FACTORS AFFECTING TEACHING, LEARNING AND ACADEMIC PERFORMANCE IN THE DEPARTMENT OF GRAPHIC DESIGN TECHNOLOGY: TAKORADI TECHNICAL UNIVERSITY – GHANA

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ABSTRACT

This study was carried out to evaluate factors affecting teaching, learning and academic performance of the Graphic Design Students in the Department of Graphic Design Technology, Faculty of Applied Arts and Technology, Takoradi Technical University in Ghana. The objectives of the study were to identify the factors and analyse their effect on teaching, learning and academic performance of the Graphic Design Students. An expert purposive sampling method was employed. The research design employed was qualitative since the nature of this study is dependent solely on a wide range of observations, document reviews, verbal data from experienced, course lecturers and experts well-knowledgeable in Graphic Design and Students. Data for this study were collected from two key sources, namely: primary sources through interaction and observation and secondary sources through literary sources. Thematic and descriptive analyses were employed to present and analyse the data. The study concluded that lack of adequate spacious studios, laboratories equipped with state of the art equipment, materials, Course Lecturers and Technicians who are experts in their areas of specializations are the key factors affecting teaching, learning and academic performance of the Graphic Design Students. The study recommended that Takoradi Technical University Governing Council, in collaboration with the Takoradi Technical University Management should resource the Department of Graphic Design Technology with spacious studios and laboratories, equipped with state of the art equipment and materials, provide modern printing equipment to aid in acquisition of hands-on skills, competences and managerial aptitudes by the students, offer employment to Course Lecturers and Technicians who are experts in their areas of specialization and source funding from the Government of Ghana through the Ministry of Education in order to augment Takoradi Technical University's effort in the provision of adequate material, physical and human resources needed to train Graphic Design Students holistically to improve their academic performance.

Key Words: Factors, Affecting, Teaching, Learning and Academic Performance, Resources, Graphic Design Students.

1. INTRODUCTION

As part of the Ghana Educational Reforms which began in the 1980s, Takoradi Polytechnic (now Takoradi Technical University – TTU) and five (5) other similar Polytechnics in Ghana were upgraded by the Polytechnic Act 321 (Provisional National Defence Council (PNDC) Law 1993) to become part of the Ghana Tertiary Education System. The upgraded Polytechnics per law began to offer Higher National Diploma (HND) programmes in the 1993/1994 academic year. These reforms mandated the Polytechnics to compliment the role of the Universities to increase access to tertiary education for the training of middle and higher-level manpower for the socio-economic

development of the country (TTU 2020 Diary). Again in 2016, an Act of Parliament, the Technical University Act 2016 (Act 922) subsequently converted eight (8) of the ten (10) Polytechnics in Ghana out of which Takoradi Polytechnic met the requirements. To this end, Takoradi Polytechnic Council adopted the name "Takoradi Technical University," which has been duly registered with the Registrar General's Department of Ghana, thus making the institution a fully-fledged Technical University (TTU 2020 Diary). The conversion from Polytechnics to Technical Universities (TUs) in 2016 has put in place the teaching and learning of Commercial Art Programmes including Graphic Design Option. The teaching and learning in the Technical Universities are geared towards affording the Graphic Design Students to acquire hands-on skills, competences and managerial aptitudes that will make them self-reliant and employable in Graphic Design world of work or self-employed after graduation.

Based on these two (2) Acts (Polytechnic Act 321 – PNDC Law 1993 and Technical University Act 2016 – Act 922), TTU introduced a four (4) semester (two (2)-year) Bachelor of Technology (B-Tech Top-up) Degree, which was granted accreditation in 2010, to provide the academic progression and the much needed specialised abilities required by the industries/employers of the HND graduates after all the necessary accreditation processes had been followed and approved. This initiative of TTU was followed with other three (3) accredited academic programmes, namely Four (4)-Year Bachelor of Technology (4-Yr. B-Tech) and Two (2)-year, research Master of Technology (M-Tech) in Printing and M-Tech in Graphic Design, which have been running since 2020/2021 and 2017/2018 academic years respectively. It must be stated here that among the Technical Universities in Ghana, it is only the Department of Graphic Design Technology (DGDT) of the Faculty of Applied Arts and Technology (FAAT), TTU that runs two (2) M-Tech programmes – in Graphic Design and in Printing. The DGDT is the most vibrant, with the highest students' population among the six (6) departments within FAAT, TTU, all offering different types of Commercial Art programmes with Options in Graphic Design, Sculpture, Ceramics, Painting, Textile and Fashion.

