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EFFECT OF COGNITIVE APPRENTICESHIP INSTRUCTIONAL METHOD ON HOME ECONOMICS STUDENTS' SKILL ACQUISITION IN CLOTHING AND TEXTILE IN COLLEGES OF EDUCATION IN KOGI STATE

BY

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Abstract
Skills acquired in Clothing and Textile improve students' capabilities for job creative venture. With adequate practical work in clothing and textile on graduating, students will be competent to face the economic challenges and survive in the existing unemployment situations. This study determined the effect of cognitive apprenticeship instructional method on Home Economics students' skill acquisition in Clothing and Textile at Colleges of Education in Kogi State. Specifically, the study was guided by three objectives. Three research questions were raised to guide the study. Also, three hypotheses were formulated and tested at 0.05 level of significance. The study used quasi-experimental research design, specifically the pretest-posttest non-equivalent control group design. The study was carried out in Kogi State, Nigeria. The population of the study is 372 Home Economics students in Kogi State College of Education Ankpa, and Federal College of Education Okene. The sample size for the study is 91 students drawn from intact classes. The students were split into two groups namely; control and experiment group. The instrument for data collection is a test titled "Home Economics Achievement Test". The instrument was subjected to face and content validation. In order to ascertain the reliability of the instrument, items of the instrument were trial tested among 25 students and the data collected was analysed using Cronbach Alpha method. The result showed a reliability coefficient of 0.74 which is an indication that the instrument is reliable. Data for the study were collected through the administration of the test instrument to the students by the researcher and three other research assistants. Data collected for the study were analyzed using both descriptive and inferential statistics. The research questions were answered using mean and standard deviation while the hypotheses formulated were tested using Analysis of Covariance (ANCOVA). The findings of this study revealed that there is a significant difference in the mean score of students taught Clothing and Textile with the use of modeling, coaching, scaffolding methods and those taught with lecture method. The study concluded that cognitive apprenticeship instructional methods of modeling, coaching and scaffolding are more efficient methods of teaching Home Economics students' skill acquisition in Clothing and Textile at Colleges of Education in Kogi State. The study recommended that teachers should be trained on the use of cognitive apprenticeship instructional methods so that they can use it effectively.

Keywords: Cognitive Apprenticeship, Instructional Method, Home Economics Students, Skill Acquisition, Clothing, Textile, Colleges of Education, Kogi State

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INTRODUCTION

Education is the bed-rock of all in every nation. Educate a child and educate a nation. When a child is educated towards skill-based learning, the nation will progress because the child will be self-employed and also create job opportunities for others. But when skills are not acquired, on graduation, the child goes about looking for employment. This is in line with the idea of Abiogu (cited in Nkwodimma & Okoh, 2019) who reported that on graduation, youths roam about the street looking for employment. Skill acquisition has been the main focus of Vocational education in Nigeria, hence the major objective of vocational education is to train individuals in the development of skills and prepare them for the world of work (Federal Republic of Nigeria (FRN), 2004). Nwankwo (cited in Nkwodimma & Okoh, 2019) opined that Home Economics has been identified as a field of study that can help youths off the street from searching for employment. Molokwu (2007) noted that Home Economics is both inter-disciplinary and multi-disciplinary and is a field of knowledge with numerous saleable skills which make for self-employment and self-reliance.

Clothing refers to items worn on a body such as dress, suit, pants, shoes, socks, foot wears, gloves; body pearling, jewelry, handbag, head coverings and scarves etc. Textiles are however products made from fibres, yarns or fabric also referred to as clothe. Textiles are used in producing clothing which is one of the basic needs of individual (Foster,2014). Some clothing or textile producer or workers learn their skills through apprenticeship training while others learn the skills in school. The clothing and textile industry is a dynamic field. Fast paced global in scope and complex. Clothing and textile educators equip the individual with skills and attitude to be able favourably in top market in clothing and textile industry locally and globally.

