

COLLABORATIVE TEACHING APPROACH IN PRE-SERVICE CAREGIVERS/TEACHERS EDUCATION: IMPERATIVE FOR SUSTAINABLE QUALITY EARLY CHILDHOOD CARE AND EDUCATION IN NIGERIA

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ABSTRACT

The study investigated the effect of the Collaborative Teaching Approach on pre-service teachers' knowledge in some selected course outlines. The population for the study comprised all 200 level pre-service teachers in the Department of ECCE in the Federal Colleges of Education in Southwestern, Nigeria. The sample for this study consists of eighty (80) 200-level pre-service teachers who were purposively selected in the Department of ECCE in Federal College of Education, Iwo, Osun State Nigeria. The study adopted a quasi-experimental design with a non-equivalent pre-test and post-test control group. Three null Hypotheses were formulated for the study. The result revealed that there is a significant impact of CTA on pre-service teachers' knowledge of marking and cutting of letters A-Z ($F_{(1, 77)} = 85.660, P < 0.05$). It also revealed that there is a significant influence of CTA on pre-service teachers' practical knowledge of printing patterns and images and converting them to templates ($F_{(1, 77)} = 34.256, P < 0.05$). Lastly, the result revealed that there is no significant influence of CTA on pre-service teachers' ability to work with fruit templates and create 3D effects using lines ($F_{(1, 77)} = 0.919, P > 0.05$). The study concluded that CTA significantly influence pre-service teachers' knowledge of tracing templates of letters, printing patterns and images and converting them to templates. The study recommended further implementation of the approach in Colleges of Education and other Institutions that train pre-service teachers.

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1. Introduction

Early childhood care and education are crucial levels of education for all children across countries because they are the foundation on which other levels of education are built. This is why it is very essential to make available qualified and professional ECCE caregivers/teachers for young children at this level of education. The availability of qualified professionals in ECCE depends on the quality of training acquired during pre-service training of the caregivers/teachers at the College of Education, University or other tertiary level of education that produces caregivers/teachers in the field of ECCE. Caregivers/teachers are believed to have been equipped with prior knowledge before transferring it to the learners in the classroom or development centres, this is why Darko and Wang (2021) might have described education as the transfer of knowledge from anyone who has prior knowledge and experience to those who need to learn or acquire more knowledge. In Nigeria, the normal routine before being qualified to be an in-service caregiver/teacher requires going through pre-service training at the College of Education or University to study education as a course.

The main objective of teacher education at any of the higher institutions is to cultivate expertise, ensuring that pre-service teachers possess a solid foundation and skills prepared to perform excellently in the classroom. This objective of informed raises several questions. Are pre-service teachers being prepared for the skills of teacher educators? What level of training is being acquired by pre-service

teachers most especially in the field of ECCE? This may explain why Burns et al (2024) in their findings state that many in-service teachers considered their pre-service training as full of theories that lack the practical that the teaching profession demands. It is further noted that preparing pre-service teachers during training plays an essential role in promoting the beliefs, practices and professional commitment of future in-service teachers who will be effective and confident in their duties as caregivers/teachers.

Burns et al (2024), found out in their study that pre-service teacher systems across the globe are lacking a lot of variabilities such as quality issues and lecture-based instructional methods which leave the in-service teachers not prepared for the realities of teaching young children, teacher educators lacking relevant teaching experience, limited professional development and support for teacher educators. All the factors stated are compounded by the prioritization of research over teaching which is contributing to an overly theoretical- versus practical focus on effective teaching.

From the foregoing, it is not a gainsaying that the quality of training experienced by pre-service teachers during training will reflect on their professionalism when they later become in-service teachers. For a pre-service teacher to possess quality training, this is highly embedded in the teaching and learning approach applied by teacher educators in higher education. Various approaches are being used by teacher educators to train pre-service teachers in preparation for quality education in Nigeria, but it is very important to note the right approach that can be used to teach every course effectively especially in this 21st Century to meet Sustainable Development Goal 4 target 4 that aim at quality education for all children.

Building young children from a solid educational foundation promises better achievement in other levels of education and this can only be achieved when the pre-service teachers are being trained with 21st-century approaches. Burns et al (2024) thought that pre-service teacher training can be effective when priority is being given to the learner-centred method of teaching, peer instruction and small group learning as meta-evaluations have shown the positive impacts of the approaches on pre-service teachers' achievement and attitude towards cooperative learning.