In line with the vision and mission of TTU, the DGDT's vision and mission are: to chunk out world-class manpower to provide excellent Art Education to support industries, to provide human resource development in Ghana and abroad, to provide tertiary education in the field of graphic design through the application of arts, and promote teaching and research in the graphic world respectively. Graphic Design programmes offered are:

1. Three (3)-Year (or Six (6) Semesters) HND in Commercial Art (Graphic Design Option).
2. One (1)-Year B-Tech Top-Up in the following Options:
   a. Multimedia and Photography
   b. Advertising and Packaging
   c. Animation and Illustration
   d. Pre-press and Printing Technology
3. Four (4)-Year (or Eight (8) Semesters) B-Tech
4. Two (2)-Year (or Four (4) Semester) Research M-Tech in Graphic Design
5. Two (2)-Year (or Four (4) Semester) Research M-Tech in Printing

From the above programmes offered and in consonant with embedded tenets in the conversion Act of Parliament, the Technical University Act 2016 (Act 922) of Ghana, the Department of Graphic

Design Technology (DGDT) in tandem with the core objectives of TTU has as its core objectives to provide:

1. The best quality teaching in all the course inherent in the Graphic Design Programme,
2. Hands-on skills and competences in all the courses it offers, and
3. The practical managerial aptitudes needed for the employment space or self-employment after graduation.

The conversion of the Polytechnics into Technical Universities in 2016 has put in place the teaching and learning of Graphic Design programmes in the various institutions, but in the DGDT, FAAT, TTU there are problems affecting teaching and learning, which in turn affects the academic performance of the Graphic Design Students. It is against this background that this study was carried out to identify the factors that are affecting teaching, learning and academic performance of the Graphic Design Students and outline recommendations that would enhance teaching and learning, and promote a better academic performance in the students.

2. DISCUSSIONS AND FINDINGS

Writing on education, Olufemi, Adeliran & Oyeduran (2018) state that education is one of the most important aspects of human resource development. The students' performance plays an important role in producing best quality graduates who will become great leaders and manpower for the country thus responsible for the country's socio economic development. They continued by stating that academic achievement is one of the major factors considered by employers in hiring workers especially for the fresh graduates, thus students have to put the greatest effort in their study to obtain good grades and to prepare themselves for future opportunities in their careers; at the same time to meet the employers' expectations. In support of this intervention, Adeliran, Ojomo & Adeyanjusw (2015) state that education is an industry for social, political and economic development and is being affected by the environment which it exists. They further stated that hence, national development has been funded by those who are experts in their areas of specialization and this would not have come into fruition without the instrumentality of the education system.

In addition, it must be made clear that teaching, learning and imparting of hands-on skills, competences and managerial aptitudes to the Graphic Design Students at the DGDT greatly depend on the expertise and experiences of the Course Lecturers since all the courses inherent in the Graphic Design programme are practical/studio-based courses. This fact has been buttressed by Alos, Caranto & David (2015), who significantly underscored the importance of having qualified teachers in the field of teaching since the success of the Graphic Design programme is conditioned by the lecturers of the courses, since should there be any failure on the part of the lecturers at any point of teaching, the whole teaching and learning structure fails. To sum this up, Dewett (2007) opined that good teachers are constantly on the alert for methods and instructional materials that will make learning meaningful; and with the wise selection and use of variety of instructional materials or audio-visual materials, experiences may be provided to develop understanding.

Technical University Education, according to Kozik (2015), is the engine for economic growth due to the importance it attaches to the development of skills, knowledge, technology and work-related experience critical to meet the middle and high-level human power demand by industry,

service and commercial sectors essential for national development. In confirmation of this statement, Yorke (2004) says that Technical University Education is an essential instrument for producing higher level knowledgeable and skilled technicians who can confidently enter and remain in employment throughout their working lives or create jobs to promote economic growth.

Additionally, since the main aim and objective of running the Graphic Design programme at the DGDT in TTU are typically industry-driven in nature, the students need to be taught skills in creative thinking and their application in graphic arts industry (Dennis & Jenkins, 1991). Again, the students are required to be taught, trained and equipped with hands-on skills, competences and managerial aptitudes needed as requirement for employment or set-up their own businesses after graduation. According to Dennis & Jenkins (1991); Alismal & McGuire (2015); Hierrera (2012) these training and equipping of the Graphic Design Students with those practical, industry-driven courses help them to stand on their own without chasing non-existent jobs; but rather start their graphic arts businesses after graduation through the acquisition of the much needed skills, knowledge and deposition necessary to become valuable to the growth of Ghana.

The underlying factors here are that following the conversion of the Polytechnics into Technical Universities by the Government of Ghana in 2016, the DGDT, which had been running Graphic Design
programme in TTU since 1993/1994 academic year was given a renewed impetus to up its mode of teaching and impartation of skills and aptitudes needed in the employment space and as explicitly stated by Kozik and Yorke. Based on these points, the author of this study now tends to focus on the factors affecting teaching, learning and academic performance of the graphic design students at the Department of Graphic Design Technology.

