97 - THE IMPACT OF PHYSICAL EDUCATION ON THE MOTOR DEVELOPMENT OF STUDENTS OF A UMEI FROM VILA VELHA

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1 INTRODUCTION

Movement is one of the principal resources that a human has at the beginning of its development. It's through this that a child interacts with its environment relates to others and builds its knowledge. Much more than a single movement of a body through space movement is the catalyzer of childhood development and the main adaptive activity that the child possesses in the first years of its life. Human movement, initially reflexive, becomes progressively more complex as new neurologic connections are formed in the child's nervous system as a result of its motor action on the environment that it is in. In elementary education, the first stage of Brazilian basic education, the times and spaces are destined to experiencing the culture of movement is increasingly more restrictive. From early age young children are submitted to schooling processes present in fundamental and high school in which cognitive learning, specially literacy are prioritized (SAYAO, 2002). Movement is seen as “the other reason” something that needs to be controlled and broken in so that intellect can develop. Beyond this, in the context of childhood education, the approach of movement has been characterized from a maturing perspective in which endogen regulating mechanisms are considered mainly responsible for the appearance and development of motor repertoire of children. In this perspective there is no deliberate and systematic action to promote the motor development, it is expected that it will occur naturally since it is understood that as the organism matures the motor potential in children gradually appears. However, research in motor behavior has shown the importance of experience in the process of motor development highlighting the necessity of interventions that promote experiences of rich and diversified motor experiences in the beginning of this process, being so it is necessary that childhood education addresses movement in a planned and intentional way to promote motor development since school is one of the few available places, more so for low income families capable of guarantying significant motor novelties for the child. In this context physical education acting as a pedagogical intervention has had as an objective of the culture of movement can offer important contributions to childhood development. Although the Law of Directives and Bases of National Education (Law 9394/96) considers physical education as a compulsory curricular component in Brazilian elementary education that includes the subject in a context that isn't organized in this way . It's necessary to break free with the knowledge and think about the insertion of physical education in elementary education with projects discussed collectively by the figures present in everyday school life. In these projects, different areas of knowledge interact around a common goal, without each area losing its specificity. Pedagogy of Projects is a theoretical and methodological referential viable to insert Physical Education in elementary school since it proposes that work is shared between the different areas of knowledge present in the school curriculum forming multidisciplinary teams that seek to mobilize and the management of pedagogical knowledge and practice for teaching professional action.

The pedagogical intervention of Physical education in elementary school, mediated by the Pedagogy of projects, conceives the child as a person of rights, permitted to be a co-constructor of knowledge and its identity, considering the social context it is inserted, the ludic dimension and playing as a language for guiding pedagogical intervention. In this study we investigated the insertion of Physical Education in Early Childhood Education from an actual experience of intervention, which has the Pedagogy Project as a theoretic-methodological reference and the child as a "subject of rights" as a pedagogical principle. The aim of this study is to evaluate the impact of physical education, developed with a view of Pedagogy Project, on the motor development of students in a Unit Municipal Early Childhood Education (UMEI) Vila Velha / ES.

The study was theoretically and methodologically designed based on the Collaborative Action Research (IBIAPINA, 2008). From this perspective, teachers and researchers acted in a production of shared knowledge and pedagogical duties. The focus of interest in collaborative research focuses on knowledge and training processes, reconciling these two important dimensions of educational research. This methodological approach requires a collaborative action between teachers and researchers, mediated by dialogic relationship, which is embodied in circles reflective, in that both are co-producers of knowledge. To Ibiapina (2008, p.23), the collaborative research is…

> [...] A practical alternative to investigate the reality in which researchers and educators work together to implement change and the analysis of problems, sharing the responsibility in making decisions and carrying out research tasks.

The Collaborative Research undertaken in this study focused on an intervention program of physical education in kindergarten, mediated by the Pedagogy Project and that occurred in the context of the discipline of Supervised study in a UMEI Vila Velha / ES. To check the impact of physical education classes on the motor development of students, we used the motor evaluation proposed by Rosa Neto (2002). We applied motor tests in two stages: the beginning (February) and in the end (December) the process of educational intervention. Following the first test, the development of classes and applying a second test occurred in a period of eleven months. Below, we elucidate the conditions of Pedagogy Project and then present and discuss the data from the intervention process.

