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Role of laboratory experience in the teaching of clothing and textiles in secondary schools in delta state: it's impact in entrepreneurship skills

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Abstract: The purpose of the study was aimed at finding out the role of laboratory experience in the teaching of clothing and textiles in secondary schools in Delta State and its impact in entrepreneurship skills. Four Research questions were formulated to guide the study. The population was all students studying clothing and textile in Delta state. All the 264 respondents were used for the study. Questionnaire was the instrument used for data collection and data were analyzed with mean and standard deviation. Finding showed that identify the laboratory roles in the teaching of Clothing and textiles to include; to develop practical competence, identify tools and materials, demonstrate proper usage of tools and equipment, and identify students' strengths and weaknesses. Also its effectiveness helps students in problem solving, increase interest, strengthen their ability for critical thinking and solve problems, thereby boost entrepreneurship skills through teamwork, creativity and innovation for self reliance. Conclusions and recommendations were made; that to prepare students for a better career future, the method of teaching adopted by the teacher plays an important role in continuity and advancement of clothing and textile as a course of study. Government should provide modern laboratories and equipment and subsidize practical expenses for the student in schools.

Keyword: Laboratory Experience, Clothing And Textile, Entrepreneurship Skill.

INTRODUCTION

Clothing and Textiles is a vital component of Home Economics education in Nigerian secondary schools. It is designed to equip students with both theoretical knowledge and practical skills in garment construction, fabric maintenance, textile design, and fashion entrepreneurship. The importance of practical instruction in Clothing and textiles has grown considerably, particularly as the subject is increasingly recognized as a pathway to skill development, self-reliance, and economic empowerment. Clothing and textiles is one of the

major areas in Home Economics in the Nigeria Senior Secondary Schools. It was added with the intention of training students in secondary schools to acquire skills in Clothing and textiles in order to contribute to the development of the nation's economy and young entrepreneurs (Ministry of Education, 2020). More so, to be entrepreneurs after leaving school, it serves as apprenticeship training for students. Those who can learn the skills in Clothing and textiles can fit into the job market (Arubayi and Obunadike 2011). The teacher or trainer is very instrumental to student skill impartation at this level. Jikeme (2011) believes a teacher is one who has learning to pass along and interest to impact someone with a need or desire to know.

A teacher facilitates the acquisition of knowledge and instilled societal values. Jones (2012) also believes that a teacher is the one who has learning to pass along and interest to impact on students with a need or desire to know. The teacher also facilitates the acquisition of knowledge and instilled societal values through teaching and learning experience. Laboratory experience plays a critical role in achieving the objectives of Clothing and textiles education. It provides students with opportunities to engage directly with tools, fabrics, and machines, translating theoretical concepts into hands-on skills.

This method of instruction fosters creativity, problem-solving, and technical competence, which are essential for navigating the dynamic textile and fashion industry (Ajayi & Ojelabi, 2023). In schools where laboratory activities are effectively implemented, students show improved academic performance, higher engagement and readiness for entrepreneurship or vocational careers (Adewuyi & Ogunyemi, 2022). The laboratory experience is integral to the acquisition of knowledge and skill, serving as a platform for students to apply theoretical concepts in practical settings.

It helps develop technical competence, allowing students to gain hands-on experience with tools, systems, and methodologies relevant to their field of study. Anaekwe et al. (2025) emphasize that practical exposure, such as in laboratory settings, is key to improving workforce efficiency, noting that employees with practical skills contribute significantly to organizational performance. This aligns with the findings of Anaekwe et al. (2025), who explored the role of digital tools in enhancing service delivery, which can also be applied in laboratory environments to optimize learning and skill acquisition.

Additionally, Okeke and Anaekwe (2025) argue that effective e-administration and access to technological resources in training environments are essential for boosting technical competence and improving service delivery. As Nwobi et al. (2023) note, competency in both technical and digital tools can foster a more inclusive and efficient workforce. Entrepreneurship Education deals with the main process of acquiring knowledge, attitudes and skills of entrepreneurship.