1. **Identifying the Factors Affecting Teaching, Learning and Academic Performance of the Graphic Design Students**

At the DGDT, FAAT, TTU, the author identified the following as the main factors affecting teaching, learning and academic performance of the graphic design students:

a. Inadequate teaching and learning resources – comprising:
   i.   Material resources,
   ii. Physical resources and
   iii. Human resources.
b. Inadequate time allocated for teaching and learning
c. Knowledge, skills and competences of Course Lecturers and Technicians

2. **Analyse their Effect on Learning, Teaching and Academic Performance of the Graphic Design Students**

   To analyse the effect, there is the need to delve into the six (6) identified factors affecting teaching, learning and academic performance of the Graphic Design Students stated above.

   a. **Lack of Adequate Teaching and Learning Resources**
Teaching and learning resources, principally encompasses three (3) basic resources and these are material resources, physical resources and human resources. A critical observation made in

relation to adequate supply or accessibility of teaching and learning resources at the DGDT indicates that they were, and still, not adequately supplied or accessible to augment teaching and learning in order to impart the mandated hands-on skills and competences to the Graphic Design Students. This tendency of inadequate accessibility of teaching and learning resources has been a serious concern to Lecturers and Technicians, and a challenge to students pursuing Graphic Design Programme with regard to acquisition of the practical skills, competences and aptitudes needed for the job market or setting-up their own businesses after graduation.

Learning is a multifaceted activity that includes interplay of students' motivation, physical facilities, teaching resources, and skills of teaching as curriculum demands; consequently; adequate accessibility of teaching and learning resources readily improves the effectiveness of the Department of Graphic Design Technology as they are the rudimentary resources that convey good academic performance in the Graphic Design Students (Okongo et al, 2021). Simply put, material resources, human resources such as Lecturers and Technicians and physical resources such as lecture rooms, tools, equipment, studios and laboratories are the indispensable resources that should be adequately accessible for teaching and learning at the DGDT. In addition, it must be noted that inadequate accessibility of teaching and learning resources compromises education of the learners via teaching, hence having effect on academic performance of students, Lecturers and Technicians' motivation and making it impossible to meet any educational goals (Okongo et al 2015).

Findings through interaction with Lecturers, Technicians and supporting staff and perusal of documents at the DGDT clearly indicates that there is one thousand, two hundred and forty (1,240) students comprising 383 females and 857 males ranging from HND Commercial Art (Graphic Design Option), B-Tech to M-Tech in Graphic Design and Printing. Based on these findings, this study will now delineate into the three (3) sub-topics under the teaching and learning resources stated above, but before that detailed enrolment, statistics for the past five (5) academic years at the DGDT would be outlined from table 1 – table 4 below. This is being done in order to lay bare the factors affecting teaching, learning and academic performance of the Graphic Design Students and for appreciation of the facts on the ground, since these enrolment statistics have a profound effect on the discussion on the material resources available.

Table 1: Enrolment of M-Tech in Graphic Design and Printing Students for the Past Five (5) Academic Years

Gender	2022/2O23 Academic Year	2021/2022 Academic Year	2020/2021 Academic Year	2019/2020 Academic Year	2018/2019 Academic Year
Male	3	9	5	4	7
Female	0	2	0	2	6
Total	**3**	**11**	**5**	**6**	**13**

Table 2: Enrolment of 4-Yr B-Tech Graphic Design Students for the Past 5 Academic Years

Gender	2022/2O23 Academic Year	2021/2022 Academic Year	2020/2021 Academic Year	2019/2020 Academic Year	2018/2019 Academic Year
Male	205	120	90		
Female	60	45	41		
Total	**265**	**165**	**131**		

Note: The first batch of the 4-Yr B-Tech Graphic Design are in the third (3rd) Year, meaning the programme commenced in 2020/2021 academic year, thus the blank spaces in both 2019/2020 and 2018/2019 academic years.

Table 3: Enrolment of B-Tech Top-Up Graphic Design Students for the Past 5 Academic Years

Gender	2022/2O23 Academic Year	2021/2022 Academic Year	2020/2021 Academic Year	2019/2020 Academic Year	2018/2019 Academic Year
Male	91	80	80	45	35
Female	20	27	52	25	17
Total	**111**	**107**	**132**	**70**	**52**

Table 4: Enrolment of HND Students for the Past 5 Academic Years

Gender	2022/2O23 Academic Year	2021/2022 Academic Year	2020/2021 Academic Year	2019/2020 Academic Year	2018/2019 Academic Year
Male	25	90	206	159	133
Female	15	27	94	130	110
Total	**40**	**117**	**300**	**289**	**243**

Through findings at the DGDT, the enrolment statistics of the students for the past five (5) years presented from table 1 – table 4 above revealed that M-Tech in Graphic Design and Printing students captured under 2020/2012, 2019/2020 and 2018/2019 academic years; B-Tech Top-Up students from2019/2020 and 2018/2019 academic years while on the other hand, HND Commercial Art (Graphic Design Option) students from 2019/2020 and 2018/2019 have completed their programmes and graduated.

From the table 1 – table 4 above, it can be deduced that the total number of students' enrolment in the DGDT is 1,240 students comprising 383 females and 857 males. The breakdown of the enrolment statistics are as follows:

    a.   M-Tech in Graphic Design and Printing from 2022/2023 and 2021/2022 = 14 comprising 2 females and 12 males,

    b.   4-Yr B-Tech Graphic Design from 2022/2023, 2021/2022 and 2020/2021 = 561 comprising 146 females and 415 males,

    c.   B-Tech Top-Up Graphic Design from 2022/2023 and 2021/2022 = 218 comprising 99 females and 119 males, and

d.   HND Commercial Art (Graphic Design Option) from 2022/2023, 2021/2022 and 2020/2021 = 457 comprising 136 females and 321 males.

i.   Material Resources

In TTU, material resources (MC) are classified under teaching and learning materials (TLMs) of which the various Heads of Department request through the Dean within the six (6) faculties based on the total enrolment number of each department who are basically into practice-based courses and programmes at the beginning of every academic year for the Procurement Office to procure after all the necessary procurement requirements have been satisfied. Based on this, both terms, i.e., MC and TLMs would be used interchangeably in this study. Again, since all the courses inherent in the Graphic Design programme are practical/studio-based courses, there is the need to have adequate TLMs for practical tutorials by the Course Lecturers and Technicians in order to afford the Graphic Design Students the needed acquired knowledge, skills and disposition to become valuable and contribute to the socio-economic development of Ghana.

