

EFFECT OF PARTICIPATORY TRAINING PROGRAMME ON EARLY CHILDHOOD EDUCATION PRE-SERVICE TEACHERS' PRODUCTION OF LOCALLY-MADE INSTRUCTIONAL MATERIALS IN KWARA STATE

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ABSTRACT

This study determined the effect of participatory training programme (PTP) on early childhood education pre-service teachers' production of locally-made instructional materials in Kwara State, Nigeria. Pretest-posttest control group quasi-experimental design with 2x2x3 factorial matrix was adopted. Two colleges of education running Early Childhood Education programme were purposively selected using intact classes of 200Level students offering ECE 227. A total of 65 pre-service teachers (16 males and 49 females, ages 20 years \pm 1.6) participated in the study. Participants were randomly assigned to PTP (51) and control (14) groups, while the treatment, along with hands-on practical production for the PTP group lasted 12 weeks. Instruments used were Pre-service teachers' knowledge of locally available resources assessment test ($r = 0.81$), Creative ability ($r = 0.84$), Production ($r = 0.80$), Utilisation of LmIMs ($r = 0.82$) rating scales and the instructional guides. Data were analysed using Analysis of covariance and Scheffe post-hoc test at 0.05 level of significance. Treatment had significant main

effect of treatment on pre-service teachers' production ($F(1,52) = 704.31$; partial $\eta^2 = 0.93$). There were no two-way and three-way significant interaction effects of treatment and gender; treatment and creative ability; gender and creative ability; treatment, gender and creative ability. Hence, ECE teacher educators can adopt the participatory training programme in the teaching of pre-service teachers for improved performance. Also, this training can be integrated into the in-service teachers' professional development programmes in order to enhance or update their skills of producing instructional materials using the resources available in their surroundings.

Keywords: participatory training programme, pre-service teachers' production skill, Locally-made instructional materials, locally available resources.

INTRODUCTION

Children naturally are full of life and are usually very active as they strive to make sense out of their world. The motivation to interact with their immediate environment is an intrinsic peculiarity of all children irrespective of their background but the quality of the interactions depends largely on the possibilities for engagement that the environment provides. In other words, the opportunities for interaction children get from the environment set the basis for their later years learning outcomes. More so, due to the unique characteristics of children and how they learn, the immediate environment remains their first and most equipped classroom. It is through children's interaction with the environment, particularly at the early years, that the basic skills needed for maximum development are acquired.

Among those whom children interacts with generally combine relevant inputs to facilitate children's learning process (Ogunleye, 2014). Teachers of young children play major roles in children's development, learning and in the process of skills acquisition. As co-learners with children, they have significant ways of influencing children through the provision of stimulating environment as well as developmentally and culturally appropriate facilities for learning. Due to the importance of early childhood and primary education in

the lives of children, their families, and the nation at large, education policy makers cannot afford to handle teacher preparation for this level of education carelessly. A carefully planned and executed preparation programme for teachers will result in a greater grasp of teaching techniques, more professional self-assurance and improved quality of work by the teachers (Oduolowu & Agarry, 2014).

In the ideal early childhood and primary school settings, the learning materials also known as instructional materials provided by teachers reflect the lives of the children and the families they serve as well as the diversity found in the society in general (Smith, 2014). Ramos (2013) added that these materials help simplify important concepts in a lesson, they arouse and sustain learner's interest, give every child the opportunity to share the experiences necessary for new learning in a class and also help make learning more meaningful and permanent. Abimbade (1997) asserted that, instructional materials make children's learning more effective and also promote and sustain their interest.

That is to say, instructional materials have the potential to attract children, make them want to stay a little longer on some learning activities, explore new things and construct their own knowledge.

In a play-based, child-led environment such as Reggio-inspired environments, the materials are carefully selected for children to enhance learning and discovery (Kable, 2013).

At any level of education and especially at the early childhood and primary education levels, the materials used by teachers to facilitate children's learning are very crucial for successful teaching and learning process. Children's learning may not be effective or meaningful in the absence of instructional materials. Nworgu (2003) and Ndukwu (2004) expressed the view that the most promising instructional materials are those designed to be responsive to the exploration of children, enable them to be self-propelling, extend the range of stimuli to several senses. Similarly, Barresi (2011) said that instructional materials should be concrete and relevant to a child's own life experiences as well as open-ended but purposeful.

Despite the importance of instructional materials to teaching and learning outcomes at the early childhood stage, these materials seem not to be readily and sufficiently available for use in many Nigerian classrooms. Ekukinam (2012) observed that children's interaction with learning materials seems to be limited in many Nigerian schools particularly at the public early childhood and primary schools due to lack of

or inadequate provision of instructional materials.

