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AN INQUIRY ON FUNDAMENTAL MOVEMENT SKILLS TAUGHT TO PRE-SCHOOL CHILDREN IN ZAMBEZI REGION OF NAMIBIA: A TEACHER'S PERSPECTIVE

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Abstract

Fundamental movement skills are a definite set of gross-motor skills that encompass different body parts. The purpose of this study was an inquiry on fundamental movement skills taught to pre-school children from teachers 'perspective within the Zambezi Region. This study used quantitative procedures to gather, and analyse the data. The population of this study comprised of (n = 72) male and female Physical Education teachers from (n = 50) schools who were purposively selected. Data was analysed using SPSS statistical software programme, frequencies, percentages, mean and standard deviation scores were used to interpret the results. The study results show that a total number of (n = 3) movement skills; striking, rolling and volleying were 100% not taught in all schools. Dribbling was taught in some schools by 66(93.0%) over 5(7.0%) with a score of (M = 0.35 ± SD = .479). Jumping was taught by 68(94.4%) over (5.6%) with a score of (M = 0.94 ± SD = .231). Leaping was not taught in schools 9(12.5%) with a score of (M = 0.13 ± SD = .333). Walking taught in schools by 58(80.6%) over 14(19.4%) with a score of (M = 0.81 ± SD = .399). Sliding was not taught by 57(79.2%) over 15(20.8%) with a score of (M = 0.21 ± SD = .409). Balancing was taught by 52(73.2% over 19(26.8%) with a score of (M = 0.74 ± SD = .444). Landing movement was taught by 49(69.0%) over 22(31.0%) with a score of (M = 0.69 ± SD= .464). Pushing skill was not taught by 47(66.2%) over 24(33.8%) with a score of (M = 0.33 ± SD = .475). Throwing was not taught by 37(52.1%) over 34(47.9%) with a score of (M = 0.47 ± SD = .503). Standing was taught by 36(50.7%) over 35(49.3%) with a score of (M = 0.51 ± SD = .503). It can be established that fundamental movement skills are a vital aspect of child development, therefore this study concludes that much teaching emphasis was placed on locomotor movement skills, whilst a little emphasis was placed on non-locomotor with much less effort put on teaching manipulative movement skills.

Keywords

Inquiry, Physical Education, Movement Skills, Pre-school, Teachers

Introduction

Mastery of fundamental movement skills has been suggested as contributing to children's cognitive, social and physical development and is thought to give the base for a vigorous lifestyle. Usually established in infancy and consequently advanced into context of sport-precise skills, they include locomotor, object control, manipulative and stability skills (Lubans et al, 2010). As suggested by Bannett et al (2016) the fundamental movement skills are very significant for the growth of a child in physical activity. Fundamental movement skills are the rudimentary movement outlines such as catching, jumping, throwing and running while also giving to the improvement of quickness, speed and stability. Fundamental movement skills assist to grow children's social, emotional and physical growths. Fundamental movement skills are an essential basis for children as it benefits them with their progress in sport and physical movement from an early age (Bannett et al, 2016)

The position of children's initial motor skills shows a significant role during youthful and across lifespan. Research have found that children between 2 – 7 years get some important skills from automatic and fundamental skills from exercise, and acquire more complex skills in sport-specific-phases (Xia et al, 2022). Even though

children have the prospective to master most movement skills, their learning is exceedingly individual. It must be renowned that these rudimentary sports shapes are not obviously learnt in process of prime of life, and numerous motor skills are highly subjective by the background and family influences that lead to a transformation in lifestyle such as un-monitored free-time, different types of outside play (Chan et al, 2016). Improved evidence shows that school based movement skills intrusions taught by physical education educators and that gave professioonal learning prospects for teachers in educating movement skill (Mitchel et al, 2013).

