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An assessment of the physical education curriculum's effectiveness in developing fundamental motor skills among primary school children (ages 6–10), based on the TGMD-2 test

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Abstract This study aimed to explore the effectiveness of the physical education curriculum in fostering the acquisition of fundamental motor skills among primary school pupils (ages 6–10), using the TGMD-2 test. The research was conducted on a purposive sample of 60 pupils whose scores fell below the hypothetical mean in the subtests of the TGMD-2. To collect and analyze the data, the experimental method was employed, as it aligns well with the nature of the topic. Regarding data collection tools, the study relied on books and references in addition to the Test of Gross Motor Development–Second Edition (TGMD-2). Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS). The findings of the study were as follows:

•There were statistically significant differences between the pre-test and post-test in locomotor skills among primary school pupils.

•There were statistically significant differences between the pre-test and post-test in object control skills among primary school pupils.

Keywords: Curriculum; Physical Education and Sport; Motor Skills; Primary School; TGMD-2 Test.

Article info

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Introduction

Educational curricula represent the core of the learning process, and the quality of their content shapes the psychological, social, philosophical, and intellectual framework of the learner. In light of modern theories, today's youth are considered human capital that can be developed through education and training. Consequently, contemporary societies strive to design curricula that equip young generations with knowledge, skills, and values, enabling them to adapt to changing circumstances and contribute to the growth and prosperity of their communities. To achieve this, curricula are built in accordance with national, social, economic, cultural, and political needs, while also taking into account modernization across these domains, as well as regional and international requirements. (**Mahmoud & Hussein Nashwan, 2015**)

In line with this understanding of the curriculum's role, Algeria has placed significant emphasis on the physical education curriculum at the primary level, recognizing it as a key component in developing pupils' motor, cognitive, and social capacities. This subject aims to foster fundamental motor skills and is considered an integral part of the national educational programs. It is designed to meet pupils' needs by offering a variety of physical activities that promote physical, mental, and social development. However, the curriculum faces major challenges, particularly the lack of specialized design and implementation. Often, curricula are developed in a generalized manner without accounting for individual differences among pupils or local cultural and societal specificities.

Furthermore, as noted by Khaled Kateb, physical education classes in Algerian schools suffer from a lack of resources necessary for effective curriculum implementation, such as the absence of dedicated spaces for sports activities and insufficient equipment. (**Kateb et al., 2023, p.48**)

The age range of 6 to 10 years is a critical period in a child's development, during which most fundamental motor skills, such as running, jumping, throwing, and balancing, are formed. Nevertheless, the effectiveness of existing curricula in achieving these developmental goals remains a subject of extensive debate among educational and academic circles. (**Gallahue & Ozmun, 2012, p.76**)

Numerous studies have highlighted significant disparities in the level of fundamental motor skills among children, which may reflect gaps in either the implementation or the design of the physical education curriculum itself. According to the Motor Learning Theory proposed by Schmidt and Lee (2019), "the acquisition of motor skills largely depends on the quality of practice, the time allocated for training, and the level of feedback provided during instruction" (Schmidt, R. A., & Lee, T. D., 2019, p.23). Given that physical education curricula are often generalized and not tailored to specific developmental stages, this may result in missed opportunities to enhance children's motor skills.

Moreover, the absence of precise and systematic assessment tools makes it difficult to evaluate the extent to which educational and motor objectives are being achieved. This underscores the importance of the Test of Gross Motor Development–Second Edition (TGMD-2) as a standardized and comprehensive tool for assessing children's fundamental motor skills. The TGMD-2 is distinguished by its ability to measure motor skills both quantitatively and qualitatively, providing accurate data that supports the analysis of curriculum and program effectiveness. (**Ulrich, D. A., 2000, p.24**)

Hence, we address the following questions:

1. General Question:

Does the physical education curriculum implemented in Algerian primary schools play a role in developing fundamental motor skills among children aged 6 to 10?

1.1 Sub-questions

- Are there statistically significant differences between the pre-test and post-test in locomotor skills among primary school pupils?

- Are there statistically significant differences between the pre-test and post-test in object control skills among primary school pupils?