This helps to equip individuals for innovation and creative problem solving. Skill has to do with expertise, ability to practice, tact and dexterity. Thus, entrepreneurial skills are those activities that involve both mental and physical, that can be displayed for development of new product. Furthermore, entrepreneurial skills can help to internalize knowledge, skills, promote relevance to economic empowerment and self reliance (Bob-Eze, 2023). Entrepreneurial skills entail technical skill, creativity, handiwork, drive, teamwork, initiative, innovation, decisiveness, communication skills, self-confidence, among others for wealth creation (Anyakoha, 2015).

Technical skill is the expertise as well as the aptness in operating equipment and machineries used in the course of production to produce high quality goods Onuoha (20I0). It involves the specialized knowledge and ability required to perform task in a particular situation; such as preparation of confectioneries, manipulation of equipment like the mixers, egg whisk, gas, electric and microwave ovens. Use of needles to produce various designs in knitting, crocheting, and weaving fabrics which makes laboratory experience effective in learning. The Nigerian Federal Ministry of Education (2020) also emphasizes that skill-based

subjects like Clothing and textiles serves as informal apprenticeship programs that prepare students for life after school.

With effective laboratory engagement, students can acquire skills that not only make them employable but also capable of starting their own tailoring or textile ventures, thus contributing to national economic growth. However, many secondary schools in Delta have been observed with poorly equipped laboratories, inadequate materials, and insufficiently trained teachers, which hinder the full realization of the benefits of practical instruction (Okeke &Igwe, 2022). Despite these barriers, the value of laboratory experience cannot be overstated.

It encourages active learning, strengthens knowledge retention, and empowers students to become innovators and job creators, an outcome that is especially vital in a nation grappling with youth unemployment and economic instability (Eze & Onuigbo, 2021). Therefore, this study explores the significance of laboratory experiences in the teaching of Clothing and textiles in Delta state. It aims to assess how practical sessions contribute to skill acquisition, effective method of teaching and it's entrepreneurship skills boost

Purpose of The Study

The study was designed to investigate the role of laboratory experience in the teaching of clothing and textiles in secondary schools in Delta State and its impact in entrepreneurship skills.

The study specifically seeks:

a. To find out the role of laboratory experience in the teaching of clothing and textiles.
b. Find out how effective is the methods use in teaching clothing and textiles.
c. Find out the extent laboratory experience can boost entrepreneurship skills in the student.

Research Questions

The following research questions were stated to be tested.

1. What role does laboratory experience play in the teaching of clothing and teaching of clothing and textile in secondary school?
2. How effective is the method used in teaching clothing and textiles in secondary schools?
3. To what extent can the laboratory experience boost entrepreneurship skills in the student?

METHOD

Research Design

The study adopted ex post facto research design using survey method. This method is appropriate to get response from the respondents on their opinions, ideas, believe, attitude and behavior. The study is after facts, thus there is no manipulation of variables. The area of the study is Delta State.

Population /Sample

The population size of the study is 263 comprising of all the students offering Clothing and textiles in all government secondary schools in Delta State. They consist of 42 males and 221females who offer Clothing and textiles in senior secondary school. Owing to the manageable size of the population, all were studied.

Instrument of Data Collection

A structured questionnaire titled "Role of laboratory experience in teaching of Clothing and textiles secondary schools in Delta state and its impact on entrepreneurship skills"

(QTRLETCTSSIES). The questionnaire was made containing two sections; section A contains the demographic information and section B contains 26 items to get responses from the respondents. A four point rating scale of Strongly Agreed (SA)=4, Agreed (A)=3, Disagreed (D)=2 and Strongly Disagreed (SD)=1 and three point rating scale of High extent (HE), Moderate extent (ME) and Low extent (LE) were used to collect the data. The instrument was subjected to validation by three experts in Clothing and textiles and Measurement and evaluation from Delta State University, Abraka. A pilot test study was carried out of 10 male and 10 female students who were not used in the study and Cronbach Alpha coefficient index was used to determine the reliability with a co-efficient of 0.74 obtained.

Data Collection And Analysis

Two hundred sixty three (262) copies of the questionnaire were administered personally with the help of two assistants to the students used for the study. All the questionnaires were filled and returned back at the spot to the researcher. Mean and Standard deviation were used to analyze the research questions. A mean of 2.50 was taken as a cut off point for the items. Any item mean of 2.50 and above is regarded as strongly agreed and below 2.50 is regard as strongly disagreed. Also, any item mean of 2.00 -3.00 is high extent (HE), 1.99 -1.00 is moderate extent (ME) and 0.01 -0.99 is low extent (LE)

RESULTS AND DISCUSSION

Research question 1**:** What role does laboratory experience play in the teaching of Clothing and textiles in secondary schools?