Arinze (2013) emphasized that every skill oriented discipline whose acquisition of skills and knowledge is needed requires intensive exposure of students to practical work. In clothing and textile, the practical aspect ought to be taught thoroughly to enable the students acquire wider necessary skills for employability and lifelong learning. However, this is far from personal observation as it is revealed that the students still do not master the skills required as most of them could not make underwears for themselves. More so, teachers of clothing and textile education programme are increasingly placing serious challenges as diversity of students within each classroom continues to widen. These challenges in population increase in demand for education programme are increasingly placing serious challenges as diversity of students within each work and individuals' differences. Therefore, clothing and textile students should be equipped with the knowledge of cognitive apprenticeship as instructional method to be able to cope with the emerging new world of technology.

Skills acquired in Clothing and Textile improve students' capabilities for job creative venture. With adequate practical work in clothing and textile on graduating, students will be competent to face the economic challenges and survive in the existing unemployment situations. However, since the introduction of vocational/Technical Education in colleges of education in Nigeria, the methods adopted in the teaching of clothing and textiles have not been considered adequate. For example, the predominant methods adopted in teaching clothing and textiles in most Nigeria colleges of education are the lecture and demonstration methods (Ogbu cited in Kuo & Yen, 2012). Lecture and demonstration method consist mainly of the teacher giving out information which students are required to remember and reproduce in an examination. Lectures and demonstration are grossly inappropriate in clothing and textile teaching because they deprive students of active participation in the learning process and thus the potentialities for learning are low (Etuk cited in Spector, 2010).

According to Onwuka (cited in Aduloju, 2015), lecture method is a verbal presentation mode in which learners are expected to listen, receive and assimilate information, take notes and sometimes supplement these with viewing of slides or films. Lar, (cited in Aduloju, 2015) stated that lecture is a carefully prepared oral presentation of a subject by a qualified person and that a carefully prepared lecture may be intended to provide a topic covering to generate understanding, and to stimulate interest. When lecture method is used, the teacher is the active participant while the students are passive and hence the teacher as the lecturer benefits more than students. Also, demonstration method according to Anyakoha (cited in Obinne, 2016) is the commonest method in use in the area of Home Economics. This method is not very adequate because it is not appropriate in every situation reason being that demonstration method is used by teachers to create learning environment and to specify the nature of activity in which the teacher and learner will be involved during practical lessons. Ogwo and Oranu (cited in Aduloju, 2015) defined demonstration as any planned performance by a teacher on occupational skill information aimed at explaining the steps/facts of on operation/principle. A demonstration is aimed at showing how a process, procedure or experiment is to be carried out. It shows the student what to do and why it is done that way.

However, the search for finding better ways and means of teaching and learning clothing and textiles has been more intensified over the past ten years (Ogbu cited in Emaikwu, 2016), so as to motivate the performance of students and also to achieve desirable learning outcomes. Research evidence such as that of Nasara (2017) has given rise to the acceptance and use of more effective methods of teaching practical subject such as clothing and textile. Literature recommends the use of some methods like demonstration, projects, experiment, field-trip assignment, problem-solving and discovery methods as suitable instructional technique for teaching practical subjects in science and vocational/technical education because they foster deeper understanding, better academic performance and retention in the subjects (Udofia cited in Adikwu & Aduloju, 2018). It is observed that most of these recent methods of teaching clothing and textile do not give students enough freedom to work. Students should be told what their goals or objectives are and should work when they want to (Ezugu, 2004).

Teachers of clothing and textile (Education programmes) are increasingly facing serious instructional challenges as the diversity of students within each classroom continues to widen. These challenges include escalating technology, increase in population, increase in demand for education for work and individual differences (Obanya and Ogwa cited in Shih, Chuang & Hwang, 2010). So clothing and textile students should be equipped with the knowledge of cognitive apprenticeship instructional method to be able to cope with the emerging new world of technology.

