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Research Article

Capacity Building Needs of Home Economics Lecturers for Computer Assisted Teaching of Pattern Drafting for Entrepreneurship in South East Nigeria

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Abstract: This study looked at the capacity development requirements of Home Economics teachers in South East Nigeria for computer-assisted pattern drafting training. A research question and a hypothesis guided the investigation. Ex-post facto research was used in this study. A total of 131 Home Economics lecturers from universities, polytechnics, and colleges of education in South East Nigeria were included in the study. Because of its manageable size, the complete population was investigated, so there was no sampling. The Capacity Building Needs for Computer-Assisted Teaching Questionnaire (CBNCATQ) was used for data collection. The instrument was face-validated and tested for internal consistency using the Cronbach Alpha Coefficient. Data obtained from the respondents were analyzed using the Statistical Package for Social Sciences (SPSS). Percentages, mean scores, and standard deviations were used to answer the research question, while the hypothesis was tested with a t-test at a 0.05 level of significance. The results of this study showed that training on the use of computers, ability to use various pattern drafting materials and equipment, availability of electricity to power equipment, and ability to follow basic principles of pattern drafting, among others, were capacity building needs of lecturers. Based on the findings, it was recommended, among others, that lecturers should be given opportunities for in-service training on computer usage, and workshops should be organized for the lecturers on the benefits of using computers in teaching.

Keywords: capacity building needs, home economics, pattern drafting, computer assisted teaching, entrepreneurship and lecturer

1. Introduction

The most crucial element that determines whether a garment is ultimately accepted or rejected is fit, and fit must be incorporated into the original pattern by subtleties in the pattern that provides fullness subtly at the proper spots to accept body bulges in a pleasing way. Hence drawing of the pattern must take into account the unique shapes and proportions of the particular consumer to ensure a good personalized fit. Making patterns involves manipulating and forming a flat piece of fabric to fit one or more human body curves. Making patterns serves as the link between design and production. A pattern that translates the design in the shape of the garment components can turn a sketch into a finished item of clothing.

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Making patterns serves as a transitional process between design and manufacturing. Just as a trained architect's blueprint is essential to the building of a house, a good pattern is essential to a successful seamstress. Making patterns is an artistic endeavor. It is the art to manipulate and shape a flat piece of cloth to fit one or more curves of the human figure (Min & Chang, 2022). A pattern is a piece of paper that has been created, sized, and shaped in order to be used for cutting out pieces of fabric to make dresses. Since it gives the designer confidence while cutting fabric, using patterns is crucial in the development of clothing. The best technique to get a proper fit in a garment is via patterns, which also promote design innovation. For students to create clothing that fits properly, teachers of clothes and textiles help them through this process. Drawing teaching and learning schedules by hand have long been the norm in Nigerian postsecondary institutions. This approach is slow, and it will need a lot of time, patience, and imagination to finish the assignment. As a result, a professor who finds pattern drawing difficult would not be able to impart such practical skills to pupils. A teacher, according to Arubayi (2010), cannot provide what he does not have.

A teacher, who is well-trained at the beginning of their career, soon falls behind as a result of later advancements in their area unless they continue to get further training. In this situation, the instructor has minimal control over the skills necessary for mass production. Such a system cannot satisfy the demand for clothing since it does not encourage large manufacturers. The manufacture of items in enormous commercial numbers is referred to as "mass production". Computer software must be taught in pattern drafting classes if mass production is to be achieved. It will provide an overview of how the conventional abilities of pattern cutting, grading, lay planning, and fashion design may be combined with computer-aided production (Bao et al., 2021).

1.1 *Literature review*

1.1.1 *Computer-assisted pattern drafting*

Using a computer entails using software and hardware, such as a 3D scanner and 2D photographs, which are digitally inputted programs that collect measurements, create, draft patterns, and assemble clothing for customized manufacture. The first step in creating personalised apparel is to acquire exact body measurements. At this point, the computer-aided manufacturing system allows the user to choose from a variety of body dimension gathering techniques. The dimensions of the body can be obtained via a 3D scanner or by taking 2D pictures. Prior to scanning, the scanner must be calibrated according to a defined technique, and the illumination must be carefully managed to reduce noise. The scanner gathers hundreds of thousands of data points from an individual's picture, and the program extracts dozens of metrics that may be utilized in a variety of ways automatically. Skilled pattern designers usually create clothing designs based on the measurements gathered and observed. Computer software can make it more effective to produce garment patterns with the advancement of Computer-Aided Design (CAD) technology (Lu & Wang, 2008). The computerized production of clothing designs may be produced based on the mathematical expression for needed measurement. Furthermore, computer-generated human models assist in seeing the fitting outcomes of developed clothing in a virtual setting.

