PODIUM
Journal of Science and Technology in Physical Culture

UNIVERSITY EDITORIAL

Volume 18
Issue 1
2023

University of Pinar del Río "Hermanos Saíz Montes de Oca"

Director: Fernando Emilio Valladares Fuente

Email: fernando.valladares@upr.edu.cu

ISSN: 1996–2452 RNPS: 2148
PODIUM Journal, January-April 2023; 18(1): e1414

Translated from the original in Spanish

Original article

Levels of development of body expression and motor skills, in Initial Education: virtual modality

Niveles de desarrollo de la expresión corporal y motricidad, en la Educación Inicial modalidad virtual

Níveis de desenvolvimento da expressão corporal e das habilidades motoras na Educação Precoce modalidade virtual

Rubén Castillejo Olán[1*], *Heidy Justin Rodríguez Pérez*[1], *Maritza Catherine Vallejo Palacios*[1], *Lizmary Feriz Otaño*[1]

[1]Universidad de Guayaquil. Ecuador.

[*]Autor para la correspondencia: ruben.castillejoo@ug.edu.ec

Recibido: 13/10/2022.
Aprobado: 28/11/2022.

ABSTRACT

The objective of the study focused on characterizing the levels of development of body expression and motor skills achieved through the virtual modality, in a group of children from the Víctor Murillo Soto Basic Education school, in Ecuador, at the end of the 20-2021 school year. A non-experimental, cross-sectional research was carried out, through a field study with non-probabilistic, intentional and stratified sampling made up of 32 children, their parents and a teacher. The variables education in virtual modality, body expression and motor skills were operationalized in four dimensions: perception of result, implementation strategies, perception of its impact and levels of development and a questionnaire, a structured interview and an observation guide were applied; in addition, a rating scale with three levels of development. The results showed that the parents were in

favor of the face-to-face modality in relation to the achievement of motor learning objectives, to take advantage of the physical spaces in children's educational institutions and to achieve a quality education for their children; a contradiction was revealed between the teaching discourse and the real levels of development of child body language and motor skills, in correspondence with the curricular requirements of the sublevel and low levels of development in body language and motor skills, at the end of the school period, due to that only a third of the children achieve the category of acquired.

Keywords: Initial Education; evaluation; body expression; virtual modality; motor skills.

RESUMEN

El objetivo del estudio, se centró en caracterizar los niveles de desarrollo de la expresión corporal y motricidad alcanzados mediante la modalidad virtual, en un grupo de niños de la escuela de Educación Básica Víctor Murillo Soto, en Ecuador, al finalizar el período lectivo 2020-2021. Se realizó una investigación transversal-no experimental, mediante un estudio de campo con muestreo no probabilístico, intencional y estratificado integrado por 32 niños, sus padres y un docente. Se operacionalizaron las variables educación en modalidad virtual, expresión corporal y motricidad en cuatro dimensiones: percepción de resultado, estrategias de implementación, percepción de su impacto y niveles de desarrollo y se aplicaron un cuestionario, una entrevista estructurada y una guía de observación; además de, una escala de valoración con tres niveles de desarrollo. Los resultados evidenciaron que los padres de familia, se mostraron a favor de la modalidad presencial en relación al alcance de objetivos de aprendizajes motrices, de aprovechar los espacios físicos en las instituciones educativas infantiles y de lograr una educación de calidad para sus hijos; se reveló una contradicción entre el discurso docente y los niveles reales de desarrollo de la expresión corporal y motricidad infantil, en correspondencia con las exigencias curriculares del subnivel y bajos niveles de desarrollo en la expresión corporal y motricidad, al finalizar el período lectivo, debido a que solo una tercera parte de los niños logra la categoría de adquirido.

Palabras clave: Educación Inicial; evaluación; expresión corporal; modalidad virtual; motricidad.

INTRODUCTION

After the end of the first quarter of 2020, the conditions in which the teaching-learning process was carried out in most educational systems and levels changed as a result of mandatory confinement in the face of the global health crisis, as a result of the pandemic due to the COVID-19; this imposed the virtual modality in education and revealed its "(...) structural limitations" (Fernández, 2021, p. 50).