Obasa (2000) and Adewunmi (2008) in their studies on the availability of instructional learning resources revealed that the materials that are needed to make teaching and learning effective in the classroom are not sufficiently available for use in many schools. In situations where these materials are provided at all, most of them are imported which makes them very expensive and only a few schools can afford to purchase them for their children to interact and learn with. Consequently, a limited number of children have access to these learning materials and a large number of early childhood and primary school children in Nigerian are deprived of high-quality learning experiences. In addition, these imported materials lack direct cultural and environmental bearings for effective teaching and learning. Thus, making the learning process for many children more complicated and unexcited.

It is imperative to note that as obvious as this problem is in Nigeria, several studies on instructional materials or resources concentrate more on the availability and its utilisation by teachers majorly at the secondary school level with little or no attention given to the production of instructional materials that are developmentally and culturally appropriate

for the early childhood and primary school children.

Against this trend of research, it is therefore necessary to equip pre-service teachers with the skills of to transform materials found in their environments into instructional materials through a participatory training programme. A participatory training programme in this study refers to series of training activities organised to equip the pre-service teachers' production skills using locally available resources. The training programme adopted the active learning approach which according to Pretty, Guijt, Thompson and Scoones (1995); Farrell (2009) is a hands-on form of educating students where the teachers creates conditions so that the students can take charge of their own learning, move the learners beyond the role of passive listeners and note takers.

The participatory approach has been used to develop civic and social skills such as cooperation, team-spirit and problem-solving skills among learners. It has also been found to improve the learning outcomes of students especially the secondary students but it has not been employed in teaching production of instructional materials for early childhood and primary school level. As a result of the positive outcomes recorded through this approach to learning, the researcher employed a participatory training programme to determine its effects on ECE

pre-service teachers' production of locally-made instructional materials in Kwara State, Nigeria.

RESEARCH QUESTION

The question below was answered in this study:

To what extent are ECE pre-service teachers able to apply the principles of design in the production of instructional materials for early childhood and primary school use after the training?

Hypotheses

The following hypotheses were tested in the study at $p < 0.05$ level of significance.

H01: There is no significant main effect of:

Treatment gender creative ability on early childhood education pre-service teachers' production of instructional materials from locally available resources.

H02: There is no significant interaction effect of: treatment and gender treatment and creative ability gender and creative ability treatment, gender, and creative ability on early childhood education pre-service teachers' production of instructional materials from locally-available resources.

METHODOLOGY

The study adopted a pretest-posttest, control group quasi-experimental research design with 2x2x3 factorial matrix. Two colleges of education were purposively selected and randomly assigned to either the experimental (treatment) or control group respectively. Intact classes of ECE 200 Level students

were purposively selected to participate in the study. The selection was based on the fact that one of the courses offered at 200 Level by the ECE students is ECE 227 titled, “Production and Use of Instructional Materials”. Pre-service Teachers’ Production Rating Scale (PTPRS), Pre-service Teachers’ Creative Ability Scale (PTCAS) were the instruments used to collect the necessary data. Pre-service Teachers’ Production of Locally-made Instructional Materials Guide (PTPIMG) and Non-Participatory Lecture Guide on Pre-service Teachers’ Production of Instructional Materials (NPLGPTPPIM) gave direction to all activities carried out in both experimental and control group.

The study lasted twelve weeks. The first one week was allotted for training of research assistants, followed by eleven weeks for interactive teaching and training on production of instructional materials using locally available materials. It is important to note that the production aspect of the training was participatory all through in the experimental group. At the end of the training on production of instructional materials, the post-test was then administered to the pre-service teachers in both groups.

Results

Answering the research question, mean, standard deviation and weight average were used to analyse the data. Table 1 presented the findings.

Table 1: Pre-service Teachers’ Application of the Principles of Design in Instructional Materials Production

Items	Mean	SD	Weighted Average	Remark
Simplicity				
Ensures the instructional material conveys the key detail.	3.31	.88	3.46	Very Good
Makes the instructional material easy to operate.	3.34	1.00	(69.2%)	Good
Makes sure the instructional materials are not complicated to replicate.	3.60	.72		
Ensures the instructional materials are not complicated. to use	3.60	.72		
Unity				
Ensures sense of uniformity of materials	3.02	.67	3.26	Very Good
Sense of alternating patterns, that is, sense of flow	3.23	.86	(65.2%)	Good
Has sense of bringing together related materials/resources	3.52	.87		
Balance				
Ensures logical arrangement of materials.	3.00	.81	3.31	Very Good
Appropriates instructional materials with concepts.	3.49	.90	(66.2%)	Good
Ensures cautious use of materials/resources	3.45	.95		
Colour				
Ensures appropriate use of colours (attractive)	3.34	.82	3.48	Very Good
Ensures the colours are beautifully combined.	3.43	1.24	(69.6%)	Good
Makes the instructional materials colourful	3.68	1.42		