Studies have shown that the experiences that children benefit by using their bodies are very vital for their awareness and appreciation of the world. Particularly in the earliest years of their life, the familiarities that are gained form the substructure of motor growth, social-emotional (Bayhan & Artan, 2009). Moreover, studies has further acknowledged that children with decent level of motor capability and/or confident motor skill awareness are physically energetic, and that their health-associated limitations (such as body figure index, aerobic dimensions and strength) are definitely established (Demir et al, 2021).

Problem statement

Children start to acquire basic movement skills during kindergarten that they will continually be depended on their sports skills later as young adults. Learning of physical education fundamental movement skills is very vital as it creates a strong sports foundation by improving children's cognitive, physical, social, and intellectual aspects of life (Ozkur, F., 2020). Therefore main purpose of this study is to inquiry on fundamental movement skills taught to pre-school children from a teacher's perspective.

Research Question

- What are the fundamental movement skills taught to pre-school children?

Literature Review

Internationally, there has been a deteriorating tendency in motor skill, with a smaller amount of 50% skill acquisition in locomotor and object-control skills, and merely 11% showing progressive skill between 12 – 13 year old school children (Brien et al, 2016). More lately, a systematic evaluation of the literature established that normal object-control skill between 57 – 64% of school children, normal object-control skill between 51 – 69% of school children, and a total normal fundamental movement skill proficiency between 34 – 49% of school children (Bolger et al, 2021). Fundamental motor skills are mutual motor doings with precise visible patterns. Utmost skills used in sports and movement activities are advanced types of fundamental motor skills. Fundamental skills can be divided into three categories such as; locomotor, non-locomotor and manipulative skills.

Locomotor movement skills

Locomotor movement skills refer activities whereas the body is moved in one way, or a mixture of directions, from one certain point to another e.g. shuffling, skipping, running, jumping, walking, jogging, moving forwards, backwards, side- hopping and leaping are considered fundamental locomotion movements (Salters et al, 2022). Studies have shown that locomotor skills help school children to create a fundamental foundation from childhood to adulthood with; functional skills, independence, healthy weight, coordination, balance, endurance and cardiovascular health. Locomotor skills are vital as they are the way by which we manoeuvre our bodies from one place to another (Ozkur, 2020). Exercise and reprise of locomotor skills is significant for school children to help grow as many neutral ways as imaginable to support the synchronisation of this movement as well as shape strength in our physiques and joins to be able to accomplish them and muscle memory so that our brains send the messages to our muscles quickly to move them more proficiently (Supriadi et al, 2022).

Non-locomotor movement skills

Non-locomotor skills are movements of the body that does not include moving from one place to other. Non-locomotor movement skills include; flexing, swaying, pushing, dodging, pulling, wiggling, shaking, lifting, swinging, rotating, twisting, raising, turning, extending, stretching, and bending (Langford et al, 2023), A non-locomotor movement include the use of the limbs, or entire body, and needs steadiness. Research has found that non-locomotor movement skills do not develop without intervention. Both the children and teachers need direction on how to appropriately do certain non-locomotor skills. It is significant for children to improve non-locomotor skills to use in daily life, as well as in subsidiary activities (Tsapakidou et al, 2014). Research further acknowledges that it is just as significant for adults to improve non-locomotor movement skills to stay physically active and self-determining as they grow older. Non-locomotor movement skills are helpful for both children and adults include pushing, stretching and pulling movements that require poise and strength (Tsapakidou et al, 2014).

Manipulative movement skills

Manipulative skills involve moving or using object with the hands or feet to achieve a goal or complete a task. In gross-motor area, these skills include; volleying, throwing, pushing, pulling, lifting, kicking, dribbling, catching and bouncing (Holecko & Rahal , 2021). Research have found that manipulatives improve a child's sense of spatial awareness, promote problem solving skills, encourage creativity, encourage self talk, promotes self-regulation skills, improve attention span, improve discussion and language development, develop eye-hand coordination, improve hand strength (ECR4Kids, 2015). Pre-school teachers enhance manipulation in educating young children, these manipulations can be learning aids in the increasing vital skills required to meet the demands of the 21st century in sports society (Ramilo et al, 2022)

Research methods

According to Creswell (2002) mentioned that quantitative research is the procedure of accumulating, scrutinizing, construing, and inscription the outcomes of the study. This study engaged a quantitative research method to sort and outline the fundamental movement skills taught to pre-school children?

