

MENDIVE

REVISTA DE EDUCACIÓN

Translated from the original in Spanish

Development of fine motor skills with playful activities in preschool children

Desarrollo de la motricidad fina con actividades lúdicas en niños preescolares

Desenvolvimento de habilidades motoras finas com atividades lúdicas em crianças em idade pré-escolar

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Received: February 10th, 2020.

Accepted: May 18th, 2021.

ABSTRACT

In early childhood, neurodevelopment and motor development begin, which provide the skills to achieve social interaction. In Peru, initial education is

responsible for this goal, but many teachers do not employ it; consequently, at the end of the pre-school stage, children have limitations in the tracing of calligraphic features, clipping, filling and tearing; with negative effects on higher education levels; Therefore, the objective was to determine the influence of playful activities on the fine motor skills of preschool children from the IEP "Cyberkids" Ayacucho. The research used the hypothetic-deductive method, experimental type and pre-experimental design with a sample of 30 children aged 3 and 4 years; The data were collected with an observation sheet (pre-test and post-test), which allowed determining the influence of recreational activities on fine motor skills, confirming with the Wilcoxon statistic that recreational activities influence the improvement of fine motor skills (visual, hand, facial and gesture) in children aged 3 and 4 years ($p = 0.000$), for which its use is suggested in the teaching of preschool-age children.

Keywords: playful activities; motor development; stimulation; fine motor; preschool.

RESUMEN

El trabajo presenta alternativas de solución a la problemática del limitado conocimiento de los docentes del departamento de Ingeniería Industrial de la Facultad de Ingeniería Mecánica e Industrial de la Universidad Central "Marta Abreu" de Las Villas, en cuanto a la dirección del proceso de enseñanza-aprendizaje de los sistemas de Planificación de los Recursos Empresariales dentro de las asignaturas del currículo propio de la carrera. Como objetivo se persiguió proponer un sistema de acciones de preparación metodológica para los docentes de la carrera Ingeniería Industrial que incluye como contenido los sistemas de Planificación de los Recursos Empresariales. Para responder a la problemática planteada en la investigación se sigue el método

dialéctico-materialista con la vinculación de los análisis cualitativos y cuantitativos. Se han aplicado observaciones, entrevistas y análisis de documentos en las etapas de diagnóstico, implementación y discusión de resultados. Como resultados principales se exhiben acciones metodológicas dentro del plan de trabajo metodológico que, con un carácter sistémico, preparan al profesor para el empleo de los sistemas Planificación de los Recursos Empresariales en la dirección del proceso de enseñanza-aprendizaje. Se concluye en la investigación que con la aplicación de las acciones metodológicas propuestas se elevan los conocimientos teóricos y prácticos sobre los sistemas Planificación de los Recursos Empresariales y su inclusión en los contenidos de las asignaturas del currículo propio, cuestión que contribuye a ofrecer soluciones a la empresa desde la academia.

Palabras clave: acciones; aprendizaje; enseñanza; preparación metodológica; Sistemas de Planificación de los Recursos Empresariales.

RESUMO

O trabalho apresenta soluções alternativas para o problema do conhecimento limitado dos docentes do Departamento de Engenharia Industrial da Faculdade de Engenharia Mecânica e Industrial da Universidade Central "Marta Abreu" de Las Villas, no que diz respeito à direção do processo de ensino-aprendizagem dos sistemas de Business Resource Planning nas disciplinas do próprio currículo de carreira. O objetivo foi propor um sistema de ações de preparação metodológica para professores da carreira de Engenharia Industrial que inclua os sistemas de Planejamento de Recursos de Negócios como conteúdo. Para responder aos problemas levantados na pesquisa, segue-se o método dialéctico-materialista com a articulação entre análises qualitativas e quantitativas. As observações, entrevistas e análise

documental foram aplicadas nas etapas de diagnóstico, implementação e discussão dos resultados. Como principais resultados, são expostas ações metodológicas dentro do plano de trabalho metodológico que, com um caráter sistémico, prepara o professor para a utilização dos sistemas de Business Resource Planning na direção do processo de ensino-aprendizagem. Conclui-se na pesquisa que com a aplicação das ações metodológicas propostas levantam-se os conhecimentos teóricos e práticos sobre os sistemas de Business Resource Planning e sua inserção nos conteúdos das disciplinas do próprio currículo, questão que contribui para oferecer soluções para a empresa da academia.

Palavras chave: Ações; Aprendendo; ensino; preparação metodológica; Sistemas de planejamento de recursos de negócios.