Data from human models may be easily saved and accessed using a computer. The scanner can quickly generate a different sort of garment design without having to take another measurement. Auto Computer Aided Design (CAD) will be used to build the patterns in electronic format after gathering body proportions using 2D photographs, 3D scanning photos, and direct input. The system gives a graphical preview of the designs together with the specifications when the pattern drawing is completed. The system will convert the drawing into Drawing Exchange Format (DEF), which is compatible with CNC laser cutting equipment after the user is pleased with the results and agrees to proceed. Fabric cutting will be the next phase, following which the pattern parts may be generated automatically in a short amount of time. Then they'll be ready for the rest of the manufacturing process, which includes stitching, fitting tests, and final adjustments (Nwaokaomah, 2010). Pattern drawing in apparel and fabric cutting have both benefited greatly from computer-assisted instruction. As a result, there are innovations in apparel mass production that are both time and cost effective. In other words, the employment of computer-assisted methods in teaching pattern drawing is critical in Nigeria in order to achieve the nation's sustainable development goals.

1.1.2 *Teaching and learning of pattern drafting at the tertiary level*

According to the Federal Republic of Nigeria (FRN) (2004), tertiary institutions are those that provide the National

Education System's post-secondary education. Advanced Teachers Colleges, Colleges of Education, Colleges of Technology, Polytechnics, Monotechnics, and Universities, as well as other tertiary schools that provide correspondence courses, are among the institutions. Through the development and advancement of human capabilities, its academic and research activities provide critical support for solid macroeconomic and public sector management of the nation. Tertiary institutions, according to Igwe and Augustine in Hamza (2010), are formed to improve the creation of middle-level labor in areas of national significance. If adequately taught by the instructor, those trained in any of the higher schools are anticipated to develop useful skills in Home Economics. Lecturers in the fields of clothing and textiles must be well-versed in the use of computer-assisted instruction and must be able to apply it successfully in the teaching of pattern drafting at their schools. They require adequate teaching qualifications in Clothing and Textiles in order to be better equipped to handle the current problems of teaching Clothing and Textiles, which necessitate technical abilities in order to develop entrepreneurial-ready graduates. As Ikem and Ajala in Nwanewezi and Isifeh-Okpokwu (2008) noticed, knowing how to utilize computers in the classroom is an extra advantage for Clothing and Textiles teachers.

Teaching is viewed as intentional acts carried out to enhance learning. It is a conscious and intentional effort made by mature, experienced, or professionally educated individuals to teach less experienced and immature individuals knowledge, information, skills, attitudes, and habits with the goal of fostering learning (Toraman & Korkmaz, 2022). Teaching is the structured, purposeful exchange of information and experience within a discipline in the field of education. More broadly, it is the act of another person that stimulates a person's intellectual and psychological development. Therefore, it is a preplanned behavior that leads and steers instruction to accomplish intended student outcomes, guided by learning principles and child development theory (Harrison et al., 2022). As a result, it is the responsibility of Home Economics lecturers to teach pattern drafting using new computer technology, and there is a need to create capacity in the new computer technology for teaching pattern drawing.

