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Competency and improvement needs of clothing and textiles students in body measurement for large scale garment production in Nigeria

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Abstract: This study examined the competency and improvement needs of clothing and textiles students in body measurement for large scale garment production in Nigeria. The purpose of the study was to determine the demographic profile, competency improvement needs in illustration of styles and body measurement. Three research questions and hypotheses guided the study respectively. Ex post facto research design was adopted using survey method. Population size was 363 students in four tertiary institutions in Anambra State and due to the manageable size of the respondents, there was no sample and all the students were used for the study. Instrument for data collection was structured questionnaire and data was analyzed with frequency counts, percentages, mean ($\bar{X}$) scores, Standard Deviation (SD), Improvement Need Index (INI), and t-test statistical tools. Findings showed that more females engage in its teaching and learning Clothing and textiles area of specialization while there were few male students. Findings also shows that students have high improvement needs for all the competencies on illustration of styles and 11 competencies on body measurement for large scale garment production. There was no significant difference between the mean ($\bar{X}$) need ratings of male and female students in illustration of styles and body measurement for large scale garment production. It was concluded that it is important that fashion designers needs competency improvement for optimal productivity. Therefore, it became imperative that more males be encouraged to enroll in this skill oriented vocational course by giving them scholarship and grants, and well-equipped modern laboratories for skill acquisition and mastery.

Keywords: Competency, Improvement Needs, Clothing and Textiles, Students, Body Measurement, Garment Production.

INTRODUCTION

A developing nation, such as Nigeria has a lot to achieve if the potentials of the youths are channeled into the acquisition of proficient skills. Such skills can be acquired through Vocational Education courses, such as Home Economics, Fashion designing, Clothing and Textiles, Pattern Making, Home Management, among others. Azonuche (2015) noted that Technical and Vocational Education and Training (TVET) is essential in the progress of a country as it allows individuals and societies to unlock their potentials and become accustomed to the transformations in the dynamic world. Thus, the main purpose of Technical and Vocational Education is to equip young men and women with the technical and professional skills needed for socio-economic development of a country (Charway, 2002).

Clothing and Textiles is an area of Home Economics concerned with fibres, fabric production, clothing construction, maintenance and care. Azonuche (2021) noted that Clothing and Textiles helps to train students to acquire knowledge and skills in clothing production and management. The Ghana Ministry of Education cited by Forster, *et al.* (2017) stated that Clothing and Textiles syllabus is aimed at providing students with the necessary experience that will develop their competencies in textiles selection, and its use in clothing production and management. Arubayi (2003) opined that the aim of Clothing and Textiles in Nigeria is to help learners acquire knowledge, skills and techniques for meeting personal and societal clothing needs. The Clothing and Textiles programmes in tertiary institutions are meant to assist students to improve upon their knowledge and skills in designing and sewing of classic garments and other clothing articles that meet local and international standardizations and are attractive to many fashion consumers (Sarpong, *et al.*, 2012). Garment production, is thus seen as a core skill area that Clothing and Textiles students need to acquire to become successful entrepreneurs in the fashion industry.

Garment production plays a significant role in achieving national education goals by equipping learners with essential technical and creative skills relevant to technological advancement and self-reliance. It provides orientation for learners and fosters creativity through hands-on engagement in the design and production of clothing and accessories. According to Rumberger (2015), garment production involves various interrelated units responsible for producing patterns, garments, and fashion accessories. Bhati (2018) emphasized that garment development entails processes such as pattern making, drafting, cutting, and stitching, all of which demand precision, competence, and creativity. These processes not only promote innovation but also prepare learners for productive engagement in the textile and fashion industries. In addition, Ekong and Kennedy (2019) noted that garment production aligns with the broader educational goal of developing learners' technological capacity. The integration of modern tools and creative techniques mirrors how vocational education supports national development, similar to how institutional and technological strategies enhance productivity and innovation in other sectors (Emegha *et al.*, 2025; Idigo, 2024; Okonkwo & Idigo, 2024; Osuchukwu *et al.*, 2025). Therefore, garment production serves as both an educational and industrial foundation for technological application, skill development, and creative expression in learners.