2. General Hypothesis:

The physical education curriculum implemented in Algerian primary schools contributes to the development of fundamental motor skills among children aged 6 to 10.

2.1 Sub-hypotheses:

- There are statistically significant differences between the pre-test and post-test in locomotor skills among primary school pupils.

- There are statistically significant differences between the pre-test and post-test in object control skills among primary school pupils.

3. Definition of Terms

3.1 Physical Education and Sport

Physical education is considered a manifestation of education that seeks to achieve its objectives through selected motor activities, aiming to shape responsible citizens who enjoy holistic development, physically, psychologically, and socially, enabling them to adapt to their communities and lead fulfilling lives under conscious guidance. (**Sharaf, A. H., 2001, p.25**) According to Stork et al. (2021), physical education is a fundamental tool in schools for developing children's motor abilities and promoting their overall growth. It contributes to fostering physical and social harmony within the school environment. (**Stork, S. et al., 2021, p.76**)

3.2 Fundamental Motor Skills

In the field of physical education, the term "fundamental motor skills" refers to observable motor achievements that emerge during early stages of physical maturation, such as crawling, walking, running, rolling, jumping, throwing, climbing, and related movements. Since motor skills are primarily influenced by genetic predispositions and maturation, many scholars refer to them as "basic movements" (**Sassi, A., 2007, p.85**)

3.3 TGMD-2 Test

The Test of Gross Motor Development–Second Edition (TGMD-2) is a standardized tool used to assess fundamental motor skills and to identify individuals who may benefit from adapted physical education services. To ensure the test's relevance for such individuals, it includes elements representing common motor skills typically acquired by children before entering school and during early primary education (ages 3–10). The test evaluates 13 fundamental motor skills, including running, jumping, and throwing. (**Ulrich, D. A., 2000, p.5**)

3.4 Physical Education Curriculum

The physical education curriculum refers to the set of experiences provided by the school, both inside and outside the classroom, with the aim of supporting pupils' holistic development. This process contributes to behavioural adjustment and the achievement of educational goals. (**Helmi, H. B. M., 2005,**

p.66) Dooly et al. (2022) add that a school curriculum should include a variety of motor activities that encourage social interaction and physical development. (**Dooly, M., Nunan, D., & Seitz, M., 2022, p.89**) Thus, the physical education curriculum can be defined as a structured set of activities and exercises designed to teach motor skills and enhance physical fitness among children.

4. Research Objectives

This study aims to evaluate the effectiveness of the physical education curriculum in developing fundamental motor skills among primary school pupils aged 6 to 10. Using the TGMD test, the research seeks to measure pupils' motor skill levels before and after the implementation of the curriculum, and to determine whether there are noticeable differences in performance in core skills such as running, jumping, and throwing. Additionally, the study aims to explore the challenges teachers may face during curriculum implementation and how these challenges affect the effectiveness of motor skill instruction.

5. Significance of the Study

The importance of this research lies in its potential to improve the quality of physical education curricula. Understanding the impact of the curriculum on the development of fundamental motor skills can help in designing more effective educational programs tailored to the needs of children in early developmental stages. The study also highlights the role of these skills in enhancing children's motor coordination and social interaction, which positively influences their physical and psychological well-being. Furthermore, the findings may contribute to providing recommendations for educational institutions to improve physical education curricula in primary schools, thereby strengthening children's ability to acquire the motor skills necessary for future participation in physical and sports activities.

6. Previous Studies

6.1 Study by Sion Mi Seo (2024): "Application of a Sports Program for Primary School Students with Developmental Disabilities: Impact on Fundamental Motor Skills"

This study aimed to examine the effects of fundamental motor skills on primary school students with developmental disabilities through the implementation of a structured exercise program. Six participants diagnosed with developmental impairments underwent a 50-minute exercise session twice a week for 12 weeks. Data analysis was based on pre- and post-test results using the TGMD-II assessment. Mean scores and standard deviations were calculated using statistical software, and the Wilcoxon non-parametric test was applied to identify significant differences.

