

## Quality Assurance from Accountability and Infrastructure Perspectives: The Case of Four Ghanaian Technical Universities

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### Abstract

*For various reasons, quality assurance has become one of the central constituents of higher education. This article accordingly looks at the current state of quality assurance in Ghanaian Technical Universities (TUs) with a focus on accountability and infrastructure. The study design was the concurrent mixed method by means of a semi-structured interview. The quantitative part was analysed using SPSS while thematic analysis was used to analyse the qualitative part. The key findings of the study were that there were issues with both internal and external quality assurance in the following respects – trust in external reviewers, support from stakeholders, office space for QA activities, infrastructure for teaching and learning, and experts in quality assurance. Improvement in awareness creation, infrastructure and human and material resources are recommended.*

**Keywords:** Accountability, higher education, infrastructure, quality assurance, technical university.

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### Introduction

Worldwide, there is a growing emphasis on Quality Assurance (QA) in Higher Education (HE) as evidenced by the many written rules specifying how quality should be measured in HE; and the establishment of specialized bodies/agencies overseeing quality assessments in HE (Langfeldt et al., 2010). These quality demands stem from significant increases in tertiary enrollment against a back log of public expenditure worries; increasing competition within the HE for resources and students; increased mobility of students, faculty, and programmes; global networks between institutions and the general quest for better public services and

global networks between institutions (Ryan, 2015; Varonism, 2014).

Over the years, the following approaches to quality measurement have been used in HE: Quality control, quality audit and quality assurance. Tam (2001) suggests the following four main QA methods operational in HE: traditional QA methods; Total Quality Management (TQM); accountability and performance indicators; and assessment-and-outcome-movement methods. However, the performance indicator method was used in measuring the institutional health of the TUs. This was largely due to its monitoring function (regular tracking of performance) in specific areas from both

local and international perspectives (Scheerens, 2011; Langfeldt, et al., 2010). Ullah, Ajmal & Rahman (2011) outline the following six quality indicators in HE: Quality of staff and faculty; students; curriculum, infrastructure, management and governance and accountability. The details are presented below:

1. Quality of staff and faculty: This assesses quality from three main perspectives - faculty and organizational development, instructional development and teacher training programmes.
2. Quality of Students: This pays special attention to students' problems regarding access and criteria related to merit (abilities and motivation) and proactive policies for the benefit of the disadvantaged.
3. Quality of Curricula: It assesses training objectives in relation to the world of work and societal needs; adaptations in teaching methods to make students more active and enterprising; and an expansion of, and greater flexibility in, training facilities to critically include the use of information technology and networking of curricula, students and teachers.
4. Quality of Management and Governance: The following are looked at: decision-making, organizing, staffing, planning, controlling, and communicating.
5. Quality of Infrastructure: This assesses the quality of the infrastructure from both the internal and external environment.
6. Quality of Accountability: This is closely dependent on systemic evaluation and regulation or the culture of evaluation within the institution i.e. set-up systems for gathering relevant, valid and reliable data for decision-making, improvement activities and outcomes.

QA can also, be both internal and external. External Quality Assurance (EQA) strategies may include accreditation, site visit and institutional, academic and peer review. Over the years, different Internal Quality Assurance (IQA) instruments including student satisfaction surveys, workload assessments,

progression studies, programme evaluation, course evaluation, graduate tracer studies, internship supervision, unit evaluation, and performance agreements have been used (Martin, 2018). Interestingly, structured national-level quality assurance systems in Africa are quite recent (in the early 2000s) though differing in scope and rigour - from a simple licensing of institutions by the minister responsible for higher education to a comprehensive system-wide programme accreditation and ranking of institutions. Within institutions, self-assessment and academic audits are encouraged to supplement national-level Quality assurance efforts (Materu & Righetti, 2010).

In Ghana, the responsibility of ensuring national-level quality assurance falls on the shoulders of the Ghana Tertiary Education Commission (GTEC), mandated by the Education Regulatory Bodies Act, 2020 (Act 1023). The Commission among other things is to ensure institutions: (a) apply the highest quality standards and relevance to teaching, learning, research and outcomes and (b) undertake or cause to be undertaken, periodic or ad-hock visitations, regular inspections, and monitoring and evaluation of tertiary institutions in line with international growing demands for quality in higher education. The Commission, therefore, requires all Ghanaian institutions to produce evidence of quality in terms of minimal standards met; graduates produced; and the adequacy of infrastructure and institutional performance.

