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Achieving the Exigency of Pattern Development Among Clothing and Textiles Students in Tertiary Institutions for Garment Production in South East, Nigeria

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Abstract:
This study addresses the critical need to enhance pattern development skills among clothing and textiles students in tertiary institutions in South East, Nigeria. Focused on the context of large-scale garment production, both in rural and urban areas, the research explores the dynamic interplay between traditional craftsmanship and contemporary techniques within the local fashion industry. Three research questions guided the study and hypotheses tested at 0.05 significance level. The study adopted the ex-post facto research design using the descriptive survey method. The population of the study was 363 subjects, which comprised of all the Clothing and textiles students in Federal and State tertiary institutions in South East States. The research instrument used to collect data from the respondents was a structured questionnaire. The reliability of the questionnaire was determined with the use of Split-half reliability method. The data collected from respondents were coded and inputted in SPSS, Version 23, and analyzed with frequency counts, percentages, mean ($\bar{X}$) scores, Standard Deviation (SD), Improvement Need Index (INI), and t-test statistical tools. The result showed that Students in clothing and textiles require improvement in eight competencies for pattern drafting, including the use of 3D and 2D digital scanner software. Nine competencies in pattern alteration and adaptation, such as developing construction plans and alter and adapt pattern pieces need enhancement. Additionally, 11 competencies in pattern grading, involving correct measurement application require improvement. Notably, there were no significant differences in mean performance or need ratings between students in Colleges of Education and Polytechnics, as well as between students in rural and urban areas. Investing in the education and training of clothing and textiles students, policymakers, educational institutions, and industry stakeholders can contribute to skilled workforce development capable of driving innovation. The study advocates for strategic investments by policymakers, educational institutions, and industry stakeholders to ensure a well-prepared workforce. Bridging the gap between theory and application is paramount, and initiatives such as vocational training programs, industry-academia collaborations, and access to modern technology and nurture skills.

Keywords: Advancing, exigency, pattern development, clothing and textiles, students, garment production.

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Introduction

In the dynamic landscape of the global fashion industry, the ability to navigate and respond to evolving trends is paramount for aspiring professionals in clothing and textiles. Nowhere is this adaptability more crucial than in tertiary institutions for garment production, where students are not only challenged to master traditional techniques but also compelled to embrace innovation and pattern development methodologies (Xia et al., 2023). In the context of South East, Nigeria, a region rich in cultural diversity and renowned for its vibrant textiles, the exigency of developing pattern for garment production becomes even more pronounced. As fashion trends rapidly evolve and consumer preferences shift, the next generation of clothing and textiles professionals in South East, Nigeria, must be equipped with the skills to not only follow trends but also to shape them. This necessitates a comprehensive understanding of pattern development process and techniques, innovative design concepts, and the ability to fuse traditional craftsmanship with contemporary aesthetics (Gill et al., 2023; Brown, 2015). In light of these imperatives, this study delves into the challenges and opportunities surrounding the development of pattern proficiency among students in tertiary institutions that deliver the post- secondary education of the National education system, which include; Colleges of education, Polytechnics and Universities for garment production in South East, Nigeria. Pattern development is crucial in garment making is designed to satisfy the generic desire of learners in skill learning that can equip them with means of getting livelihood, be self-reliant and create jobs after graduation. Pattern development starts with basic block pattern piece. Basic block is a master or foundation piece made from paper without seam allowance. They are five basic block pieces namely; front bodice, back bodice, basic skirt front, basic skirt back and basic sleeve. Pattern is a shaped cut to size piece of paper constructed or drafted from standard measurement and used in making clothing. Igbo and Iloeje (2012) outlined methods of drafting pattern to include; modeling, knock-off design, flat pattern, modifying/grading available set of pattern and computer-aided design

Drafting is the sketching of an image on paper to show a portrait of a work one intends to do (Nasara &Agbo, 2019). Igbo and Iloeje (2012) asserted that pattern drafting is the engineering approach to producing pattern using a set of measurement obtained from a figure while following a set of instructions. Amankwa, *et al.* (2015) stated that pattern drafting is an existing craft that is simple if the basic techniques involved in drafting are well-fitted and proportionally connected to block pattern along with adjustments and alterations of these patterns to create stylistic and fashionable apparel. It is therefore important for every pattern maker to possess the relevant competencies involved in drafting in order to design a good pattern that can be saleable in the fashion industry. A well planned or detailed block pattern enables the designer understand the figure type and visualizes the finished pattern pieces

(Ezike & Arubayi, 2016). Before style are incorporated into the pattern pieces, they have to be sewn and worn to check for fit, where there are fitting faults, these have to be corrected to obtain the main block pattern pieces with relevant symbols without seam allowances. After drafting, the next stage is pattern alteration and adaptation, grading among others.

