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Students' Views on Teaching Learning Materials Used in Implementing the Fashion Design Curriculum at Takoradi Technical University, Ghana

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Abstract

The study evaluated students' views on teaching and learning materials (TLM) in fashion design education at Takoradi Technical University in Ghana. Using a descriptive research approach, data were collected from 110 randomly selected Higher National Diploma students through a closed-ended questionnaire. ANOVA analysis revealed significant differences in perceptions of TLM usage among academic levels ($F(2, 11.72)$; $p < 0.05$). Post hoc comparisons showed no significant difference between Level 100 and Level 200 students ($p = 0.390$), but Level 100 students had significantly higher perceptions than Level 300 students ($p = 0.002$, mean difference = 0.38), and Level 200 students also scored higher than Level 300 students ($p = 0.041$, mean difference = 0.24). Overall, perceptions of TLM use decline as students' progress in their studies. The students believed that the use of TLM by their facilitators helps them understand complex issues more effectively and enables them to ask questions for clearer understanding. The null hypothesis was rejected, and it was concluded that students at Levels 100, 200, and 300 differed significantly in their perceptions of the utilisation of TLMs in the Fashion Design and Technology department of Takoradi Technical University. The study concludes that while teaching and learning materials serve important functions in fashion design education, their implementation at Takoradi Technical University faces significant challenges, with student satisfaction declining markedly as they progress through academic levels, indicating systematic problems in resource quality, availability, and utilization that may compromise graduate preparedness for industry practice. The study recommends that Takoradi Technical University should implement immediate faculty development programs to improve teaching material utilization, as current low usage rates of reference books and industrial equipment inadequately prepare students for industry practice. The institution should establish quality assurance mechanisms to address why senior students report declining satisfaction with educational resources, ensuring that advanced courses receive enhanced rather than reduced material support. Industry partnerships should be strengthened through mandatory workshops and facility visits to bridge the gap between academic training and professional requirements. Administrative oversight should be enhanced to resolve the disconnect between faculty reports and student experiences, while curriculum restructuring should prioritize resource allocation that aligns with evolving fashion industry demands and maintains educational quality across all academic levels.

Keywords: *Fashion, student views, teaching learning materials, facilitators, Takoradi Technical University, Ghana*

1.0 Introduction

Instructional materials play a crucial role in education, significantly enhancing student comprehension, accommodating diverse learning styles, and fostering active participation. These resources are essential for clarifying complex concepts, incorporating visual aids, and catering to various preferences, thereby directly boosting student engagement. By effectively supporting the learning process, instructional materials have been proven to improve learners' achievement dramatically. For instance, an educational video offers valuable insights, while a thoughtfully designed worksheet provides essential opportunities for practising newly acquired skills from class (Agordah et al., 2024; Evangelou, 2023). Teaching and learning materials are essential in enhancing student learning within the classroom. Educators utilise these resources to ensure that the teaching process is effective. Furthermore, these materials support learners in achieving their defined learning outcomes following classroom instruction. The use of teaching learning materials engages students' interests, stimulates critical thinking, inspires creativity, and encourages repeated exploration. Teaching and learning resources capture both minds and emotions while building on learners' cultural and linguistic backgrounds (Moustafa & Al-Rashaida, 2024). They improve students' knowledge, skills, and abilities, monitor information retention, and support their development and growth.

Developing teaching materials is a dynamic process that creates practical resources to foster meaningful learning experiences for students. This involves creating, adapting, and refining instructional materials tailored to meet the diverse needs of learners and the specific contexts in which teaching and learning occur. Beyond supporting general learning, educational materials are essential for assisting teachers in their professional responsibility of implementing differentiated instruction (Onyishi & Sefotho, 2020). This approach involves customising lessons to accommodate the various learning styles and abilities found within the classroom. Teaching and learning resources go beyond merely enhancing the appeal of the educational process; they are essential in fostering active learning, developing diverse skills, and instilling positive values and attitudes in students (Abdulla, 2024). The teaching and learning process is crucial for the development of individuals and societies. By providing quality education, we contribute to establishing a more just and equitable world. Through this, fashion design graduates can effectively practice their skills in the fashion industry.