Despite the fact that the educational sector is one of those that shows the greatest development in technological matters at a social level (Rodríguez *et al.*, 2018), the urgency in educational continuity showed the insufficient digital skills of teachers, which generated the proliferation of training courses related to virtual learning technologies and educational

participation (Fernández, 2021) and revealed that "(...) the level of continuous training is directly proportional to the level of digital teacher competence" (Pozo-Sánchez *et al.*, 2020, p.1).

The particularities of the initial level of education made the virtual modality a challenge for nursery school teachers, the family and pedagogical managers; in addition, for those who outline educational policies at the macrosystem level, since "The pandemic is affecting all aspects of children's lives: their physical health, their development, their learning possibilities" (UNICEF, 2020, p. 4). According to Pozo-Sánchez et al. (2020, p. 1) "(...) women have a higher level in the creation of digital content than men", which can have a positive impact on the initial level of education.

Internet access, possession and use of an electronic device with certain characteristics and family support for the child are conditions for carrying out a virtual early childhood education. In this sense, during the didactic management, a relationship is established between virtual pedagogical communication and virtual teaching-learning tools, among which the use of educational management platforms, videoconferences and social networks stand out.

In children, confinement caused harmful effects such as negative emotional reactions, sleep and behavior problems (Erades and Morales, 2020). One of the most affected dimensions of human activity, during this period, was mobility. Despite the end of the confinement, many educational centers continued their activity in a virtual mode, which prevented children's access to physical education for children, recesses and playful activities as forms of promoting physical activity in educational institutions (Cárcamo-Oyarzun *et al.*, 2022).

Child psychomotor activity as an expression of children's physical education, not only offers opportunities for their development, but also for motor learning (Aguilar *et al.*, 2021). The limitations of motor skills in physical education, as in other areas of knowledge, reflect the theory-practice relationship, but accentuated as a result of its relationship with bodily practices (Miragem and Almeida, 2021). The virtual management of school physical activity forced a shift in the teaching-learning process directed more at knowing than at knowing how to do, which has generated changes not only in children, but also in teachers. It would be necessary to corroborate the hypotheses that have been established about the possible impact on motor skills in the long term.

The relevance of achieving a good development of basic motor skills in childhood lies not only in the development of motor skills itself, but also in the positive influence that it can exert on other dimensions of the human being such as biological, cognitive, affective, social and psychological (García-Marín and Fernández-López, 2020). In turn, the learning and development of basic motor skills is positively related to the levels of bio - psycho - social and environmental development (Adamo *et al.*, 2016).

The evaluation of the development of basic motor skills can be carried out through different standardized tests. The Test of Gross Motor Development (TGMD-2) proposed by Urlich (2000) is widely used and is considered the only qualitative tool with a standardized protocol (Luz *et al.*, 2017). However, although it adjusts to the age range of the study, it

covers twelve skills grouped into locomotor (6) and manipulative (6) skills, even though they are not considered in the initial curriculum (Ministry of Education, 2014) or that there are skills not considered in the test. It is understandable, from the pedagogical point of view, to use the didactic resources offered by the curriculum, not only as guidance for learning management, but also as a way of evaluating the skills it includes.

Consequently, it is intended to know how the levels of development behave in the field of curricular body expression and motor skills, in a group of 4-5-year-old children, once they have completed their teaching-learning process in the virtual modality. The objective of the research was to characterize the levels of development of body expression and motor skills, achieved through virtual modality in a group of children from the Víctor Murillo Soto Basic Education school, at the end of the 2020-2021 school period.

MATERIALS AND METHODS

In the research, a methodology with a qualitative-quantitative approach of a transversal type, not experimental, was used. An intentional and stratified non-probabilistic sampling carried out at the Víctor Murillo Soto Basic Education School, in the Duran canton, in Ecuador, made up of all children from 4 to 5 years of age (32) enrolled in initial II of the morning session, was used. a teacher and 32 parents. The research instruments of the field study were applied in the month of March 2021, at the end of the 2020-2021 school year and as part of the tutor-student activity of the pre-professional practice, corresponding to the Initial Education career of the Guayaquil University. The variables education in virtual modality, body expression and motor skills were operationalized in four dimensions: perception of result, implementation strategies, perception of its impact and levels of development. The indicators can be seen in Table 1.