Garment making success starts with good paper design, where necessary adjustments are made on the pattern so that the measurements may correspond with the size of the figure and the size difference form the basis for adjustment. Efajemue and Lilly (2011) stated that pattern alteration is the process of increasing and decreasing in size, while adaptation is the development of a new pattern to any style of your choice using the drafted blocks. Alteration of pattern pieces means adjusting pattern pieces to correspond with the size of the figure, also it can be carried out by transferring dart from one position to another. Designers do not make a fitted pattern longer or shorter by adding or removing few inches, this changes the proportion and fit of the garment. Pattern pieces that are well made have indication lines of where to alter shown with symbol of line and scissors. Alteration precedes adaptation of pattern pieces, which involves changing basic block pattern pieces to suit new styles in garment. Adaptation of pattern entails addition of details to the altered pattern pieced such as pleats, gathers, tucks, flares, manipulation of dart from one point to another, among others (Osia, 2003). Adapted pattern should bear the seam allowance and pattern symbols/marks to guide the garment maker on the laying, cutting and sewing, since they are usually placed directly on the fabrics for cutting and sewing. The tools for alteration and adaptation process include; brown paper or construction paper, paper scissors, pencil eraser, French curve set, tracing wheel, transparent rule, tape measure, dressmaker's carbon, basic block pieces, among others (Azonuche, 2015). Adapting patterns before laying, cutting and sewing to fit a person is time consuming, frustrating, and may be difficult for an inexperienced person. Thus, New Zealand Qualifications Authority (2017) stated that dressmakers should possess relevant competencies to enable them draft basic patterns, make alterations to a pattern to fit the wearer.

Grading involves the increase or decrease of pattern pieces to make sure the shape, fit and aesthetics appearance of the prototype sample size. Patterns are grade according to the sizes of the users to ensure adequate fit. Grading is made when the adding or decreasing adjustments to be made is very slight less than 0.5cm, while higher amount of difference should be done by alteration and adaptation. The process of enlarging or diminishing a base size, making it possible to obtain proper fit for all sizes without changing the title for a given compilation of anthropometric measurements (Islam, 2020). It is a blueprint for making other sizes of measurements from initial size such as sizes small, medium, large, extra-large, among others. It helps in creating a line of differently sized or contoured garments that are yet similarly

patterned (Datta & Seal, 2018). Students need competencies to carry out functions of grading in pattern making process for large scale production for garment making.

Generally, Clothing and textiles as a major field in Home Economics is aimed at providing students with proficient skills that is needed in the world of work. Thus, it is expected that students who specialized in the Clothing and textiles had acquired the relevant competencies in pattern making for garment production upon graduation. These competencies are in the area of illustration of styles, body measurement, drafting, alteration and adaptation, grading choosing the right materials, techniques and strategies that will help to enhance skill learning which are needed for successful large scale garment industry. Previous studies have shown that there is inability of the educational system to train the youths to acquire skills that will make them useful to themselves and the society (Uchendu, 2015; Abanyam et al, 2016; Okafor, 2019; John et al, 2023; Sunday et al, 2022). There has been a mismatch between theory and practice, since the teaching of Clothing and textiles in most tertiary institutions has been more theoretical with little practical involvement due to some challenges. Those who specialized in Clothing and textiles do not go into pattern making ventures, because they lack competencies, ability and skills needed to produce garment in large scale. Commercial pattern are no longer available in Nigeria due to ban on importation of goods by the government. Garment makers involved in large scale production cannot take body measurement and cut out styles/designs one by one in sizes for a large quantity. Garment producers do not have patterns for large scale production since there is no importation of patterns. Therefore, it is important that Clothing and textiles students acquire the required competencies to function maximally in large scale garment production after graduation. Majority of the Clothing and textiles graduates are unemployed and cannot begin a fashion business venture because of lack of basic competencies for making garments in large quantity. Skills acquired by graduates would aid job creation, youths' empowerment and poverty alleviation, which in turn have the capacity to solve various social problems. Patterns of different styles/designs can be made in sizes for garment producers to meet large scale societal clothing demands. This study thus, sought to determine the various competency needs of Clothing and textiles students in tertiary in pattern making for large scale garment production in South East States in Nigeria.