The program showed statistically significant improvements in locomotor skills such as running ($P<.05$), sprinting ($P<.05$), jumping ($P<.05$), and sliding ($P<.05$), as well as in object control skills including bouncing ($P<.05$), catching ($P<.05$), kicking ($P<.05$), throwing ($P<.05$), and rolling ($P<.05$). The results indicated that the sports program had a positive impact on the fundamental motor skills of primary school students with developmental disabilities. The study concluded that in order to develop diverse exercise programs for this population, it is essential to provide instruction that considers effective teaching practices and individual differences in skill levels.

6.2 Previous Study: **Ibn Andali Marta (2024)**

Title: Characteristics of Fundamental Motor Skills in Primary School Students Aged 7–8 Years

This study aimed to describe the fundamental motor skills of pupils aged 7 to 8 and to identify differences in skill levels. The second edition of the Test of Gross Motor Development (TGMD-2) was used as the primary data collection tool. The research was conducted on a sample of 140 pupils (70 boys and 70 girls) enrolled in primary schools. Data were analyzed using IBM SPSS Statistics, version 25.

The results showed an overall mean gross motor quotient of M = 83.39, SD = 9.2, with the 7-year-old group scoring M = 84.91, SD = 7.8 and the 8-year-old group scoring M = 81.87, SD = 10.2. These differences were statistically significant at the 0.05 level, indicating a notable variation in motor skill proficiency. The 7-year-old group demonstrated higher competence compared to the 8-year-old group, particularly among pupils whose overall motor performance was below average.

Additionally, boys outperformed girls in both age groups, and pupils showed stronger proficiency in general motor skills than in object control skills. The study concluded that improving physical education instruction in primary schools is essential to support the development of pupils' overall motor competence.

7. Methodology

A research methodology refers to a structured set of procedures used by researchers to study a phenomenon in an objective and verifiable manner. It relies on careful observation, experimentation, and logical analysis to reach scientific conclusions.

In this study, the experimental method was adopted due to its suitability for the research topic. This method is defined as "a procedure involving controlled experiments under specific conditions to test hypotheses or examine the effects of independent variables on dependent variables, with the aim of understanding causal relationships." (**Field, A., 2022, p.132**)

8. Research Sample and Its Characteristics

7.1 Study Population (Statistical Population)

The study population refers to the group of individuals targeted by the researcher for data collection or analysis. In this research, the total population consists of all primary school pupils aged 6 to 10 years in Algerian schools. As Bryman (2023) notes, "the population is used in research to identify shared characteristics among the individuals included in the study." (Bryman, A., 2023, p.76)

7.2 Main Study Sample

The sample is a subset selected from the population that the researcher aims to study. It is chosen systematically to ensure representativeness, allowing the researcher to generalize the findings to the broader population. Sampling is used when it is difficult or impractical to collect data from every individual in the total population. (Creswell, J. W., 2018, p.43)

8.3 Sampling Method

Determining and selecting the sample size is crucial. A sample that is too large increases effort and cost, while a sample that is too small reduces the accuracy of results. Therefore, the sample size depends on the required level of precision and the degree to which the sample represents the population.

In this study, a random sample was selected from primary school pupils. The initial sample included 180 pupils, of whom 25 were excluded, resulting in a final sample of 155 pupils. From this group, the study focused on a subset of 60 pupils whose scores fell below the hypothetical mean in the subtests of the TGMD-2 assessment.

The researcher followed these steps to select the application sample:

The TGMD-2 test for gross motor skills was administered to 155 primary school pupils aged 6 to 10. Among them, 60 pupils scored below average on the subtests, indicating lower performance in fundamental motor skills. These pupils formed the final sample for the experimental study.

After determining the sample size, the researcher followed the steps below:

- A group of 60 pupils was selected to form the experimental sample. These pupils had scored below the hypothetical mean on both subtests of the TGMD-2 gross motor skills assessment during the pre-test phase.

- The pre-test was conducted in October 2023, during which the sample size was finalized, pupils' scores were recorded, and their names were documented.

- A post-test was administered in April 2024 to identify differences and assess the significance of changes within the experimental group.

Accordingly, the researcher adopted a single-group pre-test/post-test design to examine the effect of the independent variable on the dependent variable. This design involves comparing the results of the pre-test and post-test within the same group, following the application of the independent variable, namely, the physical education curriculum.

