PREDICTIVE ESTIMATE OF OPENNESS TO EXPERIENCE AND SELF-EFFICACY ON EARLY YEARS TEACHERS' PERCEPTION OF HANDS-ON MATERIALS FOR CLASSROOM TEACHING IN LAGOS, NIGERIA

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Abstract: *The study was carried out to examine the predictive estimate of openness to experience and self-efficacy on early years teachers' perception of hands-on materials for classroom teaching in Lagos, Nigeria. The participants in the research were all the public and private elementary schools teachers in Lagos however snowball non-probability the sampling method was adopted to select 150 elementary school teachers as the sample. Three instruments titled Hands-on Materials Utilization Questionnaire (HOMUQ), Openness to Experience Questionnaire (OEQ) and Teacher Self-Efficacy Rating Scales (TSERS) were used to gather the needed data. Six research questions were raised while three null hypotheses were formulated. While the inferential statistics of Pearson Product Moment Correlation Statistic (PPMC) and T-test were employed to test the null hypotheses at a 0.05 level of significance, the descriptive statistics of frequency count, percentage, mean, and mean rank were utilized to answer the research questions. The findings of this investigation demonstrated that early year teachers believed that using hands-on materials was beneficial for teaching young schoolchildren in attendance; however, there is no correlation between early year teachers' perceptions of using hands-on materials in the classroom and their openness to new experiences (r-value = -.003, p-value = 0.484 > 0.05); there is no significant relationship between self-efficacy and early year's teachers' interpretation of how hands on materials in the lecture hall (r-value = -.016, p-*

value = 0.844 > 0.05); there is no significance difference in male and female early year teacher's interpretation of how hands-on materials for classroom teaching (t-value = 1.873, p-value = 0.709 > 0.05). Considering the results, the following recommendations among others were made: Government and private school owners should provide adequate and effective hands-on material(s) and make it accessible to the early year's teachers; Government and private school owners through the ministry of education should organize on regular basis seminar and or workshop to be training the earlier years teachers on how to use hands-on teaching material to deliver instruction in early years classroom.

Keywords: *Self-efficacy, Hands-on Material, Instructional Strategy Efficacy, Student Engagement Efficacy, Classroom Management Efficacy.*

Introduction

Early Childhood Education (ECE) is aimed at promoting holistic development of children from birth to age 8. Children who receive the right sort of support and encouragement during the early years are expected to be creative and adventurous learners throughout their lives otherwise they tend to have a negative disposition towards learning in later life (Ige & Omotuyole, 2012). The recognition of the significance of the first year of a human being in constructing the basis of the personality, the attitudes and principles that will guide thoughts, feelings and the actions of human beings for the rest of their life formed the basis for early intervention through a quality programme of early childhood education. Olowe, Kutelu, and Majebi (2014) define ECE as any group programme that is designed to promote children's intellectual development, socio-emotional development, language development, physical development and learning from birth to age 8. The aim of this educational programme was enlisted by Sooter (2013) to include fostering proper development of children, identifying and addressing their problems, harnessing their potentials, moulding their characters, enhancing their learning and preparing them for life so that their actions are directed toward promoting their own, their communities, and the world's development. However, all the above listed importance and or functions of ECE cannot be effectively achieved without making the use of a hands-on or experimental teaching approach to the teaching and learning process.

A hands-on approach is a way of teaching where students are encouraged to learn via experience. Giving the students the chance to interact with the materials they are learning about, such as plants, insects, rocks, water's magnetic field, scientific instruments, calculators, rulers, arithmetic sets, and shapes, is what is meant by this. In actuality, it is a strategy for teaching in which students actively participate in the learning process. According to Haury and Rillero (2015), A hands-on learning strategy involves the kid in a comprehensive learning experience that develops their capacity for critical thought. The conclusion is that any educational style that is successful in this area may be characterized as activity-oriented. Hands-on-approach has been proposed by many scholars such as Cecilia, Esther & Dorothy (2015) as a means to increase pupil's academic achievement and understanding of difficult concepts by manipulating objects which may make abstract knowledge more concrete and clearer. Students can participate in real-world examples and see the results of changing various factors thanks to a hands-on approach. It provides specific examples of the principles.