Competencies refer to the ability to perform a task and role in accordance to the combination of knowledge, skills, attitudes, personal values, and the ability to develop knowledge, skills, and learning experiences (Gangani, McLean & Braden, 2006). Competencies in pattern making, therefore refer to the ability of students to be able to perform the various tasks in illustration of styles, pattern alteration, drafting, body measurement and pattern grading, that will grant them the opportunity for gainful

employment in large scale garment production industries on graduation. Kopp, et al. cited in Obinnim and Pongo (2018) pointed out that pattern making is a three-step process that covers pattern analysis, pattern design and pattern drafting. Analyzing pattern involves drawing, sketching and illustration of garment styles and designs that are made into pattern pieces for use.

Illustration of styles is a form of stylish drawing that seeks to communicate not only an artist's representation, but also the sense of style, which helps to develop the ability of a designer to draw in a variety of angles and poses. Hamstech (2019a) posited that illustration of styles forms the initial face of every design as a visual way of explaining different ideas, as well as the basic transmission of an idea into a creative design through diagrams and drawings. Ireland in Amankwa, *et al.* (2015) emphasized that the aim of illustration of styles is to promote design in skill sewing. Drake in Wikiwand (2021) suggested that fashion designers should brainstorm their ideas on paper or digitally to preview and visualize designs before sewing actual clothing. A good garment producer should be able to sketch styles in order to transmit into pattern pieces by drafting for the garment. Competency in illustration of styles is therefore of utmost importance to any pattern maker that seeks to be effective. To make good pattern pieces, Bhati (2011) opined that correct body measurement with added ease for movement is very necessary to become successful in the fashion industry.

Body measurements according to Thiel (2020), refers to measuring the actual person (or people) who will wear a garment. Body measurements are prerequisite to pattern construction, because the size and fit of a garment depends upon its accuracy (Bond, 2008). Body measurement can be done with the use of the traditional manual measuring by tape, computerized 3D body scanning or using photographic systems. Bond (2008) surmised that using either of these methods for large scale garment production requires a high level of skills from the pattern maker. The different methods of pattern making should include various sizes to suit different body shapes. Bond (2008) further stated that size chart formulation begins with the division of average body measurements artificially into categories to form a range of sizes. These average body measurements are obtained from surveys of body measurements. Each size is given a code, for example, 10–12–14–16, or labeled small, medium, and large (Bond, 2008). After measurement, the next stage in pattern development is pattern drafting.

Large scale production refers to the production of a commodity on a large scale with a large sized firm (Martkovich, 2020). In pattern making, it is the production of various patterns on a large scale with a large sized firm. The importance of pattern making in garment production stems the need for students to be taught the various skills to make them competent in illustration of styles, body measurement, drafting, pattern grading and pattern alteration. Wesley and Bickel (2005) buttressed that these competencies are embedded in instructional activities such as tutorials, lectures, course works, projects, case studies, research and practical trainings, that allow students to gain firsthand knowledge through the guidance of their instructors. Odia and Odia (2013) believed that exposing students to entrepreneurial skills in pattern-making through these channels would lead to the acquisition of skills that would enable them to be self-reliant and consequently reduce the unemployment rate among tertiary institution graduates. Tertiary institution includes Colleges of Education, polytechnics, monotechnics, and universities.

Theoretical Framework

The study was hinged on the Human Capital Theory.

Human Capital Theory: The original idea of human capital can be traced back to Adam Smith in his book titled “An Inquiry into the Nature and Causes of the Wealth of Nations Book”, which was published in 1776. He viewed human capital as an asset that generates flow of services, most often measured as earnings. The modern theory was popularized by Gary

Becker (an economist and Nobel Laureate from the University of Chicago), Jacob Mincer, and Theodore Schultz. This is the reason why Scott (2014) defined Human Capital Theory as a modern extension of Adam Smith's explanation of wage differentials by the so-called net advantages/disadvantages between different employments.

According to Fix (2018), human capital is the stock of habits, knowledge, social and personality attributes (including creativity) embodied in the ability to perform labour so as to produce economic value. The theory rests on the assumption that formal education is highly instrumental and necessary to improve the productive capacity of a population (Almendarez, 2011). In short, Human Capital Theorists argue that an educated population is a productive population; thus, the theory emphasizes how education increases the productivity and efficiency of workers by increasing the level of cognitive stock of economically productive human capability, which is a product of innate abilities and investment in human beings (Almendarez, 2011).