The structure of the experimental design is as follows:

(Experimental Group → Pre-test → Independent Variable: Physical Education Curriculum → Post-test)

9. Study Delimitations

9.1 Temporal Delimitation: The pre-test was administered in October 2023, while the post-test was conducted in April 2024.

9.2 Spatial Delimitation: The study was carried out in selected primary schools in Algiers, the capital of Algeria.

9.3 Human Delimitation: The sample consisted of primary school pupils aged 6 to 10 years.

10. Research Instruments

The researcher employed a set of standardized tests designed to assess fundamental motor skills, which are representative of motor development and appropriate for the developmental stage targeted in this study. In preparation, the researcher reviewed relevant educational literature and previous studies focused on motor skill assessment. Based on this, the Test of Gross Motor Development – Second Edition (TGMD-2) was selected.

10.1 Primary Uses of the TGMD-2:

- Identifying children who significantly lag behind their peers in the development of fundamental motor skills.

- Planning educational programs aimed at enhancing fundamental motor skills.

- Evaluating individual progress in overall gross motor proficiency.

- Assessing the effectiveness of gross motor development programs.

- Serving as a measurement tool in research related to motor development.

The TGMD-2 is particularly valuable for researchers investigating the impact of various educational curricula on children's gross motor development. The availability of valid, reliable, and standardized tools

for measuring variables such as fundamental motor skill acquisition or object control proficiency is essential for this type of research.

7-5 Required Materials for Administering the TGMD-2:
(Basketball, Lightweight ball (10 cm diameter), Playground ball (20 cm diameter), Softball, Soccer ball, Tennis ball, Tape, Square cloth beanbag (20 cm), Batting tee, Plastic bat and Cone).

10.2 Subtests of the Instrument Used

Table 1: Locomotor Skills Subtest – TGMD-2

Skill	Performance criteria	m^1	m^2	$\sum$
Running	Arms move in opposition to legs, with elbows bent.			
	Brief flight phase where both feet are off the ground.			
	Narrow foot placement, landing on the heel or toe (i.e., not flat-footed).			
	The knee of the non-support leg is bent approximately 90 degrees, positioned close to the buttocks.			
Horse bell	Arms are bent and raised to waist level during takeoff.			
	A forward step with the lead foot is followed by a step with the rear foot to a position adjacent to the lead foot.			
	A brief period occurs during which both feet are off the ground.			
	Maintains a rhythmic pattern for four consecutive cycles.			
Hopping on one foot	The non-support leg swings forward to generate force.			
	The foot of the non-support leg remains behind the body.			
	Arms are bent and swing forward to generate force.			
	Takes off and lands three consecutive times with the preferred foot.			
	Takes off and lands three consecutive times on the preferred foot.			
Horizontal Jump	Take off from one foot and land on the opposite foot.			
	There is a period during which both feet are off the ground, longer than in running.			
	Reach forward with the arm opposite the lead foot.			
Two-foot Horizontal Jump	The preparatory movement involves bending the knees while extending the arms behind the body.			
	Arms extend forcefully forward and upward to reach full extension above the head.			
	Takeoff and landing occur simultaneously on both feet.			
	Arms are pushed downward during landing.			
Side Slide	The body moves sideways so that the shoulders are aligned with the line on the ground.			
	A side step with the lead foot is followed by a slide of the trailing foot to a point next to the lead foot.			
	At least four continuous sliding cycles to the right.			
	At least four continuous sliding cycles to the left.			