This learner-centered approach encourages "do it yourself" science and allows students to view, touch, and control objects while learning. This encourages more seeing and doing than listening. Obanya (2012) verified the aforementioned fact in his convocation talk by adding that practice by doing (activity-oriented) learning has a retention rate of roughly 75% compared to lectures, which have an average retention rate of 5%. It is obvious that the memory rate rises gradually as teaching techniques become more participatory and activity-based. On the other hand, Ekwueme and Meremikwu (2010) reported that some teachers oppose the use of interactive activity-oriented methods (i.e., hands-on approaches), claiming that it takes too much time and does not allow for complete coverage of the syllabus. Fortunately, the successful development of a child to be self-reliant and economically productive is founded on students' level of abilities and knowledge rather than how much of the curriculum they have learned.

Over time, the concept of teacher self-efficacy has been connected with a multitude of critically important educational variables, such as student behaviour. Since teachers are known to impact pupil learning and development positively, teachers' sense of efficacy is an idea that neither researchers nor practitioners can afford to ignore. High self-efficacy educators are known to approach challenging tasks and recover from disappointments and setbacks; whereas, teachers with little efficacy avoid challenging situations and believe difficult tasks are beyond their capabilities. Also, the ability of human beings to influence their environment is strongly linked with belief in their

ability to bring about change in addition year of practical experience. Albert Bandura, the social psychologist who devised the construct of self-efficacy, states, “People’s level of motivation, affective states, and actions are based more on what they believe than on what is objectively the case” (Bandura, 1991). This shows that an individual having a high level of self-efficacy makes judgments about his or her capacity to achieve a certain level of performance which may influence his or her emotive state, goal setting and persistence.

The 'Big Five' personality traits include self-efficacy and being open to new experiences. According to Costa and McCrae (1992), openness to experience is a broad and all-encompassing aspect of personality that is typically "seen in vivid fantasy, artistic sensitivity, depth of feeling, behavioral flexibility, intellectual curiosity, and unconventional attitudes." It is among the "Big Five" aspects of a person's personality that describes how well they can adapt to new and unconventional ideas, circumstances, and lifestyles. Experience-openness comprises both structural and motivational elements. There have discovered that individuals who score well on openness are encouraged to explore new opportunities and conduct introspection. They have a fluid kind of consciousness due to their structural makeup, which enables them to creatively integrate seemingly unrelated thoughts. In contrast, closed individuals like routine and established experiences.

Additionally, there is still a long way to go before teachers are using hands-on materials as effectively as they think they are. The term perception was defined by Wikipedia (2008) as the process of attaining awareness or understanding of sensory information. The Collins Essential English Dictionary (2006) describes perception as an insight or intuition and a way of viewing. Meanwhile, the Merriam-Webster Online Thesaurus (2009) adds that perception the capacity for understand inner qualities or relationships and also just as knowledge gained from the action of coming to know or understand something. In a lay man term, perception is defined as an act of being aware of one’s environment through physical sensation, which denotes an individual’s ability to understand. Rao and Narayan (2009) holds that Perception is one of the key cognitive components of behavior or the psychological process by which humans comprehend their surroundings. In their own words, perception is the process whereby people select, organise, and interpret sensory stimulations into meaningful information about their work environment. They went on to declare perception is the single most significant factor in determining human behavior and that behavior cannot exist without perception. Thus, without any awareness of their capabilities, teachers cannot adopt via means of hands-on materials in an efficient and effective manner.