TLMs procured and supplied to the DGDT are usually practice-based materials and hand-held tools procured through the school fees build-up of every Graphic Design Student and they mostly consist of:

a.   T-shirts, mercerized-cotton fabric, Acrilex paints, masking tapes, screen fabrics, squeegees, cutting/utility knives, pair of scissors, staple pins, staple machines, potassium dichromate, sensitizer, etc., for acquisition of hands-on skills and competences training in silk/screen printing course.

b.   Reams of Bond Papers, White Fevicol Glue, White Thread, Muslin, Bodkin/Awl, Binding Clothes, Needles, Brushes, Marbled/Kente-Designed Paper, Metal Rules, Cutting/Utility Knives, Strawboards, Gauze, Brown/Kraft Paper, Lithographic Printing Plates, Gum Arabic, Films, Computers and accessories, California Case, Key and Quoin, Composing Sticks, Printing/Processed Inks, Cylinders, etc., for acquisition of hands-on skills and competences training in Printing and Bookbinding Course.

c.   Strawboard, Brushes, Cutting/Utility Knives, Pencils, Metal Rulers, Super Adhesive-Adhesive Type 99 New Glue, etc., for interior decoration hands-on skills and competences training.

d.   Cameras, Backdrops, Backdrops Clippers, Camera Lens Cleaning Kits, Lapel Microphones, Colour Copiers, Sliders, Aperture Lights, Scanners, Tripods, Photo Printers, Reflectors, Editing Software, Broomsticks, Photo Papers, Photo Frames, Tripods, Soft-Box with Strobe Lights, etc., for acquisition of hands-on skills and competences training in Multimedia and Photographic Course.

e.   Drawing paper of different types, Pencils of different types, Crayons, Pastels, Gouache Pastes, Projectors, Drawing Tablets, Licensed Software, etc., for acquisition of hands-on skills and competences training in animation and illustration.

f.   Computers and accessories, Adobe Dreamweaver CC 2023, Adobe XD CC 2023, Sublime text, etc., for acquisition of hands-on skills and competences training in Web Design Course.

g. Calligraphic Pens, Inks, Papers, Cardboards, etc., for acquisition of hands-on skills and competences training in Lettering and Typography Course.

h. Personal Computers for Lecturers, Technicians and Students, Computer Servers, External Hard Drive, Projector Screens, Printers, Networking of The Laboratory, etc., for acquisition of hands-on skills and competences in Computer Graphics Course.

Findings through interactions with Course Lecturers, Technicians and physical observations made with critical consideration of the total enrolment statistics of the Graphic Design Students, the above listed material resources are the ideal, adequate quantity and more of TLMs needed by the Department of Graphic Design Technology to achieve its vision and mission. But, it was discovered that the Department has struggled (and struggling) from one academic year to another for the past five (5) years in getting the required, adequate material resources supplied for teaching and learning in order to impart positively on the academic performance of Graphic Design Students. Even when supplied, they are woefully inadequate to cater for tutorials, practical works and End-of-Semester Examination, forcing Lecturers and Technicians to appeal to the students to look for material resources on their own to execute studio/practice-based, hands-on skills and competence assignments for assessment, thus, creating unconducive relationship between material resources needed and used by Lecturers and Technicians, and academic performance of the Graphic Design Students in terms of tutorials and studio/practice-based activities.

This scenario is not the best for learning because of its dire implications and consequences on academic performance of students. This assertion is supported by a discovery made by Okongo et al (2015) that there is a very strong positive significant relationship between instructional resources and academic performance. Hence, it behooves on the Universities, both traditional and technical Universities in Ghana to supply adequate TLMs through Departments to their students in order to perform better academically and motivate Lecturers and Technicians to deliver to their maximum. It is a known fact that students' academic performance is affected gravely by inadequate supply of TLMs; this is because Universities with adequate TLMs stand a better chance of having students performing better in examination than poorly equipped ones, thus supporting the argument that poor academic performance of students could be attributed to inadequate supply of TLMs (Okongo et al, 2015).

