sexes, tandis que les filles avec un rang plus élevé parmi les points. Compte tenu de l'âge moyen élevé et une expérience dans le préscolaire, le score obtenu dans cette étude était significativement plus faible chez les deux sexes.

**MOTS-CLÉS:** Coordination de la motricité fine. Élèves du primaire. L'essai de moteurs

**LA COORDINACIÓN MOTORA FINA DE ALUMNOS DE ESCUELA PÚBLICAS PRIMARIA DE RIO DE JANEIRO****RESUMEN**

La educación física se desarrolla papel fundamental en la vida de los niños, niñas y adolescentes dentro y fuera de la escuela porque sus actividades hacen posible la generación de un ciudadano en el pleno desarrollo de las habilidades motoras, cognitivas, afectivas y sociales que es extremadamente importante durante el pre-escolar. Así, este estudio tiene características de tipo de campo descriptivo, comparativo y compara objetivamente las habilidades de motricidad fina de los niños en edad preescolar. El instrumento utilizado fue el protocolo Bruininks Oseretsky, las pruebas de la praxis fina (motor ocular). Se seleccionaron 70 niños (35 de cada sexo) con edades comprendidas entre 10 y 13 años. Dado que todos los de la misma escuela secundaria pública que ofrece la educación física. Los estudiantes seleccionados no tenían actividad física dirigida fuera del ámbito escolar. A partir de estas peculiaridades es la intención de poner en estudio la interferencia en el desarrollo de la motricidad fina de niños que tienen acceso a la educación física en la escuela. Los resultados fueron que no había diferencias significativas entre los sexos para el sub-ensayo A y B, teniendo en cuenta los chicos obtienen mejores resultados. Sin embargo, para el C subtest, ambos tenían la misma puntuación. En la prueba D, la diferencia no fue significativa entre los sexos, mientras que las niñas con una clasificación más alta entre los puntos. Teniendo en cuenta la alta edad media y la experiencia en el preescolar, la puntuación obtenida en este estudio fue significativamente menor en ambos sexos.

**PALABRAS CLAVE:** La coordinación motora fina. Estudiantes de la escuela primaria. evaluación del rendimiento motor.

**COORDENACAO MOTORA FINA DE ESCOLARES DO ENSINO FUNDAMENTAL DE ESCOLAS PUBLICAS DO RIO DE JANEIRO****RESUMO**

A Educação Física, desenvolve papel fundamental na vida de crianças e adolescentes dentro e fora da escola, pois suas atividades tornam possível, a geração de um cidadão mais completo no desenvolvimento de habilidades motoras, cognitivas, afetivas e sociais que é de suma importância na fase do ensino pré-escolar. Sendo assim o presente estudo tem características do tipo pesquisa descritiva, comparativa de campo e objetiva comparar a coordenação motora fina de crianças na fase da pré-escola. O instrumento utilizado foi o protocolo de Bruininks Oseretsky, testes de praxia fina (óculo motora). Foram selecionadas 70 crianças (35 de cada gênero), com idades entre 10 e 13 anos. Sendo todas da mesma escola pública de ensino que oferece educação física escolar. Os alunos selecionados não praticam atividade física orientada fora do ambiente da escola. A partir dessas peculiaridades pretende-se colocar em questão as interferências, no desenvolvimento das habilidades motoras de praxia fina em crianças e adolescentes que têm acesso à educação física escolar. Os resultados obtidos foram, que não ocorreram diferenças significativas entre os gêneros para o sub-teste A e sub-teste B, considerando os meninos com melhor pontuação obtida. Entretanto para o sub-teste C, ambos tiveram a mesma pontuação. No sub-teste D, a diferença não foi significativa entre os gêneros, considerando as meninas com uma melhor classificação entre os pontos obtidos. Considerando a alta média de idade e a vivência na pré-escola, a pontuação obtida nesse estudo foi significativamente baixa em ambos os gêneros.

**PALAVRAS-CHAVE:** Coordenação motora fina. Alunos do ensino fundamental. Avaliação motora.