INTRODUCTION

The future personality of children is trained at preschool stage, developing the skills to integrate into society; the initial education that serves children between 0 to 5 years of age, provides the educational base in the intellectual, affective, social, physical and emotional aspects, contributing to the integral development of boys and girls (Nicolás; Arencibia & Espinoza, 2011). For this reason, it is asserted that fine motor skills prepare the child for intellectual activity, allowing the morpho functional benefit of the organism (Cabrera & Dupeyrón, 2019; García & Batista, 2018).

Playful activities develop actions such as: cutting, tearing, folding, pleating, and gluing, cutting, cutting, tracing, drawing, coloring, among others. In this regard, fine motor skills enables mastery of body movement, communication and

relationship of the child with the environment, with small, very precise movements (García & Batista 2018), consolidate awareness of one's body in proper structuring temporal space. Cabrera & Dupeyrón (2019) highlight that it enhances the capacities to adapt to different spaces, improves creativity and promotes assertive communication, developing awareness (Gutiérrez & Ruíz, 2018).

Cabrera & Dupeyrón (2019) reaffirm that the well-stimulated child, even one who has some disorder or health problem, will become a useful human being for himself and for society, since he will be able to achieve the greatest possible autonomy and self-validation, which will be reverted to benefits for society.

Education aims at the well-being of students so that they can provide their contribution to society (Aroquipa, Sucari, Chambi & Supo, 2019; Sánchez *et al.*, 2017), but one of its main problems is poor performance in the different levels of education, especially at the initial level; This is mainly due to the fact that in initial education little importance is given to teaching with playful. Its absence can delay the learning process at the initial level, even more so when parents and teachers are unaware or limited of their strategies to promote psychomotor development (Cajamarca, 2018).

The issue has attracted the attention of many researchers, as Cajamarca (2018), who claim that recreational activities produce significant effects on improving eye-hand, facial and gestural motor skills in preschool children, coinciding with Cabrera & Dupeyrón (2019). For their part, Ramírez, Patiño & Gamboa (2017) agree that children have limitations in activities such as: drawing, coloring, tracing, as well as in the analysis in serials and borders, among other activities of graph-perceptual coordination; for this reason they need a

lot of help from their parents and the teacher when executing motor actions. The authors warn that this context can go forging the demotivation of children in practices for the development of fine motor skills.

An interesting information is found in Cabrera & Dupeyron (2019), who says that traditional games develop fine motor skills. He considers that this can improve the quality of learning and motivate children's participation; in some communities they are still in force, a very important aspect considering that, in some areas, especially rural ones, these games are still being maintained.

Academic problems of the Ayacucho region, specifically in the institutions of initial level were the starting point and interest to carry out this research; for this reason it had as General objective: determine the influence of playful activities in improving the fine motor in preschool children; The information obtained will serve as a basis to promote teaching using recreational activities, in order to prepare children for better academic performance and at the same time be useful to society.

MATERIALS AND METHODS

The research was carried out at the Private Educational Institution (IEP) "Cyberkids" of Ayacucho, from June to September 2018. To achieve the proposed objective, the mixed approach, experimental type, descriptive level and longitudinal cut was used, evaluating a pre-test and post-test, the research design was pre-experimental. The population consisted of 50 children of 3, 4 and 5 years old; the census sample being 30 children aged 3 and 4, selected with the prior informed consent of their parents. The independent variables were recreational activities consisting of games to energize the hearing, touch,

smell and sight; the dependent variable was motor skills (dimensions of visual-hand coordination, facial motor skills and gestural motor skills). To study the independent variable it was used the observation technique and as instrument, the observation card (Zafra, Orchard & Martinez, 2016).

Data collection was performed on the observation sheet (pre-test and post-test), using a indicators to determine the influence of play activities in improving the fine motor achievement levels (beginning, process and achieving). The instrument was subjected to expert judgment; the Cronbach's Alpha reliability was 0.873. The data obtained have been processed in frequency tables, using the statistical program Excel and SPSS 22, performing the inferential tests using the Wilcoxon statistician.

Dimensions and indicators of fine motor skills assessed in preschool children (Cajamarca proposal was used, 2018).

Dimension I. Coordination visor Manual (they are movements that involve more accurately).

Indicators:

- Handle the scissors correctly.
- Develop threading properly.
- Perform the tipping technique.
- Begins to use thumb and index finger to hold pencil and crayon.
- Clasp pins, clothespins.

Dimension

II. Facial motor skills, mastery of the muscles of the face to adopt authentic facial expressions.

Indicators:

- Stick out the tongue and move it in different directions.
- He gets angry and smiles.
- Blow the bubbles.
- Hit your lips with your hands.
- Shows expressions when tasting tastes (sour, sweet, salty, and bitter).

Dimension III. Motor gestural, domain fine motor, partial domain each element hand.

Indicators:

- Perform various movements with your fingers.
- Perform varied movements with your hands.
- Screw and unscrew thick screws.
- Act out a story with mimics.
- Performs movements as a mime.