2 PEDAGOGY PROJECT

The option to insert Physical Education in the context of early childhood education via Pedagogy Project stems from the way this level of education is organized. Unlike school and high school, the Elementary School is not disciplinarily structured. The Curriculum Guidelines governing the first stage of basic education in Brazil indicates the need to overcome the fragmented approach to knowledge, treating it in a complex and interdisciplinary way. In considering this principle, a question arises: how to insert a subject (Physical Education) in a non-disciplinary context (Early Childhood Education)? An alternative to overcome this contradiction is to work on physical education in kindergarten through the Pedagogy of Projects. But ultimately, what is Pedagogy Project? It is a design theory and methodology, which opposes the traditional way of teaching that presents the curriculum divided into subjects and periods in which each teacher has a specific time and uses it to transmit the knowledge that it should, causing the student only to be deposit of information, unable to participate directly in the process of teaching and learning from the intervention process.

Pedagogy Project is not a current theoretic-methodological conception , its genesis occurred in the transition from the nineteenth century to the twentieth century, with the educational movement called the New School. However, some factors have brought back the pedagogical work in the form of projects to present educational context. The change in the concept of childhood is a factor that favors the return of working on projects. The child throughout history was considered to be a reproduction of both knowledge and feelings. This new design sees the child as an individual able to make their own concepts and reach their own conclusions, making them the protagonist in the construction of their knowledge. The diversity of information that works in the classroom, using different symbolic languages, puts the child in a universe of possibilities, contributing to the development of their cognitive schemas, affective, social, aesthetic and motor, making it capable to question things in the world and interpret them according to a frame of reference built in its interaction with the environment and with others. According to Barbosa and Horn (2008, p. 28):

> This view in which children were seen as incomplete beings, only to be protected, to a conception of children in their development, accomplished through an active dialogue with their peers, with adults around them, with the environment in which they are inserted in.

A change in scientific paradigm is another factor that puts the Pedagogy Project elevated the scenario of current education. This new century begins with the disruption of some scientific paradigms that have influenced education, among them the Cartesian model, in which knowledge is worked in a fragmented way. The compartmentalization of knowledge is challenged by the new model of emerging science, which calls for the reconnection of such knowledge in complex networks of knowledge (Morin, 2000). Pedagogy Project is in step with the post-modern paradigm of science, it points to the transition from a disciplinary to a multidisciplinary knowledge, as this is handled complex and systemic. Finally, another factor that favors the return of Pedagogy Project, is the change of concept about learning and human development. The nineteenth century was marked by a maturational view of child development, in which the endogenous regulatory mechanisms were considered the key factors moving the child's development. From this perspective, child development was compared to a plant, which with enough "water", in other words, love and affection, would be enough for their natural potential to "bloom". The twentieth century is marked by environmentalist or behaviorisitic model of education where the incentives offered by the environment determine the limits and possibilities of learning and human development. From this perspective, the conditioning becomes the central focus of education, which plans to offer appropriate incentives to produce desired responses / behaviors.

If, on the one hand, the Pedagogy Project enables the integration of physical education in kindergarten, brings new questions: the pedagogical work mediated by a common axis causes the physical education to lose its specificity? From this perspective, physical education would not only be "at the service" of other knowledge? In order to answer these questions, we became interested in examining the impact of physical education, developed with a view of Pedagogy Project, on the motor development of students. We considered motor development a factor in child development and a specific contribution in the area of physical education for preschool children, although being the only group. However, due to the work limitations, the motor development will be focused.

3 PEDAGOGY PROJECT AND MOTOR DEVELOPMENT

In this section, we discuss the contributions of physical education from the perspective of Pedagogy Project, for the motor development of children who participated in an intervention, which occurred in the context of Supervised an initial training course in Physical Education and lasted ten months. In addition to teacher-researchers in the field of Physical Education, the Arts teacher, the teacher and conductor of the educational aspects of the school, participated in the study, 22 children in a class of Pre II, aged between five and six years old.

We conceive motor development as progressive and regressive changes in motor behavior that occur throughout the life cycle of an individual, from conception to death. The process of motor development is determined by the convergence of genetic factors, environmental factors and factors typical of the different motor tasks (HAYWOOD, Getchell, 2004). In this study, we chose to analyze the motor development through the coordinative capabilities, which are related to the joint work of the central nervous system and skeletal muscle in the production of movement, involving the perception and processing of sensory information for the performance of motor tasks (HAYWOOD, Getchell, 2004). Coordinative capabilities analyzed here were: fine motor, Global motricity, equilibrium, body scheme and spatial organization. We use the motor tests, proposed by Rosa Neto (2002), to verify the general motor age of the children. The calculation of the Motor Age Average(IMG) is the sum of the scores associated with the five skills tested and the subsequent division of the result of the sum by five, as illustrated by the following formula

$$\text{GMA (Geral Motor Age)} = \frac{MA1+MA2+MA3+MA4+MA5}{5} \text{ (MA: Motor Age)}$$

