Education

Primary pupils' involvement in indoor and outdoor learning activities as predictors of cooperative skills

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Abstract

The study determined the extent to which primary pupils' involvement in indoor and outdoor learning activities predicts their cooperative skills in Niger State, Nigeria. The study was guided by two research questions and two null hypotheses. The study adopted the correlational survey research design. The population of the study comprised 10, 568 Primary III pupils in the five Local Education Authorities in Niger State. The sample for the study was 400 primary pupils drawn using multistage sampling procedure. Data were collected using two instruments titled: Primary Pupils' Learning Activities Rating Scale (PPLARS) and Primary Pupils' Cooperative Skills Rating Scale (PPCSRS) developed by the researchers. The reliability coefficients obtained for the PPLARS and PPCSRS were 0.80 and 0.82, respectively. Data were analyzed using simple linear regression analyses. The findings of the study among others showed that 43% of primary pupils' cooperative skills are predicted by their involvement in indoor learning activities, which is statistically significant (p<0.05). It also shows that 21% of primary pupils' cooperative skills are predicted by their involvement in outdoor learning activities, which is statistically significant (p<0.05). Based on these findings, it was recommended that: Government and school administrators and parents should provide indoor and outdoor activities for primary pupils in schools.

Keywords: indoor activities, outdoor activities, primary pupils, cooperative skills

Introduction

Education has remained a social process in capacity building and maintenance of society as well as a weapon for acquiring skills, relevant knowledge and positive habits for surviving in a challenging world. According to Adesina (2011) [2], education is a major force in economic, intellectual, social and cultural empowerment. Children are the leaders of their families and nations in future (Lindon, 2013) [13]. The national interest therefore will be safely preserved if the needs of children were to be properly attended to; especially their educational needs (Cotton & Wikeniund, 2011) [8]. This is due to the fact that education is seen as a global vehicle that catapults every nation into development and advancement in technology.

The National Policy on Education (2013) refers to primary education as the education given in educational institution to children aged 6 to 11 plus. The reason is that, by the time the child is six years old, the child should have been physically strong enough to withstand the rigors of school life. The child by the age of six should also be physically strong enough to walk to and from school particularly in places where the schools are far from home without any problem to his health. Psychologically, the child is also ready for formal learning. Through the lofty objectives, the child gradually adapts to the new world through guidance and directive. In the same vein, European Commission (2014) have documented that learning experiences gained at these levels of education have a great impact on subsequent accomplishments of individuals as it lays a foundation for lifelong learning. It is seen as the success or failure of the whole education system since all other educational system are built upon it (FRN, 2013) [10].

Primary school children want to touch, taste, and smell, hear, and test things for themselves. They are eager to learn. They learn by experiencing and by doing, most importantly, they learn from their play. They are busy developing skills, using language, and struggling to gain inner control. This implies that primary scholars want to establish themselves as separate from their parents and other adults. They can express their needs since they have greater command of language.

The benefits of pupils' education cannot be underestimated. Supporting this assertion, Acar (2014) [1] observed that primary school promotes children's physical, social, emotional, and cognitive development. In the same vein, the Organization for Economic Cooperation and Development [OECD] (2017) [17] stated that primary school is a fundamental step in children's development as it lays the foundation for future growth and learning. It also encourages labor market participation of parents, especially of mothers. From these reports, it could be inferred that primary school has a wide range of benefits for the children themselves, their parents, and society as a whole.

Empirical evidence of the benefits of preschool has been reported in the literature. For instance, Barnett (2011) [5] reported that children of childhood education are associated with better academic performance and greater chances of educational attainment. In the same vein, Van-Belle (2016) [22] reported that early education leads to improvements in individuals' health and well-being, better labor market participation of parents, increased family earnings, productivity, and employability of parents. The goal for every child in the teaching learning environment is to be helped to develop the desired learning skills through the learning activities organized to them by the teachers. For children to

maximize learning, Yldrm and Akamca (2017) [23] asserted that effective learning at school can be ensured through both indoor and outdoor learning activities.