The Fashion Design and Technology programme at Takoradi Technical University equips students with valuable skills. Upon completing this programme, graduates will be prepared to start businesses or train and employ others. This initiative aims to contribute to reducing the country's unemployment rate. Researchers have highlighted that the fashion sector is highly diverse, continually introducing new products and refreshing existing ones to create job opportunities (MBS Group & British Fashion Council, 2022). This suggests that Fashion Design provides a wide range of career options. As clothing remains a basic necessity, it will consistently offer employment opportunities for graduates as long as there is ongoing demand for it. Implementing a planned program in any area of education and life often encounters challenges. As a result, the program may not be executed according to the standard specifications outlined in the plan, or modifications may be made (Moses et. al, 2024). In extreme cases, learners might abandon the entire program due to these difficulties. Additionally, some implementers may overlook certain aspects of the curriculum during the implementation phase, leading to incomplete plan execution.

Therefore, it is crucial to regularly evaluate and assess important areas of the program to determine whether the established objectives are being met.

According to Wilson (2024), curriculum evaluation not only assesses what students have been taught but also employs a rigorous approach to evaluate how prepared learners are for challenges in their chosen careers. Evaluation of the use of teaching learning materials ensures that the content is well-delivered and remains aligned with modern advancements. Additionally, it helps to identify and remove outdated or irrelevant material from the curriculum. Furthermore, it enhances overall effectiveness and improves the efficiency of curriculum implementation. Evaluating students' perspectives on teaching and learning materials, as well as their effectiveness in supporting the understanding of concepts and skill acquisition, is important in determining the programme's effectiveness. Therefore, this study investigated students' views on the teaching and learning materials used in the implementation of the fashion design curriculum at Takoradi Technical University.

1.1 Statement of the Problem

The Fashion Design curriculum outlines strong objectives; however, the degree to which these objectives are executed in the actual teaching and learning process requires serious attention regarding performance excellence. Effective implementation requires the involvement of all educational stakeholders. These stakeholders include teachers, students, administrators, employers, and society. Nevertheless, teachers play a pivotal role in implementing the programme (Hadisaputra et al, 2024; Katshuna et al, 2023). The availability and adequacy of resources, along with their practical use, play a crucial role in the implementation and success of a programme (Achuba et al, 2025). Furthermore, the selection of appropriate instructional resources has a significant influence on this process. It is vital to consider learners' perspectives on how these instructional resources impact their acquisition of knowledge and skills necessary to achieve the programme's objectives.

Learners must be able to identify the teaching and learning materials that facilitators use in class, as this skill is essential for effectively practising and applying what they have learned. Therefore, this study investigates fashion design students' ability to recognise the teaching and learning materials employed in the implementation of the fashion design curriculum at Takoradi Technical University. The scarcity of empirical data regarding learner views on the use of teaching-learning resources to facilitate the acquisition of skills and knowledge in the fashion programme challenges curriculum improvement. It hinders the attainment of knowledge by graduates. This lack of information complicates the identification of the strengths and weaknesses of the implementation process.

1.2 Objectives of the Study

i. Ascertain the Fashion Design students' ability to identify TLMs used in implementing the Fashion Design curriculum.
ii. Examine students' perspectives on how teaching and learning materials aid in the acquisition of skills and knowledge in Fashion Design.

1.3 Hypothesis

H_{O1}: Students' academic levels will not significantly affect their views of the use of TLMs in implementing the Fashion Design and Textiles curriculum at Takoradi Technical University.

2.0 Review of Related Literature

The review of related literature was organized into sections, each systematically examining studies, and contextual evidence relevant to the study variables.

