

Effect Of Play-Based Learning On Primary One Pupils Knowledge Of Personal Health In Ibarapa East Local Government Area Of Oyo State Nigeria

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Abstract: *This study examined the effect of a play-based learning strategy on Primary One pupils' knowledge of personal health in Ibarapa East Local Government Area, Lanlate, Oyo State, Nigeria. The study adopted a pre-test–post-test experimental design with control and experimental groups. The population comprised all Primary One pupils in the study area, from which a sample of 40 pupils was selected using simple random sampling. Data were collected using a researcher-developed instrument titled Personal Health Questionnaire (PHQ), designed to assess pupils' knowledge of personal health concepts. The instrument was validated and tested for reliability using the test–retest method, yielding a reliability coefficient of 0.82, indicating satisfactory internal consistency. Descriptive statistics (mean and standard deviation) were used to summarize demographic data, while independent sample t-tests were employed to test the hypotheses at the 0.05 level of significance. The findings revealed that pupils exposed to the play-based learning strategy demonstrated significantly higher knowledge of personal health than those taught through the lecture method. Specifically, significant improvements were observed in hand hygiene ($t = 22.614, p < .05$), body hygiene ($t = 4.951, p < .05$), and dental hygiene ($t = 4.951, p < .05$). The study concluded that play-based learning is an effective pedagogical strategy for improving young learners' knowledge of personal health. It recommended the integration of play-based instructional approaches into the primary school curriculum to promote pupils' health knowledge, practical hygiene skills, and positive attitudes towards personal health practices.*

Keywords: Play-based Learning, Hand Hygiene, Body Hygiene, Dental Hygiene

Introduction

Play is important because it affects every part of a child's development. It helps physical development because children use their gross and fine motor skills when they play. It helps cognitive development because children learn to solve problems, remember information, and make decisions as they play. It helps emotional development because children become aware of their feelings and learn to manage them during play. Play also builds imagination, since children create make-believe scenes and pretend during play. It builds communication skills too, because children use and develop language as they interact with others while playing. Since a healthy child learns better, pupils in early primary school need to be taught basic personal hygiene alongside these benefits of play.

Goldstein (2012) sees play as work for young children. It is the way children come to understand their own world and the world around them. Play is active and constructive rather than passive (Emslie & Mesle, 2009). Because play is not scripted, children explore it with curiosity and there are no right or wrong answers. The teacher acts as a facilitator while the children take the lead. Play stays central to the classroom because it lets children explore and discover who they are becoming (Whitman, 2018).

Play is defined more by the process than the product. It stays flexible and gives children room to explore their interests, express joy, and deal with fears, disappointments, and sorrow (Edwards, 2017; Smith, 2013; Miller & Almon, 2009). It also gives children many chances to learn about one another, since they become fully absorbed in their own little world while playing. Time spent playing during the school day builds lasting bonds and relationships. Play is one of the most important ways young children gain knowledge and skills, which is why play, exploration, and hands-on learning sit at the core of good early primary programmes. Children use play to make sense of the world, connecting new experiences to what they already know. Play and learning are not fixed; children use play to practice skills, try out possibilities, revise their thinking, and take on new challenges, leading to deeper learning (Whitman, 2018).

UNICEF (2018) states that play in the pre-primary and early primary years, usually ages 6 to 8, helps children explore and make sense of the world while building their imagination and creativity. Play-based learning is an approach that gives pupils different playful activities and experiences in the classroom. It is age-appropriate and child-centred, and it focuses on learning through purposeful play. Children learn best when the activities are meaningful to them. This approach is called child-centred because

children direct their own learning through curiosity and interest, and it builds important academic foundations and social skills for later schooling (Kampen, 2023). Play-based learning is child-directed, enjoyable, and focused on the process. Through free play, children can explore and make mistakes without fear of failure, which helps each learner discover their own interests while working with peers and teachers.