Population

Population is a cluster of people who have the same behaviour traits that can be studied by researcher (Creswell, 2009). The population of the current study consisted of male and female Physical Education teachers from 50 schools in the Zambezi Region, Namibia.

Sample

Sample is a cluster of people, stuffs, or things that are withdrawn from a bigger population for measurement (Education Centre, 2008). The sample for this study comprised of 72 physical education teachers from 50 schools of the Zambezi Region in Namibia. The participants were chosen purposively based on their teaching experience and involvement in teaching the subject.

Data collection methods

Data collection is the method of collecting and quantifying data on variables of concern, in a reputable efficient approach that allows one to reply stated research problems, test assumptions and weigh results (Cresswell, 2012). Data was collected using questionnaires with 31 movement skill items.

Data analysis

According to Ibrahima (2015) data analysis is a process of performimg certain calculations and evaluations in order to extract relevant information. Data was analysed using SPSS software, frequencies, pecentages, mean and standard deviation were used to interprete the results.

Results

This section of the study shows results derived from statistical analysis to determine which fundamental movement skills are taught to pre-school children from a teacher's perspective.

Table 1 shows the demographic key information of participants, (n = 72) physical education teachers participated in this study of which (n = 36, 50%) were female teachers (n = 18 teacher from urban schools, n = 18 from rural schools, whereas (n = 36, 50%) male teachers (n = 18 from urban schools, n = 18 from rural schools) from 50 schools of the Zambezi region in Namibia.

Gender	n = teachers	n = schools	Setting
Male	18(25%)		
Female	18(25%)	15(30%)	urban
Male	18(25%)		
Female	18(25%)	35(70%)	rural
Total	72(25%)	50(100%	

Table 1: Demographic key information

Table 2 shows locomotor fundamental movement skills frequency, percentage, mean and standard deviation score per each skill. Participants responded with a "yes" that walking was taught in schools by 58(80.6%) over 14(19.4%) that said "no" response with (M = 0.81 $\pm$ SD = .399). Participants agreed by saying "yes" 58(80.6%) over "no" 14(19.4%) that that said running skill was taught to children with (M = 0.81 $\pm$ SD = .399).

Participants further responded with "no" by 51(70.8%) over "yes" 21(29.2%) indicating that hopping was not much taught by some of the teachers with (M = 0.29 ± SD = .458).

Furthermore, the majority of participants responded with "yes" by 68 (94.4%) over "no" with 4 (5.6%) by saying that jumping was taught in school with (M = 0.94 ± SD = .231). Participants responded with "no" that galloping movement skill was not taught by most schools by 54 (75.0%) over 18 (25.0%) that indicated "yes" with a score (M = 0.25 ± SD = .436). Most participants responded by saying "no" by 57(79.2%) over 15(20.8%) that responded with "yes" that indicated that sliding movement skill was taught in schools with a score of (M = 0.21 ±SD=.409). Participants indicated by saying "yes" skipping was taught by 58(80.6%) and "no" by 14(19.4%) with a score of (M = 0.81 ± SD = .399). Most participants agreed by indicating "no" 63(87.5%) indicating that leaping was not taught in schools over 9(12.5%) that said "yes" with a score of (M = 0.13 ± SD = .333).