2.1 Teaching Learning Materials for Implementing Fashion Design Curriculum.

Teaching and learning materials are essential resources for implementing the curriculum. They encourage learners to develop their thinking skills as they become accustomed to remembering and practising what they have been taught. When teaching and learning materials are effectively integrated into the teaching process, they support a strong learning process; however, the lack of such materials leads to a weak learning process. According to Oo et al. (2024), teaching and learning materials in fashion design can be categorised into six main groups: design software, fabric samples, sewing machines, tools for pattern making, sketching, and construction. The fundamental tools in each of the six categorical groups are vital for fostering learners' interest and encouraging their progression to more sophisticated and technologically advanced resources. These materials are essential for building practical skills and theoretical knowledge in areas such as design principles, textile technology, millinery and garment construction (Zamiri, 2024). Effective TLMs assist students in grasping concepts, practising skills, and establishing a strong foundation for a career in the fashion industry.

Teaching and learning materials play a vital role in equipping learners with the essential skills needed in the industrial sector. These resources not only lay a strong foundation for successful industrial internships and practical attachments but also improve the overall educational experience (Agordah et al, 2023). Therefore, learners must identify and use suitable teaching and learning materials effectively, as this skill is crucial for implementing the curriculum successfully. A learner's ability to identify these materials depends on the resources that facilitators use to incorporate them during the teaching and learning process. Consequently, if the necessary teaching and learning materials are used, instruction may become too theoretical, resulting in a less engaging educational experience. Hence, this study explores the ability of Fashion Design students to identify TLMs utilised in implementing the Fashion Design curriculum.

2.2 The usefulness of teaching learning materials in developing skills and knowledge in fashion design.

The significance of teaching and learning materials in implementing a fashion design curriculum is paramount. These materials are crucial for enhancing the educational experience, as fashion design technology is inherently a skill-based programme of study. Effective teaching and learning materials, such as textbooks, digital resources, and hands-on tools, provide students with the foundation to develop their creativity and technical skills (Wilson, 2024). They facilitate a deeper understanding of the concepts and techniques essential to the field, enabling students to engage actively in practical applications. By incorporating a variety of resources tailored to different learning styles, educators can create a comprehensive learning environment that prepares students for the dynamic and competitive nature of the fashion industry.

Effective learning requires learners to acquire the necessary knowledge and understanding of the various teaching and learning materials that facilitators utilise. Teaching and learning materials come in different forms, and their effectiveness largely depends on how they are presented to learners. Technological advancements have permeated every industry, including fashion, and these

technologies are continuously evolving, leading to new production methods (Mabasa et al., 2024; Xiaoli, 2024). The successful implementation of the fashion design curriculum in technical universities depends on several key factors, primarily the students' familiarity with the teaching and learning materials (Ahmed et al, 2024). Enabling learners to effectively acquire the necessary knowledge and skills, they must not only understand the materials but also engage in practical, hands-on activities. This practical experience enables students to apply the concepts and techniques they have learned in real-world situations, reinforcing their understanding and increasing their confidence. Ultimately, a comprehensive approach that combines theoretical knowledge with practical application is vital for achieving the curriculum's objectives.

Gathering feedback from learners about the teaching and learning materials used in fashion design education is essential for several reasons. Understanding their perspectives can offer valuable insights into how these resources support the acquisition of both knowledge and practical skills within the field (Obilor, 2019). By analysing students' experiences and preferences, educators can determine which materials are most effective and engaging, leading to improvements in the curriculum. This process ultimately boosts the overall effectiveness and efficiency of curriculum delivery, ensuring that students are well-prepared for success in the fashion design industry. This study aims to examine the perspectives of fashion design students on the various teaching and learning materials used at the fashion department of Takoradi Technical University. The study investigates how these resources influence their understanding of key concepts, affect their skill development, and contribute to their readiness for real-world industrial scenarios. By gathering insights from the students, this research seeks to emphasise the importance of these materials in their educational journey and to identify any gaps or areas for improvement in the current curriculum implementation.

3.0 Research Methodology

The study employed a case study approach to examine students' perspectives on using teaching and learning materials for delivering the Fashion Design curriculum at Takoradi Technical University in the Western Region of Ghana. The Fashion Design and Technology Department is one of six programmes offered within the School of Applied Arts. A total of 110 students from the Fashion Design Department at Takoradi Technical University participated in this study. The department was selected due to my personal experience as a lecturer there since 2007. Limited evidence exists regarding learners' views on utilising learning materials in lesson delivery. Therefore, this research explored students' opinions on how teaching and learning materials support their skill development.