The findings of this study will be useful to Clothing and textiles students, as it will provide them with insight of the competencies needed in pattern making for the production of garments. This will inspire them to concentrate on these competencies in such a way that on graduation from school, they would have acquired enough competencies needed for gainful employment in the garment industry, and also become self-reliant, helping to eliminate the problem of unemployment and other social vices plaguing the society. The study will also be beneficial to Clothing and

textiles graduates as it will equip them with the competencies needed to be successful in the garment production industry.

Purpose of the Study

The main purpose of the study was to determine achieving the exigency of pattern development among Clothing and textiles students in tertiary institutions for garment production in South East, Nigeria.

1. Identified the competency needs of Clothing and textiles students in pattern drafting for large scale garment production;
2. Ascertained the competency needs of Clothing and textiles students in pattern alteration and adaptation for large scale garment production;
3. Determined the competency needs of Clothing and textiles students in pattern grading for large scale garment production.

Research Questions

The following research questions were raised in the study:

1. What are the competency needs of Clothing and textiles students in pattern drafting for large scale garment production?
2. What are the competency needs of Clothing and textiles students in pattern alteration and adaptation for large scale garment production?
3. What are the competency needs of Clothing and textiles students in pattern grading for large scale garment production?

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Hypotheses

The following hypotheses were tested at 0.05 level of significance:

1. There is no significant difference between the mean ($\overline{X}$) performance ratings of students in Colleges of Education and Polytechnics in pattern drafting for large scale garment production.
2. There is no significant difference between the mean ($\overline{X}$) performance ratings of students in rural and urban areasin pattern alteration and adaptation for large scale garment production.
3. There is no significant difference between the mean ($\overline{X}$) need ratings of students in Colleges of Education and Universities in pattern grading for large scale garment production.

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Methods

The study adopted the ex-post facto research design using the descriptive survey method. Ex-post facto research design deals which events that has occurred, while the survey method is a systematic method for gathering information from (a

sample of) entities for the purpose of constructing quantitative descriptors of the attributes of the larger population of which the entities are members. The population of the study was 363 subjects, which comprised of all the Clothing and textiles students in Federal and State Colleges of Education and Polytechnics and Universities in South East States in Nigeria. No sampling was done because of the manageable size of the population. All the 363 Clothing and Textiles students were involved in the study. This included the Clothing and Textiles students in the 2 Colleges of Education (Federal College of Education, Umunze, and Nwafor Orizu College of Education, Nsugbe) and 2 Polytechnics (Anambra State Polytechnic, Mgbakwu, and Federal Polytechnic, Oko), University of Nigeria, Nsukka and Ebonyi State University, Abakaliki, in the South East were used for the study.

The research instrument used to collect data from the respondents was a structured questionnaire. The questionnaire comprised of three sections, that is Section A and B. Section A contains the biodata of respondents (sex and type of school). Section B is made up of 28 items generated from the purpose of the study and review of literature. They are arranged in three sub-sections, with regards to the competencies needed by students in the following order: pattern drafting (8 items), pattern alteration (9 items), and pattern grading (11 items). This section was designed using the Competency Improvement Needs assessment technique. Students were expected to rate their level of needs and performance in a 5-point rating scale of:Need Ratings:Very High Need (VHN) = 5; High Need (HN) = 4; Moderate Need (MN) = 3;Low Need (LN) = 2; and Very Low Need (VLN) = 1.Performance Ratings:Very High Performance (VHP) = 5; High Performance (HP) = 4; Moderate Performance (MP) = 3; Low Performance (LP) = 2; and Very Low Performance (VLP) = 1.