RESULTS

Observations were made during nine scheduled sessions in the different areas of activities, with the aim of verifying the achievement levels achieved in the children. Prior, a pre-test was applied and the concluding sessions proceeded to apply the post-test, whose results are shown in the figures and tables below.

In figure 1 it is observed that before the application of recreational activities, 66.7 % (20) of the children are located at the beginning level of fine motor skills; while after the application of

playful activities, the majority percentage, 93.3 % (28) children managed to advance to the level of achievement. It is concluded that recreational activities improve the body movement in its coordination visor manual dimension in children of 3 and 4 years of EI P "Cyberkids" of Ayacucho.

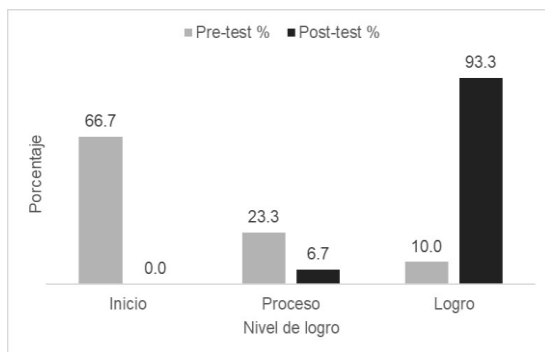


Fig. 1- Level of body movement in its coordination visor manual dimension

In Figure 2 shows that before the implementation of recreational activities, 53.3 % (16) of the children that are placed at the initial level, did not practice any of the indicators of facial motor function; after the application, the majority percentage, 96.7 % (29) of the children reached the level of achievement. This showed that the implementation of recreational activities improves movement thin in its facial dimension motor skills in 3 and 4 years children in EI P "Cyberkids" of Ayacucho.

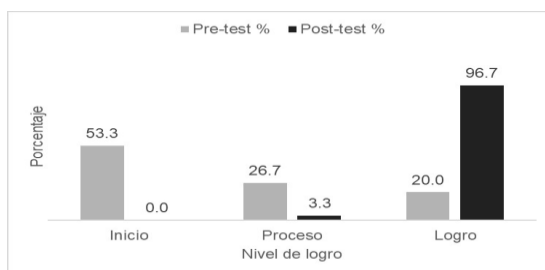


Fig. 2- Fine motor level in its facial motor dimension

In Figure 3 it shows that before application of the recreational

activities, to the same as in the other dimensions, 83.3 % (25) of the children are placed in the starting level, while after application of playful activities, the level of achievement is increased; 50.0 % (15) of the children managed to advance to the process level and the other 50.0 % (15) of the children managed to advance to the achievement level. These results allow us to conclude that the implementation of recreational activities improving the fine motor skills in their size motor gestural in children aged 3 and 4 years of EIP "Cyberkids" of Ayacucho.

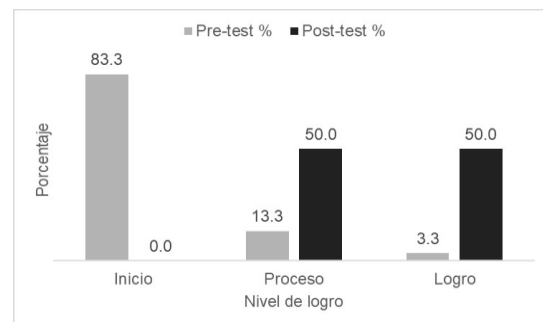


Fig. 3 - Fine motor level in its gestural motor dimension

Table 1 - Inferential analysis of recreational activities and fine motor skills

HIPÓTESIS	ESTADÍSTICOS DE PRUEBA PRE-TEST Y POST-TEST		DECISIÓN
	Z	Sig. Asintótica (bilateral)	
Hipótesis general Motricidad fina1- motricidad fina2	-4,882b	,000	Acepta Ha
Hipótesis específica 1 Viso manual1- viso manual2	-4,730b	,000	Acepta Ha
Hipótesis específica 2	-4,443b	,000	Acepta Ha

Facial1- facial2			
Hipótesis específica 3	- 4,893b	,000	Acepta Ha
Gestual1- gestual2			

to. Wilcoxon test of signed ranks
 b. It is based on positive ranges

In Table 1 the results of the inferential analysis are observed. In all the hypotheses $\tilde{n} = 0.000$, less than $\alpha = 0.05$ is calculated, so the alternate hypothesis is accepted, stating that there are significant differences between pre-test and post-test of the the level of fine motor and dimension ones coordinating visor manual facial motor, and gestural motor; proving that with a confidence of 95 %, that playful activities develop the fine motor skills in children with 3 and 4 years of EIP "Cyberkids" of Ayacucho.