3.1 Population for the study

The targeted population included all Takoradi Technical University Fashion Design and Technology students, including those pursuing a Higher National Diploma, Bachelor of Technology, and Diploma. However, the study focused on only those with a Higher National Diploma, which is the oldest program being offered by the Fashion Department. The complete target population for a research study is not always easily accessible. Therefore, researchers often focus on a specific portion, such as the study population or sample (Kazerooni, 2001).

3.2 Sample and Sampling Procedure

A simple random sampling method was used to select participants for the study. A total of 110 students were chosen from a population of 168 Higher National Diploma students in fashion design. The sample consisted of 37 students from level 300, 49 students from level 200, and 24 students from level 100. To ensure each student had an equal chance of being selected, their registration numbers were written on pieces of paper and placed in a box, using the fishbowl technique for random selection. In addition to the student participants, six facilitators who teach various subjects, including pattern making, garment construction, millinery, beauty culture, and fabric decoration, were also randomly selected to participate. According to Mugenda and Mugenda (2003), a sample size of between 10% and 30% is sufficient to represent a study population when the total number of individuals is fewer than 10,000. Thus, the 110 students selected represent 66% of the total population pursuing the Higher National Diploma in fashion design.

3.3 Instruments

A questionnaire was developed to gather data from students. It was created using clear and simple language to enhance comprehension among respondents. The questionnaire consisted of closed-ended questions, which were selected for their ease of coding and scoring, facilitating straightforward data analysis. A Likert scale, ranging from two to six points was employed to structure the questionnaire.

3.4 Pre-Test

The questionnaire was pre-tested to eliminate any ambiguity and ensure that participants clearly understood the questions. Teaching-learning materials were classified as "AU" for always used and "NU" for not used. Experts reviewed the instruments to make necessary corrections and enhance their effectiveness. This expert review aimed to ensure the face validity of the questionnaire, confirming its ability to gather the intended information accurately. Furthermore, the instrument was tested for reliability in the Fashion Design and Textiles Department at a different technical university.

3.5 Data Collection Procedure

Data was collected from students and facilitators over three days, with each day dedicated to a specific year group. Data collection occurred on Tuesday, Wednesday, and Thursday. Each day, two facilitators from the HND level who teach subjects such as garments, patterns, millinery, beauty culture, and fabric decoration were randomly selected to participate, regardless of how many were present that day. All participants were informed of their right to participate voluntarily and were made aware that they could withdraw from the research at any time.

3.6 Data Analysis

The data were analyzed using both descriptive and inferential statistical methods to address the research objectives and test the stated hypothesis. The quantitative data from student participants were systematically coded and organized for analysis. Descriptive analysis

involved creating percentage tables and bar graphs to summarize and visualize response patterns across different categories of teaching and learning materials. Students' responses regarding their ability to identify teaching and learning materials were categorized based on their perceptions of how facilitators used these resources in classroom instruction. For inferential analysis, appropriate statistical tests were employed to examine relationships between variables, particularly focusing on whether students' academic levels influenced their perceptions of teaching and learning material usage by facilitators. Post-hoc analysis was conducted to identify specific group differences and provide detailed comparisons between academic levels. The analytical approach ensured comprehensive examination of the data while maintaining appropriate standards for statistical interpretation and reporting.

3.7 Ethical Issues

Research involving human subjects is complex and governed by ethical principles (Creswell, 2009). Before data collection, the Head of Department was contacted for permission, and individual consent was also sought from each participant (Christians, 2005). I emphasised that the research would not cause harm and informed participants of their right to withdraw while ensuring their anonymity and confidentiality.