ii. Physical Resources

Physical resources available for the use of graphic design students at the DGDT, FAAT, TTU include lecture rooms consisting of a Drawing Room, Computer Graphics Laboratory; Graphics Photo Studio, Library, Students' Washrooms, etc. For better perspective and comprehension, the physical resources available at the DGDT, FAAT, TTU have been indicated in figure 1 – figure 5 below.
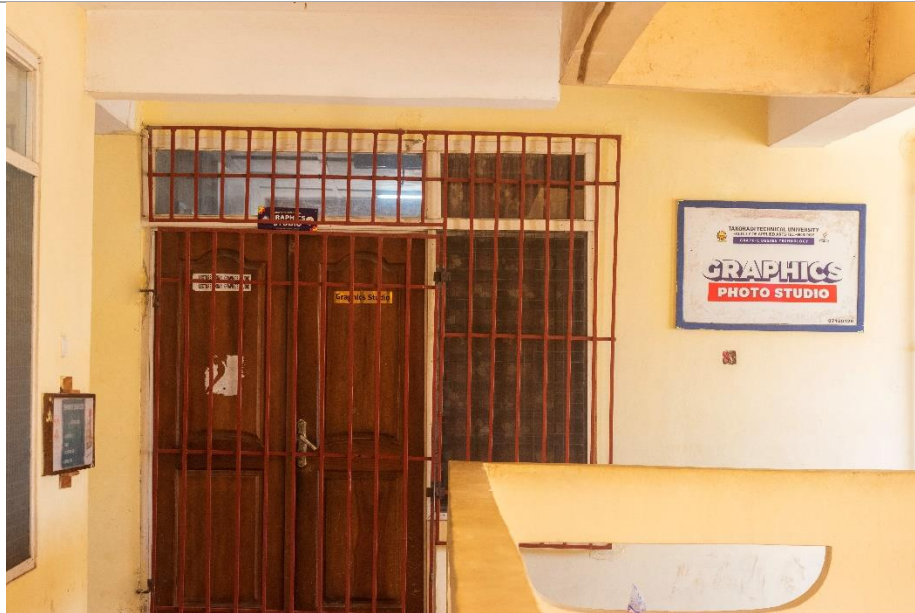
Figure 1a: Graphics Photo Studio
Source: Fieldwork, 2023

Figure 1b: Graphics Photo Studio
Source: Fieldwork, 2023

Figure 2a: Computer Graphics Laboratory
Source: Fieldwork, 2023

Figure 2b: Computer Graphics Laboratory
Source: Fieldwork, 2023

Figure 3a: Lecture Room without Electronic Black/Chalkboard
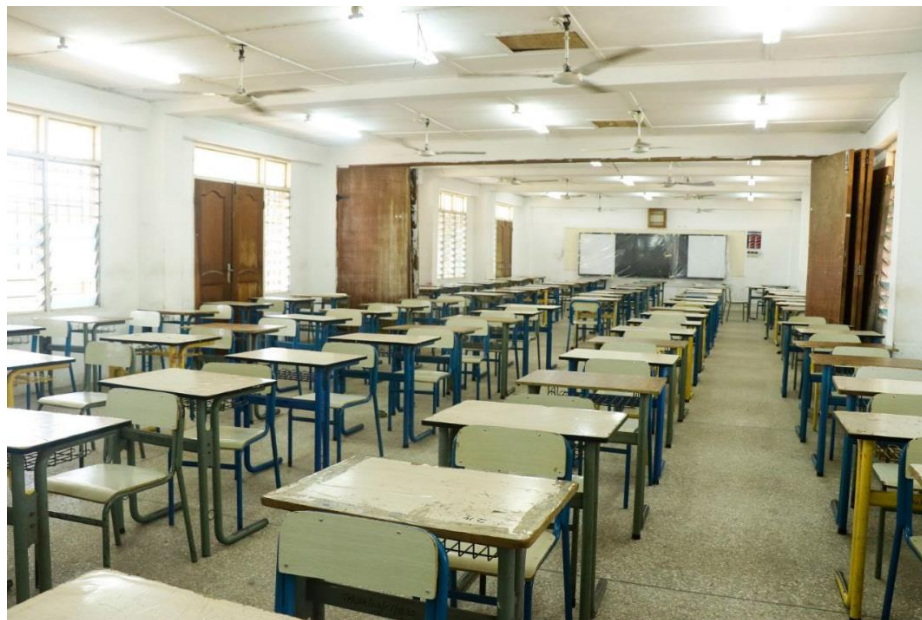**Source:** Fieldwork, 2023

Figure 3b: Lecture Room with Electronic Black/Chalkboard
Source: Fieldwork, 2023

Figure 4a: Faculty of Applied Arts & Technology Library
Source: Fieldwork, 2023

Figure 4b: Faculty of Applied Arts & Technology Library
Source: Fieldwork, 2023

Figure 5: Faculty of Applied Arts & Technology Washroom
Source: Fieldwork, 2023

Findings through interactions with course lecturers, technicians and physical observations made with a critical consideration of the total enrolment statistics of the Graphic Design Students, which stands at 1,240 as stated under table 1 – table 4, clearly depicts the physical resources available to the DGDT. The underlying explanation deduced from the findings are:

1. Figure 1a and 1b i.e., the Graphics Photo Studio has the capacity for only thirty (30) students during studio/practice-based assignments; it has only two (2) Soft-Box with Strobe Lights, one (1) tripod, 1 Epson Printer, 1 TV set, 1 Backdrop, four (4) Functioning Cameras, etc.,
2. Figure 2a and 2b i.e., the Computer Graphics Laboratory has the capacity for only thirty-seven (37) students since the laboratory only has 37 HP Computers, one (Projector),
3. Figure 3a and 3b i.e., the two (2) lecture rooms apart from the Drawing Room that with availability of chairs and tables can accommodate a maximum of eighty (80) students each, and are without fixed Projectors to aid teaching and learning. But, these 2 Lecture rooms are divided into, namely Lecture Room 5A and 5B and 6A and 6B, thus accommodating a maximum of forty (40) students at a time. Additionally, it is only in one of the divided lecture rooms, i.e., Lecture Room 6A that has Electronic Black/Chalkboard,
4. Figure 4a and 4b i.e., the Faculty of Applied Arts & Technology Library serving the entire faculty has a total capacity for a maximum of thirty (30) students, and
5. Figure 5a and 5b i.e., Faculty of Applied Arts & Technology Washroom(s) for female and male students serving all the students in the faculty. In all, there are nine (9) separate toilet/urinary facilities for the females and males, which are mostly locked due to frequent water shortages and unreliable water supply.

The underlying factors deduced from the findings made in the above, clearly demonstrate that the DGBT lacks adequate physical resources, e.g., it lacks spacious Printing Studio, Bindery, Photo Laboratory, etc., and thus inhibiting teaching, interfering with the learning methods and affecting the academic performance of the Graphic Design Students. Additionally, the findings revealed that Lecture rooms, Studio, Laboratory and Library are always crowded due to the huge number of the Graphic Design Students. It is an established fact that Learning Institution with well-structured physical resources facilitate construction of a culture of success while the vice versa inhibit construction of a culture of success (Fonseca and Conboy, 2006).

iii. **Human Resources**

The human resources at the DGDT involve basically Lecturers, who lectures and Technicians, who involve themselves in the method of teaching, learning and imparting hands-on skills, competences and managerial aptitudes to the Graphic Design Students during their studies. Hence, in tandem with the core values of TTU which stipulate good academic performance among the students, the various departments, of which the DGDT is not an exception, has been mandated to fully make use of the employed human resources particularly, Lecturers and Technicians in order to make students achieve better academic performance. The human resources at the DGDT are indicated in table 5 below as follows:

Table 5: Number (No) of Lecturers and Technicians at the DGD

No.	Human Resources – Lecturers and Technicians	No. at the Department
1	Associate Professor with PhD	1
2	Senior Lecturers with PhD	4
3	Senior Lecturers without PhD	6
4	Lecturer with PhD	1
5	Lecturers	8
6	Assistant Lecturers	2
7	Technicians/Instructors	6
	Total	28

Based on the findings from the office of the Head of Department and coupled with table 5 illustrated above, the DGDT has twenty (20) Lecturers, two (2) Assistant Lecturers and six (6) Technicians. Out of the 20 Lecturers, ten (10) are currently pursuing PhD programmes at Universities in Ghana and abroad, granted sponsorship and study-leave with pay by TTU based on its staff development policy. Four (4) out of the 10 are not due to be in the lecture rooms till the completion of their studies, and since Assistant Lecturers are technically, not to teach, but to work under the supervision of Professors, Associate Professors, Senior Lecturers or Lecturers, these four (4) studying Lecturers are out of the Lecture rooms, thus creating a shortage or gap that is putting a lot of stress and untold hardship on the remaining Lecturers now totally sixteen (16) after deduction, i.e., $20 – 4 = 16$ remaining Lecturers. There is the need to employ additional Lecturers and Technicians to fill the created gap, however, the non-recruitment policy of the government of Ghana is making it hard to employ.

This brings to the fore the need to look at the adequacy of the Lecturers and Technicians on Graphic Design Students' academic performance since the adequacy of this human resource is the determining factor in assessing either the success or failure of the system being pursued at the DGDT in teaching, learning and bettering of the academic performance of the students. This determining factor of the extent Lecturers and Technicians' adequacy would be done through Lecturer to student ratio and Technician to student ratio, which is the number of Graphic Design Students assigned to a Lecturer or a Technician for teaching, a policy enshrined in the Quality Assurance & Academic Planning Peer and Professional Review Policy, TTU (2021).

  i.   1,240 Graphic Design Students ÷16 Remaining Lecturers = 77.5
  ii. 1,240 Graphic Design Students ÷ 6 Technicians   = 206;66

Although the maximum use of the human resources in DGDT brings about productive learning results since Lecturers and Technicians encourage Graphic Design Students learning experiences as well as motivate them to perform better academically, the usage also comes with its implication as illustrated above. The implication, coupled with inadequate physical resources at the DGDT shows both Lecturers' and Technicians' workload at any particular time of teaching and imparting hands-on skills, competences and managerial aptitudes to the Graphic Design Students. In addition, this clearly shows how both Lecturers and Technicians are overloaded and over-utilized in their line of work (Okongo et al, 2015).

b. Inadequate Time Allocated for Teaching and Learning

Since the main aims and objectives inherent in the running of the Graphic Design programme at the DGDT, TTU are typically industry-driven in nature; there is the need for the Graphic Design Students to be taught skills in creative thinking and their application in the Graphic Arts Industry. In addition, they are required to be taught, trained and equipped with knowledge, hands-on skills, competences and managerial aptitudes needed and required for employment or set-up their own businesses after graduation. Deducing from these tenets in the Graphic Design programme, it is prudent to look at the teaching and learning time allocated for all Courses run at the Department in order to draw a holistic conclusion on whether the time allocations are adequate or inadequate for Lecturers and Technicians to integrate theory and practice or studio-based assignments in the Graphic Design Courses for effective teaching and learning. For this reason, three (3) samples of the structure of Graphic Design Programme would be used to illustrate time allocations for the Courses in terms of theory and practicals (or studio/practice-based activities).