Locomotor skills	**Frequency & (%)**		**Mean**	**Standard Deviation**
	no	**yes**		
▪ Walking	14(19.4%)	58(80.6%)	0.81	0.399
▪ Running	14(19.4%)	58(80.6%)	0.81	0.399
▪ Hopping	51(70.8%)	21(29.2%)	0.29	0.458
▪ Jumping	4(5.6%)	68(94.4%)	0.94	0.231
▪ Galloping	54(75.0%)	18(25.0%)	0.25	0.436
▪ Sliding	57(79.2%)	15(20.8)	0.21	0.409
▪ Skipping	14(19.4%)	58(80.6%)	0.81	0.399
▪ Leaping	63(87.5%)	9(12.5%)	0.13	0.333

Table 2: Locomotor fundamental movement skills

Table 3 shows non-locomotor fundamental movement skills frequency, percentage, mean and standard deviation score per each skill. Participants responded with "yes" 36(50.7%) over 35(49.3%) that indicated with "no" that standing skill was not taught in schools with (M = 0.51 ± SD = .503). Participants responded with "yes" 52(73.2% over 19(26.8%) that said "no" that balancing was not taught with (M = 0.74 ± SD = .444). Respondents further indicated with "no" by 60(84.5%) over 11(15.5%) that indicated with "yes" that tumbling was taught in their schools with (M = 0.15 ± SD = .362). Stopping skill was taught in schools by 47(66.2%) over 24(33.8%) with a score of (M = 0.81 ± SD = 1.08). Dodging was taught in schools by 47(80.3%) over 14(19.7%) with a score of (M = 0.81 ± SD = .399). Landing movement skill was taught in schools by 49(69.0%) over 22(31.0%) with a score of (M = 0.69 ± SD = .464).

Moreover, bending skill was not taught by some school by 46(64.8%) over 25(35.2%) with a score of (M = 0.35 ± SD = .479). Twisting movement skill was not taught by most school by 55(77.5%) over 16(22.5%) with a score of (M = 0.22 ± SD = .419). Turning skill was not taught in schools by 57(80.3%) over 14(19.7%) with a score of (M = 0.19 ± SD = .399). Swinging movement skill was not taught in schools by 59(83.1%) over 12(16.9%) with a score of (M = 0.17 ± SD = .375). Swaying skill was not taught in schools by 62(87.3%) over 9(12.7%) with a score of (M = 0.13 ± SD = .333). Stretching skill was not taught by most schools by 64(90.1%) over 7(9.9%) with (M = 0.10 ± SD = .298).

Non-locomotor	Frequency & (%)		Mean	Standard Deviation
	no	yes		
Standing	35(49.3%)	36(50.7%	0.51	.503
Balancing	19(26.8%)	52(73.2%)	0.74	.444
tumbling	60(84.5%)	11(15.5%)	0.15	.362
Stopping	24(33.8%)	47(66.2%)	0.81	1.08
Dodging	14(19.7%)	57(80.3%)	0.81	.399
Landing	22(31.0%)	49(69.0%)	0.69	.464
Bending	46(64.8%)	25(35.2%)	0.35	.479
Twisting	55(77.5%)	16(22.5%)	0.22	.419
Turning	57(80.3%)	14(19.7%)	0.19	.399
Swinging	59(83.1%)	12(16.9%)	0.17	.375
Swaying	62(87.3%)	9(12.7%)	0.13	.333
Stretching	64(90.1%)	7(9.9%)	0.10	.298

Table 3: Non-locomotor fundamental movement skills

Table 4 shows manipulative fundamental movement skills frequency, percentage, mean and standard deviation score per each skill. Pushing skill was not taught by some of school by 47(66.2%) over 24(33.8%) with a score of

(M = 0.33 ± SD = .475). Pulling manipulative skill was not taught in some schools by 52(73.2%) over 19(26.8%) with a score of (M = 0.26 ± SD = .444). Lifting skill was not taught in some schools by 51(71.8%) over 20(28.2%) with (M = 0.28 ± SD = .451). Striking skill was not taught in all schools by 72(100%) with (M = 0.00 ± SD = .000).