3.8 Limitations

The study examines students' perspectives on utilising teaching and learning materials in lesson delivery within the HND Fashion Design program. Although the study would have included the bachelor's degree program, it is a new initiative, and the first admitted students are currently in their third year when the data were collected. This narrowed scope may affect the generalizability of the findings. Nevertheless, evaluative research is inherently context-specific, meaning that implementation conditions will vary across different environments.

4.0 Findings of the Study

The study's findings were presented in sections.

4.1 Demographic Information of Respondents

The analysis of demographic data presented participants' key details. This information is vital for evaluating whether the study participants accurately mirror the target population, enabling generalisations (Salkind, 2010). Figure 1 shows the age range of HND students in the Fashion Design and Technology department at Takoradi Technical University.

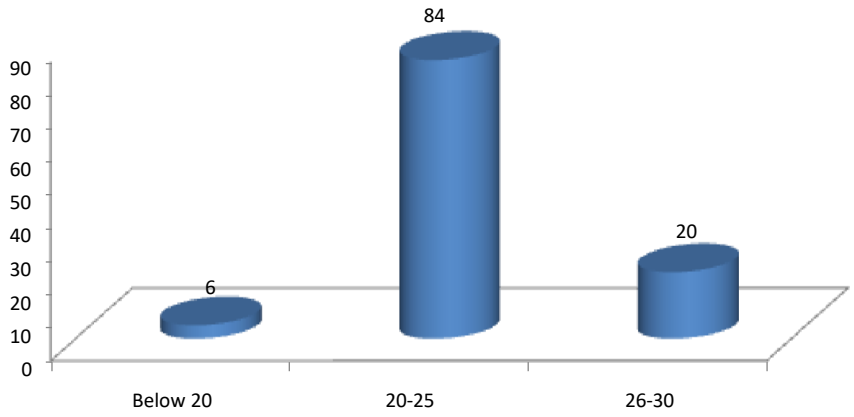

Figure 1: Age Distributions of Fashion Design and Textiles Students

Figure 1 shows that all the students were 30 years old or younger. Most (n=86) of the students involved in the study were youths, mostly between 20 and 25 years old. A good proportion (n=18) were aged between 26 and 30 years and above, while a minority (n=6) were younger than 20. The facilitators' findings on the use of Teaching Learning Materials in their daily teaching aim to help understand the classroom environment. Table 1 presents the results.

Table 1: Facilitators' use of needed TLMs

Group of Teaching/Learning Materials	Yes		No	
	f	%	f	%
Text & Reference Books	2	33	4	67
Practical Tools for Demonstration	5	83	1	17
Sample materials for demonstration	5	83	1	17
Industrial Equipment (cutting and digital machines)	3	50	3	50
Consumables	6	100	00	0

The findings in Table 1 revealed that all six facilitators indicated they use TLMs in their daily teaching, while five (83) reported using practical tools and sample materials for demonstrations. The table indicates that four facilitators (50%) use industrial equipment to help students learn and practice new concepts. Industrial equipment can be quite costly, making it difficult for students to gain hands-on experience. Introducing students to heavy machinery in a school setting is essential. By doing so, they can develop familiarity and competence with these tools before their industrial attachments. The findings also revealed that only two facilitators utilise texts and reference books during their teaching. This situation poses a challenge, as learners find it difficult to practice what they have been taught due to the lack of guidance from lecture notes. To assess the ability of fashion design students to recognise TLMs used in delivering the fashion design curriculum, the students identified potential groups of learning materials employed in class. Figure 2 presents the results as follows.