Structure of the Programme (Structure of Course, showing the credit value of each course)

Table 6a: Sample of HND Structure of the Graphic Design Courses

(Key: T – Theory: P – Practical: C – Credit)

COURSE CODE	COURSE TITLE	T	P	C
HND YEAR TWO – (SEMESTER TWO)				
CAG 280	DESIGN HISTORY II	2	0	2
CAG 281	ADVANCE LETTERING & TYPOGRAPHY	1	4	3
CAG 282	PRINTING TECHONLGY	1	4	3
CAG 283	COMPOSITIONAL DRAWING	1	4	3
CAG 284	CAMERA OPERATIONS	2	4	3
CAG 285	INTERIOR DECORATION II	1	2	2
CAG 286	APPLIED ADVERTISING TECHNOLOGY	1	6	4
	TOTAL	**9**	**24**	**20**

Table 6b: Sample of 4-Year B-Tech Structure of the Graphic Design Courses

COURSE CODE	COURSE TITLE	T	P	C
4-YEAR B-TECH ONE (LEVEL 100) – (SEMESTER ONE)				
BGD 411	Technical Drawing	1	2	2
BGD 311	Basic Design	1	2	2
BGD 313	Fundamentals of Drawing	1	4	3
BGD 315	History of Art	2	0	2
BGD 317	Introduction to Digital Imaging	1	2	2
BGD 319	Introduction to Graphic Design	1	4	3
BAS 311	African Studies	2	0	2
BCS 311	Communication Skills	2	0	2
BCL 311	Computer Literacy	1	2	2
	TOTAL	**12**	**16**	**20**

A student must choose **ONE** of the options as a **major elective course** in addition to the **Core Courses in Year One (Semester One)**
ELECTIVE COURSES (MAJOR OPTION)

COURSE CODE	COURSE TITLE (CORE COURSES)	T	P	C
M-TECH IN GRAPHIC DESIGN – YEAR ONE (SEMESTER ONE)				
RSM 551	Artistic/Practice-Based Research I	6	0	6
AGG 551	Mini Project in Graphic Design I	0	4	**2**
AGG 553	Production & Operations Management in Graphic Design	1	4	3

AGG 555	Research in Graphic Design	1	2	**2**
AGG 557	Introduction to Digital Imaging	1	2	**2**
AGG 559	Trends and Techniques in Graphic Design	2	0	**2**
	ELECTIVE COURSE	1	4	3
	TOTAL	**12**	**16**	**20**

Table 6c: Sample of M-Tech in Graphic Design Structure of Courses

AGG 561	Advertising & Packaging I	1	4	3
AGG 563	Multimedia, Photography & Design I	1	4	3
AGG 565	Animation & Illustration I	1	4	3

Findings and perusal of the above structures of Graphic Design programme (HND, B-Tech and M-Tech) at the office of the Head of Department clearly indicate that the Practical (P) Courses are allocated 2, 4 and 6 studio/practice-based hours. From interaction at the DGDT, Lecturers and Technicians revealed that the time allocated for the Studio/Practice-Based Courses are woefully inadequate for teaching and learning, thus not giving them adequate time to integrate theory and practice in order to impart the requisite hands-on skills and competences to the graphic design students.

c. The Knowledge, Skills and Competences of Course Lecturers and Technicians

Typical of DGDT and TTU in general, Lecturers and Technicians play vital roles in promoting progress in technical education and academic performance of the Graphic Design Students. Therefore, Lecturers and Technicians of the DGDT's qualification, knowledge, skills and competences of the Course matter, enthusiasm, interaction with the students, method of lecturing and skills impartation and encouraging participation in course discussion have constructive and substantial impact on students' academic performance (Engin-Dermir. 2009). To buttress this fact further, Heinesen (2010) stated that Teachers' ability and competence prove significance in improving students' performance and that Instructors' teaching styles enhance understanding of concepts taught.

Findings and critical observations made at the Lecture rooms, Studio and Laboratory at the DGDT revealed that the various Course Lecturers and Technicians are having the requisite qualifications to lecture in Multimedia and Photography, Animation and Illustration, Advertising and Packaging, and Pre-Press and Printing Technology. Additionally, they have the skills and expertise to impact, interact well and adopts what they termed as 'participatory lecturing' with the students during theory and studio/practice-based activities, thus augmenting students' comprehension and grasping of the various Graphic Design Courses being lectured, in spite of the limited material resources and physical resources at their disposal.