It is on this note that this study seeks to predictively estimate the impact of openness to experience and self-efficacy on early years' teachers' perception on hands-on materials for classroom teaching in Lagos, Nigeria

Research Questions

The study provides answers to the following research questions;

1) What are the opinions of the early years' teachers on via means of hands-on materials for classroom teaching?
2) Does teacher's self-efficacy affect their interpretation of how hands on materials in early years classroom?
3) Do teachers' openness to experience affect teachers' interpretation of how hands-on materials in the classroom?
4) Does experience influence early years' teachers' interpretation of how hands-on materials in early years' classroom?

Research Hypotheses

The study tested the following null hypotheses;

Ho_1: There is no significant relationship between openness to experience and early years' teachers' opinion on the usage of hands on materials in the classroom.

Ho_2: There is no relationship between self-efficacy and teachers' perception of the use hands-on material in the early years' classroom.

Ho_3: There is no significant difference between male and female early year teacher's interpretation of how hands-on materials for classroom teaching in Lagos, Nigeria.

Methodology

The research design for the study was a descriptive survey type. The participants of the research include private and public primary schools in 16 local governments that makes Lagos metropolis. A sample size of 150 respondents selected through snowball non-probability sampling technique from 3 randomly selected local governments participated in the study. The technique was viewed appropriate because it's challenging for the researcher to ascertain the total number of elementary schools and educators in the metropolis. Three instruments were designed for the study, a self-constructed questionnaire titled Hands-on Materials Utilization Questionnaire (HOMUQ), which has 35 question items arranged into five clusters using the Likert scale format and with reliability value of 0.79 using Cronbach Alpha method was used to obtained data on teachers' utilization of hands-on teaching and learning material utilization. Openness to Experience Scale (OES)

adopted from Goldberg's (1992) Big Five Adjective Markers was the second instrument. While a Self-Efficacy Rating Scale (SERS) adapted from Edwin (2017) study was the third instrument used for the study. The researcher alone administered 150 copies of each instrument to the respondents. All the instruments were properly filled and returned on schedule giving 100% response rate. Inferential statistics of Pearson Product Moment Correlation Statistic (PPMC) and the T-test used to evaluate the null hypotheses. at a 0.05 level of significance while descriptive statistics like frequency count, percentage, mean, and mean rank were used to answer the research questions.

Results

Research Question 1: *What are the perceptions of the early years teachers on the use of hands-on materials for classroom teaching?*

S/N	Item	N	Mean	Std. D	Remarks
1	Use of hands-on materials will make learning easy and fun for young children	150	2.61	1.170	Agreed
2	The use of hands-on materials in the early years will help children understand concepts much better	150	2.12	.883	Disagreed
3	Proper use of hands-on materials will help children retain information	150	3.16	.836	Agreed
4	Use of hands-on materials will serve as motivation for young children	150	3.45	.538	Agreed
5	The right use of hands-on materials will improve student's performance	150	3.33	.620	Agreed
	TOTAL		**2.93**	**4.047**	

Table 2: Perceptions of the Early Years Teachers on the Use of Hands-On Materials

Source: Fieldwork, 2020

Table 2 presents the analysis on the perceptions of the early years teachers on the use of hands-on materials for classroom teaching. It shows that the fourth item has the highest mean score of 3.45, followed by the fifth item with a mean score of 3.33, then the third item with a mean score of 3.16 and then the first item with a mean score of 2.61. While, second item had a mean score of 2.12. Meanwhile, the cumulative means score of 2.93 was attained which is above the

benchmark of 2.0. This by implication shows that early year teacher's percept the use of hands-on material to be helpful for early years classroom teaching.