Table No. (2): Control Subtest – Control and Manipulation Skills				
Skill	**Performance criteria**	**m^1**	**m^2**	**∑**
Striking a stationary ball	The dominant hand grips the bat above the non-dominant hand			
	The non-preferred side of the body faces the imaginary pitcher, with feet aligned and parallel			
	Hip and shoulder rotation occurs during the swing			
	Body weight shifts onto the front foot			
	The bat makes contact with the ball			
Stationary dribbling	Touch the ball with one hand at approximately waist level			
	Push the ball using the fingertips			
	The contact surface is in front of or slightly outside the preferred-side foot			
	Maintain control of the ball for four consecutive bounces without moving the feet			
Two-hand ball throw	Preparation phase: hands are positioned in front, with body and elbows bent			
	Arms extend while reaching for the ball, upon arrival, the ball is caught using hands only			
Kicking the ball	Quick and continuous approach to the ball			
	A long step or jump just before contacting the ball			
	The non-kicking foot is placed even with or slightly behind the ball			
	Kick the ball with the instep of the preferred foot			
Overhand throw	The rotation begins with a downward motion of the hand/arm			
	The hips and shoulders rotate until the non-throwing side faces the wall			
	Weight is transferred by stepping with the foot opposite the throwing hand			
	Follow through after releasing the ball across the body toward the non-preferred side			
Underhand roll	Preferably swing the hand downward and backward, reaching behind the torso while the chest faces the cones			
	Step forward with the foot opposite the preferred hand toward the cones			
	Bend the knees toward the lower part of the body			
	Release the ball close to the ground to prevent it from bouncing higher than 10 cm			

11. Psychometric Properties of the Tool in the Current Study:
To ensure the validity of the tools used for data collection, we relied on calculating validity and reliability using the following methods:

11.1 Validity:
"Test validity refers to the extent to which a test actually measures what it is intended to measure, and not something else or in addition to it. The validity of the tools was assessed using the following methods:

11.1.1 Discriminant Validity of the Basic Motor Skills Test:

To estimate the validity coefficient of the scale, we relied on the method of extreme group comparison, also known as discriminant validity. The differences between the means of the two groups on the test were calculated using the T-test, and we obtained the following results:

Table (3) shows: The T-value indicating the significance of differences between the upper and lower groups in the basic motor skills test

Comparison groups	Sample	Mean	Standard Deviation	Degrees of Freedom	Calculated T-value	P-value	Significance Level
Upper third	5	77.50	14.84	8	5.88	0.000	significant at 0.05
Lower third	5	24.50	2.12				

Source: It is evident from the above table that the p-value (p = 0.000) for the t-test (5.88), with 8 degrees of freedom, is lower than the statistical significance level (0.05). Therefore, the result is statistically significant, indicating differences between the two groups. This suggests that the scale is capable of distinguishing between its components, and thus it is valid and suitable for use in the study.

11.2 Reliability: The term "reliability" refers to stability. This means that if the test were repeated multiple times on the same individual, the results would show a degree of consistency—that is, the test would yield similar outcomes when administered more than once under the same conditions and with the same individuals.

11.2.1 Reliability Calculation Using Internal Consistency (Cronbach's Alpha): This method is used when the test is administered only once, in order to calculate the homogeneity coefficient that reflects the internal consistency of the test.

Table 4 presents the reliability coefficient of the test (internal consistency of the fundamental motor skills test)

Sample	Number of Items	Cronbach's Alpha Value
20	96	0.975

Source: It appears that the test demonstrates a high reliability coefficient and can be considered trustworthy.

12. Statistical Methods Used in the Study: The nature and objectives of the topic require specific statistical methods that assist the researcher in obtaining data and results through which the study subject can be interpreted and analyzed. Statistical analysis provides precise outcomes, as it translates findings into numerical values. The statistical review was conducted using the SPSS software, version 22.

13. Presentation, Analysis, and Discussion of Results:

13.1 Presentation and Analysis of the First Hypothesis Results: Hypothesis statement: There are statistically significant differences between the pre-test and post-test in locomotor motor skills among primary school pupils aged 6 to 10 years.

The analysis was conducted as follows: means, standard deviations, and the t-test value were calculated to determine the significance of the differences between the pre- and post-measurements in locomotor motor skills, as shown in the table.