3.CONCLUSIONS

Through interactions with the Head of Department, Lecturers and Technicians, observations and findings made at the DGDT, it was realized that Course Lecturers and Technicians are regular and punctual in Lecture rooms with comprehensive lecture notes and eager to take students through Studio/Practice-Based activities in the Photo Studio and Computer Graphics laboratory. This is done by both Lecturers and Technicians as their core mandate is to impart knowledge, hands-on skills, competences and managerial aptitudes, and better the academic performance of the Graphic Design Students notwithstanding the enormous challenges the DGDT faced. This study concluded that inadequate teaching and learning resources, namely material resources, physical resources and human resources; inadequate time allocated for teaching and learning and knowledge, skills and competences of Course Lecturers and Technicians are the key factors affecting teaching, teaching and academic performance of the Graphic Design Students at DGDT.

4.RECOMMENDATION

In order to address the factors affecting teaching, learning and academic performance in the DGDT, FAAT, TTU and based on the discussions and findings through interactions and observations made, this study made the following recommendations in order to boost teaching and learning, improve and better Graphic Design Students' academic performance in the DGDT in the following study areas:

1. On material resources, TTU must secure funds from the government of Ghana through the Ministry of Education, Commission for Technical and Vocational Education and Training and Ghana Education Trust Fund to provide adequate material resources such as:
    a. Adobe Dreamweaver CC 2023, Adobe XD CC 2023 and Sublime Text for the teaching and learning of Web Design course,
    b. Adobe Animate CC 2023, Adobe Character Animator CC 2023, Blender, Toon Boom and Wacom Tablets for the teaching and learning of Animation and Illustration course,
    c. Adobe Premier Pro CC 2023, Adobe after Effects CC 2023, Adobe Media Encoder CC 2023, Canon ESO 5D Mark IV Full Frame, Canon 18mm – 24 f2.8 Mark III Lens, Canon 24mm – 70mm f2.8 Mark III Lens, Canon 70 – 200mm f2.8 Mark III Lens, Canon 85mm f2.8 Mark III Lens, Canon 50mm f2.8 Mark III Lens, Neewer 2 Pieces Bi-Colour 660 LED Video Lights, Prograde 5D Card 12gb (300mbps), Manfrotto Pro Heavy-Duty Tripod, Comica CVM-WM300a Wireless Lapel Lav Microphone, Canon DSLR Lithium Batteries, Godox VING V860 II C Speedlight, Godox XProC TTL Wireless Trigger, Impact Turtle Base C-Stand Kit, Godox ad400pro, Godox P90L Parabolic Softbox with Bowens Mount (120cm) and Samsung 85inches TV Display for the teaching and learning of Multimedia and Photography course,
    d. Lenovo V50T Desktop Tower PCs, Intel i9-11900 Up to 5.2 GHz, 64GB RAM 2TB NVMe SSD, UHD Graphics 750, DisplayPort, HDMI, VGA, DVD, Card Reader, AC Wi-Fi, Bluetooth Windows 11, HP Desktop Computers 22G9, Intel Core i5 12th Gen. 125000 (3,000GHz) 16GB DDR5 512 GB SSD, Intel UHD Graphics 770 Windows 11 Pro 64-bit, HP Proliant ML30 Gen10 Tower Server Bundle with Intel Xenon E-2224, 64GB DDR4, 8TB SSD, RAID, WINDOW Server 2019, TeraStation Essentials 16TB Desktop 4-Bay NAS with Hard Drives

included (4 x 4TB), 5Core 100-inch Projector Screen Manual Pull Down 8K Ultra HD 3DReady 16.9, Epson EcoTank Pro ET-16600 Wide-format All-in- One Business Super tank Printer, Kyocera M8130CIDN A3 Colour 30PPM MFP Printer and 3 TP-Link JetStream TL-SL5428E Managed Switch Network Cables for the teaching and learning of computer graphics.

    e.   Gum Arabic, Films, Processed Inks, Pantone Inks and Gauge, Silk Screen Acrilex Paints, T-shirts, Mercerized Cotton, Squeegees, Rollers, Papers and Bindery for the teaching and learning of Printing Technology course.

2. On physical resources, TTU must secure funds from the Government of Ghana through the Ministry of Education, Commission for Technical and Vocational Education and Training (CTVET) and Ghana Education Trust Fund (GETFund) to provide adequate physical resources such as: additional spacious lecture rooms with electronic black/chalkboards and installed projectors, public address systems, microphones, Photographic Studios, Computer Graphics laboratories, Printing Studio with Bindery, well-equipped Lithographic Printing machine, Guillotine, Printing Plates, Rollers for Studio/Practice-Based activities in order to impart the requisite hands-on skills, competences and aptitudes needed in the employment space.

3. On human resources, as matter of urgency, TTU Management must employ at least four (4) Graphic Design Lecturers and 4 Technicians, pay them from Internally Generated Funds. In addition, the Government must lift the embargo for TTU to employ more Graphic Design Lecturers and Technicians for DGDT, who are experts in their areas of specialization in teaching of Graphic Design Courses.

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