The reliability of the questionnaire was determined with the use of Split-half reliability method. In doing this, the instrument was administered to ten (10) Clothing and textiles students in College of Education, Mosogar, Delta State. Their responses were inputted in SPSS Version 23, and Split-half statistical tool was used to analyze the data, which yielded Spearman-Brown coefficients of 0.78 and 0.81 for Section B. This indicates that the instrument is reliable and adequate for the study. Out of 363 copies of questionnaires that were administered, 320 copies representing 88.15% were completely filled, retrieved and used for the study.

The data collected from respondents were coded and inputted in SPSS, Version 23, and analyzed with frequency counts, percentages, mean ($\overline{X}$) scores, Standard Deviation (SD), Improvement Need Index (INI), and t-test statistical tools. Percentages were used to analyze the demographic data of the respondents. Research questions were analyzed using the Improvement Need Index. The competency improvement needs of Clothing and textiles students was determined by: determining the weighted mean ($\overline{X}_{\mathrm{n}}$) of the need scale and the weighted mean ($\overline{X}_{\mathrm{p}}$) of the performance scale for

each item. Furthermore, the performance gap was determined by finding the difference between the values of $\overline{X}_n$and $\overline{X}_p$.

Thus, $\overline{X}_n$- $\overline{X}_p$= Performance Gap (PG)

A negative (-) PG means there was no improvement needed because the level at which Clothing and textiles students performed the competencies in pattern making is greater than the level at which it was needed; a positive (+) PG signifies that improvement is needed in the various competencies because the level at which Clothing and textiles students performed the competencies in pattern making was less than what was needed; and a zero (0) PG indicated that there was no improvement needed as the level at which the students performed competencies in pattern making equates the level at which it was needed.

Result and Discussion

Results

1. Research Question 1

What are the competency needs of Clothing and textiles students in pattern drafting for large scale garment production in?

Table 1.

Performance Gap Analysis of the Mean ($\overline{X}$) Responses of Clothing and Textiles Students on Pattern Drafting (n = 320)

S/N	Pattern Drafting Competencies	$\overline{X}_n$	$\overline{X}_p$	PG ($\overline{X}_n$ - $\overline{X}_p$)	Remark
	Ability to:				
1.	select basic tools and materials for pattern drafting	4.46	3.14	1.32	CIN
2.	use tools and materials as required to draft patterns	4.62	2.89	1.73	CIN
3.	follow safe work practices when using tools in drafting patterns	4.52	2.92	1.60	CIN
4.	draft basic blocks according to instruction	4.84	2.79	2.05	CIN
5.	draft various basic block pattern pieces for garment	4.88	2.05	2.83	CIN
6.	use 2D digital scanner software to draft patterns	4.92	1.98	2.94	CIN
7.	use 3D digital scanner software to draft patterns	4.94	1.94	3.00	CIN
8.	label pattern pieces adequately	4.50	2.97	1.53	CIN

Key: $\overline{X}_n$ = Mean of Need Scale;$\overline{X}_p$ = Mean of Performance Scale; PG = Performance Gap; CIN = Competency Improvement Needed

The result from Table 1 showed the competency needs of Clothing and Textiles students in pattern drafting for large scale garment production. On the need scale, the mean scores ranged from 4.46 - 4.94, that of the performance scale ranged from 1.94 – 3.14, while that of the performance gap shows a high INI of 1.32 – 3.00, showing that students have high improvement needs for all the competencies on pattern drafting for large scale garment production. However, item 7 (ability to use 3D digital scanner software to draft patterns has 3.00), 6 (ability to use 2D digital scanner software to draft patterns has 2.94), 5 (ability to draft various basic block pattern pieces for garment has 2.83) and 4 (ability to draft basic blocks according to design has 2.05) had the highest INI.

2. Research Question 2

What are the competency needs of Clothing and textiles students in pattern alteration and adaptation for large scale garment production?

Table 2.