Generally, Teaching and learning activities involve various components that connect each other, teaching and learning approaches are among the key ingredients that support the effectiveness of teaching and learning objectives (Irzawati, 2023). Teacher educators have different approaches they apply during their teaching and learning processes which may vary from lecture methods to teachers-centred methods. It is very important to note that for pre-service teachers to effectively achieve quality training experience in this 21st century where the Global goal is targeting quality education this goes beyond using Conventional Instructional Strategy but to apply a Collaborative Teaching Approach as

it is a learner-centred method of teaching.

Applying CTA as an instructional style in the teaching and learning process as a teacher educator allows pre-service teachers to build abilities in group interactions and collaboration that are necessary in the 21st century (Darko and Wang, 2021). It was further stated that when pre-service teachers are engaged through CTA they are more likely to gain critical thinking abilities and metacognitive learning methods, for instance making them learn how to learn in small group collaborative settings than in lecture methods. Davidson and Major, (2014) thought that Collaborative learning also allows pre-service teachers to complete practical processes and conduct meaningful research and gives them the confidence to actively participate in problem-solving, resulting in greater comprehension of the courses being offered.

Burns et al (2024) affirm that blending CIS and CTA in preparing pre-service teachers has been connected to improving teaching ability in the classroom once the pre-service teachers graduate to become in-service teachers. Despite the advantages CTA could have on training pre-service teachers in preparation for in-service experience and subject delivery in the classroom, it seems that the usage is very limited in Colleges of Education.

2. Statement of the Problem

The National Commission for Colleges of Education (NCCE, FGN, 2020.) minimum standard is in expectation that all course contents are to be taught in both theory and practical for the effective acquisition of knowledge by pre-service caregivers/teachers during training and production of standard teachers for the future of Nigeria educational system without considering that no educators know it all. However, some of the course contents need major practicals for its effective delivery. The contents are in three different courses titled “Introduction to Basic Design”, “Early Childhood Curriculum Methods” and “Production and Use of Instructional Materials” in the first and second semesters of NCE II. Lecturers from the Department of Early Childhood Care and Primary Education in some Colleges of Education in Southwest Nigeria were interviewed and it was discovered that some course contents are being taught in theory as there is no availability of experts in the area that could train the pre-service teachers on the practical aspect of the courses and experts from other departments who can be of help with the courses do have bulk of loads which may not make them available to help in teaching the courses. The need for pre-service teachers in the Department of Early Childhood Care and Education in the Colleges of Education in Nigeria to acquire practical knowledge on the basic design of domestic shapes, creating engaging and no-cost, low-cost instructional materials prompted this study.

3. Objectives of the Study

The overall objectives of this study are to assess the effect of the Collaborative Teaching Approach on pre-service teachers in the Department of Early Childhood Care and Education, Federal College of Education, Iwo, Osun State, Nigeria on practical knowledge of creating class décor and production of low-cost instructional materials that will inspire creative teaching and learning process at pre-school and lower primary school level in the 21st Century through collaboration with experts in the community. The specific objectives of this study were to:

- (a) Examine the impact of CTA on tracing templates of letters A-Z with marking and cutting by pre-service teachers.
- (b) Determine the influence of CTA on pre-service teachers' practical knowledge of printing patterns and images and converting them to templates; and
- (c) Investigate the influence of pre-service teachers' ability to work with fruit templates and create 3D effects using lines after acquiring the knowledge through CTA.

4. Research Hypotheses

The following null hypotheses were tested in the study:

- H₀₁: There is no significant impact of CTA on pre-service teachers' knowledge of marking and cutting of letters A-Z
- H₀₂: There is no significant influence of CTA on pre-service teachers' practical knowledge of printing patterns and images and converting them to template
- H₀₃: There is no significant influence of CTA on pre-service teachers' ability to work with fruit templates and create 3D effects using lines.

5. Methodology

The study adopted a quasi-experimental design with a non-equivalent pre-test and post-test control group. The population for the study comprised all NCE II pre-service teachers in the Department of ECCE in the Federal Colleges of Education in Southwestern, Nigeria. Eighty (**80**) NCE II pre-service teachers in the Department of Early Childhood Care and Education in the Federal College of Education, Iwo, Osun State, were purposively selected as a sample size for the study. The pre-service teachers were being trained for three days using 2 hours per day as stipulated on their school timetable for the courses. All the pre-service teachers were taught with the Conventional Instructional Strategy, training was given to the experimental group by an invited social enterprise from the community named Neighborhood Sustainable Development Hub (NSDH) while the Conventional Instructional Strategy was used to teach the control group. For both the experimental and control groups the following outlines

were considered during the training and teaching (a) Tracing templates of letters A-Z with marking and cutting, (b) Printing of pattern and image and converting it to template (c) Working with fruits templates and creating 3D effects using lines. CTA was used to assess the pre-service teacher’s knowledge before and after the treatment. The data collected were analysed using Analysis of Covariance.