Throwing was not taught by most of the schools by 37(52.1%) over 34(47.9%) with a score of (M = 0.47 ± SD = .503). Kicking skill is taught by most schools by 37(52.1%) over 34(47.9%) with a score of (M = 0.51 ± SD = .503). Rolling skill is not in schools by 72(100%) with a score of (M = 0.00 ± SD = .000). Volleying skill was not taught in all schools by 72(100%) with a score of (M = 0.00 ± SD = .000). Bouncing skill was not taught in some schools by 64(90.1%) over 7(9.9%) with a score of (M = 0.11 ± SD = .316). Catching skill was taught in some schools by 52(73.2%) over 19(26.8%) with a score of (M = 0.74 ± SD = .444). Dribbling was not taught in some schools by 66(93.0%) over 5(7.0%) with a score of (M = 0.35 ± SD = .479).

Manipulative skills	**Frequency & (%)**		**Mean**	**Standard Deviation**
	no	**yes**		
Pushing	47(66.2%)	24(33.8%)	0.33	.475
Pulling	52(73.2%)	19(26.8%)	0.26	.444
Lifting	51(71.8%)	20(28.2%)	0.28	.451
Striking	72(100%)	0(0%)	0.00	.000
Throwing	37(52.1%)	34(47.9%)	0.47	.503
Kicking	34(47.9%)	37(52.1%)	0.51	.503
Rolling	72(100%)	0(0%)	0.00	.000
Volleying	72(100%)	0(0%)	0.00	.000
Bouncing	64(90.1%)	7(9.9%)	0.11	.316
Catching	19(26.8%)	52(73.2%)	0.74	.444
Dribbling	66(93.0%)	5(7.0%)	0.35	.479

Table 4: Manipulative fundamental movement skills

Table 5 shows an overall distribution of 31 fundamental movement skills from three categories namely, locomotor, non-locomotor and manipulative skills. Moreover, the distribution shows the skills taught and not taught in schools with frequencies and percentages presented in a descending order from the highest to the lowest. The skills with the highest score of 100% were; striking, rolling and volleying; these skills were totally not taught in schools at all.

The second set of movement skills above 90 - 94% were; jumping dribbling, stretching, bouncing, these skills were highly not taught in exception of jumping that was highly taught in some schools. The third set of skills above 80.3% – 87.5% were; leaping, swaying, tumbling, swinging, walking, running, skipping, dodging, turning. The fourth set of skills above 71.8% – 79.2% sliding, twisting, galloping, balancing, pulling, catching, hopping and lifting. The fifth sets of skills above 64.8% - 69.0% were; landing, stopping, pushing and bending. The sixth sets of skills above 50.7% - 52.1% were; throwing, kicking and standing.

Movement skill	Taught/not taught	frequency	%
Striking	not taught	72	100%
Rolling	not taught	72	100%
Volleying	not taught	72	100%
Jumping	highly taught	68	94.4%
Dribbling	highly not taught	66	93.0%
Stretching	highly not taught	64	90.1%
Bouncing	highly not taught	64	90.1%
Leaping	highly not taught	63	87.5%
Swaying	highly not taught	62	87.0%
Tumbling	highly no taught	60	84.5%
Swinging	highly not taught	59	83.1%
Walking	highly taught	58	80.6%
Running	highly taught	58	80.6%
Skipping	highly taught	58	80.6%
Dodging	highly taught	57	80.3%
Turning	highly not taught	57	80.3%
Sliding	highly not taught	57	79.2%
Twisting	highly not taught	55	77.5%
Galloping	highly not taught	54	75.0%

▪ Balancing	highly taught	52	73.20%
▪ Pulling	highly not taught	52	73.20%
▪ Catching	highly taught	52	73.20%
▪ Hopping	highly not taught	51	70.80%
▪ Lifting	highly not taught	51	71.80%
▪ Landing	highly taught	49	69.00%
▪ Stopping	highly taught	47	66.20%
▪ Pushing	highly not taught	47	66.20%
▪ Bending	highly not taught	46	64.80%
▪ Throwing	partially taught	37	51.10%
▪ Kicking	partially taught	37	52.10%
▪ Standing	partially taught	36	50.70%