Table 1: Mean responses on the role of laboratory experience in the teaching of clothing and textiles

S/N	Role of laboratory experience	X	SD	Remark
1.	To develop practical competence in the area of Clothing and textiles specialization	3.24	0.62	SA
2.	To study and experiment with tools in a controlled teaching and learning environment	3.01	0.70	SA
3.	It gives room for exploration	2.86	0.72	SA
4.	It is child-entered learning approach	3.00	0.74	SA
5.	To identify tools and materials	3.18	0.80	SA
6.	To demonstrate proper usage of tools and equipment	3.31	0.88	SA
7.	The learning experience is a standardized procedure	2.84	0.76	SA
8.	To identify students' strengths and weaknesses	2.72	0.70	SA
9.	To familiarize student with lab equipment and technology	2.90	0.68	SA
10.	To practice the technical skills in clothing production	3.32	0.87	SA
11.	To pursue professional development opportunities in Clothing and textiles	2.86	0.77	SA

Key: X=mean, SD=standard deviation, SA=strongly agreed

The result table 1 shows the role of laboratory experience in the teaching of clothing and textile in secondary schools with mean ranged from 2.72 to 3.32 for all the items. This means that respondents strongly agreed that to develop practical competence in the area of

specialization, identify tools and materials, to demonstrate proper usage of tools and instrument, identify students' strengths and weaknesses, pursue professional development opportunities, among others are the roles of laboratory experience in the teaching of clothing and textile in secondary schools.

Research question 2: How effective is the method used in teaching clothing and textiles in secondary schools?

Table 2: Mean responses on how effective the method is used teaching clothing and textiles in secondary schools.

S/N	Item	X	SD Remark
1.	The method increase students interest	3.31	0.70 SA
2.	Motivates students in the process of inquiry	3.10	0.81 SA
3.	Helps students in problem solving	3.35	0.75 SA
4.	It helps students in engage critical thinking	3.05	0.95 SA
5.	It is a child-centered approach	2.64	0.72 SA
6.	It helps in strength students ability to solve their own problems	3.25	0.88 SA
7.	The method can produce same result multiple times	2.80	0.92 SA
8.	The method is accurate	2.70	0.84 SA

From the above table result shows that mean responses ranged between 2.64 and 3.35 which means the respondent strongly agreed that the laboratory experience helps students in problem solving, increase student's interest, strengthen students' ability to solve their own problems, method motivates students to learn more, engage in critical thinking, the method can produce same result multiple times, the teaching method is accurate, among others. Indication is that laboratory experience is effective in the teaching Clothing and textiles in secondary schools.

Research 3: To what extent can the laboratory experience boost entrepreneurship skills in students?

Table 3: Mean responses on the extent the laboratory experience can boost entrepreneurship skills in students

S/N	To what extent can laboratory experience boost entrepreneurship skills of students in following areas?	X	SD	Remark
1.	Engaging in clothing and textiles related skills.	2.66	0.75	HE
	Frequent entrepreneurial skills practical learning	2.50	0.82	HE
2.	Helping to demonstrate professional potentials in clothing and textile craft practices	2.64	0.72	HE
3.	Helping to internalize entrepreneurial skill knowledge	2.54	0.68	HE
4.	Promoting self reliance for economic empowerment	2.86	0.71	HE

5.	Promoting initiative for creativity.	2.74	0.66	HE
6.	Encouraging drive for teamwork	2.72	0.70	HE
7.	Bringing innovations in learning	2.62	0.68	HE

Key: HE=High extent

From the above table 3 the analysis shows that all the items mean ranged between 2.50 and 2.86 which means that to high extent laboratory experience boost promoting self reliance for economic empowerment, initiative for creativity, drive for teamwork, engaging in clothing and textiles related skills, innovations in learning, internalize entrepreneurship knowledge, among others. This indicates that laboratory experience to high extent can boost entrepreneurship skills in students.