Maringe (2015) presented Human Capital Theory as both a public and private investment decision for governments and its people. He further stated that when human capital is seen as a public investment, the fundamental argument is that investing in education leads to economic growth through increased productivity, social stability, and healthier lifestyles. On the other hand, Wahrenburg and Weldi (2007) opined as a private investment choice, investing in education leads to increased lifetime earnings for those with more years of schooling, access to better paying jobs, reduced time spent in the unemployment market, and speedier transitions to enhanced career prospects.

According to Van-Loo and Rocco (2004), Human Capital Theory is an investment in skills and knowledge. In fact, Psacharopoulos and Woodhall (1997) believes that the provision of formal education is seen as an investment in human capital, which proponents of the theory have considered as equally or even more worthwhile than that of physical capital. In the opinion of Kucharcikova in Alika and Aibieyi (2014), human capital lays emphasis on educating individuals which is seen as a key for individuals to acquire both material advantage and the progress of the economy; in essence, the more education possessed by individuals, the better their financial rewards and national economy flourishes. The rationale behind the investment in human capital is based on three major arguments as posited by Babalola (2003), which include:

- i. The new generation must be given the appropriate parts of the knowledge which has already been accumulated by previous generations.
- ii. The new generation should be taught how existing knowledge should be used to develop new products to introduce new processes and production methods, and social services.
- iii. People must be encouraged entirely new ideas, products, processes, and methods through creative approaches.

These arguments make it obvious that investment in human capital development is a way of investing in knowledge, skills and productivity of the workforce (Swanson, 2001). Becker (1964) clearly stated that human capital embraces the productive capabilities that bring values in investing in the skills of the workforce. The human capital theory is very appropriate for this study because it emphasizes the need for investing in education through building the workforce. In this case, the workforce is Clothing and Textiles students that needs the various competencies for pattern making in the garment production industry. The theory is simply saying that investing in students' development of the various competencies in pattern making will produce experts that can fit into the garment production industry and bring about all round development of the society.

Purpose of the Study

The main purpose of the study was to determine the competency improvement needs of tertiary institution Clothing and Textiles students in pattern making for large scale garment production in Anambra State. Specific objectives include to:

1. Find out the demographic characteristic of Clothing and Textiles students in Anambra State.
2. Determine the competency improvement needsof Clothing and Textiles students in illustration of stylesfor large scale garment production in Anambra State.
3. Assess the competency improvement needs of Clothing and Textiles students in body measurement for different sizes (S, M, L) for large scale garment production in Anambra State.

Research Questions

The following research questions were raised in the study:

1. What are the demographic characteristic of Clothing and Textiles students in Anambra State.
2. What are the competency improvement needs of Clothing and Textiles students in illustration of styles for large scale garment production in Anambra State?
3. What are the competency improvement needs of Clothing and Textiles students in body measurement for different sizes (S, M, L) for large scale garment production in Anambra State?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

1. There is no significant difference between the mean ($\bar{X}$) need ratings of male and female students on illustration of styles for large scale garment production in Anambra State.
2. There is no significant difference between the mean ($\bar{X}$) performance ratings of male and female students on body measurement of different sizes (S, M, L) for large scale garment production.

METHOD

Research Design

The study adopted the ex-postfacto 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 (Avedian, 2014). According to Isaac and Michael (1997), survey research is used to answer questions that have been raised, to solve problems that have been posed or observed, to assess needs and set goals, to determine whether or not specific objectives have been met, to establish baselines against which future comparisons can be made, to analyze trends across time, and generally, to describe what exists, in what amount, and in what context.

Population of the Study

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 in Anambra State. The population size of three-hundred and sixty-three (363) students is made up of thirty (30) students from Federal College of Education, Umunze, forty (40) students from NwaforOrizu College of Education, Nsugbe, twenty-four (24) students from Anambra

State Polytechnic, Mgbakwu, and two hundred and nineteen (219) students from Federal Polytechnic, Oko.

Sample and Sampling Techniques

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, Umuze, and NwaforOrizu College of Education, Nsugbe) and 2 Polytechnics (Anambra State Polytechnic, Mgbakwu, and Federal Polytechnic, Oko) in Anambra State was used for the study.