Indoor learning activities could be considered quite indispensable in children's learning. According to Ajayi (2014) [3], indoor learning activities are those learning experiences offered to children inside the classroom setting. Ajayi further mentioned that the activities involve children's learning with various materials such as erasers, drawing paper, crayons, clay, water, and sand, among others. Indoor learning activities, according to Okoh *et al*. (2022) [16], are those learning experiences offered to children inside the classroom setting with various materials such as erasers, drawing paper, crayons, clay, water, and sand, among others. Children's learning through play is also included, with materials such as picture books, flannel boards, beads, meeting toys, hand mirrors, plastic bracelets, bounce chairs, green plants, and music boxes, among others, which are organized in designated corners of their classroom. In a study, Kroeker (2017) [12] defined indoor learning activities as learning tasks children are engaged with in the classroom. Furthermore, Kroeker noted that indoor learning activities are usually organized into learning centers and include areas such as art materials, blocks, dramatic play materials, manipulatives, pictures, and story books, among others. From the above, it can be inferred that indoor learning activities include all of the learning experiences children have in the classroom setting.

Apart from indoor learning activities, pupils are also provided with a series of outdoor learning activities. Ajayi (2014) [3] defined "outdoor learning activities" as those learning experiences offered to children outside of the classroom setting. According to Ajayi, outdoor learning activities provide children with the opportunity and ample freedom to explore and encourage social interactions among them. Ajayi also mentioned that outdoor activities involve the provision of an open space for running, throwing, rolling, and movement, as well as equipment for climbing, jumping, sliding, and swinging, among others. Thus, the activities enhance the acquisition of knowledge and many skills that cannot be acquired in the traditional classroom setting. In their own opinion, Yldrm and Akamca (2017) [23] considered outdoor learning activities as the learning tasks given to learners in open spaces in the outside environment rather than in the classroom. They added that the activities allow children to actively participate and to learn by doing. This implies that outdoor activities provide hands-on learning experiences for children.

It is important to note that both indoor and outdoor learning activities are designed to complement children's learning and development. Both sets of learning activities are meant to promote children's behaviour and overall development (Cabell, Justice, McGinty, DeCoster & Forston, 2015) [7]. The activities are designed to lay a foundation for children's learning and development by facilitating their cognitive, cooperative, emotional, and social skills (Mirrahimi, Tawil, Abdullah, Surat & Usman, 2010; Tarman & Tarman, 2011) [15, 21]. These assertions imply that both indoor and outdoor learning activities are designed to facilitate the cognitive, emotional, cooperative and social development of children.

Cooperative learning skills seem to enhance children's learning. These skills according to Bentoa & Dias, (2017) [6] refers to children's capabilities that enhance their participation in small-group learning activities that promote positive interaction and effective learning. They further explained that during group outdoor learning activities, some children can become teachers by sharing their knowledge and skills for accomplishing certain tasks, which is rare during indoor learning activities. Thus, cooperative learning skills include children's ability to share, take turns, and demonstrate caring behaviors for others (Akçay, 2016) [4]. Akçay furthered that during cooperative learning, some children are also likely to exhibit interpersonal, group work, and self-regulatory skills for coping with others as they work together in group learning activities. This implies that interpersonal capabilities, among other abilities that enhance successful group task accomplishment, can be considered as cooperative learning skills.

Previous studies on children's involvement in indoor and outdoor learning activities in relation to their cooperative skills, however, have conflicting findings. For instance, some studies (Harun & Salamuddin, 2014; Yldrm & Akamca, 2017; Loukatari, Matsouka, Papadimitriou, Nani, & Grammatikopoulos, 2019) [11, 23, 14] have shown that outdoor activities are significantly more effective in improving cooperative skills than indoor learning activities. While Smogorzewska and Szumski (2017) [18] indicate that the cooperative skills acquired by pupils who attended outdoor learning activities did not differ significantly from those of their counterparts in indoor learning activities. Apparently, there are contractions and inconsistencies in these reports. This implies further research in order to clearly justify the correlation among the above variables.

In Nigeria, especially in Niger State, as commonly observed, many pupils exhibit unacceptable internalized and externalized behaviors such as uncoordinated attitudes, disobedience, and defiance, lack of cooperation, lack of empathy, selfishness, and lack of social acceptance, poor language and communication skills. Considering the potential benefits of primary pupils' involvement in indoor and outdoor learning activities and the dearth of empirical literature on the contribution of such activities to pupils' cooperative skills, a study in this direction is worthwhile. It is against this background that this study examined the predictive power of primary pupils' involvement in indoor and outdoor learning activities on their cooperative skills in Niger State, Nigeria. Specifically, the study examined the predictive power of:

- Primary pupils' involvement in indoor learning activities on their cooperative skills;
- Primary pupils' involvement in outdoor learning activities on their cooperative skills.