Table 1. *- Operationalized indicators of the variables education in virtual modality and corporal expression and motricity*

No.	Indicators	No.	Indicators
1	Perception of education in virtual modality	10	Crawl at a distance of 10 meters
2	Children's motor activities in virtual mode	11	Continuous running and jumping on inclined surfaces.
3	Effects of virtual strategies	12	Kicking balls head on
4	Effects of child motor skills in education	13	Throw and catch balls at 3 meters with parabola
5	Use of physical spaces in virtual mode	14	Postural control during the race with changes of direction
6	Effects of infant motor skills on communication	15	Postural control in the standing position
7	Effects of infant motor skills on socialization	16	Postural control when walking on a 25 cm high beam
8	Interest in children's motor skills in virtual mode	17	Coordination of hip and knee movements
9	Jump from one foot to the other alternately autonomously	18	Coordination of wrist and finger movements

Instruments

Three instruments were applied, the first was a questionnaire for parents with the objective of knowing their opinion about the education in virtual modality that their children receive. The applied instrument questioned the following: 1. Do you consider that your child receives a comprehensive quality education in this virtual modality? 2. Do you believe that the education that your child is receiving in virtual modality benefits all areas of learning? , 3. Do you understand that the proper development of the field of corporal and motor expression is essential in the education of your child?, 4. Do you think that virtual education can replace the physical environments and spaces for motor learning in children of 4 to 5 years?, 5. Do you think that jumping, running, catching, kicking, walking and rolling are examples of fundamental skills that your child must master at this age of 4 to 5 years?, 6. Do you consider that the Strategies used in the virtual modality used by the teacher of the institution contribute to the quality education of your child?, 7. Do you understand that it is possible to obtain a quality education at the motor level without accessing the physical space of the ins title? and 8. Do you think that the development of corporal expression helps your child to control the movement of his body, improving confidence and self-confidence ? Rate on a scale with the following ranges: Agree, Strongly Agree, Disagree, and Strongly Disagree.

The second instrument was a structured interview with the teacher, containing 5 questions that are shown below:

1. Do you think that children develop relationships of communication and socialization through the practice of body movements?

2. Do you do body movement activities with the children in this new virtual modality?

3. Is it necessary for teachers to use innovative virtual strategies for the proper development of the body and motor area?

4. Do the children show interest in the bodily stimulus that they visualize through the synchronous virtual class?

5. What are the skills that most help the psychomotor development of children from 4 to 5 years of age?

The third instrument was a structured observation guide, it was used to assess the variable levels of development of body expression and motor skills; the following indicators were evaluated: 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18 (Table 1). They reflected the skills that Ecuadorian children from 4 to 5 years old must achieve, according to the current curriculum. The scope of curricular skills was expressed in four learning objectives (Ministry of Education, 2014):

1. Achieve global dynamic coordination in the different forms of locomotion to move safely.

2. Control muscle strength and tone in the execution of activities that allow the realization of coordinated movements.

3. Develop postural control in static and dynamic balance activities, strengthening mastery of body movement.

4. Achieve coordination in performing segmental movements, identifying the dissociation between the thick and thin parts of the body.

For the assessment of the development of body expression and motor skills level, the following categorical scale was used: level started, acquired and in process, those established in the Initial Education curriculum for the assessment of the level of development of skills, in correspondence with the fulfillment of the objectives established in the field of corporal expression and motor skills. In the acquired category, the child met the objective established for the skill; in the initiated, the child did not reach the goal for the skill and in the category in process, the child partially met the goal (Ministry of Education, 2014). The practical development of the observation was carried out using a checklist. The empirical data obtained were processed through the resources of descriptive statistics.

RESULTS AND DISCUSSION

Results of the questionnaire applied to parents

In question No. 1, 43 % of those surveyed believed that their child received a comprehensive quality education. This result evidenced the levels of dissatisfaction in more than half of the parents. In the responses to question No. 2, more than half of the parents considered that virtual classes did not benefit all learning areas, which is contrary to the statement by Gamboa *et al.* (2019) about the fact that motor skills are essential for the construction of different learning, since children establish concepts during the exploration of their environment.