6. Testing of Hypotheses

Hypothesis One (Ho₁): There is no significant impact of CTA on pre-service teachers’ knowledge of marking and cutting letters A-Z.

For the study to test this hypothesis, data obtained on pre-service teachers’ knowledge on marking and cutting of letters A-Z that have been taught with CTA and Conventional Instructional Strategy (CIS) were subjected to analysis of covariance (ANCOVA) using the pre-service teachers’ post-test scores as the dependent variable and pre-test scores as the covariate. The results are presented in Table 1.

Analysis of covariance of the effect of CTA on pre-service teachers’ knowledge of marking and cutting of letters A-Z

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12935.115 ^a	2	6467.558	42.995	.000	.528
Intercept	2466.862	1	2466.862	16.399	.000	.176
Pre-test Treatment	881.065	1	881.065	5.857	.018	.071
Group	12885.371	1	12885.371	85.660	.000	.527
Error	11582.685	77	150.424			
Total	240422.000	80				
Corrected Total	24517.800	79				

a. R Squared = .528 (Adjusted R Squared = .515).

Table 1 shows the result of the One-way between-group analysis of covariance conducted to determine the significant main effect of CTA on pre-service teachers’ knowledge of marking and cutting letters A-Z in Federal College of Education Iwo. The result revealed that there is a significant impact of CTA on pre-service teachers’ knowledge of marking and cutting letters A-Z ($F_{(1, 77)} = 85.660, P < 0.05$, partial $\eta^2 = .527$). The result further revealed that the instructional strategy alone contributed 52.7% of the variance in the pre-service teachers’ knowledge of marking and cutting letters A-Z. As a result, the null hypothesis (Ho₁) was rejected. Therefore, this result concluded that there is a significant impact of CTA

on pre-service teachers’ knowledge on marking and cutting of letters A-Z in Federal College of Education Iwo.

Hypothesis Two (Ho₂): There is no significant influence of CTA on pre-service teachers’ practical knowledge of printing patterns and images and converting them to templates.

For the study to test this hypothesis, data obtained on pre-service teachers’ practical knowledge of printing patterns and images and converting them to templates that have been taught with CTA and Conventional Instructional Strategy (CIS) were subjected to analysis of covariance (ANCOVA) using the pre-service teachers’ post-test scores as the dependent variable and pre-test scores as the covariate. The results are presented in Table 2.

Analysis of covariance of the effect of CTA on pre-service teachers’ practical knowledge of printing patterns, images and converting them to templates

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	32665.779 ^a	2	16332.889	121.452	.000	.759
Intercept	3328.885	1	3328.885	24.754	.000	.243
Pre-test Treatment	9951.979	1	9951.979	74.003	.000	.490
Group	4606.699	1	4606.699	34.256	.000	.308
Error	10354.971	77	134.480			
Total	238052.000	80				
Corrected Total	43020.750	79				

a. R Squared = .759 (Adjusted R Squared = .753)

Table 2 shows the result of the One-way between-group analysis of covariance conducted to determine the significant influence of CTA on pre-service teachers’ practical knowledge of printing patterns and images and converting them to templates. The result revealed that there is a significant effect of CTA on pre-service teachers’ practical knowledge of printing patterns and images and converting them to templates ($F_{(1, 77)} = 34.256, P < 0.05, \text{partial } \eta^2 = .308$). The result further revealed that the instructional strategy alone contributed 30.8% of the variance in the pre-service teachers’ practical knowledge of printing patterns and images and converting them to templates. As a result, the null hypothesis (Ho₂) was rejected. Therefore, this result concluded that there is a significant influence of CTA on pre-service teachers’ practical knowledge of printing patterns and images and converting them to templates in the Federal College of Education Iwo, Nigeria.

Hypothesis Three (H₀₃): There is no significant influence of CTA on pre-service teachers’ ability to work with fruit templates and create 3D effects using lines after acquiring the knowledge through CTA. For the study to test this hypothesis, data obtained on pre-service teachers’ ability to work with fruit templates and create 3D effects using lines that have been taught with CTA and Conventional Instructional Strategy (CIS) were subjected to analysis of covariance (ANCOVA) using the pre-service teachers’ post-test scores as the dependent variable and pre-test scores as the covariate. The results are presented in Table 3.