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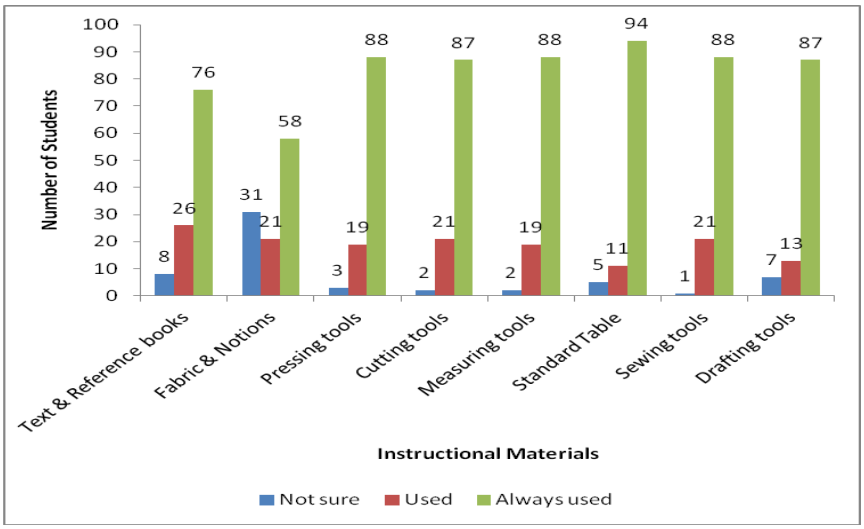

Figure 2: Students' views on teachers' Utilisation of teaching and learning materials.

Figure 2 illustrates students' perspectives on teachers' use of teaching and learning materials (TLMs) for all Fashion Design and Textiles lessons. The data suggests that teachers generally utilise TLMs. The most frequently used TLMS are represented by standard tables (n=94), pressing tools (n=88), measuring tools (n=88), and sewing tools (n=88). These are followed by cutting tools (n=87), drafting tools (n=87), and text and reference books (n=76). Fewer students indicated that fabric and notions were the least frequently used TLMS. However, the findings from the students are not very clear because only 33% of the facilitators indicate the use of reference books and lecture notes in class. Additionally, only 50% of the facilitators reported using industrial cutting machines and digital industrial machines. This could be because students consider cutting tools to be the equivalent of a dressmaker's scissors. The study further examined how the use of the TLMs enhances students' comprehension of content and the application of skills taught by their facilitators. Table 2 displays the results.

Table 2: Students' Views on How Teaching Learning Materials Support Knowledge and Skills Acquisition in Fashion Design.

List of items	Always		Occasionally		Sometimes		Not really		Not at all	
	f	%	f	%	f	%	f	%	f	%
It helps them understand complex concepts.	68(6I.8)		26 (23.6)		16 (14.5)		0 (0)		0 (0)	
It helps them learn how to use them to practice.	72(65.4)		26 (23.6)		12 (10.9)		0 (0)		0 (0)	
Encourage me to ask questions for clarity.	48(43.6)		54(49.0)		8(7.2)		0 (0)		0(0)	
It helps them learn how to use the needed tools.	76(69)		18(16.3)		12(10.9)		4(3.6)		0(0)	

The results in Table 2 indicate that 61.8% of students believe that the TLMs used by their facilitators always help them comprehend complex concepts. Meanwhile, 23.6% indicate that TLMs are used occasionally, even though their usage supports them, and 14.5% say they are sometimes used during teaching; at such times, the learning experience is good, as they are able to understand complex concepts. Regarding skill practise, 65.4% report that they can always practise independently using the TLMs introduced by their facilitators, while 23.6% say they can do so occasionally. In comparison, 10.9% state their facilitators used TLMs sometimes, which helps them to practise. The study further examined how the use of the TLMs enhances students' comprehension of content and the application of skills taught by their facilitators.

4.2 Inferential Results on Fashion Design and Technology Students' Views on TLM Use by Lecturers

Hypothesis

Ho: *Students' academic levels will not influence their perceptions of the use of TLMs in implementing the Fashion Design and Textiles curriculum at Takoradi Polytechnic.*

This analysis was conducted to investigate how students' academic levels affect their understanding of the use of TLM in implementing the Fashion Design curriculum.

Table 3 shows the ANOVA results regarding students' perceptions of their facilitators' use of teaching-learning materials.