DISCUSSIONS

Cabrera & Dupeyrón (2019) assert that initial or preschool education is the first link in the educating system, it must be fulfilled the conducting lines regular and accurate lines, and the proper use of tools and materials and mastering techniques in the different actions of cut, tear, trace, color, fill.

At the beginning of the research, a pre-test was used to evaluate the dimensions under study (visual- manual coordination, facial motor skills and gestural motor skills), later the recreational activities were applied to later evaluate the level of achievement through the post-test; It should be noted that, at the beginning, most of the children (66.7%) were at the initiation level, but after the application of recreational activities, the level of process and achievement increased (93.3%), both at a general level as inferential , showing that these activities improve fine motor skills (Delgado-Mero, 2016).

The fine motor skills have as indicators: ripping, folding, rolling, cutting with scissors, fastening and unbuttoning buttons, knotting, coloring, drawing a straight, curved or spiral line (strokes), among others; the same ones that the children have achieved once the playful activities have been applied, demonstrated in the post-test.

The results find support in Cajamarca (2018), which shows that recreational activities produce significant effects in the improvement of fine motor skills, affirming the importance of play in the correct personal and intellectual development of the boy and girl that strengthen their personality, reporting limitations by family influence.

In Ayacucho, most of the teachers of the initial education level lack training in the use of recreational activities or otherwise not apply, reality shows by Mendoza (2017), recommending that it must influence training teachers in the use of the recreational activities as a teaching method.

It is worrisome that children without pre stimulation school do not develop skills for higher levels of education (Gutiérrez & Ruiz, 2018). Possibly, the low performance of the students at different levels of education is rooted in the lack of interaction of teachers in education, who do not use recreational activities, despite being necessary for children to develop their skills and skills that will enhance their abilities to know, describe and express through their hands.

The inferential tests carried out with the Wilcoxon statistician show us that recreational activities improve fine motor skills; those children who did not reach the level of achievement, possibly due to the limited participation they had, sometimes missing the sessions.

Sánchez *et al.* (2017) highlight the importance of playful in the development of psychomotor activities, since it is the

result of the achievements made by the child in mastering fine hand movements; linking the child manages to society, a situation that supports our findings, since it has shown progress in handling scissors, collaring, expression feeling tastes, movements with hands and fingers, etc.

The Research shows that by the recreational activities, the boy and girl will express their discomfort or comfort with their surroundings and recreates conditions so that their needs are met. Delgado-Mero (2016) emphasizes that it must reap the great benefits of the game through exercises sorting, comparison and serialization not only to transfer knowledge. It is also necessary to consider assertions such as those of Zafra *et al.* (2016), who state that motor skills are not innate and must be developed in the best way, recommending playful skills.

One aspect that we must not ignore is that the improper use of playful can cause delay psychomotor development (Camargos & Mendes 2016), that is why implementing screening programs, care and monitoring in the areas of fine praxis and Global praxis should be an institutionalized practice, to be able to intervene early, especially to prevent affectations that are the cause of a disability (Segers *et al.*, 2018).

Another observation made is that some children do not show interest in the development of playful activities, a fact that is approached by Ramírez, Gutiérrez, León, Vargas & Cetre (2017), who associate low creativity in graph plastic activities with the lack of interest in children in practices for the development of fine motor skills.

For this reason, it is stated that motor development is the key to exploring the environment; the advancement of motor autonomy is associated with psychic development and progressive awareness

of the environment. There is a significant relationship between motor development and academic performance (Sánchez *et al.*, 2017).

The state's curricular design has focused its attention on what they learn from the age of four (Zapata & Restrepo 2013); but, as Ramírez *et al.* (2014), quality affective and cognitive relationships with boys and girls should be prioritized, and educational environments should be organized within an approach that allows human development within principles such as respect for the pace of development and daily life of the child.

For Cajamarca (2018), the little interest of parents and teachers does not allow children to develop their fine motor skills. There is a lot of dependence on their parents in the activities they carry out, their first movements being uncoordinated and isolated. Therefore, children must be given opportunities to express their creativity from the body through which their psychological, physiological and social "I" will be formed.

The results obtained in the research demonstrate the fundamental role played by recreational activities for the improvement of fine motor skills. Consequently, this research sets a precedent for other studies that may be developed in much wider areas, seeking to generalize from a scientific point of view.

The research objective has been achieved, demonstrating that ludic activities produce significant effects in the improvement of fine motor skills and its dimensions (visual- manual coordination, facial motor skills and gestural motor skills) of children of pre- school age of the EIP "Cyberkids" from Ayacucho ($n = 0.000$), showing significant differences with respect to the pre - test and post - test at a confidence level of 95 %.

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Conflict of interests:

The authors declare not to have any interest conflicts.

Authors' contribution:

The authors participated in the writing and analysis of this work.



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