1.1.3 *Teaching and learning of pattern drafting at the tertiary level*

Building capacity is the process to enhance the knowledge, talents, procedures, and resources that enable organizations and communities to endure, adapt and prosper in a world that is undergoing rapid change. When teachers are well-trained for their jobs, they find them more fascinating and get greater joy and satisfaction out of them. They are less bored and tense, and their mental health is better, as a result. The capacity to accomplish something well is referred to as competence. To be competent, according to Ikeoji (2018), a person must have the capacity or power to display the knowledge, abilities, and attitudes necessary to accomplish a specific job or task. On the other hand, if, one is unable to exhibit the necessary knowledge, abilities, and attitudes for teaching, the individual will have a competency gap. Individual capacity building is required to close this gap. Capacity development is retraining offered to serve instructors in order to strengthen a specific skill or competency, or to improve overall performance ability. Capacity development, according to Olaitan et al. (2009), is an endeavor to enhance an individual's ability to execute a job or activity, and is targeted at improving what an individual is already doing in order to boost productivity. It is the process, through which people acquire, bolster, and retain the capacity to create and accomplish their own long-term development goals (Liu, 2022). It is a transformational process, the process of building and enhancing an organization's or individual's capacity to enable them to survive, adapt, and prosper in a rapidly changing environment (Salajegheh et al., 2020). Capacity development for Home Economics instructors is an effort aimed at boosting the level of knowledge, abilities, and attitudes held by the teachers in order for them to perform successfully in reaching the educational objectives.

In this Information and Communication Technology (ICT) era, the present way of teaching pattern drawing (manual method) has to be supplemented by computer-assisted education. In reality, if the current technique of teaching pattern drawing is replaced with the use of computer aid, it will contribute to long-term industrialisation and innovation. In the realm of educational technology, computer-assisted teaching is the use of computers and software programs to teach ideas or skills (Wilder, 2006). It is the outcome of a thorough development process that yielded a repeatable sequence of educational activities that has been shown to result in measurable and consistent student learning. Computer-Assisted Instruction (CAI) is an electronic method of exchanging and transmitting information that does not always require physical interaction between the instructor and the learner. Computer-Aided Instruction was born out of the notion of computer-assisted teaching and learning. This interactive teaching method uses a computer to display the lesson content and track student progress (Bianchi et al., 2022). All parts of the curriculum are enhanced by CAI using a combination of text, graphics, sound, and video. Even the most resistant students' attention may be aroused by using computer-

assisted learning to make classes much more dynamic and compelling (Arthur-Baidoo et al., 2022).

It is possible to make huge volumes of well-fitting clothing using a computer-assisted pattern drawing approach. Large-scale garment manufacturing will prosper as computer-aided design becomes more widely available, boosting entrepreneurship. This will gradually lower the amount of clothing imported or smuggled into the nation, preserving our foreign reserves. There are a variety of reasons why computer-assisted pattern drafting for entrepreneurship is becoming increasingly important in Nigeria. Many uniformed institutions, such as the army, police, customs, navy, and security groups, require enormous numbers and mass manufacture of uniforms for their employees. The same is true for primary and secondary schools that require uniforms to be mass-produced for their students and children. Clearly, the entrepreneurial manufacture and delivery of these clothes to meet the wants of clients at the point of need can no longer be provided using manual garment production methods.

1.1.4 *Teaching and learning of pattern drafting at the tertiary level*

After graduation, home economists can use the commercial pattern part of the garment construction process as a vital entrepreneurial instrument to yield or generate income for self-reliance and satisfaction in the business sector. Without the talents and knowledge of patternmakers, ready-to-wear apparel would not be possible in the clothing or fashion design industries. Today, the textile and apparel industries have created numerous job opportunities in a variety of fields, including fabric or dressmakers (for whom pattern making is a strength), textile cutting machine operators or machinists, fashion illustrators, fashion merchandize, patternmakers or designers, and clothing maintenance (Ahmad et al., 2021). The fact that the patterns they develop serve as the foundation on which the finished clothing is made makes clothing pattern makers essential to the fashion and apparel industries.

The lack of needed abilities in pattern designing using a computer might be due to a variety of issues. There is a need to assess instructors to see what level of quality they possess. Assessment is the act of judging or deciding the amount, value, quality, or importance of something, or the judgment or decision that is made. Assessment evaluates, measures, and documents the readiness, progress, skill acquisition, or needs of individuals. Assessment is necessary to determine the value of something or a person's performance on a skill based on measurement (Pastore & Andrade, 2019; Christoforidou & Kyriakides, 2021). The discrepancy between the required standard of performance and the instructors' current level of performance indicates a capacity gap that must be filled via capacity-building activities. As a result, in order for Home Economics students to be well-trained in pattern drawing, teachers must have held the necessary essential abilities to successfully educate toward promoting entrepreneurship.