More than two thirds of the parents thought (question No. 6) that the strategies in the virtual modality used by the institution's teacher contributed to the quality education of their child. In a study carried out in Spain, on the appreciation of virtual teaching-learning, it was concluded that "The degree of satisfaction of families, with respect to the teaching that their children are receiving in primary school, stands out in 60 % of private centers, while public centers in 37 %" (Cabrera *et al.*, 2021, p. 251).

The opinion of the parents investigated was more in line with the results of the Spanish private educational system, which showed similar states in different educational contexts. The satisfaction of parents with the teaching-learning process that was carried out with their children was an important factor that was found to be related to their participation in child education (Colás Bravo and Contreras, 2013) and therefore, in determining the quality of the educational system (Andrés Cabello and Giró Miranda, 2016).

The answers to question No. 3 of the questionnaire showed that approximately 50% of the parents were of the opinion that the good development of the field of corporal and motor expression was essential in the education of their son; however, 29 of them believed that the motor skills expressed in the initial curriculum should be mastered by their children

(question No. 5). The main conceptions about motor skills reaffirmed its importance and relevance in the integral formation of children (Callado, 2018; Cabrera and Dupeyrón, 2019) In a bibliographical review, it is stated that "(...) motor skills not only allow the motor development of students, but also because through it the child expresses and communicates his emotions and acquires knowledge, being movement a determining factor in learning for action" (Viciana *et al.,* 2017, p. 101).

Although it is true that studies show how teachers recognize the value of children's motor skills, the school organization does not always grant the temporary distribution that is required for the integral formation of children (Alonso et al., 2020). Consequently, other studies show that some teachers do not sufficiently treat child motor training due to insufficient experience and skills for it (Delgado and Montes, 2017). However, it is relevant that motor patterns are developed without neglecting the other curricular areas, since they have the same value in the integral formation of the child (Bernate, 2019).

In the same direction, studies in Ecuador show that the nursery school teacher has to approach the contents from the motor perspective, through basic motor skills in order to optimize that energy and direct it to the achievement of learning (Simbaña *et al.,* 2022). These statements can flourish the type of link between the perception of the family and the performance of the nursery school teacher in relation to motor skills.

Three quarters (75%) of those surveyed considered that the virtual modality cannot replace the physical environments and spaces for motor learning in children 4-5 years of age (question No. 4); likewise, half of the parents were of the opinion that a quality education at the motor level cannot be obtained without accessing the physical space of the institution (question No. 7). A study carried out in Ecuador that correlates the variables of environments and physical spaces with child motor development states that there are marked motor difficulties, both gross and fine, in children of initial education from 4 to 5 years old, from the Dr. José Basic Education Center Ricardo Martínez Cobo, associated with limitations with specialized spaces (Pinargote *et al.,* 2019). These results reaffirm the opinions of the parents in the sample.

Parents believed, in more than 90 %, that body expression and motor skills helped motor control and improve the confidence and security of their children (question No. 8), which agrees with the statements of the research results in Ecuador which state that the greater the child's language and body schema capacity, the greater the mastery he will achieve in coordinating large locomotion movements and, consequently, in safety and motor confidence (Simbaña *et al.,* 2022).

Results of the interview with the preschool II teacher who works with the children in the sample

In summary, the pre-school teacher interviewed sufficiently valued the role of motor skills as a factor in the development of communication and social relationships in children and considered that communication was essential in their development and growth. This was justified by stating that, through from body expression and motor skills, the child transmitted states of mind, feelings and thoughts. This answer finds support in a study carried out to reinforce social relationships through a motor program (Sánchez *et al.,* 2022); it concludes that the better the motor development of the child, the more likely they are to

establish positive relationships with their peers, in the same way, the better relationships the child has with their group, the more likely they are to get involved in the practice of motor activities.

The teacher continues by stating that virtual classes constituted a limitation for the development of children's interactivity in physical spaces, children did not always find company at home to exercise motor activities guided by the teacher. The strategies that were used were aimed at motivating the child to perform motor activities under the supervision of an adult at home, where he measured the screen of the electronic device used or as part of playful tasks.

These aspects indicated by the teacher coincide with the research results of Carrasco *et al*. (2021) who bet on motor strategies in virtual modality focused on the game, on the possibility of having a small physical space at home and the support of the family for its execution. In this sense, family support corresponds to the conception of the potential to generate coordinated relationships between the family game and the school educational game (Toro *et al*., 2022) very much in tune with the virtual modality, where children's presence is in home.