Research Instrument

The research instrument used to collect data from the respondents was a structured questionnaire titled: "Competency Improvement Needs of Clothing and Textiles Students in Pattern Making Questionnaire (CINCTSPMQ)". The questionnaire comprised of three sections, that is Section A and B. Section A contains the bio data of respondents (sex and type of school). Section B is made up of 24 items generated from the purpose of the study and review of literature. They are arranged in 2 sub-sections, with regards to the competencies needed by students in the following order: illustration of styles (11 items), body measurements (13 items). 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

Validation of Instrument

The questionnaire was subjected to face validation through the comments and suggestions of five experts, that is, the supervisor, three other lecturers from the Department of Vocational Education (Home Economics and Agricultural Education Units), and an expert from the Department of Measurement and Evaluation, Faculty of Education, Delta State University, Abraka. Their comments and suggestions were used to produce the final instrument that was used for the study.

Reliability of Instrument

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 and C, respectively. This indicates that the instrument is reliable and adequate for the study, since the reliability coefficient is greater than 0.60 as suggested by Straub, et al. (2004) as the benchmark for the reliability of a research instrument.

Method of Data Collection

A total of three hundred and sixty-three (363) copies of questionnaire were administered to Clothing and Textiles students in the Colleges of Education and

Polytechnics used for the study. This was done with the help of four research assistants who were briefed by the researcher on how to administer the instrument to obtain necessary information for the study. They ensured that they retrieved the questionnaires immediately responses were provided. Out of 363 copies of questionnaires that were administered, 320 copies representing 88.15% were completely filled, retrieved and used for the study.

Method of Data Analysis

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. Percentages were used to analyze the demographic data of the respondents. Research Questions 1 to 5 in Section B part of the questionnaire was analyzed using the Improvement Need Index. The competency improvement needs of Clothing and Textiles students was determined by: determining the weighted mean ($\bar{X}_n$) of the need scale and the weighted mean ($\bar{X}_p$) of the performance scale for each item. Furthermore, the performance gap was determined by finding the difference between the values of $\bar{X}_n$ and $\bar{X}_p$.

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

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.

For Research Question 6 and 7 in Section C part of the questionnaire, mean ($\bar{X}$) and Standard Deviation (SD) was used to analyze the data. Since it was designed on a 4-point rating scale, 2.50 served as the benchmark for agreeing or disagreeing to each of the items. Hypotheses were tested with t-test at 0.05 level of significance. A hypothesis was accepted when the table value was greater than 0.05, and rejected when the table value was less than or equal to 0.05.

RESULT AND DISCUSSION

Table 1: Demographic characteristic of Clothing and Textiles students

Variables	Frequency (F)	Percentages (%)
Sex		
Male	5	1.6
Female	315	98.4
Total	320	100

Result in table 1 shows the demographic characteristic of Clothing and textiles students in Anambra state. The male students were 5 representing 1.6% while females students were 315 representing 98.4% that are offer Clothing and textile course in their institutions. Indication is that all the students in the Clothing and textiles area of specialization engage in its teaching and learning, though there were few male students.

Research Question 1

What are the competency improvement needs of Clothing and Textiles students in illustration of styles for large scale garment production in Anambra State?

Table 2: Performance Gap Analysis of the Mean ($\bar{X}$) Responses of Clothing and Textiles Students on Illustration of Styles (n = 320)

S/N	Illustration of Styles Competencies	$\bar{X}_n$	$\bar{X}_p$	PG ($\bar{X}_n - \bar{X}_p$)	Remark
Ability to:					
1.	visualize ideas	4.44	3.99	0.45	CIN
2.	create designs for garments	4.63	2.89	1.74	CIN
3.	sketch styles using pencils	4.49	4.02	0.47	CIN
4.	sketch styles using computer software	4.75	2.03	2.72	CIN
5.	draw clothing styles using different lines	4.52	2.52	2.00	CIN
6.	use different shapes to create styles	4.48	2.52	1.96	CIN
7.	sketch styles that can be used in clothing catalogues	4.55	2.56	1.99	CIN
8.	use good sense of proportion in sketching figures	4.52	3.07	1.45	CIN
9.	communicate fashion ideas through sketching/drawings	4.50	3.06	1.44	CIN
10.	use fashion sketching to record inspirations, ideas on paper	4.53	3.03	1.50	CIN
11.	use the right tools to make perfect patterns	4.54	3.01	1.53	CIN

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

Source: Field Work (2022)

Result from Table 2 shows the competency improvement needs of Clothing and Textiles students in illustration of styles for large scale garment production in Anambra State. On the need scale, the mean scores ranged from 4.44 - 4.75, that of the performance scale ranged from 2.03 – 3.99, while that of the performance gap shows a high Improvement Need Index (INI) of 0.45 – 2.72, depicting that students have high improvement needs for all the competencies on illustration of styles for large scale garment production in Anambra State. However, item 4 (ability to sketch styles using computer software, 2.72) and 5 (ability to draw clothing styles using different lines, 2.00), respectively, had the highest INI.