According to Bob-Eze (2010), entrepreneurship is the process, by which individuals pool their human and material resources to offer goods and services that people want. Entrepreneurship, according to Atakpa (2011), is the process through which entrepreneurs start and grow businesses. Egbule (2018) defined entrepreneurship as a human-creative act that involves an individual's work in recognizing potential business prospects in a given context, as well as controlling and exploiting such chances. In Nigeria, entrepreneurship can be viewed as a "Nigeria Policy Priority" program, having been adopted and enlisted by the government as the most important among other policies ever introduced in Nigeria, such as the Mass Mobilization for Self Alliance (MAMSA), National Economic Empowerment and Development Strategies (NEEDS), and others, in dealing with the adverse conditions of her citizenry. There is a strong relationship between the drafting of instructional patterns in Tertiary Institutions and business. The use of CAI in pattern drawing for garment manufacture will pave the way for mass production in the fashion industry. One of the consequences of mass manufacturing of any vital human need is an increase in the market supply, which naturally lowers the price of the item and expands work prospects for individuals. A modern garment factory in Calabar, which is now the best in the country, is an example of this. Certainly, Nigeria's burgeoning importation of Chinese clothing and other Chinese goods is the driving force behind China's mass manufacturing, which invariably promotes industrialisation.

Nigeria's Gross Domestic Product (GDP) would benefit from the expansion of the apparel industry. The GDP, which is the total value of goods and services generated in a country over a period of time, is a key indicator of a country's economic health. Unfortunately, some instructors at all levels of education in most poor nations, including Nigeria, lack the requisite knowledge, abilities, and attitude to impart the necessary skills to pupils.

1.2 *Theoretical framework*

The study was guided by Human Capital Theory postulated by Adam Smith in 1776. According to the human capital theory, people can become more productive by getting more education and training in specific talents. Any activity that can increase the productivity of a single worker gives rise to human capital. The human capital theory is pertinent to the current study since it is predicated on the idea that home economics lecturers must develop their skills in computer-assisted pattern drafting instruction in order to increase their potential as entrepreneurs. The human capital idea highlights how capacity building boosts the degree of cognitive stock of economically productive human capability, which is a result of intrinsic abilities and investment in people. This raises the productivity and efficiency of home economics lecturers.

1.3 *Purpose of the study*

The main purpose of the study is to access the capacity building needs of Home Economics lecturers in South East, Nigeria for computer assisted teaching of pattern drafting for entrepreneurship.

1.4 *Research question*

The study focuses on the following research question:

What are the capacity building needs of Home Economics lecturers in South East, Nigeria for computer assisted teaching of pattern drafting for entrepreneurship?

1.5 *Research hypothesis*

The study tested the following hypothesis:

Ho_1: There will be no significant difference between the mean responses of more experienced Home Economics lecturers and their less experienced counterparts regarding their capacity-building needs for computer-assisted teaching of pattern drafting for entrepreneurship.

2. Materials and methods

This study was conducted using an ex-post facto research design approach. The study's focus is on Nigeria's South East geopolitical zone. Abia, Anambra, Ebonyi, Enugu, and Imo are the five states that make up this zone. All Home Economics lecturers in all public tertiary institutions in South East Nigeria were included in the study's population. As of the time of the research, there are 14 public postsecondary institutions in South East Nigeria that provide Home Economics: 5 universities, 1 polytechnic, and 8 colleges of education, with 131 Home Economics lecturers. Because of its manageable size, the full population of 131 professors was researched; hence, there was no sampling. A structured questionnaire titled "Capacity Building Needs for Computer Assisted Teaching Questionnaire (CBNCATQ)" was developed by the researchers for the study. Three experts face validated the tool. The questionnaire integrated their ideas and opinions on the items' appropriateness and usefulness. Using Cronbach's Alpha approach to estimate the instrument's internal consistency, 29 Home Economics lecturers in Edo State were able to establish the instrument's reliability at 0.84. To examine the data and answer the study question, percentages, mean, and standard deviations were employed. The hypothesis was tested using a T-test with a significance threshold of 0.05.