Cognitive apprenticeship is an instructional method that emphasizes the importance of the process in which a teacher of a skill teaches that skill to the students. Cognitive apprenticeship as an instructional method brings tacit processes into the open, where students can observe, enact, practice and learn with help from the teacher (Erin, 2015). Part of the effectiveness of cognitive apprenticeship method of instruction comes from learning in context and is based on theories of situated cognition. This implies that in cognitive apprenticeships, teachers model their skills in real-world situations. By modeling and coaching, teachers in cognitive apprenticeships also support the three stages of skill acquisition described in the treacheries literature: the cognitive stage, the associative stage, and the autonomous stage (Anderson cited in Erin, 2015). In the cognitive stage, learners develop a declarative understanding of the skill. In the associative stage, mistakes and misinterpretations learned in the cognitive stage are detected and eliminated, while

associations between the critical elements involved in the skill are strengthened. Finally, in the autonomous stage, the learner's skill becomes honed and perfected until it is executed at the teachers' level (Anderson cited in Erin, 2015).

Statement of the Problem

Clothing and textile is an aspect of Home Economics which is needed to prepare students for gainful employment after school. It is also an area where students need to be well skilled in order to fit in properly and be able to compete favorably in the world of work. The teaching and learning of clothing and textile is one area that should provide the adequate knowledge and skills needed for work when properly taught.

However, there is an outcry of individuals and groups over the poor quality NCE graduates being produced in Kogi state most especially in clothing and textile. Studies carried out on this have suggested that, there is a problem in the process of teaching and learning of clothing and textile. In line with this, Igbo (1990), who observed flaws in the teaching methods used in teaching clothing and textiles. According to Igbo, lecture/demonstration method generally used in teaching many topics in clothing and textiles do not offer the students enough opportunity to acquire the necessary skills in clothing and textiles. This then implies that the inability of the clothing and textiles students to acquire the needed skills has resulted from ineffective teaching method that do not cater for the individual differences as observed by Egwu (2004).

There is therefore the need for a change of strategy in the teaching of clothing and textiles so as to enable NCE students acquire adequate knowledge and skills for the world of work and further studies. It is believed that the adoption of both teacher-student centered approach of instruction like the cognitive apprenticeship method may yield something different from the lecture/demonstration method and may bring about the required result.

Thus the need to determine the effect of cognitive apprenticeship instructional method on Home Economics students' skill acquisition in Clothing and Textile at Colleges of Education in Kogi State becomes necessary.

Purpose of the Study

The main purpose of this study is to determine the effect of cognitive apprenticeship instructional method on Home Economics students' skill acquisition in Clothing and Textile at Colleges of Education in Kogi State. Specifically, the study will determine the;

1. Mean scores of students taught Clothing and Textile using Modeling method and those taught using lecture method.
2. Mean scores of students taught Clothing and Textile using Coaching method and those taught using lecture method.
3. Mean scores of students taught Clothing and Textile using Scaffolding method and those taught using lecture method.

Research Questions

The following research questions would help guide the study

1. What is the mean scores of students taught Clothing and Textile using Modeling method and those taught using lecture method?
2. What is the mean scores of students taught Clothing and Textile using Coaching method and those taught using lecture method?
3. What is the mean scores of students taught Clothing and Textile using Scaffolding method and those taught using lecture method?

Statement of Hypotheses

The following hypotheses are formulated and would be tested at 0.05 level of significance.

1. There is no statistical significant difference in the mean scores of students taught Clothing and Textile using Modeling method and those taught using lecture method.
2. There is no statistical significant difference in the mean scores of students taught Clothing and Textile using Coaching method and those taught using lecture method.
3. There is no statistical significant difference in the mean scores of students taught Clothing and Textile using Scaffolding method and those taught using lecture method.

METHODOLOGY

The study used quasi-experimental research design, specifically the pretest-posttest non-equivalent control group design. The study was carried out in Kogi State, Nigeria. The population of the study is 372 Home Economics students in Kogi State College of Education Ankpa and Federal College of Education Okene. The sample size for the study is 91 students drawn from intact classes. The students were split into two groups namely; control and experiment group. The instrument for data collection is a test titled "Home Economics Achievement Test". The instrument was subjected to face and content validation. In order to ascertain the reliability of the instrument, items of the instrument were trial tested among 25 students and the data collected was analysed using Cronbach Alpha method. The result showed a reliability coefficient of 0.74 which is an indication that the instrument is reliable. Data for the study were collected through the administration of the test instrument to the students by the researcher and three other research assistants. Data collected for the study were analyzed using both descriptive and inferential statistics. The research questions were answered using mean and standard deviation while the hypotheses formulated were tested using Analysis of Covariance (ANCOVA).