Research Question 2: *Does teacher's self-efficacy affect their interpretation of how hands on materials in early years classroom?*

S/N	Items	N	Mean	Std. D
1	I am always certain that I can effectively utilise hands on materials in teaching.	150	2.93	.748
2	In general, I think that I can help children obtain desirable outcomes through the use of hands on materials	150	2.54	.765
3	I believe I can successfully teach any topic with the use of hands on materials.	149	2.97	.730
4	I am confident that I can perform effectively in utilising hand on materials for any type of children.	149	3.35	.636
5	Even under pressure, I can work really well in utilising hands on materials	149	3.15	.723
	Total		**2.99**	**0.720**

Table 3: Effect of teacher's self-efficacy on interpretation of how hands on materials

Source: Fieldwork, 2020

Table 3 presents the analysis on the teacher's self-efficacy effect on their interpretation of how hands on materials in early year classroom. It shows that the fourth item has the highest mean score of 3.35, followed by the fifth item with a mean score of 3.15, third item has a mean score of 2.97, and the next is the first item with a mean score of 2.93 while the second item on the table has a lowest mean score of 2.54. Meanwhile, the cumulative means score of 2.99 was attained which is highly above the benchmark of 2.0. This by implication displays that the view of the use of hands-on materials in early year's classrooms is affected by the self-efficacy of the teacher.

Research Question 3: *Do teachers openness to experience affect their interpretation of how hands-on materials in the classroom.*

S/N	Items	N	Mean	Std. D
1	I am always open to new experiences; hence I will not hesitate to use hand-on materials.	150	2.64	.914

2	I adapt easily to unforeseen situations, thus to use hands-on material in my class will be a welcoming idea.	149	2.91	.788
3	It will feel so good to use hands on material in early years classroom because I always have the impression that new things are for the best.	144	3.03	.919
4	I easily adapt to a new environment, thus use of hands-on materials in early years classroom will surely give me an alternative way of teaching.	149	2.57	1.080
5	I can forge ahead even if I am uncertain hence to try out hands-on materials in the early years classroom will be an exciting experience	150	3.15	.814
6	I am capable of carrying on while having faith in my experience hence trying out hands-on materials in the early years classroom will promote more discoveries for me.	146	3.16	.836
	Total		**2.91**	**.892**

Table 4: Effect of Teachers Openness to Experience on Their Interpretation of how Hands-On Materials

Table4 presents the analysis on effect of teacher's experience on their interpretation of how hands-on materials in classroom. It shows that the sixth item has the highest mean score of 3.16, followed by the fifth item with a mean score of 3.15, third item has a mean score of 3.03, and the next is the second item with a mean score of 2.91 while the fourth and the first items on the table has a lowest mean score of 2.57 and 2.04 respectively. Meanwhile, the cumulative means score of 2.91 was attained which is highly above the benchmark of 2.0. This by implication shows that teacher's experience has effect on their interpretation of how hands-on materials in classroom.

Research Question 4: *Does experience influence early year's teachers' interpretation of how hands on materials in the classroom?*

S/N	Items	N	Mean	Std. D
1.	Years of experience using hands on materials in early years classroom enhances teachers' effectiveness in the use of materials	150	3.03	.523
2.	It does not matter if a teacher has experience or not before he can teach with hands-on materials in the early years classroom	150	2.69	.935
3.	Teachers need long period of practice to effectively use hands-on materials with young children in the classroom	132	2.25	1.080

4.	Use of hands-on materials in early years classrooms do not require experience by the early years teachers	150	3.47	.540
5.	Having experience in the correct use of the hands-on materials will positively affect children' learning	150	2.96	1.146
	Total		**2.88**	**0.845**

Table 5: Effect of Teachers Experience on Their Interpretation of how Hands-On Materials

Source: Fieldwork, 2020

Table 5 presents the analysis on effect of teacher's openness to experience on their interpretation of how hands-on materials in classroom. It shows that the fourth item has the highest mean score of 3.47, followed by the first item with a mean score of 3.03, fifth item has a mean score of 2.96, and the next is the second item with a mean score of 2.69 while the third item on the table has a lowest mean score of 2.25. Meanwhile, the cumulative means score of 2.88 was attained which is highly above the benchmark of 2.0. This by implication shows that teacher's openness to experience has effect on their interpretation of how hands-on materials in classroom.