3. Results

3.1 *Bio-data*

Table 1 showed that all the respondents were females. Abia State 33 (25 %) had the highest number of lecturers while Imo State had only 19 (15 %). By the type of institution, the Federal Universities had the highest 35 (28 %) while

the Polytechnic had the least number of lecturers 9 (7 %). By qualification, 78 (60 %) of the respondents had Doctorate Degree, 42 (32 %), Master's Degree and 11 (8 %), Bachelor's Degree. 61 (46 %) of the respondents had teaching experience between 11-20 years, 34 (26 %), had 21 and above years of teaching experience, 22 (17 %) had between 6-11 years while 14 (11 %) had less than 5 years of teaching experience.

Table 1. Demographic characteristics of Home Economics Lecturers in South East Nigeria (N = 131)

Demographic Characteristics		Frequency	Percentage (%)
Sex	Male	Nil	0
	Female	131	100
State	Anambra	28	21
	Imo	19	15
	Abia	33	25
	Enugu	31	24
	Ebonyi	20	15
Type of Institution	Federal University	37	28
	State University	17	13
	Polytechnic	9	7
	Federal College of Education	33	25
	State College of Education	35	27
Highest Qualification	Bachelor's Degree	11	8
	Master's Degree	42	32
	Doctorate Degree	78	60
Teaching Experience	Less than 5 years	14	11
	6-10 years	22	17
	11-20 years	61	46
	21 years and above	34	26

3.2 *Research question*

What are the capacity-building needs of Home Economics lecturers in Tertiary Institutions in South East, Nigeria for computer-assisted teaching of pattern drafting?

The result in Table 2, indicated that in the Federal Universities, items 52 and 55 with mean ($\bar{x}$) scores ranging between 2.14 and 2.49 were below the cut-off mark of 2.50. Items 46-51, 53, 54, 56-61 had mean ($\bar{x}$) scores range of 2.65-3.49 and a grand mean ($\bar{x}$) of 2.87 above the cut-off mark of 2.50, thus showing that these items are the capacity-building needs of Home Economics lecturers. In the State Universities, items 46, 59 and 61 had mean ($\bar{x}$) scores range of 1.88-2.47 which were below the cut-off mark of 2.50, thus showing that the respondents disagreed. Items 47-58 and 60 had mean ($\bar{x}$) scores range of 2.94-3.88 and a grand mean ($\bar{x}$) of 3.09 which were above the cut-off mark of 2.50

thus showing that respondents agreed to the items as the capacity building needs of Home Economics lecturers. In the Polytechnic, items 46-61 with mean ($\bar{x}$) scores range of 3.56-3.89 and a grand mean of 3.21 were above the cut-off mark of 2.50 were agreed as the capacity-building needs of Home Economics lecturers for computer-assisted teaching of pattern drafting.

Table 2. Mean ($\bar{x}$) scores and standard deviation on the capacity building needs of Home Economics lecturers in Tertiary Institutions in South East, Nigeria for computer-assisted teaching of pattern drafting

	Capacity Building Needs	N = 37 FU		N = 17 SU		N = 9 Polytechnic		N = 33 FCE		N = 35 SCE	
	items	$\bar{x}$	R	$\bar{x}$	R	$\bar{x}$	R	$\bar{x}$	R	$\bar{x}$	R
1	Competence in body measurement using manual method	3.49	A	2.18	DA	3.00	A	2.85	A	3.43	A
2	Competence in pattern drafting using manual method	3.00	A	3.11	A	3.11	A	2.97	A	3.09	A
3	Competence in pattern adaptation using manual method	3.11	A	3.29	A	3.67	A	2.79	A	2.89	A
4	Competence in lying of patterns using manual method	3.03	A	3.00	A	3.44	A	3.24	A	2.86	A
5	Competence in cutting of fabrics using manual method	2.70	A	2.94	A	3.33	A	2.82	A	2.29	DA
6	Competence in assembling of fabrics using manual method	3.03	A	3.88	A	3.00	A	3.09	A	2.60	A
7	Training on use of computer	2.49	DA	3.59	A	3.33	A	2.88	A	2.26	DA
8	Training on use of computer aided design	2.84	A	3.71	A	3.89	A	2.45	DA	2.31	DA
9	Availability of computer	2.65	A	3.47	A	3.11	A	3.06	A	2.40	DA
10	Availability of computer accessories like random access memory (RAM), graphics card, laser printer, scanner and others	2.14	DA	3.65	A	3.00	A	2.82	A	2.29	DA
11	Availability of industrial sewing machines	2.86	A	3.29	A	3.67	A	3.18	A	2.66	A
12	Availability of electricity to power equipment	2.89	A	3.00	A	3.11	A	2.70	A	3.09	A
13	Ability to use various pattern drafting materials and equipment	3.05	A	3.06	A	3.00	A	3.27	A	3.71	A
14	Appropriately following instructions in drafting patterns	2.70	A	2.47	DA	2.56	A	2.03	DA	1.09	DA
15	Ability to follow basic principles of pattern drafting	3.30	A	2.94	A	2.78	A	2.79	A	2.83	A
16	Competence in pattern grading	2.70	A	1.88	DA	3.33	A	1.73	DA	3.03	A
	Grand Mean ($\bar{x}$) score	2.87		3.09		3.21		2.79		2.68	