RESULTS

Research Question 1

What is the mean scores of students taught Clothing and Textile using Modelling method and those taught using lecture method?

Table 1: Mean and Standard Deviation of the Students Taught Clothing and Textile using Modeling Method and those Taught using Lecture Method

Methods	**N**	**Pre-test**		**Post-test**	
		Mean	SD	Mean	SD
Modelling	39	54.56	9.45	68.26	5.92
Lecture	52	52.47	13.4	56.83	12.4
Mean Diff.		2.09		11.43	
N Total	91				

The result of data presented in Table 1 shows the mean scores of students taught clothing and textile using modeling method and lecture method. The result shows that in the pre-test, the students taught with modeling method had a mean score of 54.56, while the students taught with lecture method had a mean score of 52.47. The result also shows that in the post-test examination, the students taught with modeling method had a mean score of 68.26, while the students taught with Lecture method had a mean score of 56.83. The mean score difference between the two groups is 11.43 and this was in favour of the students with taught using

Modelling method. To ascertain if the observed difference in the mean scores is significant, the corresponding hypothesis was tested.

Research Hypothesis One

There is no statistical significant difference in the mean scores of students taught Clothing and Textile using Modelling method and those taught using lecture method.

Table 2: Analysis of Covariance of Significant Difference in the Mean Scores of Students Taught with the Use of Modelling method and those Taught with Lecture method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2687.418[a]	2	1343.709	17.878	.000	.287
Intercept	7067.929	1	7067.929	94.039	.000	.514
PRE-Score	2641.717	1	2641.717	35.148	.000	.283
GROUP	**759.150**	**1**	**759.150**	**10.101**	**.002**	**.102**
Error	6689.191	89	75.159			
Total	312862.000	92				
Corrected Total	9376.609	91				

The result of the Analysis of Covariance presented in Table 2 shows that the P-value of 0.002 is less than 0.05 level of significant at 1 degree of freedom. This shows that the test is significant. The result implies that there is a statistically significant difference in the mean score of students taught with the use of modelling method and those taught with lecture method. Therefore, the null hypothesis of no significant difference is rejected.

4.1.3 Research question two

What is the mean scores of students taught Clothing and Textile using Coaching method and those taught using lecture method?

Table 3: Mean and Standard Deviation of the Students Taught Clothing and Textile using Coaching Method and those Taught using Lecture Method

Methods	N	Pre-test		Post-test	
		Mean	SD	Mean	SD
Coaching	39	50.00	6.53	69.64	6.32
Lecture	52	52.47	13.4	56.83	12.4
Mean Diff.		2.47		12.81	
N Total	91				

The result of data presented in Table 3 shows the mean attitude ratings of students taught with coaching method and those taught with lecture method. The result shows that in the pre-test, the students taught with Coaching Method had a mean score of 50.00, while the students taught with Lecture method had a mean score of 52.47. The result also shows that in the post-test examination, the students taught with Coaching method had a mean score of 69.64, while the students taught with Lecture method had a mean score of 56.83. The mean score difference between the two groups is 12.81 and this was in favour of the students with taught using Coaching method. To ascertain if the observed difference in the mean scores is significant, the corresponding hypothesis would be tested.

Research Hypothesis Two

There is no statistical significant difference in the mean scores of students taught Clothing and Textile using Coaching method and those taught using lecture method.

Table 4: Analysis of Covariance of Significant Difference in the Mean Scores of Students Taught with the Use of Coaching method and those Taught with Lecture method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3709.634[a]	2	1854.817	27.585	.000	.383
Intercept	3390.744	1	3390.744	50.428	.000	.362
PRE-Test	3532.123	1	3532.123	52.530	.000	.371
GROUP	394.023	1	394.023	5.860	.018	.062
Error	5984.323	89	67.240			
Total	319414.000	92				
Corrected Total	9693.957	91				

The result of the Analysis of Covariance presented in Table 4 shows that the P-value of 0.018 is less than 0.05 level of significant at 1 degree of freedom. This shows that the test is significant. The result implies that there is a statistically significant difference in the mean scores of students taught with the use of coaching method and those taught with lecture method. Therefore, the null hypothesis of no significant difference is rejected.