Consequently, the teacher considered as part of his response that an electronic device could not replace the physical areas and the school environment of a classroom or an institution, which harmonizes with the statement that the most important thing is not the device. electronic, but the pedagogical components and teaching creativity in the process in virtual modality, according to Carrasco *et al.* (2021); along the same lines, the proposal for a program for the integration of movements in the teaching of academic content from Nielsen *et al.* (2022) is reaffirmed for the Initial Education stage, in times of confinement or motor inactivity, as an alternative to the virtual modality.

With the rise of online classes, it has become a bit difficult to keep children's attention and interest. It is more complex for the field of corporal expression and motor skills to use virtual teaching resources and strategies than for the rest of the fields of Initial Education. It was recognized that the skills that most help the psychomotor development of the child were those associated with learning for comprehensive training, such as holding a crayon or a pencil, using scissors, rulers and other objects, in addition to jumping, running, catching, kick, walk and roll.

Results of the observation made to the children of the sample

Table 2. *- Niveles por indicadores mostrados por los niños durante la observación*

Learning objective	Indicator	Initial level		Level in progress		Level acquired	
		F	%	F	%	F	%
1	9	4	13,00	6	18,75	22	68,75
1	10	12	37,70	5	15,62	15	46,87
1	11	15	46,87	7	21,87	10	31,25
2	12	2	6,25	20	62,50	10	31,25
2	13	8	25,00	10	31,25	14	43,75
3	14	5	15,62	18	56,25	9	28,12
3	15	9	28,12	7	21,87	16	50,00
3	16	8	25,00	10	31,25	14	43,75
4	17	6	18,75	11	34,37	15	46,87
4	18	12	37,50	9	28,12	11	34,37

In learning objective No. 1, as seen in Table 2, three indicators were evaluated (9, 10, 11). The results of indicator No. 9 showed that more than two thirds of the evaluated children fulfilled the curricular objective, by jumping from one foot to the other autonomously and alternately; however, a delay in its reach was also evidenced in four subjects of the sample. In indicator ten, the lack of motor coordination was revealed in more than half of the children evaluated when they crawled in the dorsal decubitus position. Indicator 11 showed a poor motor performance during the coordination of running and jumping continuously, since more than half of the children did not reach it at the end of their school period.

The results of these three indicators that were synthesized in achieving global dynamic coordination in different forms of locomotion for the child to move safely, harmonized with those obtained in Ecuador, by Simbaña *et al.* (2022) with children of the same age when he pointed out that few children master the skills related to the coordination of running and jumping in different directions.

Objective No. 2 (Table 2) referred to coordinated movements of kicking and throwing-catching, had two indicators (12 and 13). The results of the observation in indicator No. 12, showed that more than two thirds of the children did not achieve the levels of oculo-pedal coordination that the curriculum proposed; in indicator No. 13, it was evidenced that more than half of the children investigated did not reach the objectives of the sublevel, by exposing poor hand-eye coordination with low anticipation of movement.

The results of the questionnaire applied to 38 teachers of Day care centers in Cuba (Peraza *et al.,* 2020) confirmed that the children of the Isla de la Juventud were between the categories of fair and poor in the development of these basic motor skills in face-to-face mode. This comparison led to the reflection that the confinement due to COVID-19 could have repercussions on the level of motor development; however, it is complex to determine if this limitation already existed previously (Sanchez *et al.,* 2020).

The third learning objective (Table 2) had three indicators (14, 15, 16). In indicator No. 14, a third of the children managed to maintain postural control during the run with change of direction; for postural control, in indicator No. 15, half of the subjects failed to maintain static balance; likewise, in indicator No. 16, limitations were manifested in more than half of the children to maintain balance on the 10 cm wide beam and 25 cm high from the ground. These poor results are in line with the conclusions of a study in Spain (Ramos *et al.,* 2022) which states that as a consequence of confinement due to SARS-CoV-2, there was a worsening of balance values in children aged 11- 12 years.