Armed with IMG and chronological age (IC), we calculated the process of the child's motor development or Positive Motor Age (IMP) or Negative Motor Age (IMN). IMP is considered when the result of subtraction between (IMG) and (IC) is greater than the chronological age and (IMN) when the result of that subtraction is less than the chronological age. All motor ages are expressed in months. Through the division between the IMG and the IC and the subsequent multiplication of the result by 100, we calculated the CMG, expressed in the formula below:

$$CMG = \frac{IMG}{IC} \cdot 100$$

With the result of the CMG it was possible to classify the children's development by Motor Development Scale (EDM), according to the scores below:

Table 1 – Motor development scale

130 or more	Much superior
120 – 129	Superior
110 – 119	Normal high
90 – 109	Average
80 – 89	Normal low
70 – 79	Inferior
69 or less	Much inferior

22 children participated in the motor evaluation tests during six days, with a total time of 16:30. We use the multipurpose room of the school for the testing. In order to ensure the ecological validity of the results, we conducted the tests from play situations, where the play was the linchpin of the evaluation. Two observers noted the results of the tests. The

successful implementation of the test was recorded with the number one (1). When the test required the execution of the movement to the right and the left side of the body, it was registered the number one (1) only if there was success with the two limbs. However, if in evidence, the child obtained a positive result with only one limb (right or left), was recorded ½. When the child could not perform the test, it was recorded the number zero (0). In each test, the child started from the level of complexity consistent with their age. If he could succeed, was subjected to more complex tests, otherwise, testing was less complex. Table 2 presents the results of tests carried out before the process of pedagogical intervention:

Student	IMG	IC	IMP	IMN	CMG	EDM
1	53 months	75 months		22 months	71	Inferior
2	60 months	72 months		12 months	83	Normal low
3	71 months	80 months		9 months	89	Normal low
4	53 months	71 months		18 months	75	Inferior
5	58 months	73 months		15 months	79	Inferior
6	66 months	78 months		12 months	85	Normal low
7	56 months	81 months		25 months	69	Very low
8	58 months	70 months		12 months	83	Normal low
9	58 months	72 months		14 months	80	Normal low
10	60 months	76 months		16 months	79	Inferior
11	61 months	71 months		10 months	86	Normal low
12	61 months	75 months		14 months	81	Normal low
13	61 months	72 months		11 months	85	Normal low
14	62 months	75 months		13 months	83	Normal low
15	62 months	71 months		9 months	87	Normal low
16	60 months	72 months		12 months	83	Normal Low
17	95 months	75 months	20 months		127	Superior
18	78 months	78 months	0 months		100	Average
19	58 months	77 months		19 months	75	Inferior
20	58 months	81 months		23 months	72	Inferior
21	52 months	72 months		20 months	72	Inferior
22	58 months	82 months		24 months	71	Inferior

Abreviations (IMG – General motor age; IC – Cronological Age; IMP – Positive age; IMN – Negative Age; CMG – Geral Motor Coeficient; e EDM Motor Development Age).

Of the 22 children assessed, two were IMP. Considering the scale of Motor Development (EDM), a child was at the top level, a level normally average, eleven on the normal-low, and eight on the lower level and one in a much lower level. The test results served as a parameter to the intervention. We aim to develop a pedagogical work that reconciling motor development with a less fragmented knowledge in the Physical Education establishes a dialogue with these other areas in the curriculum of early childhood education. For this, the beginning and during the intervention process, we held meetings with the main teacher of the class and with Arts teacher, with the Coordination of the school and the children of the class to define the projects to be developed. We adopt, as a prerequisite for defining the themes of the projects, the students' interest and the proximity of their social reality. We defined the following guiding projects: "The Circus goes to school" - at the time, there was a circus in the community where schools are located and this aroused the curiosity and interest of children; "Who makes, plays more" - a project to help preserve the environment, which focused on the construction of toys from recyclable materials. The children were aware of this plan because the community in which they live, in the rainy season, floods are often caused by excessive garbage dumped into sewers and streams in the region. We discussed with them that an alternative to avoid this was to turn trash into toys, and "Knowing our traditions" - in which the manifestations of popular culture, typical of the community, were exercised. These projects collectively designed and built guided the actions of the different areas of knowledge that worked with the class.