Key: FU- Federal Universities, SU- State Universities, FCE- Federal Colleges of education, SCE- State Colleges of Education, R- Remark, A- Agree, DA- Disagree

In the Federal Colleges of Education, items 53-59 and 61 had mean ($\bar{x}$) scores ranging from 1.73-2.45 which were below the cut-off mark of 2.50 thus showing that the respondents disagreed. While items 46-52, 54-58 and 60 with mean ($\bar{x}$) scores ranging from 2.70-3.27 and a grand mean ($\bar{x}$) of 2.79 were above the cut-off mark of 2.50 and were accepted. In the State Colleges of Education, items 50, 52-55 and 59 had mean ($\bar{x}$) scores ranging from 1.09-2.40 which were below the cut-off mark of 2.50 thus, showing that the respondents agreed that they are capacity building needs of Home Economics lecturers. Items 46-49, 51, 56-58 and 60-61 had a mean ($\bar{x}$) range of 2.60-3.71 and were above the cut-off mark of 2.50. The items were agreed to as the capacity-building needs of Home Economics lecturers for computer-assisted teaching of pattern drafting. Nevertheless, the respondents agreed that the items were the capacity-building

needs of Home Economics lecturers for computer-assisted teaching of pattern drafting based on the whole grand means of each institution.

3.3 *Hypothesis*

There is no significant difference between the mean ($\bar{x}$) responses of more experienced Home Economics lecturers and their less experienced counterparts regarding their capacity-building needs for computer-assisted teaching of pattern drafting in Tertiary Institutions in South East, Nigeria.

Table 3. T-test analysis of the mean ($\bar{x}$) responses of more and less experienced Home Economics lecturers regarding their capacity building needs for computer-assisted teaching of pattern drafting in Tertiary Institutions

Variables	N	Mean ($\bar{x}$)	SD	DF	t-cal	p-value (2-tailed)	Decision
More Experienced Home Economics lecturers	80	62.93	2.20	129	13.111	0.000	Reject
Less Experienced Home Economics lecturers	51	54.18	5.30				

Table 3 indicated the t-computed value of 13.111 and a p-value of 0.000. Testing the null hypothesis, the p-value of 0.000 was less than the alpha value of 0.05. Hence, the null hypothesis was rejected. This showed that there was a significant difference between the mean ($\bar{x}$) responses of the more experienced and less experienced Home Economics lecturers regarding their capacity building needs for computer-assisted teaching of pattern drafting in Tertiary Institutions in South East, Nigeria.

4. Discussion

The outcomes of this study revealed that the lecturers in Home Economics require capacity building for computer-assisted pattern drawing instruction. This outcome is in line with the findings by Nwabueze et al. (2018), who reported that lecturers' capacity-building needs enable them to learn new information and abilities to carry out their responsibilities successfully, as well as abilities in research and development, concepts necessary for knowledge production, and a sense of teamwork to present lectures effectively. If they go from a manual to a computer-assisted approach, they experience less boredom and strain, and their mental health improves. The results also showed that lecturers in Home Economics require competence in pattern drafting using the manual method; this is related to the conclusion drawn by Bakker-Edoh et al. (2021), who observed that less than one third of the respondents in their study were of the view that free-hand cutting contributed to perfect fit of apparel.