Research questions

The following research questions guided the study:

- What is the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills?
- What is the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills?

Hypotheses

The following null hypotheses are postulated for the study and were tested at 0.05 level of significance.

- **$H0_1$:** There is no significant predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills.
- **$H0_2$:** There is no significant predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills.

Method

This study employed a correlation survey research design. The area of study was Niger State, Nigeria. The population of the study consisted of 10,568 Primary III pupils across the 560 primary schools in the five Local Education Authorities in Niger State (Source: SUBEB office Minna, Niger State, January, 2024). The study sample comprised 400 pupils drawn through a multistage sampling procedure involving cluster, simple, and stratified random sampling techniques.

Two instruments developed by the researchers were used for data collection in this study. They include: Primary Pupils' Learning Activities Rating Scale (PPLARS) and Primary Pupils' Cooperative Skills Rating Scale (PPCSRS). The PPLARS contains 20 items arranged in two clusters (I and II). Cluster I contains 10 items and were used for observing and rating primary pupils' level of involvement in indoor learning activities while cluster II contains 10 items and were used for observing and rating primary pupils' level of involvement in outdoor learning activities. The rating options range from 4, 3, 2 to 1 depicting excellent (E), good (G), fair (F) and poor (P), respectively.

The Primary Pupils' Cooperative Skills Rating Scale (PPCSRS) contains 10 items and were used for observing and rating primary pupils' cooperative skills. The rating options for the instrument was also ranged from 4, 3, 2 to 1 denoting excellent (E), good (G), fair (F) and poor (P), respectively.

To ensure that the instruments were valid, three copies of the instruments alongside with the purpose, research questions and hypotheses for the study were given to three (3) experts; one from Measurement and Evaluation and two from Childhood Education. The experts did a face validation of the instruments by examining the appropriateness of items, correctness of grammar, and suitability of the instruments in addressing the purpose of the study. The comments and suggestions of the experts were used in improving the quality of the final versions of the instruments. The reliability of the modified instruments was established after trial-testing forty copies of the instruments on a similar sample of forty (40) primary pupils from other primary schools from Kontagora, a zone not sampled for the study. The data generated was analyzed using Cronbach's Alpha Coefficient formula. The overall reliability coefficient obtained for PPLARS and PPCSRS were 0.79 and 0.81 respectively.

Data collected were coded on SPSS (Statistical Package for the Social Sciences), version 26.0 and analyzed using simple linear regression analysis. The correlation coefficients (r) and the coefficients of determination (r^2) were used to answer all the research questions while the regression ANOVA model was used for testing all the null hypotheses at 0.05 level of significance.

Results

The results are presented in Tables in line with the research questions and the null hypotheses formulated for the study.

Research question one: What is the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills?

Table 1: Regression analysis of the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills

Variables	*N*	$\bar{X}$	SD	*R*	R^2
Indoor Learning Activities	400	30.33	3.64	0.65	0.43
Cooperative Skills		30.86	3.85		

Key: N = Number of respondents, *R* = Correlation coefficient, R^2 = Coefficient of determination

Result in Table 1 shows the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills. The result shows that the correlation coefficient obtained between primary pupils' involvement in indoor learning activities and their cooperative skills was 0.65. This shows that there was a moderate and positive correlation between primary pupils' involvement in indoor learning activities and their cooperative skills. The result further shows that the coefficient of determination (R^2) (i.e. the predictive value) associated with the correlation coefficient of 0.65 is 0.43. The R^2 indicates that 43% of primary pupils' cooperative skills are predicted by their involvement in indoor learning activities. This indicates that 57% of primary pupils' cooperative skills are predicted by other variables order than involvement in indoor learning activities.

Hypothesis One

$H0_1$: There is no significant predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills.

Table 2: Regression ANOVA test of the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills

	Model	Sum of Squares	df	Mean Square	F	Sig.	Dec.
1	Regression	1911.315	1	1911.315	208.028	0.00	S
	Residual	3564.862	388	9.188			
	Total	5476.177	389				

$\alpha = 0.05$, S = Significant

Result in Table 2 shows that an f-ratio of ($F(1, 389) = 208.028$, $p < 0.05$) was obtained for the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills. Since the associated probability (p) value of 0.00 is less than 0.05 level of significance set as criterion for testing the hypothesis, this implies that the null hypothesis one ($H0_1$) is rejected. Hence, inference drawn is that primary pupils' involvement in indoor learning activities is a significant predictor of their cooperative skills. This also implies that the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills is statistically significant.