Performance Gap Analysis of the Mean ($\overline{X}$) Responses of Clothing and Textiles Students on Pattern Alteration and Adaptation (n = 320)

S/N	Pattern Alteration Competencies	$\overline{X}_n$	$\overline{X}_p$	PG ($\overline{X}_n$ - $\overline{X}_p$)	Remark
	Ability to:				
1.	take key body measurement to select pattern size(s)	4.52	4.04	0.48	CIN
2.	interpret the pattern guide sheet to select the correct pattern pieces	4.50	3.09	1.41	CIN
3.	undertake basic alteration of a pattern using key measurements	4.56	3.00	1.56	CIN
4.	interpret pattern symbols with guide	4.48	2.84	1.64	CIN
5.	alter pattern pieces at the right position	4.86	2.63	2.23	CIN
6.	adapt pattern pieces to intended style	4.85	2.65	2.20	CIN
7.	test mock up to refine pattern if necessary	4.83	3.05	1.78	CIN
8.	correctly label the adapted pattern	4.54	3.02	1.52	CIN
9.	undertake pattern alteration with creativity	4.68	2.61	2.07	CIN

Key: $\overline{X}_n$ = Mean of Need Scale;$\overline{X}_p$ = Mean of Performance Scale; PG = Performance Gap; CIN = Competency Improvement Needed

The result from Table 2 showed the competency needs of Clothing and textiles students in pattern alteration and adaptation for large scale garment production. On the need scale, the mean scores ranged from 4.50 - 4.86, that of the performance scale ranged from 2.61 – 4.04, while that of the performance gap shows a high INI of 0.48 – 2.23, depicting that students have high improvement needs for all the competencies on pattern alteration for large scale garment production. However, the highest INI were recorded for item 5 (alter pattern pieces at the right position, 2.23), 6 (adapt pattern pieces to intended style, 2.20) and 9 (ability to undertake pattern alteration with creativity, 2.07).

3. Research Question 3

What are the competency improvement needs of Clothing and Textiles students in pattern grading for large scale garment production?

Table 3. Performance Gap Analysis of the Mean ($\overline{X}$) Responses of Clothing and Textiles Students on Pattern Grading (n = 320)

S/N	Pattern Grading Competencies	$\overline{X}_n$	$\overline{X}_p$	PG ($\overline{X}_n$ - $\overline{X}_p$)	Remark
	Ability to:				
1.	identify grading requirements from garment design specification sheet	4.52	3.00	1.52	CIN
2.	Check if traced basic pattern is in accordance with different sizes	4.53	2.86	1.67	CIN
3.	trace off basic pattern on pattern sheet using required tools	4.54	2.91	1.63	CIN
4.	apply basic grading formula	4.44	3.00	1.44	CIN
5.	identify grade points with lines	4.45	3.22	1.23	CIN
6.	use curve lines in grading	4.50	3.02	1.48	CIN
7.	calculate measurement difference	4.68	2.96	1.72	CIN
8.	apply measurement differences correctly	4.76	2.96	1.80	CIN
9.	smoothen lines	4.48	2.87	1.61	CIN
10.	add required seam allowances	4.77	3.06	1.71	CIN
11.	follow safe work practices when grading	4.55	2.99	1.56	CIN

Key: $\overline{X}_n$ = Mean of Need Scale; $\overline{X}_p$ = Mean of Performance Scale; PG = Performance Gap;
CIN = Competency Improvement Needed

Table 3 presents the competency needs of Clothing and textiles students in pattern grading for large scale garment production. The result on the need scale showed that the mean scores ranged from 4.44 - 4.77, that of the performance scale ranged from 2.86 – 3.22, while that of the performance gap shows a high INI of 1.23 – 1.80, depicting that students have high improvement needs for all the competencies on pattern grading for large scale garment production. However, the highest INI were recorded for item 8 (ability to apply measurement differences correctly, 1.80), 7 (ability to calculate measurement difference, 1.72) and 10 (ability to add required seam allowances, 1.71).

4. **Hypothesis 1:** There is no significant difference between the mean ($\overline{X}$) performance ratings of students in Colleges of Education and Polytechnics in pattern drafting for large scale garment production.

Table 4.