Safety						
Uses materials/resources that are non-toxic.	3.35	1.12	3.52	Excellent		
Makes sure instructional materials are void of sharp edges.	3.37	.67	(70.4%)			
Ensures instructional materials produced are not too small for children to swallow	3.55	.69				
Materials are non-electric	3.80	1.42				
Durability						
Materials that are washable	1.78	.41	2.62	Good		
Materials are not breakable.	2.71	.61	(52.4%)			
Instructional materials are not of detachable parts	3.38	.93				
	Weighted Average	3.28 (65.5%)				

Note (%): Below 40 = Poor; 40 – 49 = Fair; 50 – 59 = Good; 60 - 69 =Very Good; and 70 & above = Excellent

Table 1 presents the summary of 5-point rating scale of the productions of the pre-service teachers after the training based on the six principles of design of instructional materials. The results show that the pre-service teachers were excellent in terms of safety (mean = 3.52), they were also very good, almost excellent in application of colours (mean = 3.48); very good in making their product simple to operate (mean = 3.46), very good in sense of balancing (mean = 3.31) and very good in terms of unity (mean = 3.26) while the pre-service teachers were only rated fair in durability of products (mean = 2.62).

The weighted average is 3.28 (65.5%). This implies that, to a considerable extent the pre-

service teachers were able to produce instructional materials from locally available resources as they applied the principles of design to the production of instructional materials.

Table 2: Summary of Analysis of Covariance on ECE Pre-service Teachers Production for Locally Available Resources

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	15274.765 ^a	1	1272.897	132.887	.000	.818
Intercept	5556.738	1	5556.738	580.109	.000	.918
Pre-production	3.053	1	3.053	.319	.575	.006
Treatment	6746.464	1	6746.464	704.313	.000	.931
Gender	2.526	1	2.526	.264	.610	.005
Creativity rate	44.273	2	22.137	2.311	.109	.082
Treatment * Gender	13.754	1	13.754	1.436	.236	.027
Treatment *	50.280	2	25.140	2.625	.082	.092
Creativity rate						
Gender * Creativity rate	38.521	2	32.275	3.369	.024	.012
Treatment * Gender *	38.521	2	19.261	2.011	.124	.034
Creativity rate						
Error	498.097	5	9.579			
Total	298517.000	6				
Corrected Total	15772.862	6				

a. R Squared = .968 (Adjusted R Squared = .961)

Table 2 shows that there is a significant main effect of treatment on pre-service teachers' production of instructional materials ($F(1,52) = 704.31$; $p < 0.05$; $\eta^2 = 0.93$). The Table equally revealed that gender has no main effect on ECE pre-service teachers' production skill ($F(1,52) = 0.26$; $p > 0.05$; $\eta^2 = 0.00$). Also, the creative ability has no significant main effect on pre-service teachers' production of instructional materials ($F(2,52) = 2.31$; $p > 0.05$; $\eta^2 = 0.08$).

However, testing the interaction effects of hypotheses 2a, 2b, 2c and 2d, ANCOVA was adopted and the results were presented in the above Table 2 as well. It was revealed that treatment and gender has no significant interaction effect on ECE pre-service teachers' production skill ($F(1,52) = 1.44$; $p > 0.05$; $\eta^2 = 0.03$). Similarly, treatment and creative ability has no significant interaction effect on the pre-service teachers' production of instructional materials ($F(2,52) = 2.63$; $p > 0.05$; $\eta^2 = 0.09$). The same Table 2 above shows that gender and creative ability has no significant interaction effect on ECE pre-service teachers' production skill ($F(2,52) = 3.37$; $p > 0.05$; $\eta^2 = 0.12$). Likewise, treatment, gender and creative ability no significant interaction effect on ECE pre-service teachers' production skill ($F(2,52) = 2.01$; $p > 0.05$; $\eta^2 = 0.03$).

Thus, hypothesis 1a is rejected while hypotheses 1b, 2a, 2b, 2c and 2d are not rejected.