However, the case of Ghanaian Technical Universities (TUs) is of special interest considering the fact that they are considered 'baby universities' or 'poor cousins' of traditional universities (Ansa, 2015; Hayward, 2006). Additionally, the government has recognized that developing the TVET sector is essential for the industrial agenda of the country given that, if people especially, the youth are equipped with employable skills, the incidence of unemployment, poverty and the other undesirable consequences of social and economic exclusion would be reduced (Atuahene, 2014; Akplu & Amankrah, 2008). The Vice President of the country, therefore, recently, launched the Technical and Vocational Education and Training (TVET)

Service (mandated by the Pre-tertiary Education Act 1049) to oversee TVET delivery in the country. The service is expected to support the country's industrialization drive by offering a wide range of programmes that harness the career pathways of the Ghanaian youth (see <https://www.myjoyonline.com/eduwatch-commends-government-for-launching-ghana-tvet-service/> accessed 12 December 2021). It is in this sense that both Technical Universities and quality assurance have become important.

It is also worth mentioning that, not much research has been done in the area of quality assurance in the TUs especially, after their conversion in 2016. The few studies conducted, on the other hand, have focused on the design and relevance of various national quality assurance schemes, the appraisal of the applicability of industrial models to higher education and the tension between improvement and accountability in both external and internal quality assurance (Eshun, Dampson & Dzakadzie, 2020; Matovu, 2017; Swanzy & Potts, 2017). Besides, most of these studies have considered individual institutions instead of different TUs (e.g. Badoo, Hammond & Oppong, 2020). For example, Okae-Adjei (2016) examined the weaknesses and challenges associated with current practices of quality assurance in three Ghanaian Polytechnics (now Technical Universities) using a qualitative approach. The study indicated that they have some internal quality assurance structures and institutional-wide quality assurance policies. Nonetheless, they have not been very successful in establishing a quality culture. Badoo, Hammond & Oppong (2020), on the other hand, assessed internal controls such as the existence and implementation effectiveness activities and the related challenges at Accra Technical University using a questionnaire. The study showed that the University has in place policies and procedures meant to enhance the implementation of internal controls however, these were militated by low staff awareness and a lack of violation penalties.

Thus, a study examining quality assurance across the different TUs in Ghana is, therefore, not only important but also necessary. It was from this

background, that this study purposed to assess the current state of quality in half of the TUs in Ghana with a focus on accountability and infrastructure. The objectives of the study are to provide an overview of the TUs as well as their QA mechanisms; to compare the TUs in terms of the quality of infrastructure and accountability/effectiveness and to discuss the challenges facing the TUs in the area of QA and the way forward.

Overall, the study is expected to provide research evidence in support of the state of quality within the TUs. Quality improvement within the TUs is another expectation i.e., the suggestions and the recommendations made can help individual TUs to improve both internal and external quality assurance in order to present themselves as quality institutions producing highly qualified skilled personnel for Ghana's development. Most importantly, it is anticipated that the study would contribute to existing knowledge by providing research evidence on quality assurance from the TVET/TU perspective from Ghana since their conversion from Polytechnics to TUs. The study is additionally expected to inform policymakers especially, the Council of the TUs and the government of Ghana to develop specific strategies aimed at improving quality assurance within the Ghanaian TUs. Of course, this study is limited in that, it was not able to cover all the TUs in Ghana and all the issues of quality assurance. It is, therefore, expected that future studies would take a hint from the approaches taken by this study as well as the findings to regularly assess quality within the TUs.

## **Materials and Methods**

The design of the study was exploratory concurrent mixed method given that this is the first-time QA issues across the newly converted TUs are being examined (most previous studies have examined quality issues within individual TUs or across the former polytechnics). The overall objective, therefore, was not to make substantive conclusions but to lay a foundation for the exploration of emerging issues. Integrating both quantitative and qualitative data brought several advantages to the study. For instance, the qualitative data validated the

quantitative findings and vice versa (O’Cathain, Murphy & Nicholl 2010).

### **Population and sampling**

The population for the study was Technical Universities in Ghana which were initially, established as Technical Schools but later re-designated respectively as Army Training, Trade Schools and Technical Institutes. The three initial Technical Schools together with seven new ones became Polytechnics in response to the government’s policy (the Polytechnic Law, 1993) of one Polytechnic in each of the then ten regions of Ghana. The Technical Universities Act (Act 922) of 2016, finally converted eight of the Polytechnics who met the relevant criteria into TUs.

At the time of collecting data for the study, there were eight Technical Universities in Ghana mandated by law. Thus, two of the old Polytechnics (out of five) and two of the new Polytechnics (out of three) were selected using simple random sampling. Geographically, the focus was on the southern part of Ghana because of the COVID-19 pandemic which essentially, limited personal contact and how many participants could be contacted. Since contacting all the TUs across the country was problematic, the heads of the QA offices in the selected TUs were selected purposively because of their direct involvement in the day-to-day handling of QA issues in their respective TUs as well as their rich and varied experiences. These happenings affected the sample size and the extent to which generalisation could be made. This limitation is duly acknowledged. The convenience of selecting the Southern part of Ghana during the COVID period is also, duly acknowledged. The study employed a semi-structured written interview guide. The instrument was developed from literature but for expert advice, the views of the former heads of the QA offices in the then-old and new Polytechnics were used during the piloting stage. This, of course, improved the reliability and validity of the instrument.