The fourth learning objective, as shown in Table 2, included two indicators to assess the performance of children in relation to segmental motor coordination (17 and 18). The results in the evaluation of indicator No. 17 showed dissatisfaction in the desired scope, in more than half of the sample; in indicator No. 18, the third part was the one that achieved the category of acquired. These results are in contrast to those achieved in a study with 5-year-old children in Peru (Aujtukai, 2022) where 88% presented normal development in relation to segmental coordination.

This research revealed the motor limitations of the sample, by not reaching the learning objectives at the end of the school period in the virtual modality, such as global and segmental coordination, postural control and dynamic balance in the confinement stage and those established in curriculum documents. This coincided with other results in Ecuador that affirm "(...) in the motor area the constant is an average development" (Sánchez-Reyes *et al.,* 2020, p. 204). It also agrees with a study in Costa Rica that ensures that more than 50 % of the study sample (five-year-old children) presented difficulties in their psychomotor development (Herrera *et al.,* 2022) and likewise, in the studies by Román and Contreras (2017) who showed a "Deficit in the fine and gross motor area" (p. 39) in children, after the stage of confinement by COVID-19.

The limitations of this study were associated with its cross-sectional nature, which did not make it possible to compare the impact of virtual strategies on children's motor learning, due to the lack of references in motor learning in face-to-face mode, as well as the size of the sample.

CONCLUSIONS

The parents of the children in the study were in favor of the face-to-face modality in relation to the achievement of motor learning objectives, to take advantage of the physical spaces in children's educational institutions and to achieve a quality education for their children.

A contradiction was revealed between the teaching discourse and the real levels of development of corporal expression and child motor skills, in correspondence with the curricular requirements of the sublevel. The address goes more to the duty of virtual motor didactics than to educational reality.

The levels of development of body expression and motor skills in the 4–5-year-old children studied were low, if one takes into account that around a third of them were reached at the end of the school year in the category of acquired in sublevel skills.

REFERENCES

Adamo, K., Wilson, S., Harvey, A. L., Grattan, K. P., Naylor, P.- J., Temple, V. A. y Goldfield, G. S. (2016). Does Intervening in Childcare Settings Impact Fundamental Movement Skill Development? *Medicine and Science in Sports and Exercise*, *48*(5), pp. 926-932. https://doi.org/10.1249/MSS.0000000000001092

Aguilar Herrero, M., García Fernández, C. M. y Gil del Pino, C. (2021). Efectividad de un programa educativo en Educación Física para fomentar las habilidades socioafectivas y prevenir la violencia en educación primaria. *Retos*, *41*, pp. 492-501. https://doi.org/10.47197/retos.v0i41.82683

Alonso Álvarez, Y., y Pazos Couto, J. M. (2020). Importancia percibida de la motricidad en Educación Infantil en los centros educativos de Vigo (España). *Educación e investigación*, *46*. https://doi.org/10.1590/S1678-4634202046207294

Andrés Cabello, S., y Giró Miranda, J. (2016). La participación de las familias en la escuela: una cuestión compleja. *Revista De Evaluación De Programas Y Políticas Públicas*, *1*(7), 28-47. https://doi.org/10.5944/reppp.7.2016.16302

Aujtukai Asamat, B. (2022). Desarrollo psicomotor en niños de cinco años de Puerto Galilea, distrito Río Santiago, Región Amazonas. *Revista de Investigación Científica UNTRM: Ciencias Sociales y Humanidades,* *5*(2), pp. 9-12. http://revistas.untrm.edu.pe/index.php/CSH/article/view/860

Bernate, J. (2021). Educación física y su contribución al desarrollo integral de la motricidad. *Podium. Revista de Ciencia y Tecnología en la Cultura Física*, *16*(2), pp. 643-661. https://podium.upr.edu.cu/index.php/podium/article/view/957

Cabrera Méndez, M., Diez Somavilla, R. y López Navarrete, A. (2021). Apreciación de la enseñanza-aprendizaje online en tiempos de COVID-19 por parte de las familias españolas. *Espacios*, *42*(1), pp. 246-258. https://www.revistaespacios.com/a21v42n01/a21v42n01p20.pdf

Cabrera Valdés, B., y Dupeyrón García, M. (2019). El desarrollo y la estimulación de la motricidad fina en los niños y niñas del grado preescolar. *Mendive. Revista de Educación*, *17*(2), pp. 222-239. http://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/