Table 3: ANOVA Results on Fashion Design and Technology Students' Views on TLM Utilisation

Utilisation	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	3.110	2	1.556	11.722	0.000
Within Groups	14.197	107	0.132		
Total	17.308	109			

The ANOVA results indicate statistically significant differences between students' academic levels and the use of TLM in the curriculum implementation of fashion design [$F(2, 11.72)$; $p < 0.05$]. Therefore, the null hypothesis was rejected, and it was concluded that students at Levels 100, 200, and 300 differed significantly in their perceptions of the utilisation of TLMs in the Fashion Design and Technology department of Takoradi Technical University. The study also performed a post-hoc test to determine how the means of the categorical variable scores contributed to the observed p-value. Using post-hoc analysis in ANOVA enables researchers to identify which categorical variable means influenced the p-value. Table 4 presents the results of the Tukey HSD post hoc analysis for TLM utilization scores among the different levels of fashion design students. The table includes the mean differences, standard errors, significance values, and confidence intervals for each pairwise comparison.

Table 4: Tukey HSD Post Hoc Comparisons for TLM Utilization by Level

Comparison	Mean Difference (I-J)	Std. Error	Sig.	95% CI Lower	95% CI Upper
100 vs 200	0.14	0.10	0.390	-0.11	0.39
100 vs 300	0.38	0.09	0.002	0.14	0.62
200 vs 300	0.24	0.11	0.041	0.01	0.47

Post hoc comparisons using the Tukey HSD test were conducted to examine pairwise differences in TLM utilisation among the three student levels (100, 200, and 300). The results, as presented in Table 3, showed that there was no statistically significant difference between Level 100 and Level 200 students ($p = .390$). The mean difference of 0.14 suggests that both groups had relatively similar perceptions about the levels of TLM utilisation. However, a statistically significant difference was observed between Level 100 and Level 300 students ($p = .002$), where Level 100 students reported significantly higher perception scores about TLM utilisation than their Level 300 counterparts, with a mean difference of 0.38 (95% CI [0.14, 0.62]). Similarly, the comparison between Level 200 and Level 300 students revealed a significant difference ($p = .041$), with Level 200 students scoring higher on the level of perception about TLM utilisation than Level 300 students, and a mean difference of 0.24 (95% CI [0.01, 0.47]). These findings suggest that TLM utilisation perceptions decline as students progress in level, with Level 300 students reporting significantly lower perceptions of usage compared to Levels 100 and 200.

4.3 Discussions of the Findings

The findings highlight a significant gap in how facilitators utilise instructional materials, especially texts and reference books, with only two facilitators engaging with them. This limited usage restricts students' access to valuable information, impeding their understanding and critical thinking skills. To enhance educational quality, it is crucial to promote a more integrated teaching approach that incorporates diverse resources and provides educators with training. Improving access to these materials is vital for advancing student learning and development.

Only 50% of facilitators indicated they used industrial cutting machines and digital tools; however, as shown in Table 1, 87% of students believed their facilitators used cutting tools during lesson delivery, as illustrated in Figure 2. This may suggest that students perceive cutting tools merely as dressmakers' scissors. Additionally, 50% of students report that the use of Teaching Learning Materials (TLMs) encourages them to ask questions to better understand complex concepts. In comparison, 44% say these materials consistently motivate them to inquire more about them. Notably, 70% of students believe that using TLMs significantly enhances their understanding of content as they learn to use these tools effectively. These findings demonstrate that the availability of TLMs and facilitators' proficiency in utilising them for teaching are key factors in effective learning.

The ANOVA results indicate that students at different academic levels (Levels 100, 200, and 300) perceive the use of Teaching and Learning Materials (TLM) in the fashion design curriculum at Takoradi Technical University differently. The analysis showed a statistically significant value [$F(2, 11.72)$; $p < 0.05$], leading to the rejection of the null hypothesis. This suggests that students'

experiences and perceptions of TLMs differ based on their progress in the programme. Such findings may reflect varying degrees of familiarity, integration, or appreciation of the teaching materials as students advance, highlighting the need to address these differences in curriculum planning and resource allocation.