During the intervention process, meetings were held with individuals participating in the project, to reassess the actions and provide opportunities for interactions between the different areas of knowledge. The lack of time hampered the systematic meetings on several occasions, teachers had to "sacrifice" moments of lunch or rest to meet. The meetings were frequent between the main teacher and the teacher of physical education. The remaining subjects had limited availability and the meetings occurred sporadically. Since the children were heard in reflective cycles, occurring after school. In these cycles, we see a hierarchy of communicative relations in which the "voices" silenced the less expressive ones. Despite the limitations, the discussions were vital to ensure the unity of the projects and reaffirm their commitment to the pedagogical approach adopted. Thus, from the specificity of its object, each area attempted to dialogue with the guiding projects. In the case of Physical Education, planning was constructed as follows (Table 1):

Planning	
Projet	**Atividades**
Motor test	Battery of motor tests
"The circus goes to school"	Playing with the characters of the circus juggler, trapeze artist, magician, clown, animals (through games and ludic activities involving these characters, we explore the experience of various locomotor skills, manipulative and stabilizers). Presentation of the circus.
"The one who makes, plays more"	Collection of recyclable materials, construction toys (comes and goes, biboquê, refriscobol, foot tin etc.). Play with the materials built and exposure of toys built by children.
"Knowing our traditions"	Capoeira – Congo – Maculelê – "Batizado"
Re-application of the motor tests	Battery of motor tests

Starting from motor reassessment, 20 children took part, as two dropped out during the year. The revaluation were adopted the same procedures of the first and lasted six days, with a total time of 10:30. And it occurred after an intervening period of ten months, in which students had two physical education classes per week, 50 minutes each class. The test results are shown in Table 3:

Students	IMG	IC	IMP	IMN	CMG	EDM
1	78 months	80 months		- 2 months	97	Average
2	68 months	76 months		- 8 months	89	Normal low
3	83 months	85 months		- 2 months	98	Average
4	65 months	76 months		- 11 months	85	Normal low
5	91 months	82 months	+ 9 months		111	Normal high
6	73 months	86 months		- 13 months	85	Normal low
7	65 months	75 months		- 10 months	87	Normal low
8	66 months	77 months		- 11 months	86	Normal low
9	70 months	81 months		- 11 months	86	Normal low
10	79 months	76 months	+ 3 months		104	Average
11	91 months	80 months	+ 11 months		114	Normal high
12	80 months	76 months	+ 4 months		105	Average
13	83 months	80 months	+ 3 months		108	Average
14	83 months	76 months	+ 7 months		109	Average
15	79 months	76 months	+ 3 months		104	Average
16	110 months	80 months	+ 30 months		137	much superior
17	101 months	83 months	+ 18 months		122	Superior
18	71 months	86 months		- 15 months	82	Normal low
19	77 months	77 months	0		100	Average
20	83 months	86 months		- 3 months	96	Average

According to Motor Development Scale (EDM) of the 20 malnourished children,one is in a much higher level, one in higher-level, two in normal-high nine on the average and seven in the normal low. The test results are significant in relation to motor development of children who underwent intervention of Physical Education in the perspective of Pedagogy Project. There were significant changes in all capacities coordinately worked and evaluated. We see major changes in the IMG of the children studied. The tests applied after the intervention process showed that ten children are IMP (initial tests showed only two children with IMP). Even the other ten children in the values of the tests indicate the permanence in IMN had these values reduced. We understand that the educational intervention was not the only factor intervening in the process of motor development of students analyzed. Other factors such as maturity and experience acquired in extracurricular situations must also be considered. However, tests of the review have different levels of motor development among students, giving evidence that the process of intervention was instrumental in promoting this development. If the development was tied only to the maturation, the fact that children are of the same age would require similar levels of motor progression. Further evidence on the contribution of the intervention in the process of motor development of students was found in tests related to the spatial organization. This ability, due to our limitations of the intervention process, has been less worked in physical education classes and, especially, the least developed.