The t-test Analysis of the Mean ($\overline{X}$) Performance Ratings of Students in Colleges of Education and Polytechnics on Pattern Drafting

School	N	$\overline{X}$	SD	Df	T	P	Decision
Colleges of Education	62	3.35	1.40	318	1.27	0.20	Not Significant
Polytechnics	258	3.09	1.47				

Significant Level = (P > 0.05)

Key: N = Number of respondents; df = degree of freedom; t = t-value; p = table value

Result in Table 4 showed a t–value of 1.27 and a p-value of 0.20 at 0.05 alpha value. Since the p-value was greater than the alpha value, the null hypothesis was accepted, implying that there was no significant difference between the mean ($\overline{X}$) performance ratings of students in Colleges of Education and Polytechnics in pattern drafting for large scale garment production.

5. **Hypothesis 2:** There is no significant difference between the mean ($\overline{X}$) performance ratings of students in rural and urban areas in pattern alteration and adaptation for large scale garment production.

Table 5.

The t-test Analysis of the Mean ($\overline{X}$) Performance Ratings of Students in Rural and Urban Areas on Pattern Alteration and Adaptation

Location	N	$\overline{X}$	SD	Df	T	P	Decision
Rural	64	4.06	0.85	318	0.24	0.81	Not Significant
Urban	256	4.04	0.79				

Significant Level = (P > 0.05)
Key: N = Number of respondents; df = degree of freedom; t = t-value; p = alpha value

From the result in Table 5, the t-test analysis showed a t–value of 0.24 and a p-value of 0.81 at 0.05 alpha value. The null hypothesis was therefore accepted since the p-value is greater than 0.05. This implies that there was no significant difference between the mean ($\overline{X}$) performance ratings of students in rural and urban areas in pattern alteration for large scale garment production.

6. **Hypothesis 3:** There is no significant difference between the mean ($\overline{X}$) need ratings of students in Colleges of Education and Universities in pattern grading for large scale garment production.

Table 6.
The t-test Analysis of the Mean ($\overline{X}$) Need Ratings of Students in Colleges of Education and Universities on Pattern Grading

School	N	$\overline{X}$	SD	df	T	P	Decision
Colleges of Education	62	4.82	0.39	318	1.16	0.25	Not Significant
Universities	258	4.75	0.44				

Significant Level = (P > 0.05)
Key: N = Number of respondents; df = degree of freedom; t = t-value; p = table value

The result from Table 6 shows a t–value of 1.16 and a p-value of 0.25 at 0.05 alpha value. The null hypothesis was accepted because the p-value is greater than the alpha value. This means that there was no significant difference between the mean ($\overline{X}$) need ratings of students in Colleges of Education and Universities in pattern grading for large scale garment production.

Discussion

Finding showed that students have high improvement needs for all the competencies on pattern drafting for large scale garment production. These include ability to use 3D digital scanner software to draft patterns, use 2D digital scanner software to draft patterns, draft various basic block pieces for garment, draft basic blocks according to design, label pattern pieces adequately, among others. These competencies are in consonance with basic principles of pattern drafting highlighted by Raghavan and Sathish Kumar (2020), which include taking actual body measurement, drafting of basic pattern blocks, marking and recording of pattern during construction, among others. The competencies are also in line with Ahsan

(2015); Adilo, *et al.* (2022) who stated that the major competencies needed by students in pattern making include selecting and use of basic tools and materials required for drafting, construct basic block pattern, use 2D and 3D software to draft patterns, among others. Furthermore, there was no significant difference between the mean ($\overline{X}$) performance ratings of students in Colleges of Education and Polytechnics in pattern drafting for large scale garment production. This implies that the same competencies are needed by Colleges of Education and Polytechnic students in pattern drafting.

Finding showed that students have high improvement needs for all the competencies on pattern alteration and adaptation for large scale garment production. The competencies ability to develop a construction plan, alter pattern pieces, adapt pattern pieces to intended style, undertake pattern alteration with creativity, among others. These competencies are expected to help students alter patterns to create something new, which is in line with Abiamuwe et al, (2017) who pointed the process of pattern alteration in developing a new pattern to the intended style using drafted basic blocks as a pre- requisite in making garment is one basic content in fashion designing. Furthermore, these competencies which include; ability to take key body measurements, interpret the pattern instructions to select correct pattern pieces, carry out basic block pattern alteration using required measurement, adapt altered pattern pieces adding seam allowances, mark the pattern symbols and label pattern pieces (Bob-Eze, 2023). There was no significant difference between the mean ($\overline{X}$) performance ratings of students in rural and urban areas in pattern alteration for large scale garment production. This simply means that students in rural and urban areas need the same competencies in pattern alteration and adaptation to produce patterns in large quantities for garment making.