Hypotheses Testing

Three null hypotheses were raised and tested in the research to establish the effect of openness to experience and self-efficacy on early year's teachers' perception on hands-on materials for classroom teaching in Lagos, Nigeria. The first and second null hypotheses were tested using PPMC while independence sample T-test was employed to evaluate null hypothesis three as follows:

Ho_1: *There will be no significant relationship between openness to experience and early year's teachers' interpretation of how hands on materials in the classroom.*

Variable	N	$\bar{X}$	SD	R	Sig.	Remark
Teachers Experience	150	3.14	1.346			
	150			-.003	.484	Significant

Hands-on Material Utilization Perception		3.01	.217			

Table 6: Correlational Analysis of Openness to Experience and Early Year's Teachers' Interpretation of how Hands-on Materials

Table 6 affirms that there is a significant negative relationship between early year's teachers experience and hands-on material utilization perception ($r = -0.03$; $p<0.05$). Therefore, the hypothesis which states that there will be no significant relationship between openness to experience and early year's teachers' interpretation of how hands on materials in the lecture hall is accepted. It means that a negative and insignificant relationship exists between openness to experience and early year's teachers' interpretation of how hands on materials the lecture hall.

Ho_2: There will be no relationship between self-efficacy and teachers' perception of the use hands-on material in the early year's classroom.

Variable	**N**	**$\overline{X}$**	**SD**	**R**	**Sig.**	**Remark**
Teachers Self-Efficacy	150	3.43	.831			
	150			-.016	.844	Significant
Hands-on Material Utilization Perception		3.01	.217			

Table 7: Correlational Analysis of Self-Efficacy and Early Year's Teachers' Interpretation of how Hands-on Materials

Table 7 shows that there is a significant negative relationship between teachers self-efficacy and hands-on material utilization perception ($r = -0.16$; $p<0.05$). Therefore, the hypothesis which states that there is no significant relationship between self-efficacy and early year's teachers' interpretation of how hands on materials in the classroom is accepted. It implies that a negative and insignificant relationship exists between self-efficacy and early year's teachers' interpretation of how hands on materials the lecture hall.

Ho_3: *There is no significant difference between male and female early year teacher's interpretation of how hands-on materials for classroom teaching.*

Variable	N	$\bar{X}$	SD	df	T	Sig.	Remark
Male Teachers	68	2.97	.243				
				148	1.873	.709	Significant
Female Teachers	82	3.04	.189				

Table 8: T-Test Analysis on Difference in Male and Female Early Year Teacher's Interpretation of how Hands-On Materials

Table 8 shows that there is a significant difference between male and female early years teacher's perception on via means of hands-on materials ($t = 1.873$; $df = 148$; $p<0.05$). Therefore, the hypothesis which states that there is no significant difference in male and female early year teacher's interpretation of how hands-on materials for classroom teaching is accepted. Female early year's teacher have a higher mean (mean = 3.04) than male (2.97) teachers.

Discussion

Analysis of data revealed the research question one in Tables 2 showed that, early year teacher's percept the use of hands-on material to be helpful for early years classroom teaching. This might be because manipulative tools (hands-on material) are valuable tools to help students of any academic level understand difficult concept especially in calculative subject like mathematics and it is suitable for a levels of pupils' ability as well. The findings validated the statement of McIntosh (2012) that "It is obvious that even with minimal exposure, students of all intelligence levels can benefit greatly from the use of manipulative". A hands-on learning technique involves the kid in a thorough learning experience and enhances their capacity for critical thought, according to Haury and Rillero's (2015) claim. Obanya (2012) verified in his convocation lecture that the average recall rate of learning by lecture is 5% whereas that of practicing by doing (activity oriented) is approximately 75%, providing more empirical support for the findings.