Research Question 2

What are the competency improvement needs of Clothing and Textiles students in body measurement for different sizes (S, M, L) for large scale garment production in Anambra State?

Table 3: Performance Gap Analysis of the Mean ($\bar{X}$) Responses of Clothing and Textiles Students on Body Measurement (n = 320)

S/N	Body Measurement Competencies	$\bar{X}_n$	$\bar{X}_p$	PG ($\bar{X}_n - \bar{X}_p$)	Remark
Ability to:					
1.	identify the parts of the body to be measured	4.01	3.09	0.92	CIN
2.	take accurate measurements of the body using appropriate tape measure	4.04	3.06	0.98	CIN
3.	observe the standard principles of measurement while taking body measurement	4.17	3.03	1.14	CIN
4.	measure different parts of the body	3.97	3.04	0.93	CIN
5.	measure upper body parts	3.92	3.97	-0.05	INN
6.	measure lower body parts	3.95	3.98	-0.03	INN
7.	measure the crotch	4.07	3.99	0.08	CIN
8.	measure the ankle	4.02	3.98	0.04	CIN

S/N	Body Measurement Competencies	$\bar{X}_n$	$\bar{X}_p$	PG ($\bar{X}_n - \bar{X}_p$)	Remark
9.	record correct body measurements	3.98	3.97	0.01	CIN
10.	use manual body measurement technique such as tape measure	3.99	3.96	0.03	CIN
11.	use computerized body scanning to take measurement	4.57	2.11	2.46	CIN
12.	add ease allowances when measuring the body where needed	4.48	2.32	2.16	CIN
13.	develop size charts for various body sizes	4.51	2.14	2.37	CIN

Key: $\bar{X}_n$ = Mean of Need Scale; $\bar{X}_p$ = Mean of Performance Scale; PG = Performance Gap;

CIN = Competency Improvement Needed; INN = Improvement Not Needed

Source: Field Work (2022)

Table 3 presents the competency improvement needs of Clothing and Textiles students in body measurement for different sizes (S, M, L) for large scale garment production in Anambra State. On the need scale, the mean scores ranged from 3.92 - 4.57, that of the performance scale ranged from 2.11 – 3.99, while that of the performance gap shows a high INI of 0.01 – 2.46 for 11 items, indicating that students have high improvement needs for all those competencies on body measurement for large scale garment production in Anambra State. The remaining two items (Item 5 and 6) had performance gap of -0.03 and -0.05, showing that students do not need improvement in those competencies. However, the highest INI were recorded for items 11 (ability to use computerized body scanning to take measurement, 2.46), 13 (ability to develop size charts for various body sizes, 2.37) and 12 (ability to add ease allowances when measuring the body where needed, 2.16).

Hypothesis 1: There is no significant difference between the mean ($\bar{X}$) need ratings of male and female students in illustration of styles for large scale garment production in Anambra State.

Table 4: Thet-test Analysis of the Mean ($\bar{X}$) Need Ratings of Male and Female Students on Illustration of Styles

Sex	N	$\bar{X}$	SD	df	T	P	Decision
Male	5	4.80	0.45	318	0.23	0.82	Not Significant
Female	315	4.75	0.50				

Significant Level = ($P > 0.05$)

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

Source: Field Work (2022)

The result in Table 4 showed a t-value of 0.23 and a p-value of 0.82 at 0.05 alpha value. Since the p-value was greater than the alpha value, the null hypothesis was accepted, showing that there was no significant difference between the mean ($\bar{X}$) need ratings of male and female students in illustration of styles for large scale garment production in Anambra State.

Hypothesis 2: There is no significant difference between the mean ($\bar{X}$) performance ratings of male and female students in body measurement of different sizes (S, M, L) for large scale garment production.

Table 5: The t-test Analysis of the Mean ($\bar{X}$) Performance Ratings of Male and Female Students on Body Measurement of Different Sizes

Sex	N	$\bar{X}$	SD	Df	T	P	Decision
Male	5	4.00	1.00	318	0.03	0.97	Not Significant
Female	315	3.99	0.85				

Significant Level = ($P > 0.05$)

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

Source: Field Work (2022)

From Table 5, the t-test analysis showed a t-value of 0.03 and a p-value of 0.97 at 0.05 alpha value. The null hypothesis was therefore accepted since the p-value is greater than 0.05.