Finding showed that students have high improvement needs for all the competencies on pattern grading for large scale garment production. The competencies include ability to apply measurement differences correctly, calculate measurement difference, add required seam allowances, check if traced basic pattern is in accordance with different sizes, trace off basic pattern on pattern sheet using required tools, smoothen out rough lines, follow safe work practices when grading, among others. These competencies are needed in creating patterns for various sizes from the sample size pattern, which is in line with Naznin et al. (2017), Datta and Seal (2018) who viewed the grading process in pattern making as turning sample pattern into various sizes using a size specification sheets according to measurement, among others. The competencies are also in line with *Universities and Colleges Admission Services* (UCAS) (2021), Ahsan (2015) who asserted that the competencies in pattern grading involves the ability to trace off basic pattern for grading, mark grade points using formula, add required margins and seams, follow safe work practices, among others. Daniela (2021) stressed that in pattern grading it is important to consider the

human body proportions and how they grow in sizes to obtain satisfactory fit. To make the process easier Computer-aided design(CAD) software can be used to grade the pattern pieces to get sealed –up and sealed-down version of the initial pattern design (Hodakel, 2020) Also, there was no significant difference between the mean ($\overline{X}$) need ratings of students in Colleges of Education and Universities in pattern grading for large scale garment production, implying that the competencies needed by students in pattern grading is same in Colleges of Education and Universities in South East, Nigeria. This is because skill process entails the extent to which students are proficient and can demonstrate the practical competencies in operations which are paramount in making needed patterns for garment production and not the type of institution

Summary of Findings

1. Eight (8) competencies in pattern drafting were needed for improvement by students, amongst which are ability to use 3D and 2D digital scanner software to draft patterns.
2. Nine (9) competencies in pattern alteration were needed for improvement by students. They are ability to develop a construction plan, use the plan to alter and adapt pattern pieces among others.
3. Eleven (11) pattern grading competencies were needed for improvement by students. They include ability to apply measurement differences correctly, calculate measurement difference, among others.
4. There was no significant difference between the mean ($\overline{X}$) performance ratings of students in Colleges of Education and Polytechnics in pattern drafting for large scale garment production.
5. There was no significant difference between the mean ($\overline{X}$) performance ratings of students in rural and urban areas in pattern alteration for large scale garment production.
6. There was no significant difference between the mean ($\overline{X}$) need ratings of students in Colleges of Education and Universities in pattern grading for large scale garment production.

Conclusion

In conclusion, this study sheds light on the critical importance of advancing the exigency of pattern alteration and adaptation skills among clothing and textiles students, with a particular focus on catering to the needs of large-scale garment production in both rural and urban areas. The findings underscore the significance of equipping students with the necessary knowledge and practical expertise to meet the demands of the dynamic and expanding fashion industry. As we navigate the challenges and opportunities presented by the intersection of traditional

craftsmanship and modern garment production techniques, it becomes evident that a well-rounded education in pattern alteration and adaptation is paramount. The synergy of rural and urban areas in South East creates a unique landscape for the integration of traditional artisanal skills with contemporary methods, fostering a rich and diverse ecosystem for garment production. By investing in the education and training of clothing and textiles students, policymakers, educational institutions, and industry stakeholders can contribute to the development of a skilled manpower relevant in driving innovation, sustainability, and economic growth in the local garment production industry. Students can navigate the complexities of large-scale production, ensuring the production of high-quality garments that meet both local and global standards when there is application of theoretical and practical knowledge and skills.

Recommendations

Based on findings it is recommended that:

1. there should be a collaborative efforts between academia, industry, and government to create a supportive environment for pattern making skill development necessary for entrepreneurship in the clothing and textiles sectors.
2. Competencies in pattern making should be encouraged and imbibed by the student for availability in large scale production of garment.
3. There should be strategic investments by policymakers, educational institutions, and industry stakeholders to ensure a well-prepared workforce, bridging the gap between theory and application is paramount, and initiatives such as vocational training programs and access to modern technology as crucial components in nurturing a skills.

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