Discussion

Finding from the result shows that to develop practical competence in the area of specialization, identify tools and materials, to demonstrate proper usage of tools and instrument, identify students' strengths and weaknesses, pursue professional development opportunities, among others are the roles of laboratory experience in the teaching of clothing and textile in secondary schools. This is in agreement with Ajayi and Ojelabi (2023) who emphasized that laboratory experience serves as a vital instructional strategy that helps students gain hands-on skills in garment construction, fabric analysis, and textile design. It is of note that such practical learning environments enhance students' creativity, technical abilities, and confidence in vocational subjects. In support of this finding, Eze and Onuigbo (2021)noted that laboratory instruction bridges the gap between theory and practice, making learning more meaningful and sustainable, particularly in skill-based subjects like Clothing and textiles. Futhermore, Olajide (2008) stressed the idea that "what I do, I know," therefore, laboratory activities foster deeper understanding and skill mastery compared to passive classroom instruction and learning. Teaching strategies that emphasize active participation (e.g., task-based learning and practical workshops) not only increased performance but also built students' confidence and readiness for independent work (Ajayi & Ojelabi, 2023). Eze & Onuigbo (2021) pointed that practical engagement in Clothing and textiles helps students develop essential psychomotor skills that cannot be fully acquired through theory alone, thereby enhancing overall academic outcomes.

Findings showed that is effective in the teaching Clothing and textiles in secondary schools. As it helps students in problem solving, increase student's interest, strengthen students' ability to solve their own problems, method motivates students to learn more, engage in critical thinking, the method can produce same result multiple times, the teaching method is accurate, among others. In line with this finding Woolfolk and Margetts (2012) stated that for effective teaching to take place, a good method of teaching must be adopted by the teacher. A teacher has many options when choosing the method with which to teach as students learn in different ways, but almost all students respond well, when they are praise as they have different ways of absorbing information and demonstrating their knowledge ability. The teacher should use techniques that help students retain information and strengthen understanding. Adewuyi and Ogunyemi (2022**)** evaluated various teaching methods in Clothing and Textiles and concluded that demonstration and laboratory-based methods significantly outperform purely lecture-based approaches in terms of student engagement and comprehension. The effective strategies for teaching Clothing and Textiles include demonstration, active learning, and collaborative work—all of which thrive in a well-structured laboratory setting (Charter, 2009**)**. Federal Ministry of Education (2020**)** promotes competency-based education and advocates

for experiential and learner-centered methodologies in technical subjects, affirming their effectiveness in preparing students for entrepreneurship and employability

Findings showed that laboratory experience to high extent can boost entrepreneurship skills in students by promoting self reliance for economic empowerment, initiative for creativity, drive for teamwork, engaging in clothing and textiles related skills, innovations in learning, internalize entrepreneurship knowledge, among others. This is in consonance with Anyakoha (2015) who enumerated entrepreneurial skills to include; creativity, technical skill, handiwork, drive, teamwork, initiative, innovation, communication skills, self-confidence, among others for wealth creation and economic empowerment. Better teaching methods mean more productivity more productivity boost economic empowerment. Finding affirmed that of .Adewuyi and Ogunyemi (2022) who reported a positive correlation between practical (laboratory-based) teaching methods and improved academic and entrepreneurship skills performance in Clothing and Textiles areas. Students exposed to hands-on experiences retained more information, initiate creative and innovative skills for self reliance and job creation. Hence, Bell (2015) pointed that entrepreneurship has become central in the academic programmes and is often taught alongside other disciples for sustainable national economic and manpower growth and development.

CONCLUSION

In conclusion, to discharge the duties of transmitting to students societal values, equipping them with needed entrepreneurial skills as well as preparing them for a better career future, the role laboratory experience in teaching is paramount. It helps increase student interest, strengthen their ability to solve problems, motivates students to learn more as well as engage in critical thinking. As a result, this boosts entrepreneurship skill acquisition for continuity and advancement of clothing and textiles both as a course of study and for future career.

Recommendation

From the findings above the following recommendations were made:

1. Government on all levels should provide schools with modern laboratories and equipment also they can subsidize practical expenses for the students.
2. Teachers should always go for training programmes to keep up with current trends in teaching clothing and textiles domain
3. Students should be motivated and encouraged with incentives activate and sustain their interest in learning clothing and textiles for entrepreneurship and employability skills development.

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