Table 5 shows the t-test value used to determine the significance of the differences between the pre-test and post-test in the first subtest (locomotor motor skills)

Variable / Transitional Motor Skills	Measure	Sample	Arithmetic Mean	Standard Deviation	Degrees of Freedom	T-Value	Probability Value	Significance Level
Exam	Pre	60	22.45	2.29	59	75.7	0.000	0.05
	Post	60	38.78	4.36				

13.1.1 Analysis and Discussion of Results:

Table 5 reveals statistically significant differences at the 0.05 significance level between the mean scores of the subscale measuring fundamental motor skills (locomotor motor skills) among primary school pupils. These differences are attributed to the variation between pre-test and post-test measurements. The t-test value reached 75.70, which is statistically significant since the p-value (0.000) is lower than the significance level (0.05). The mean score for the pre-test was 22.45, while the mean score for the post-test was 38.78. This indicates the presence of statistically significant differences in locomotor motor skills among primary school pupils between the pre-test and post-test.

The statistically significant differences between the pre-test and post-test in locomotor skills among pupils aged 6–10 years highlight the profound impact of the curriculum, which was scientifically designed to enhance fundamental motor abilities during this sensitive developmental stage. According to Gallahue's theory (2012), "this stage represents a critical window for motor development, during which the foundational elements of locomotor skills, such as running, jumping, and turning—are established, forming the cornerstone of overall motor competence." (Gallahue, D. L., & Ozmun, J. C., 2012)

Recent studies (Robinson et al., 2015) confirm that targeted educational interventions aimed at improving these skills contribute to enhanced motor balance, improved neuromuscular coordination, and support the development of motor-cognitive interaction in children, which positively affects their psychological and social well-being. (Robinson, L. E., & Stodden, D. F., 2015)

Moreover, the statistically significant differences observed reflect the effectiveness of the programs used to systematically and thoughtfully target motor abilities, taking into account the natural stages of motor development and neuromuscular adaptation in children of this age. Clark and Metcalfe (2002) emphasized that the noticeable improvement in motor performance results from the alignment between the design of motor activities and the developmental needs of children, where success depends on presenting progressive motor challenges that stimulate and deepen learning. (Clark, J. E., & Metcalfe, J. S., 2002)

These findings are consistent with UNESCO reports (2015), which affirmed that structured physical programs contribute to the development of social interaction skills and enhance self-confidence. Locomotor activities are thus not only a means of improving physical performance but also a strategic tool for holistic child development. Based on this, further longitudinal research is recommended to examine the lasting impact of motor programs and assess their relationship with children's health and social dimensions, with a focus on designing stimulating and safe educational environments for developing these essential skills. (McLennan, N., & Thompson, J., 2015)

13.2 Presentation and Analysis of the Second Hypothesis Results:

Hypothesis statement: There are statistically significant differences between the pre-test and post-test in control and coordination skills among primary school pupils aged 6–10 years.

The analysis was conducted as follows: means, standard deviations, and the t-test value were calculated to determine the significance of the differences between the pre- and post-measurements in control and coordination skills, as shown in the table.

Table 6: T-Test Value Indicating the Significance of Differences Between the Pre-Test and Post-Test in the Second Sub-Test (Control and Coordination Skills)

Variable / Control and Regulation Skills	Measure	Sample	Arithmetic Mean	Standard Deviation	Degrees of Freedom	T-Value	Probability Value	Significance Level
Exam	Pre	60	23.48	2.11	59	86.15	0.000	0.05
	Post	60	41.00	4.62				

Source: 1.2.14 Analysis and Discussion of Results:

It is evident from Table (6) that there are statistically significant differences at the significance level (0.05) between the mean scores of the subscale of the fundamental motor skills test (control and regulation skills) among primary school pupils, resulting from the variation between the pre-test and post-test measurement. The T-test value reached (86.15), which is significant because the p-value (0.000) is smaller than the significance level (0.05). The mean score of the pre-test was (23.48), while the mean score of the post-test was (41.00). This indicates the presence of statistically significant differences in control and regulation skills among primary school pupils between the pre-test and post-test.

Recent studies indicate that carefully designed educational programs focusing on movement dimensions and components play a crucial role in developing fundamental motor skills among primary school pupils. In a study entitled "The Effect of a Proposed Educational Program Based on Movement Dimensions to Develop Certain Fundamental Motor Skills Related to Volleyball for Fourth Grade Pupils," an educational program was designed based on basic movement concepts such as effort, space, and relationships. The results showed a noticeable improvement in pupils' performance of fundamental motor skills, confirming the effectiveness of the proposed program in enhancing motor performance in children at this age stage (Chiodera et al., 2007).