Analysis of covariance of the effect of CTA on pre-service teachers’ ability to work with fruit templates and create 3d effects using lines

Source	Type III Sum of Square	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1068.884 ^a	2	534.442	2.071	.133	.051
Intercept	28160.862	1	28160.862	109.113	.000	.586
Pre-test	67.772	1	67.772	.263	.610	.003
Treatment						
Group	237.146	1	237.146	.919	.341	.012
Error	19872.803	77	258.088			
Total	294137.000	80				
Corrected Total	20941.687	79				

a. R Squared = .051 (Adjusted R Squared = .026)

Table 3 shows the result of the One-way between-group analysis of covariance conducted to determine the significant influence of CTA on pre-service teachers’ ability to work with fruit templates and create 3D effects using lines in the school. The result revealed that there is no significant effect of CTA on pre-service teachers’ ability to work with fruit templates and create 3D effects using lines ($F_{(1, 77)} = 0.919$, $P > 0.05$, partial $\eta^2 = .012$). The result further revealed that the instructional strategy alone contributed 1.2% of the variance in the pre-service teachers’ ability to work with fruit templates and create 3D effects using lines. As a result, the null hypothesis (H₀₂) was not rejected. Therefore, this result concluded that there is no significant influence of CTA on pre-service teachers’ ability to work with fruit templates and create 3D effects using lines in the school.

7. Discussion of Results

The result of the analysis through Analysis of Covariance (ANCOVA) shows that Collaborative Teaching Approach (CTA) had a significant impact on pre-service teachers’ knowledge of

marking and cutting alphabets A-Z as the one-way between-group analysis of covariance calculated was at a 0.05 significant level of confidence. This result lends credence to Hur et al (2020) who found out from two universities in the USA and a university in South Korea that collaborative approach strategy had a significant impact on pre-service teachers' self-efficacy for technology integration and technology skills after participation. It also supported that of Rofik et al (2022) who revealed that CTA is very effective in improving the project competence of prospective pre-service teachers in the Islamic Religious Education programme at Raden Rahmat Islamic University (Unira) Malang. However, the study also found out the significant influence of CTA on pre-service teachers' practical knowledge of printing patterns and images and converting them to templates, the result is in agreement with Kim & Pratt (2021) whose results found that CTA had an influence on pre-service teachers' learning and the pre-service teachers had a greater willingness to implement collaborative teaching in their future teaching. The result finally revealed that there is no significant influence of CTA on pre-service teachers' ability to work with fruit templates and create 3D effects using lines. This result might be due to the low level of technological knowledge and low availability of technological devices needed by pre-service teachers during the training for this session. This result supports the opinion of Bower and Richards, (2014), who gave reason that unfamiliarity to technology by students and academic may lead to infrequent use of CTA and this may deny positive influence on the students.

8. Findings

The findings of the study provided empirical and statistical data that the Collaborative Teaching Approach had an impact on pre-service teachers' knowledge of marking and cutting alphabets, printing patterns, images and converting them to templates while the strategy did not affect pre-service teachers' ability to work with fruit templates and create 3D effects using lines.

9. Conclusion

It can be concluded that adopting and implementing the Collaborative Teaching Approach as a strategy by teacher educators in delivering subject matter for ECCE pre-service teachers in the Colleges of Education will enhance the practical experience of the teachers and this may likely be adopted in their professional delivery when they become in-service teachers. The strategy is highly imperative for pre-service teachers

10. Recommendations

Based on the findings, the study recommends that:

1. Teacher educators in the Colleges of Education and University should embrace the implementation of the Collaborative Teaching Approach as a strategy for delivering subject

matters.

2. Teacher educators can extend their collaboration approach to the community if need be on any course to be taken that involves majorly practical and there is a lack of expertise in the institution. This can be done through engaging industries or companies in the neighborhood and this would promote school-community relationship
3. The National Commission for Colleges of Education should revise the National Minimum Standard by including various 21st Century methods that can improve the teaching and learning process in Nigerian Colleges of Education curriculum which must be strictly adhered to by all teacher educators in the Federal, State and Private Colleges of Education.
4. The National Commission for Colleges of Education should have a regular monitoring committee that would visit the institutions once a semester or session to verify teacher educators' method of implementing the recommended revised National Minimum Standard most especially at the Federal Colleges of Education.
5. Teacher educators should encourage pre-service teachers to use CTA during their micro-teaching and teaching practice process. This will assist the pre-service teacher to get accustomed to the method and will be part of them when they become an in-service teacher.
6. The National Education Research and Development Council (NERDC) should consult researchers in education or visit research archives before formulating or reviewing policies on education. This will guide them on 21st-century educational requirements in Nigeria.
7. The National Education Research and Development Council (NERDC) should include the Collaborative Teaching Approach (CTA) as one of the strategies for teaching in the Basic and Senior Secondary Education curriculum.

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