4 FINAL CONSIDERATIONS

From the experience of intervention of Physical Education in Early Childhood Education, mediated by the Pedagogy Project, there have been some limits and possibilities in the use of theoretical and methodological referential. The limits, it highlights the lack of time that teachers from different areas of knowledge have to plan, discuss and evaluate the projects collectively. The time in kindergarten is very scarce for the exchanges between teachers and teaching staff to take effect, usually the planning of a teacher is from one class to the other, making difficult the possibility of dialogue and joint action. The organization of the school routine favors the fragmentation of knowledge. We must therefore develop policies that ensure collective planning in the school routine, avoiding the "sacrifice" of teachers to ensure the shared workspace. Regarding the possibilities, the study demonstrated the feasibility of introducing physical education in kindergarten through the Pedagogy Project, breaking with a disciplinary approach that area of knowledge, adjusting to the characteristics and demands of school for early childhood. The experience of intervention analysis shows that even in dialogue with other areas of knowledge, physical education has lost its specific contribution in the process of child development, which is tied to the size of motor behavior. The motor development of children who participated in the educational intervention significantly improved. We are not with this, saying that the role of physical education in kindergarten limits itself to motor development, but just pointing out that the development dimension of this behavior running through a deliberate and planned action in the school context and because of the nature of their object, the field of physical education can offer significant contributions to make this happen. Further studies are mediated by specific experiences of intervention are necessary to support discussions on the feasibility of inclusion of physical education in kindergarten through the Pedagogy of Projects, particularly studies that focus on children as "Individuals with rights" in the process of teaching and learning, insufficiently explored in this study because of its limitations.

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THE IMPACT OF THE PHYSICAL EDUCATION ON THE MOTOR DEVELOPMENT IN PUPILS OF A UMEI OF OLD VILLAGE

ABSTRACT

Discusses the contribution of Physical Education, under the perspective of the Pedagogy of Projects, of children´s motor ability development in a Primary Education. This is a co-operative action research -based work in which both researchers and teachers built knowledge and activities for a pedagogical action. The study uses motor ability tests to verify the impact of Physical Education on the motor ability development of the analyzed subjects. The results showed that pedagogical intervention contributed to the children´s motor ability development and that the lack of time for collective planning limits work according to the perspective of the Pedagogy of Projects.

KEY WORDS: Primary Education, Motor Ability Development, Pedagogy of Projects

L'IMPACT DE L'ÉDUCATION PHYSIQUE SUR LE DÉVELOPPEMENT MOTEUR DANS DES ÉLÈVES D'UNE UMEI DE VILLAGE VIEUX

RÉSUMÉ

Discute les contributions de l'éducation physique, abordé du projet de pédagogie, pour le développement moteur des enfants dans un jardins d'enfants municipaux à Vila Velha / ES. Il s'agit d'une collaboration de recherche-action, où les chercheurs et les enseignants construites conjointement les connaissances et pratiques de l'action pédagogique. Utilisé des tests moteur pour vérifier l'impact de l'éducation physique sur le développement moteur des sujets analysés. Les résultats ont montré que l'intervention éducative a contribué au développement moteur des enfants et le manque de temps pour la planification collective est limitée à œuvrer à la pédagogie du projet.

MOTS CLÉS: Early Childhood Education, développement moteur, des projets éducatifs

EL IMPACTO DE LA EDUCACIÓN FÍSICA EN MOTOR DE DESARROLLO EN ESTUDIANTES DE UN UMEI EM VILA VELHA

RESUMEN

Se analiza las contribuciones de la Educación Física, la perspectiva de la pedagogía del proyecto, para el desarrollo motor de los niños en una Unidad de Educación Infantil Municipal de Vila Velha / ES. Búsqueda Acción Colaboración en que los investigadores y profesores trabajo construido juntos por el los conocimientos y la acción para la educación. Utiliza pruebas motoras para verificar el desarrollo motor de los individuos analizados en el busqueda. Resultados mostraron que la intervención educativa ha contribuido al motor de desarrollo de los niños y la falta de tiempo para planificación colectiva se encuentra el límite del trabajo**.**

PALABRAS CLAVE: Educación Infantil, Motor de Desarrollo, Proyectos Educativos

O IMPACTO DA EDUCAÇÃO FÍSICA SOBRE O DESENVOLVIMENTO MOTOR EM ALUNOS DE UMA UMEI DE VILA VELHA

RESUMO

Discute as contribuições da Educação Física, abordada na perspectiva da Pedagogia de Projetos, para o desenvolvimento motor de crianças em uma Unidade Municipal de Educação Infantil de Vila Velha/ES. Trata-se de uma Pesquisa Ação Colaborativa, em que pesquisadores e professores construíram conjuntamente saberes e fazeres para a ação pedagógica. Utiliza testes motores para verificar o impacto da Educação Física sobre o desenvolvimento motor dos sujeitos analisados. Os resultados demonstraram que a intervenção pedagógica contribuiu para o desenvolvimento motor das crianças e que a falta de tempo para o planejamento coletivo limita o trabalho na perspectiva da Pedagogia de Projetos.

PALAVRAS CHAVES: Educação Infantil, Desenvolvimento Motor, Pedagogia de Projetos

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