Additionally, another study entitled "The Effect of a Motor Dexterity Program on Fundamental Motor Skills and the Impact of Expressive Movement-Based Learning on Primary School Children" showed that children who underwent this type of learning achieved significant improvement in their fundamental motor skills compared to their peers who followed traditional physical activities. This indicates that using expressive movements as part of educational programs can have a positive impact on the development of fundamental motor skills in children (Tsompanaki, 2019).

On the other hand, a study entitled "The Impact of a Motor Program on Developing Fundamental Motor Skills in Children Aged 5" confirmed the importance of motor programs in improving fundamental motor skills in children. The study showed that children who participated in the motor program achieved noticeable progress in their fundamental motor skills, indicating the effectiveness of these programs in enhancing motor development in early childhood (Yarimkaya & Ulucan, 2014).

Moreover, a study entitled "The Effect of Educational Units Using Movement Stories Combined with Small Games to Develop Certain Skills" addressed the impact of using movement stories combined with small games on the development of transitional motor skills such as running, jumping, and hopping.

The results showed that these educational units significantly contributed to improving children's motor skills, highlighting the importance of diversity in educational methods to enhance fundamental motor skills (Moreno Murcia et al., 2017).

In the same context, a study entitled "The Impact of Competency-Based Teaching on the Development of Certain Fundamental Motor Skills" aimed to identify the effect of employing competency-based teaching units in developing fundamental motor skills among primary school children. The results showed that the use of this teaching approach led to a noticeable improvement in children's fundamental motor skills, supporting the idea that competency-based teaching can be an effective method for developing these skills. (Strotmeyer et al., 2021)

Based on the above, it is clear that targeted educational programs that rely on diverse methods, such as expressive movements, movement stories, and competency-based teaching, significantly contribute to the development of fundamental motor skills among primary school pupils. Therefore, it is recommended to adopt such programs in educational curricula to ensure comprehensive motor development for children at this age stage.

Endnote:

After an in-depth study and comprehensive analysis of the data related to the impact of the physical education curriculum on the acquisition of fundamental motor skills among primary school pupils, the results of this research show that, the curriculum represents a key foundation in developing pupils' overall motor competence. The findings revealed statistically significant differences between the pre-test and post-test in transitional skills (such as running, jumping, and turning) and control and regulation skills (such as throwing, catching, and pushing). This clearly indicates that the studied curriculum provided pupils with an appropriate educational environment that contributes to improving the mechanical and physiological aspects of motor skills, while considering diversity in activities to promote balanced development of fundamental skills.

Conclusion:

Based on the results, it is evident that the physical education curriculum is not merely a tool for teaching motor skills, but rather a strategic means for achieving holistic and balanced development of pupils at the physical, psychological, and social levels. The significant statistical differences between the pre-test and post-test reflect the effectiveness of educational curricula in achieving their intended objectives. This highlights the necessity of integrating physical education systematically and sustainably into educational planning.

Based on this study, we recommend regularly reviewing the implemented curricula to improve their content and enhance their relevance to contemporary requirements. Furthermore, we encourage expanding future studies to assess the impact of these curricula on social and emotional dimensions, in addition to promoting longitudinal research that measures the long-term effects on fundamental motor skills and children's overall health.

Such a comprehensive approach will not only foster the holistic development of pupils but also ensure that educational strategies remain responsive to the evolving needs of society. These initiatives may ultimately lead to a healthier, more active generation, better equipped to face the challenges of modern life, while promoting lifelong habits of physical activity and well-being.

By integrating these elements into educational frameworks, we can create a dynamic learning environment that prioritizes both academic achievement and physical health, paving the way for pupils' comprehensive development. This inclusive model encourages collaboration among teachers, parents, and health professionals to establish support networks that enhance children's awareness of physical fitness and overall well-being.

Such collaborative efforts can lead to innovative programs that not only engage pupils in physical activities but also foster a sense of community and belonging, which is essential for their emotional and social growth. These initiatives can also help identify and meet the individual needs of each child, ensuring that every pupil receives the resources and opportunities that nurture their strengths and personal interests.

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