Table 3 below presents the estimated marginal means of production across the groups

Table 3: Estimated Marginal Means on Production of Instructional Materials

Variable	Mean	Std. Error
Intercept		
Pre-production skills	38.092	-
Postproduction skills	57.896	.625
Treatment		
Control	40.479	1.087
Experimental	75.312	.677
Gender		
Male	57.576	1.018
Female	58.215	.719
Creativity		
Low	59.925	1.251
Average	57.219	.930
High	56.544	1.042

Table 3 reveals that pre-service teachers exposed to participatory training programme scored the higher production mean score (75.31) than their counterparts exposed to conventional method of teaching (40.48). In other words, the pre-service teachers in the experimental group were able to conveniently produce more instructional materials than their counterparts in the

control group. Those exposed to the training produced at least thirty diverse types from locally available resources for early childhood and primary classroom use while, those in the control group produced less than 10 instructional materials out of which some did not apply the principles of production of instructional materials.

DISCUSSION OF FINDINGS

Findings revealed that participatory training programme (PTP) has significant main effect on ECE pre-service teachers' production skills of instructional materials using locally available resources. In other words, the pre-service teachers' production skill before the training was quite low in comparison with the performance after the training. Those taught through the PTP were able to acquire the skill of production and consistently reflects improved skills in the production of instructional materials. The inability of those (pre-service teachers) in the control group to acquire as much production skills as their counterparts in the experimental group can be linked to the mode of instruction they were exposed to – conventional lecture method.

This outcome supports the assertions of Rieg and Wilson, 2009; Salami, 2009; Salami, 2014 that the method of instruction plays a major role in the level of assimilation, knowledge and skills acquired by the learners. In many higher institutions,

colleges of education inclusive, it has been observed and confirmed by Salami (2014) among other scholars that conventional (lecture) method of instruction is adopted by the majority of teaching staff. Consequent to the mode of instruction, this presents the reason why many schools including early childhood centres as well as primary schools lack sufficient instructional materials for classroom use as claimed by Ekukinam (2010).

This finding thus supports McBer (2000); Anderson (2004); Salami (2014) that among the factors affecting students' learning are the teacher-related factors especially the preparation and pedagogical factors which were found to be strong predictors of students' leaning outcomes.

The study also showed that there was no locally made main effect of creative ability on pre-service teachers' production skill of locally made instructional materials. This implies that a larger number of the pre-service teachers who participated in the study were not very creative.

Although, a good number of them were just on the average, this could be a very strong factor why many pre-primary school teachers do not engage in the production of instructional materials using the locally available resources around them. The findings of this study align with the

submission of Ekukinam (2012); Adeyanju (1991) and Ezegebe (1999) that many teachers obviously do not engage in the production of instructional materials because they lack creative skills. This makes many of the early childhood and primary school teachers oftentimes depend on the Creative Art teachers for the production of instructional materials they need for classroom instruction.

It was further revealed in the study that, there is no significant there is no significant main effect of gender on pre-service teachers' production skill of locally-made instructional materials. It means gender did not have a significant effect on the production of instructional materials by pre-service teachers. This result supported the report of Buck and Tiene (1989) that the impact of gender on teachers' competence is extremely low. In the words of Ezegebe (1999) teachers, regardless of their gender are expected to actively engage in the production of instructional materials because it is one of the most exciting experiences for their professional practice.

Conclusion

Based on the findings of this study, it was concluded that participatory training programme is more effective than the conventional lecture or direct instruction method commonly adopted for the training of ECE pre-service teachers in the colleges of education in Kwara State, Nigeria.

It has also been established that creative ability and gender of pre-service teachers are not strong factors that can hinder pre-service teachers' knowledge of available resources in their immediate environment nor the ability to source for the resources as well as the production of instructional materials needed for classroom instruction. To be effective as a teacher of young children, both in the content of any subject matter and in the method of instruction, a learner-centred, active and participatory approach to learning is considered appropriate at all levels of education.

RECOMMENDATIONS

Based on the findings of this study the following are recommended:

ECE lecturers particularly those teaching production and utilisation of instructional materials should adopt a participatory approach to teaching and should avoid using the conventional lecture method of teaching as much as possible.

The participatory approach has been found to be more effective and appropriate for ECE pre-service teachers. This is because they are expected to engage young children with different hands-on activities while teaching. Lecturers teaching ECE 227 (Production and Utilisation of Instructional Materials) should encourage creativity among the pre-service teachers by allowing them to engage in

practical production in the class and by giving them project assignments that will enhance their creative skills.

Gender should not be considered as a factor that will limit teachers from preparing for classroom instruction particularly the production and utilisation of instructional materials. It should be noted that both male and female teachers should strive to make each learning experience a memorable one for their pupils by enriching their classrooms with adequate materials especially those from the child's immediate environment. It would be appropriate if this type of training is extended to the in-service teachers at the nursery and primary schools in Nigeria. This will help to solve the problem of lack of and inability to use locally-made instructional materials in many Nigerian schools.

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