Play-based learning is an approach where children take part in purposeful play to gain knowledge, skills, and attitudes. It uses structured and unstructured activities designed to build curiosity, imagination, problem-solving, and collaboration. Inekwe (2002) states that this method lets pupils learn subject matter with the same energy that marks their everyday biopsychosocial activity. Traditional teaching, also called the lecture-based or didactic approach, is a method where the teacher passes on knowledge through lectures and readings while staying in control of the class and taking full responsibility for the learning environment. Under this method, pupils sit quietly and take turns reciting the lesson when called upon. Traditional teaching relies mainly on recitation and memorisation, while play-based learning is more interactive. Play-based learning also pays attention to individual pupils' needs instead of treating the whole class as though everyone understands at the same level (Stephenson, 2018).

Ahlfeldt, Mehta, and Sellnow (2005) found that play-based teaching builds a good relationship between teachers and students, keeps students actively engaged with the subject matter, and encourages teachers to give quick feedback. Garaigordobil et al. (2011) found a close link between play and creativity. Across different theories, play is seen as children's first creative activity, and imagination grows out of play. Creative play matters for development because it builds curiosity, flexibility, and improvisation, and it encourages the kind of problem-solving that leads to learning, imitation, and adaptation to change. This is part of why play is often called children's work, and why it keeps being linked to cognitive development. Robins et al. (1999), as cited in Garaigordobil et al. (2011), also found that a child's tendency to play points to a disposition toward creativity later in life.

Health education is any set of learning experiences meant to help individuals and communities improve their health, either by increasing their knowledge or by changing their attitudes. It is not only about passing on health information; it is also about building the motivation, skills, and confidence people need to take action to improve their health. It also involves helping people understand how social, economic, and environmental conditions, along with personal risk factors and behaviours, affect their health and their use of the health system. In this sense, health education aims not only to increase knowledge of personal health behaviour but also to build the skills needed to act on the social, economic, and environmental causes of poor health (Morris & DeShon, 2001).

Personal health refers to an individual's overall wellness. It is the ability to take charge of one's health by making conscious, healthy choices. It covers not just physical wellbeing but also emotional, intellectual, social, economic, and spiritual wellbeing. Personal health depends on the different parts of the body working well together, and there are basic requirements that must be met for the body to function properly. Many of today's diseases could be prevented or controlled through simple, consistent personal health habits (World Health Organisation, 2014).

There are several types of personal hygiene. Dental hygiene is about more than having white teeth; a good routine helps prevent gum disease, cavities, and bad breath. Body hygiene matters too, since sweat glands across the body produce odour when bacteria break the sweat down. Washing the body prevents skin irritation and removes the bacteria that cause body odour. Washing the hair removes oil and keeps a person looking clean and fresh (World Health Organisation, 2014).

Young children are more likely to catch infectious diseases such as respiratory tract infections, hand-foot-and-mouth disease, and gastroenteritis, because their immune systems and their understanding of hygiene are still developing (Brady, 2004). These diseases often spread through droplets, aerosols, and the faeco-oral route (Tellier, Li, Cowling, & Tang, 2019). Contact with nasal discharge, saliva, faeces, urine, and blisters calls for careful precaution (Government of South Australia, 2014). Preschools are closed environments with many shared objects, which makes it easier for infections to spread. Hand-washing facilities are often inadequate, which adds to children's risk of catching infectious diseases (Guinan, McGuckin & Ali, 2002).

Hygiene can be defined as the way a person cares for their health by cleaning and looking after their body (Gavilanes, 2019; Moreno-Martínez, Gómez, & Hernández-Susarte, 2016; Fernández, Ortega, Furió Mas, & Gavidia Catalán, 2014). From birth, parents are responsible for their child's hygiene, both for the child's comfort and because it is understood to be necessary for good health and infection prevention. Over time, however, children must learn to take care of their own hygiene (Gavilanes, 2019). Safe hygiene practice includes behaviours such as washing hands before and after eating and disposing of faeces safely. Hygiene education aims to pass on knowledge of hygiene and its health risks so that people can adopt better hygiene practices. Personal hygiene is generally practiced to prevent or reduce the spread of communicable diseases (World Health Organisation, 2014).