This signifies that there was no significant difference between the mean ($\bar{X}$) performance ratings of male and female students in body measurement of different sizes (S, M, L) for large scale garment production.

Discussion of Findings

Findings showed that all the students in the Clothing and textiles area of specialization engaged in the learning of the course though there were few male students. This is not surprising as Clothing and textiles course are often regarded as more of female domain than male, hence the number of male that are study Clothing and textiles course. Finding is in line with Emeka and Okoh (2024), who reported poor enrollment of male in Home Economics areas such as Clothing and textiles courses and related programmes in tertiary institutions in Anambra State. This low enrolment are caused by myriad of factors such finance, parental influence, societal values, including being a female oriented course.

Finding also shows that students have high improvement needs for all the competencies on illustration of styles for large scale garment production in Anambra State. The competencies include ability to sketch styles using computer software, draw clothing styles using different lines, sketch styles that can be used in clothing catalogues, use different shapes to create styles, create designs for garments, among others. These competencies are related to drawing and sketching of patterns, which is in line with the definition given by Ireland in Amankwa, *et al.* (2015), Hamstech (2015a) that illustration of styles is the transmission of ideas into creative designs through diagrams and drawings. The findings are in agreement with Fashion Capital (2002), Azonuche (2015) and Hamstech (2019b) who reported that the competencies needed for illustration of styles include ability to create designs using imaging software, visualizing of ideas by fashion designers, sketching drawings using various mediums, productions of drawings and layouts, communicating fashion ideas through sketches, layouts, drafts, drawings, among others. There was no significant difference between the mean ($\bar{X}$) need ratings of male and female students in illustration of styles for large scale garment production in Anambra State, implying that sex is not a factor that determine the needs of students in illustration of styles.

Furthermore, finding showed that students have high improvement needs for 11 competencies on body measurement for large scale garment production in Anambra State. Ability to use computerized body scanning to take measurement had the highest INI. Finding supports Aldrich (2008) and Ashdown (2007) who stated that computerized body scanning

provides multidimensional data which have the potential to provide more reliable standard body measurement for developing standard size categories and fitting patterns (Azonuche, 2019). Other competencies identified by the study are ability to develop size charts for various body sizes, add ease allowances when measuring the body where needed, measure various parts of the body, among others. These competencies are very important to a pattern maker as Bond (2008) opined that the accuracy of manual body measurements depends on the possession of these skills by the pattern maker.

The remaining two items, that is measuring lower body and upper body had low INI revealing that students do not need improvement in those competencies. This simply means that students can effectively measure these body parts with ease, probably due to the fact that they have been taught by their lecturers. However, there was no significant difference between the mean ($\bar{X}$) performance ratings of male and female students in body measurement of different sizes (S, M, L) for large scale garment production. This means that the competencies needed by Clothing and Textiles students in body measurements of different sizes is not influenced by sex.

Findings

The followings findings were derived from the study:

1. Eleven (11) competencies in illustration of styles were needed for improvement by Clothing and Textiles students. They include ability to sketch styles using computer software, draw clothing styles using different lines, among others.
2. Eighteen(18) competencies in body measurements were needed for improvement by students, amongst which are ability to use computerized body scanning to take measurement, and develop size charts for various body sizes.
3. There was no significant difference between the mean ($\bar{X}$) need ratings of male and female students in illustration of styles for large scale garment production in Anambra State.

There was no significant difference between the mean ($\bar{X}$) performance ratings of male and female students in body measurement of different sizes (S, M, L) for large scale garment production.

CONCLUSION

Students Competency improvement need in Clothing and Textiles for large scale garment production is crucial to fashion designers productivity in this area. Hence, findings showed that few male offer Clothing and textiles than the females, the students have high improvement needs for all the competencies on illustration of styles for large scale garment production and students have high improvement needs for most competencies on body measurement for large scale garment production in Anambra State.

Recommendation

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

1. Male student should be encouraged to enroll in Clothing and Textiles through scholarship and grants supports for their programme of study.
2. Adequately equipped modern laboratories facilities and equipment should be provided in institutions for the provision of impactful learning.
3. Empowerment should be given to graduates of Clothing and Textiles for self reliance, small scale enterprises and entrepreneurship.

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