The Tukey HSD test results highlight differences in students' perceptions of Teaching and Learning Materials (TLM) usage across different academic levels. Firstly, the comparison between Level 100 and Level 200 students shows that the test found no significant difference in perceptions of TLM usage between these two groups, with a p-value of 0.390. This indicates that both Level 100 and Level 200 students have similar views on TLM usage. Conversely, the comparison between Level 100 and Level 300 reveals a significant difference in perceptions ($p = 0.002$). Level 100 students rated their views on TLM utilisation higher than Level 300 students, with a mean difference of 0.38. This suggests that as students progress from Level 100 to Level 300, they tend to view TLM usage less favourably.

Further comparison between Level 200 and Level 300 students also revealed a significant difference ($p = 0.041$), indicating that Level 200 students reported more positive perceptions of TLM than Level 300 students, with a mean difference of 0.24. Overall, these findings suggest a trend where views on TLM utilisation decline as students progress in their academic journey. This may prompt consideration of why students in higher levels view TLM less favourably and whether changes in teaching methods, academic expectations, or student engagement influence these perceptions. Understanding these dynamics is vital for improving educational strategies and ensuring that TLM effectively supports student learning at all levels.

5.0 Conclusion

The study concludes that teaching and learning materials play a fundamental role in fashion design education at Takoradi Technical University, though their implementation reveals significant challenges that undermine program effectiveness. While facilitators generally utilize TLMs in their instruction, the research demonstrates a troubling pattern where student satisfaction with these materials decreases substantially as they progress through their studies. Level 100 students maintain positive perceptions of TLM usage, Level 200 students show moderate satisfaction, but Level 300 students report significantly lower appreciation for the teaching materials provided. This declining trajectory suggests that either the quality of materials deteriorates at advanced levels, or more experienced students develop greater awareness of the inadequacies in resource provision. The disconnect between facilitator reports and student perceptions further indicates systematic problems in how teaching materials are selected, implemented, and evaluated within the program.

The study's findings reveal that despite the theoretical importance of TLMs in skill-based education, the Fashion Design program at Takoradi Technical University faces substantial implementation challenges that may compromise graduate preparedness for industry practice. The limited use of reference materials by only one-third of facilitators, combined with restricted access to industrial equipment by half the teaching staff, suggests resource constraints that directly impact educational quality. The statistical evidence showing that senior students hold the most critical views of TLM utilization indicates that those closest to graduation and industry entry perceive significant gaps in their educational preparation. This pattern challenges the assumption that practical TLM usage automatically leads to improved learning outcomes, suggesting that the

program requires substantial restructuring to align teaching materials with industry requirements and student needs across all academic levels.

6.0 Recommendations

Based on the findings, the study recommends that immediate action should be taken to address the systematic decline in student satisfaction with teaching and learning materials as they progress through their academic levels. Faculty development programs should be implemented to ensure all facilitators effectively integrate textbooks and reference materials into their instruction, given that only 33% currently utilize these essential resources. The university should invest in expanding access to industrial equipment and ensure that all facilitators receive training on modern machinery usage, as the current 50% utilization rate inadequately prepares students for industry requirements. Quality assurance mechanisms should be established to regularly evaluate TLM effectiveness across all academic levels, with particular attention to why Level 300 students report significantly lower satisfaction rates. The curriculum should be restructured to ensure that advanced-level courses receive adequate resource allocation and that teaching materials become more sophisticated rather than diminishing in quality as students progress.

The study further recommends establishing comprehensive industry partnerships to bridge the gap between academic training and professional practice requirements. Regular workshops should be conducted where students can interact directly with various types of machinery under expert supervision, emphasizing both safety procedures and operational techniques that reflect current industry standards. Manufacturing facility visits should be integrated into the curriculum as mandatory components rather than optional activities, allowing students to observe real-world applications of the processes they study and understand industry expectations. The university should develop standardized assessment tools to measure TLM effectiveness from both student and industry perspectives, ensuring that educational materials remain relevant to evolving fashion industry demands. Administrative oversight should be strengthened to monitor resource utilization patterns and address the concerning disconnect between facilitator reports and student experiences, particularly focusing on why senior students who are closest to industry entry express the most significant dissatisfaction with their educational preparation.

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