Table 5: Overall fundamental movement skill distribution

Discussion

This study was envisioned to inquire fundamental movement skills taught to pre-school children in Zambezi Region Namibia from a teacher's perspective. Initially, the study results reveal that from 8 locomotor skills in table 2 jumping was the highly taught movement skill above all with a frequency of 68 (94.4%) followed by walking, running and skipping with the same frequency of 58(80.6%). These results are supported by the News Era (2022) to which they reported that jumping, walking, running and skipping are easily learnt by children school setting as these skills are both home and school oriented. Moreover, skills that are acquired automatically in child development phases such as jumping, walking, skipping and running are easier to excute and teach, most schools teach these fundamental movement skill often (Brien et al, 2016).

On the other hand leaping was a highly not taught movement skill from table 2 with a frequency of 63(87.5%) followed by sliding 57(79.2%), galloping 54(75.0%) and hopping 51(70.8%). These results aligns with Sixkiller & Baghurst (2013) which suggested that galloping, skipping, hopping and slidding were not taught often in school and there was a serious educational need to start teaching these movement skills at an early age to ensure that more compound skills can be increasingly developed. The result above are further supported by Stanford (2022) alluding that some locomotor movement skills are non often taght in school due lack of adequate equipment and facilities, lack of qualified teachers, lack of inserve training by person.

In table 3 the study reveals 12 non-locomotor movement skills of which 5 were lowly taught in schools. Primarily, dodging was more taught with a frequency of 57(80.3%) followed by balancing 52(73.2%), landing 49(69.0%), stopping 47(66.2%), and 36(50.7%). These results concur with Darmawan (2018) study outcomes which emphasised that frequent teaching of non-locomotor skills help children with body responsiveness and spatial mindfulness. Moreover, Chan et al, (2016) futher suggest that teaching non-locomotor skills allow children to discover the technique in which the body can be altered, balanced or controlled shapes that the body can do.

Whereas, stretching was a highly not taught movement skill from table 3 with a frequency of 64(90.1%) followed by swaying with 62(87.3%), tumbling 60(84.5%), swinging 59(83.1%) turning 57(80.3%) twisting 55(77.5%) and bending 46(64.8%). These results agree with ECR4Kids (2015) suggesting that lack of exposure towards non-locomotor movement skills at a young age due to lack of orientation or lack of teaching influence low interest in sporting activities at a later stage.

In table 4 the study reveals 11 manipulative movement skills of which 9 were not frequently taught to children whilst only 2 were lowly taught. Kicking manipulative movement skill was taught with a low frequency of 37(52.1%) followed by catching with 52(73.2%). These findings are supported by ECR4Kids (2015) research findings which emphasised that teaching manipulatives movement skills improve a child's sense of spatial awareness, promote problem solving skills, encourage creativity, encourage self talk, promotes self-regulation skills, improve attention span, improve discussion and language development, develop eye-hand coordination, improve hand strengthPre-school teachers enhance manipulation in educating young children, these manipulations can be learning aids in the increasing vital skills required to meet the demands of the 21st century in sports society. On the other hand the results reveal that most of the manipulative movement skills were not taught in schools. Throwing, striking and volleying were 72(100%) not taught in schools at all, dribbling was not taught by 66(93.0%), bouncing 64(90.1%), pulling 52(73.2%), lifting 51 (71.8%), pushing 47(66.2%) and throwing with 37(52.1%). These results are supported with the study results of Ozkur (2020) emphasising that inadequate teaching of manipulative movement skills; decrease health weight frame, leads to less social interactions, lack of confidence, decrease mental faculties, decrease sense of movement in coordination and balance, decrease basic motor skills.

Conclusion

It can be established that fundamental movement skills are a vital aspect of child development; there it is vital to ensure that these skills are taught at a younger age in pre-school to acquaint children with a strong sports foundation. This study concludes that much teaching emphasis was placed on locomotor movement skills, whilst a little emphasis was placed on non-locomotor with much less effort put on teaching manipulative movement skills.

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