Callado, C. V. (2018). El aprendizaje cooperativo en educación física: Planteamientos teóricos y puesta en práctica. *Acción motriz*, *20*, pp. 7-16. https://dialnet.unirioja.es/revista/15566/A/2018

Cárcamo Oyarzun, J., Romero Rojas, F. y Estevan, I. (2022). Impacto de la pandemia por COVID19 en la percepción de competencia motriz de escolares de la ciudad de Temuco, Chile. *Retos*, *43*, pp. 361-369. https://doi.org/10.47197/retos.v43i0.87496

Carrasco Coca, O. R., Caicedo Merizalde, J. G., Savedra Valdiviezo, O. A., y Ochoa Sangurima, V. L. (2021). Fundamentos Pedagógicos para la enseñanza-aprendizaje de la Educación Física en Modalidad Virtual: Un reto actual. *Ciencia Digital*, *5*(1), pp. 232-251. https://doi.org/10.33262/cienciadigital.v5i1.1542

Colás Bravo, P. S., y Contreras, J. A. (2013). La participación de las familias en los centros escolares de Educación Primaria. *Revista de Investigación Educativa*, *31*(2), pp. 485-499. https://doi.org/10.6018/rie.31.2.171031

Delgado Lobete, L., y Montes Montes, R. (2017). Perfil y desarrollo psicomotor de los niños españoles entre 3 y 6 años. Sportis. *Scientific Journal of School Sport, Physical Education and Psychomotricity*, *3*(3), pp. 454-470. https://doi.org/10.17979/sportis.2017.3.3.2002

Erades, N. y Morales, A. (2020). Impacto psicológico del confinamiento por la COVID-19 en niños españoles: un estudio transversal. *Revista De Psicología Clínica Con Niños Y Adolescentes*, *7*(3), pp. 27-34. https://doi.org/10.21134/rpcna.2020.mon.2041

Fernández, Ruiz. M. R. (2021). Nativos pandémicos: la educación virtual en Educación Infantil durante el confinamiento por COVID-19. *Estudios sobre educación, 41*, pp. 49-70. https://doi.org/10.15581/004.41.010

Gamboa Jiménez, R. A., Bernal Leiva, M. N., Gómez Garay, M. P., Gutiérrez Isla, M. J., Monreal Cortés, C. B., y Muñoz Guzmán, V. V. (2019). Corporeidad, motricidad y propuestas pedagógico-prácticas en aulas de educación infantil: The relationship between discourse and praxis. *Revista Latinoamericana De Ciencias Sociales, Niñez Y Juventud*, *18*(1), pp. 122. https://doi.org/10.11600/1692715x.18101

García Marín, P. y Fernández López, N. (2020). Motor Skills Competence in Preschool Education. *Apunts. Educación Física y Deportes*, 141, pp. 21-32. https://doi.org/10.5672/apunts.2014-0983.es.(2020/3).141.03

Herrera González, E., Fonseca Schmidt, H., & Morera Castro, M. (2022). Diagnóstico psicomotriz de niños y niñas de 2 a 4 años que asisten a centros de atención integral. *Acción Motriz*, *30*(1), pp. 73-83. https://www.accionmotriz.com/index.php/accionmotriz/article/view/224

Luz, C., Almeida, G., Rodrigues, L., & Cordovil, R. (2017). The evaluation of motor competence in typically developing children: An integrative review. *Journal of Physical Education*, *28* e2857. https://doi:10.4025/jphyseduc.v28i1.2857

Ministerio de Educación. (2014). *Currículo de Inicial 2014*. Autoedición. https://educacion.gob.ec/wp-content/uploads/downloads/2014/06/curriculo-educacion-inicial-lowres.pdf

Miragem, A. A., & Almeida, L. de. (2021). Potencialidades e limitações da educação física no ensino remoto: o efeito pandemia no componente curricular. *Movimento*, *27* e27053. https://doi.org/10.22456/1982-8918.111633

Nielsen Rodríguez, A., Romance, R., Dobado Castañeda, J. C., y Gil-Espinosa, F. J. (2022). Evaluation of a Proposal for Movement Integration in the Teaching-Learning Process in Early Childhood Education. *Children (Basel, Switzerland)*, *9*(2), pp, 231. https://doi.org/10.3390/children9020231