There is a mutual benefit when people share health experiences with one another, since it can lead to new information, strategies, or skills. Storytelling can build trust and equality among participants and give them a way to talk about illness without stigma. It can also make people more open to healthy-lifestyle messages and help them accept behavioural change (Shenoy & Sequeira, 2010). Based on this, an age-appropriate story with oral health messages was developed after reviewing the literature and holding focus

group discussions with teachers, parents, dentists, and a storyteller. Using oral health content from the WHO Health-Promoting School framework and feedback from stakeholders, the story was built around Fogg's behaviour model. It covered messages on tooth brushing frequency and technique, amount of toothpaste, type of toothbrush, flossing, mouth washing, healthy versus junk food, and visiting the dentist. Oral health rhymes were added to reinforce the messages (World Health Organisation, 2011).

Primary school gives children unique opportunities to build good health, which matters for their whole life (Wang, Zhang, Zhao, Shan, Zhang, Wang, Jiang, Zhu, Zhang & He, 2021; D'Onise, Lynch, Sawyer & McDermott, 2010). To live a healthy life from primary school age, individuals need to gain more control over their own health. Health promotion is both a social and an individual process that aims to help people reach the best possible level of health from an early age (Ozcan & Bozhuyuk, 2013). Good health is often described as a dynamic balance between physical, emotional, social, spiritual, and intellectual health (Kim, Kang, & Lee, 2019). Children should be taught early what they need to do to stay healthy. Teaching health information to children should take their developmental level, and their environmental and personal circumstances, into account, since understanding a concept as complex as health develops slowly during the preschool years and is gradually reflected in health behaviours and attitudes over time (Almqvist, Hellnäs, Stefansson & Granlund, 2006).

Rieber (1996), as cited in Ali, Constantino, Hussain, and Akhtar (2018), notes that play and imitation are natural learning strategies that children pick up quickly. This allows educators to build meaningful classroom experiences through careful modelling and opportunities for imitation. Play-based learning also supports problem-solving, coping, understanding of cultural differences, and classroom etiquette. Robinson and Zajicek (2005) define social competence as a child's ability to successfully and appropriately choose and achieve their interpersonal goals.

In their reviews of the Tools of the Mind curriculum, Diamond, Barnett, Thomas, and Munro (2007) and Hyson, Copple, and Jones (2006) found that children in play-based preschools using this curriculum scored higher on measures of executive function, the skills that underpin self-regulation, than children in regular, instruction-based preschools. Barker, Semenov, Michaelson, Provan, Snyder, and Munakata (2014) found that the amount of less-structured time in the daily lives of 6- to 7-year-olds, including free play alone and with others, social outings, and visits to museums and zoos, predicted their cognitive self-regulation. Rezai, Namaziandost, Miri, and Kumar (2022) suggested that parents can also help teach their children the social skills and problem-solving methods that help them do well in school. Morris and DeShon (2001) add that a broad purpose of health education is not only to increase knowledge of personal health behaviour but also to build skills that address the social, economic, and environmental causes of poor health.

Objectives of the study

The general objective of the study is to find out the effects of play-based learning strategy on primary one pupils knowledge of personal health.

Three specific objectives were served as a guide in order to achieve the aims of this study.

1. To find out the effect of play-based learning strategy on pupils' knowledge of hand hygiene.
2. To examine the effect of play-based learning strategy on pupils' knowledge of body hygiene.
3. To find out the effect of play-based learning strategy on pupils' knowledge of dental hygiene.