Research question two: What is the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills?

Table 3: Regression analysis of the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills

Variables	*N*	$\bar{X}$	SD	*R*	R^2
Outdoor Learning Activities	400	28.84	3.93	0.46	0.21
Cooperative Skills		30.86	3.85		

Key: N = Number of respondents, R = Correlation coefficient, R^2 = Coefficient of determination

Result in Table 3 shows the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills. The result shows that the correlation coefficient obtained between primary pupils' involvement in outdoor learning activities and their cooperative skills was 0.46. This shows that there was a moderate and positive correlation between primary pupils' involvement in outdoor learning activities and their cooperative skills. The result further shows that the coefficient of determination (R^2) (i.e. the predictive value) associated with the correlation coefficient of 0.46 is 0.21. The R^2 indicates that 21% of primary pupils' cooperative skills is predicted by their involvement in outdoor learning activities. This indicates that 79% of Primary Pupils' cooperative skills are predicted by other variables order than their involvement in outdoor learning activities.

Hypothesis Two

$H0_2$: There is no significant predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills.

Table 4: Regression ANOVA test of the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills

Model		Sum of Squares	df	Mean Square	F	Sig.	Dec.
1	Regression	1286.194	1	1286.194	106.367	0.00	S
	Residual	4691.706	388	12.092			
	Total	5977.900	389				

α = 0.05, S = Significant

Result in Table 4 shows that an f-ratio of $F(1, 389) = 106.367$, $p < 0.05$) was obtained for the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills. Since the associated probability (p) value of 0.00 is less than 0.05 level of significance set as criterion for testing the hypothesis, this implies that the null hypothesis three ($H0_3$) is rejected. Hence, inference drawn is that primary pupils' involvement in outdoor learning activities is a significant predictor of their cooperative skills. This also implies that the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills is statistically significant.

Discussion

The study revealed that there was a moderate and positive correlation between primary pupils' involvement in indoor learning activities and their cooperative skills. Furthermore, the findings revealed that the predictive power of primary pupils' involvement in indoor learning activities on their cooperative skills is statistically significant. This suggests that improving primary pupils' in indoor activities can improve their cooperative abilities and vice versa. These findings are in line with previous findings from the study by Kroeker (2017) [12], who revealed that children's indoor and outdoor play in preschool has a similar impact on their interaction with the teacher and peers. Also, the findings are in agreement with previous findings by Tarim (2015) [20], who stated that activities enable children to develop additional skills such as solidarity, sharing, active listening, and cooperation, among others. It is equally in line with Stas Kuviene (2021) [19], which showed that children find group work interesting.

The findings revealed that there was a moderate and positive correlation between primary pupils' involvement in outdoor learning activities and their cooperative skills. The finding further revealed that the predictive power of primary pupils' involvement in outdoor learning activities on their cooperative skills is statistically significant. This means that children's' cooperation skills are greatly influenced by their participation in outdoor activities. These findings corroborate previous findings by Yldrm and Akamca (2017) [23], who revealed that outdoor activities were more effective in improving the cognitive, motor, linguistic, cooperative, and social-emotional skills of school children. The findings also lend support to the findings of the study by Tarim (2015) [20], who reported that cooperative group-based work activities reinforce children's pattern recognition skills and their development of important interpersonal skills such as cooperation and teamwork. These findings are true because as primary pupils' engage in play activities such as outdoor activities, they learn how to work in a team with other peers. They also learn how to assist one another in completing a given task. By so doing, they acquire the needed skills for cooperation.

Conclusion

Based on the findings of this study, it was concluded that there is a significant, moderate, and positive correlation between primary pupils' involvement in indoor learning activities and their cooperative skills. Likewise, there is a significantly

positive correlation between primary pupils' involvement in outdoor learning activities and their cooperative skills. Finally, the predictive power of primary pupils' involvement in indoor and outdoor learning activities on their cooperative skills and social learning skills is statistically significant. This implies that involvement of primary pupils in indoor and outdoor learning activities contributes greatly to the development of their cooperative skills.

Recommendations

Based on the findings of the study, the following recommendations are made:

- Government and school administrators should provide indoor and outdoor learning materials for children activities in schools.
- Teachers should be trained on how to integrate indoor and outdoor activities into teaching.
- Parents should provide indoor and outdoor play materials for their children at home.

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