Pinargote Zambrano, A. H., Pinargote Salvatierra, L. P., Adela Connie Alcívar Chávez, A. C., y Rojas Rojas, J. A. (2019). Los espacios físicos dentro y fuera del aula y su incidencia en el desarrollo de la motricidad de los niños y niñas de educación inicial. *Tlatemoani Revista Académica de Investigación, 10*(31), pp. 249-269. https://dialnet.unirioja.es/revista/26634/V/10

Pozo Sánchez, S., López Belmonte, J., Fernández Cruz, M. y López Núñez, J. A. (2020). Análisis correlacional de los factores incidentes en el nivel de competencia digital del profesorado. *Revista Electrónica Interuniversitaria de Formación del Profesorado,23*(1), pp. 143-159. https://doi.org/10.6018/reifop.396741

Ramos Álvarez, O., Arufe Giráldez, V., Sanmiguel Rodríguez, A., y Navarro Patón, R. (2022). Implications for balance in 11- and 12-year-old children in northern Spain during SARS-CoV-2 lockdown. *Frontiers in psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.1009299

Rodríguez, A. M., Caceres, M. P. y Alonso, S. (2018). La competencia digital del futuro docente: análisis bibliométrico de la productividad científica indexada en Scopus. *IJERI: Revista Internacional de Investigación e Innovación Educativa*, (10), pp. 317-333. https://www.upo.es/revistas/index.php/IJERI/article/view/2960/2737

Román Sacón, J. y Calle Contreras, P. (2017). Estado de desarrollo psicomotor en niños sanos que asisten a un centro infantil en Santo Domingo, Ecuador. *Enfermería: Cuidados Humanizados*, *6*(2), pp. 39-64. https://doi.org/10.22235/ech.v6i2.1467

Sánchez-Matas, Y., Gutiérrez-Díaz del Campo, D., Hernández-Martínez, A., y Segovia Domínguez, Y. (2022). Efecto de un programa de refuerzo motriz en alumnado con dificultades motrices y/o sociales. *Cuadernos de Psicología del Deporte*, *22*(1), pp. 14.27. https://doi.org/10.6018/cpd.421831

Sánchez Reyes, L., Ramón Santana, A. y Mayorga Santana, V. (2020). Desarrollo Psicomotriz en niños en el contexto del confinamiento por la pandemia del COVID 19. *Dominio de las Ciencias, 6*(4), pp. 203-219. http://dx.doi.org/10.23857/dc.v6i4.1617

Simbaña Haro, M. P., González Romero, M. G., Merino-Toapanta, C. E., y Sanmartín Lazo, D. E. (2022). La expresión corporal y el desarrollo motor de niños de 3 años. *Revista Científica Retos De La Ciencia*, *6*(12), 2540. https://retosdelacienciaec.com/Revistas/index.php/retos/article/view/385

Toro Arévalo, S., López de Maturana, D., Contreras Oyarzo, M., Sandoval-Obando, E., Peña-Troncoso, S., y Gurovich Pinto, T. (2022). Juego, Motricidad y Didáctica, desde la Cultura Infantil en Niños y Niñas de 4 a 6 años, bases teóricas desde una epistemología enactiva. *Retos, 45*, pp. 598-610. https://doi.org/10.47197/retos.v45i0.91598

Ulrich, D. (2000). *Prueba de desarrollo motor grueso 2: Manual del examinador.* (2ª ed.). Pro-Ed.

UNICEF, Dirección de Sensibilización y Políticas de la Infancia. (2020). *Salud mental e infancia en el escenario de la COVID-19*. Autoedición. https://www.unicef.es/sites/unicef.es/files /comunicacion/COVID19_UNICEF_Salud_Mental.pdf

Viciana Garófano, V., Cano Guirado, L., Chacón Cuberos, R., Padial Ruz, R., y Martínez Martínez, A. (2017). Importancia de la motricidad para el desarrollo integral del niño en la etapa de educación infantil. *EmásF*, *47*, pp. 89-105. https://dialnet.unirioja.es/servlet/articulo?codigo=6038088

Conflict of interest:
The authors declare not to have any interest conflicts.

Authors' contribution:
The authors have participated in the writing of the work and analysis of the documents