Statement of the problem

Play-based learning continues to be critical, yet it is often neglected in favour of academic-focused education approaches. Yet, in this period, active, play-based learning approaches can transform the educational experiences of children in the early primary grades and strengthen learning motivation and outcomes. Educators are re-thinking how to teach young children to tap their enormous learning potential. Children at the early primary schools should be taught the basic personal hygiene maintenance since a healthy child is one that can learn effectively. Health is also a part of factors that can promote the growth and development of a child. It has been observed that most teachers in primary school teach this important topic by only given instructions to pupils and this is not really yielding any positive health attitude as the children cannot comprehend the teacher's instructions. When children are taught from an early age, what they need to do to be healthy and not to be ill; their ability to learn effectively will be improved. Therefore, understanding of complex concept like "personal health" is very slow in early years and this development is gradually reflected in the behavior and attitudes of pupils over time, hence, the need for play-based learning strategy which helps to promote and develop children positive attitude towards their health at the early stage.

Hypotheses

The following hypotheses were formulated and tested in the study:

H₀₁: There is no significant effect of play-based learning on primary One pupils knowledge of hand hygiene

H₀₂: Play-based learning will not have significant effect on Primary One pupils knowledge of body hygiene

H₀₃: There is no significant effect of play-based learning on primary one pupil's knowledge of dental hygiene.

Methodology

This study looked at the effects of play-based learning on primary one pupils' knowledge of personal health. The study used the experimental design of pre-test post-test control group, which is a quantitative research method. Pre-test, experiment, and post-test measurements were taken before and after the experiment, which suited this research design. The experimental group was taught play-based learning on hand hygiene, body hygiene, and dental hygiene, while the control group was taught the same content using the traditional teaching method. The population of the study was all primary one pupils in Lanlate Local Government Area of Oyo State. The sample was 40 participants selected from this population using simple random sampling. Data was collected using a self-developed questionnaire titled "Personal Health Questionnaire" (PHQ), which asked questions to find out what pupils knew about their body and their personal health. The validity and reliability of the instrument were tested using the test-retest method, which gave a reliability coefficient of 0.82. Descriptive statistics of mean and standard deviation were used for the demographic data, while a t-test was used to test all three hypotheses at the 0.05 level of significance.

Results

The results are presented in tables below:

Hypothesis 1: There is no significant effect of play-based learning on primary one pupil's knowledge of hand hygiene

Table 1: t-test analysis on the effect of play-based learning on primary one pupil's knowledge of hand hygiene

Table 1 showed the groups mean and Standard Deviation of the Pre-test and Post-test scores of participants on the effects of play-based learning on hand hygiene. The table showed the group mean pre-test score on performance was .75 and group standard

Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Play based on hand hygiene-Pre-Exp – Play-based-hands-hygiene-Post-Control	.75000	.91047	.20359	.32389	1.17611	3.684	19	.012
Pair 2	Play based hand hygiene-Post-Exp – Play based hand hygiene-Post-control	5.05000	.99868	.22331	4.58260	5.51740	22.614	19	.000

deviation was .91 while the post-test group mean score performance was 5.05 and group standard deviation was .99. The table further indicate a significant t-value was obtained in respect of performance in hand hygiene ($t = 22.614$; $p < 0.05$). The hypothesis which stated that there is no significant effect of play-based learning on primary one pupil's knowledge of hand hygiene is hereby rejected, indicating that play-based learning had effect on primary one pupil's knowledge of hand hygiene. This finding agrees with CDC (2016), which states that storytelling helps people learn about and manage disease by drawing on the experiences of others who have faced the same illness. It also agrees with Scott, Hartling, O'Leary, Archibald, and Klassen (2012), Fix, Houston, Barker, Wexler, Cook, and Volkman (2012), and Brown, Gabriel, and Gherardi (2009), who say that stories are a useful way to share and communicate health evidence, known as knowledge translation, in healthcare. It also supports Ali, Constantino, Hussain, and Akhtar (2018), who note that children pick up play and imitation quickly as natural learning strategies, and Gebreslassie Mekonnen (2016), who found that play-based learning benefits children by building their skills, dispositions, and knowledge.

Hypothesis 2: Play-based learning will not have significant effect on Primary One pupil's knowledge of body hygiene.