4.1.5 Research Questions Three

What is the mean scores of students taught Clothing and Textile using Scaffolding method and those taught using lecture method?

Table 5: Mean and Standard Deviation of the Mean scores of Students Taught with the Use of Scaffolding method and those Taught with Lecture method

Methods	N	Pre-test		Post-test	
		Mean	SD	Mean	SD
Scaffolding	39	53.15	11.41	57.77	6.10
Lecture	52	51.25	12.44	52.13	10.8
Mean Diff.		1.9		5.64	
N Total	91				

The result of data presented in Table 5 shows the mean scores of students taught with scaffolding method and those taught with lecture method. The result shows that in the pre-test, the students taught with scaffolding method had a mean score of 53.15, while the students taught with lecture method had a mean score of 51.25. The result also shows that in the post-test, the students taught with scaffolding method had a mean score of 57.77, while the students taught with Lecture method had a mean score of 52.13. The mean score difference between the two groups is 5.64 and this was in favour of the students taught using scaffolding method. To ascertain if the observed difference in the mean scores is significant, the corresponding hypothesis would be tested.

Research Hypothesis Three

There is no statistical significant difference in the mean scores of students taught Clothing and Textile using Scaffolding method and those taught using lecture method.

Table 6: Analysis of Covariance of significant Difference in the Mean scores of Students Taught with the Use of Scaffolding method and those Taught with Lecture method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	469.527[a]	2	234.764	2.886	.061	.061
Intercept	13217.221	1	13217.221	162.483	.000	.646
PRE-test	313.276	1	313.276	3.851	.053	.041
GROUP	**305.955**	**1**	**305.955**	**3.761**	**.010**	**.041**
Error	7239.723	89	81.345			
Total	298803.000	92				
Corrected Total	7709.250	91				

The result of the Analysis of Covariance presented in Table 6 shows that the P-value of 0.010 is less than 0.05 level of significant at 1 degree of freedom. This shows that the test is significant. The result implies that there is a statistically significant difference in the mean scores of students taught with the use of scaffolding method and those taught with lecture method. Therefore, the null hypothesis of no significant difference is rejected.

Discussion of Findings

The findings of this study revealed that there is a significant difference in the mean score of students taught Clothing and Textile with the use of modelling method and those taught with lecture method. The findings of this study agree with that of Duncan (1996) who examined the effects of incorporating the instructional methods of cognitive apprenticeship-specifically think aloud modeling and scaffolding-into community college writing classroom and found that students in the experiment group performed better than those in the control group.

The findings of this study revealed that there is a significant difference in the mean score of students taught Clothing and Textile with the use of coaching method and those taught with lecture method. The findings of this study support that of Cash, Behrmann, Stadt and McDaniels (1996) who carried out a study on the Effectiveness of Cognitive Apprenticeship Instructional Methods in College Automotive Technology Classrooms and found that Cognitive Apprenticeship Instructional Methods of coaching, modelling and scaffolding are effective than the traditional method.

The findings of this study revealed that there is a significant difference in the mean score of students taught Clothing and Textile with the use of scaffolding method and those taught with lecture method. The findings of this study agree with that of Obodo (1990) who also conducted a research study to compare the effect of the task approach (three teaching methods), delayed formalization and expository models in teaching on the achievement, retention and interest of JS2 students in algebra and found that scaffolding method was more efficient than the traditional method

CONCLUSION/RECOMMENDATION

The study concluded that cognitive apprenticeship instructional methods of modelling, coaching and scaffolding are more efficient methods of teaching Home Economics students' skill acquisition in Clothing and Textile at Colleges of Education in Kogi State. The study recommended that teachers should be trained on the use of cognitive apprenticeship instructional methods so that they can use it effectively.

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