The results from research question two, which are presented in table 3, demonstrated that teachers' perceptions of hands-on materials in early year's classrooms are affected by their perception of their own efficacy. This might be because nothing much can be achieved from using only hands-on material in the teaching process without the presence of teachers who possess strong self-efficacy, capable and able to go to any length to ensure pupils success academically. This was in totality with the opinion of Adeoye and Popoola (2011), that for

learning to take place, learners must have access to necessary information materials and resources. They have to interact with tangible and intangible resources especially the teachers who will illustrate and demonstrate the appropriate use of this material. It also supported Mutai (2006) assertion that learning is strengthened when there are enough reference materials and that academic achievement illustrates per excellence the correct use of these materials.

The findings from the research question three and four as shown in table 4 and 5 showed that, teacher's openness to experience has effect on their interpretation of how hands-on materials in classroom. This is because a teacher with little or no experience will not be able to administer the usage of hands-on material effectively. Then it will considered most time by such a teacher as time consuming and he or she will be facing difficulties completing the curriculum. The results further supported Ekwueme and Meremikwu's (2010) assertion that some teachers oppose the use of interactive activity-oriented methods (i.e., hands-on approaches), claiming that it takes too much time and prevents them from covering the entire curriculum because they lack experience with their application.

A negative and negligible association between openness to experience and early year teachers' interpretations of how hands-on materials in the classroom work was also shown by the study hypothesis one outcome, as shown in Table 6. This is best explain through the descriptive statistic of the respondent which clearly showed that most of the early year teachers used for the study had less than 10 years of teaching experience which in real sense has not prepared them adequately to the dos and don'ts of the hands-on material utilization and which might have made many of them to considered hands-on material(s) as time consuming and facing difficulties utilizing it.

In Table 7 on research hypothesis two, the result showed that, a negative and insignificant relationship exists between self-efficacy and early year's teachers' interpretation of how hands on materials in the classroom. The findings was in agreement with that of Shabnam and Mohammad (2020) which found that the self-efficacy of soft science and hard science teachers was significantly correlated with their teaching practice, with the English language teachers' efficacy-teaching relation not reaching a statistical significance. Lastly, the findings from research hypothesis three as shown in table 8 showed that, there is a positive but insignificance difference in male and female early year teacher's interpretation of how hands-on materials for classroom teaching. This finding agreed and disagreed to that of Prosper (2013) who investigated teachers' perceived use of teaching and learning materials in inclusive classrooms. It agreed to this study

because it was found that though gender affects the teacher's perception toward usage of both education and learning material but in the aspect of disagreement a significant difference were noted between male and female teachers' perceived use of teacher learning material while in the present study insignificant difference was noted.

Conclusion

Considering the results from the research, it is concluded that openness to experience and self-efficacy do have a relationship with early year's teachers' interpretation of how hands on materials in the classroom, but not a meaningful connection. In addition, regardless of their gender, early year's instructors believe that using hands-on materials is beneficial for early year's classroom teaching. Additionally, aspects like scheduling enough time, providing enough, being accessible, having widespread awareness, and having the flexibility to improvise contribute to support the use of hands-on materials in the classroom activities by early year's instructors.

Recommendations

The following suggestions are given in light of the study's findings:

1. Owners of both public and private schools should provide adequate and effective hands-on material(s) should always be provided and accessible to the early year's teachers.
2. Government and private school owners through the ministry of education should organize on regular basis seminar and or workshop to be training the earlier year's teachers on how use hands-on teaching material to deliver instruction in early year's classroom.
3. The state ministry of education should ensure regular supervision to the early year education centers or schools to enhance effective use of hands-on material for instructional delivery.
4. Government and private school owners should also provide a good and favourable working environment to the instructors so as to enhance their organization commitment, which will make them behave in a way they will not have and will in turn make them improve their self-efficacy towards ensuring pupils success.
5. Government and private school owners should also ensure they employ mostly teachers with pool of teaching experience or those who have gone through teachers' education training since they will be able to utilize different kind of instructional materials especially hands-on material effectively.

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