Table 2: t-test analysis on the effect of play-based learning on primary one pupil's knowledge of body hygiene

Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Play based body hygiene-Pre-Exp – Play based body hygiene-Pre-control	.25000	.63867	.14281	-.04891	.54891	1.751	19	.096
Pair 2	Play based body hygiene Pre-Control – Play based body hygiene-Post-Control	.65000	.58714	.13129	.37521	.92479	4.951	19	.000

Table 2 showed the groups mean and Standard Deviation of the Pre-test and Post-test scores of participants on the effects of play-based learning on body hygiene. The table showed the group mean pre-test score on performance was .25 and group standard deviation was .64 while the post-test group mean score performance was .65 and group standard deviation was .59. The table further indicate a significant t-value was obtained in respect of performance in body hygiene ($t = 4.951$; $p < 0.05$). The hypothesis which stated that play-based learning will not have significant effect on Primary One pupil's knowledge of body hygiene is hereby rejected. This implies that play-based learning had effect on Primary One pupil's knowledge of body hygiene. This finding agrees with Parker and Thomsen (2019), who found that playful pedagogies can be more effective than traditional or highly guided approaches at building social, emotional, physical, cognitive, and creative skills in the primary classroom. It also agrees with Morris and DeShon (2001), who state that health education should not only increase knowledge of personal health behaviour but also build the skills needed to address the social, economic, and environmental determinants of health, and with Ali, Constantino, Hussain, and Akhtar (2018), who note that children pick up play and imitation quickly as natural learning strategies that educators can build on through careful modelling.

Hypothesis 3: There is no significant effect of play-based learning on primary one pupil's knowledge of dental hygiene.

Table 3: t-test analysis on the effect of play-based learning on primary one pupil's knowledge of dental hygiene.

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Play based dental hygiene-Pre-Exp – Play based dental hygiene-Pre-Control	.30000	.92338	.20647	-.13216	.73216	1.453	19	.163
Pair 2	Play based dental hygiene-Post-Exp – Play based dental hygiene-Post-control	5.45000	1.19097	.26631	4.89261	6.00739	20.465	19	.000

Table 3 showed the groups mean and Standard Deviation of the Pre-test and Post-test scores of participants on the effects of play-based learning on dental hygiene. The table showed the group mean pre-test score on performance was .30 and group standard deviation was .92 while the post-test group mean score performance was 5.45 and group standard deviation was 1.19. The table further indicate a significant t-value was obtained in respect of performance in dental hygiene ($t = 4.951$; $p < 0.05$). The hypothesis that stated that there is no significant effect of play-based learning on primary one pupil's knowledge of dental hygiene is hereby rejected, indicating that play-based learning had effect on primary one pupil's knowledge of dental hygiene. This finding agrees with World Health Organisation (2011), whose Health-Promoting School framework and oral health content, developed with stakeholder

feedback and built around Fogg's behaviour model, used similar age-appropriate messages on brushing frequency and technique, toothpaste use, flossing, mouth washing, healthy eating, and visiting the dentist, reinforced with rhymes, to build children's dental knowledge. It also agrees with Scott, Hartling, O'Leary, Archibald, and Klassen (2012), Fix, Houston, Barker, Wexler, Cook, and Volkman (2012), and Brown, Gabriel, and Gherardi (2009), who state that stories are a useful way to share and communicate health evidence in healthcare.

Conclusion

Health education and promotion should start at early stage of the child development so that it can be part and parcel of their daily routines and habits. It could be concluded that play based learning will enhance pupils personal health when they learn hand hygiene, body and dental hygiene. Therefore, play-based learning method is an effective method to promote and enhance pupil's knowledge of hands, body and dental hygiene.

Recommendations

Based on the conclusion from the study, the following recommendations were made:

1. Play-based learning method should be regularly used by teachers to teach the pupils important health concept
2. Play-based learning method should be used to teach and pass information to the pupils on their body hygiene
3. Play-based learning method should be incorporated into primary schools curriculum to enhance their knowledge, skills and positive attitude towards their personal health and dental hygiene.

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