In comparison to federal universities, federal colleges of education, polytechnics and state colleges of education, the results show that state institutions have a greater demand for computer training and availability. In a study, Chinda et al. (2018) found that inadequate funding prevented the university from providing necessary facilities and training for lecturers. They recommended that the university be encouraged to adopt a radical internal income generation strategy in order to keep up with the rapidly changing field of computer-based technology. This is especially true for educators, who must now, out of necessity, keep up with current trends in computer-driven education in order to maintain their job relevance (Paiva et al., 2022). Overall, this article's list of issues ranked the requirement for computer literacy among lecturers highest. Particularly, when it comes to the actions of teaching and learning basic principles of pattern drafting in the classroom, beginning with the creation of favorable learning environments, which are simple to comprehend and make the class more fun (Weintrop, 2019).

Industrial sewing machines are much needed by polytechnic lecturers, which is in keeping with the goal of polytechnic education, which is to promote technical and vocational education and training, technology transfer, and skill development to advance the socioeconomic development of the nation (Kinker et al., 2021). The availability of

industrial sewing machines benefits everyone-not only lecturers-because it allows for the creation of many more goods in a shorter period of time, which cuts down on the amount of time that is wasted.

The hypothesis was tested, and it was discovered that there was a substantial difference in opinion between more experienced and less experienced Home Economics lecturers on their capacity development requirements for computer-assisted pattern drafting training. This is in accordance with Okon and Bassey (2008), who believes that a teacher who is well-trained at the start of his career would quickly fall behind due to later innovations in his field of expertise unless he continues to obtain further training. The considerable discrepancy might be attributed to different amounts of extra training, based on this.

5. Conclusion

Patterns are essential in the production of clothing. For large-scale productions, they are extremely beneficial. Pattern drafting has gone through several stages of teaching and learning, from manual to computer. This study found that lecturers in Clothing and Textiles are capable of obtaining body measurements and generating designs using the manual approach. The study confirmed the lecturers' capacity-building needs to proceed to computer-assisted pattern drafting training. Computer-assisted teaching is an essential notion that Home Economics instructors should embrace and apply in teaching pattern drafting to guarantee that students develop technical abilities that will enable them to enter jobs and get successful work for a living.

The transition from manual to computer-assisted pattern drawing instruction should not be abrupt, but with time and computer education, there will be significant progress. Competency will be gained and hence improved in teaching if the identified areas where Home Economics lecturers need capacity building are made available to them with the help of government and spirited organizations. When this is completed, students will be fully prepared with the necessary abilities for garment mass manufacturing upon graduation. This will help them build their entrepreneurial skills for personal and national growth.

The present study has contributed to the knowledge of computer-assisted teaching of pattern drafting by creating new knowledge based on the capacity-building needs of home economics lecturers. The study has demonstrated that training on the use of computers, ability to use various pattern drafting materials and equipment, availability of electricity to power equipment, and ability to follow basic principles of pattern drafting among others were capacity-building needs of lecturers. Future research projects should examine methods for improving lecturers' abilities to learn how to use and use ICT equipment for educational purposes. They might use this for administrative, research, and educational objectives. The use of ICT devices in human capacity development programs exposes education lecturers to the most recent changes in instructional methods required for knowledge exchange in pattern drafting for entrepreneurship.

6. Recommendations

Based on the findings of the study, the following recommendations were made:

1. To improve Clothing and Textiles teachers ability, the University body-NUC, the Polytechnic body-NBTE, and the College of Education body-NCCE should conduct workshops and seminars on computer-assisted pattern drafting training for them.

2. The Federal and State Ministries of Education should guarantee that appropriate financing is available for the provision of computer facilities and competent lecturer training.

3. Tertiary institutions may be able to aid in the supply of ICT facilities in order to improve their students' education.

4. Lecturers in Home Economics should be retrained in order to teach effectively. This would encourage students to master skills that will enable them to become entrepreneurs once they graduate.

Ethics and consent

Not applicable.

Availability of data and material

All data generated or analysed during the study are included in this published article (and its supplementary information files).

Conflict of interest

The authors declare that they have no competing interests.

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Authors contributions

A.O. was a major contributor in writing the manuscript. N.N. analysed and interpreted the patient data regarding the findings of the study. The two authors developed the instrument for collecting data for the study. They read and approved the final manuscript.

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