### **Data Collection and analysis**

The main data collection exercise started in March 2020. Ethical protocols such as gaining access, informed consent, voluntary participation and the

confidentiality of gathered information were followed through with only the TUs with whom there was an already established contact (the data collection had started days before the first case of COVID was reported in Ghana - March 2020). The institutions were first, formally written to ask permission to do the research. This was followed by a verbal discussion (on phone) with the heads of the QA offices. The instrument was then emailed to the participants. The written responses were also, returned by email. The qualitative and quantitative data collection and analysis occurred concurrently. After data cleaning and coding, the quantitative data was entered and analyzed using descriptive (mainly means and frequencies) with the aid of the Statistical Package for the Social Sciences Software (SPSS). The qualitative aspect, on the other hand, was analysed using thematic analysis. The data was first cleaned i.e., addressing errors and incomplete sentences while maintaining the original ideas provided by the respondents. Thereafter, the cleaned data was read through severally to identify themes that formed the basis for the coding and categorization of responses. Emerging themes were then, reported on, according to the research question. The quantitative and qualitative aspects were triangulated in the discussion section.

### **Results and Discussion**

First, an overview of the selected TUs is given. This is followed by a comparison of the TUs in terms of the quality of infrastructure and accountability/effectiveness. The final part discusses the challenges of the TUs and the way forward.

#### **Overview of the selected TUs**

The study involved four TUs with a total of 20 faculties, 82 departments and 15 centres. On average, each TU had at least, four faculties and 13 departments; but others had as many as six (6) faculties and 26 departments. The following three faculties were common to all the selected TUs: Faculty of Applied Science, Business and Management, and Engineering. The total number of academic programmes were 264 comprised of eight (3%) Masters, 81 (31%) Bachelor, 85 (35%) HND, 71 (27%) Diploma and 19 (7%) Certificate

programmes (see Figure 1 below). Some TUs had as low as 34 programmes while others had as many as

105 programmes.

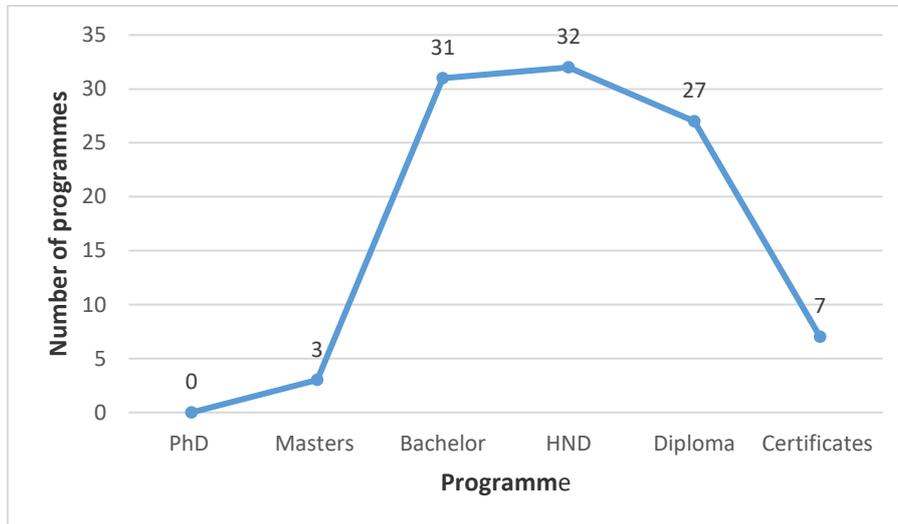


Figure 1: The programmes run by the TUs

In terms of student numbers, there was a total of 33,112 students made up of the following in decreasing order: HND 22,259; Diploma 5,341; Bachelor 4,942; certificate 189 and Masters 5. Thus, the majority of the students were pursuing undergraduate programmes. The average number of students was 8,278 with a Standard Deviation (SD) of 4,139. The gender statistics were 18,091 males (55%) and 12,149 females (45%). See Figure 1 below).

a. **Quality of Infrastructure**

The total number of infrastructures recorded was 118; made up of 50 laboratories, 19 workshops, 14 bars and cafes, 13 student halls of residence, 8

studios, 7 production rooms, 6 libraries aside from the main library and one art gallery. The average number of infrastructure was 30 but the SD was 8. Hence, the total number of infrastructures in some TUs was as low as 19 while others had as high as 38 (See Figure 2). The ratio of infrastructure to students is presented in Table 1. Overall, 280 students were to one infrastructure. This figure is huge and questions the effectiveness, efficiency and quality of teaching and learning. Specifically, 33,112 students shared one production room; 6,622 students were one laboratory; 5,519 shared another library apart from the main library; 4,139 students were one studio, and 1,743 shared one workshop.

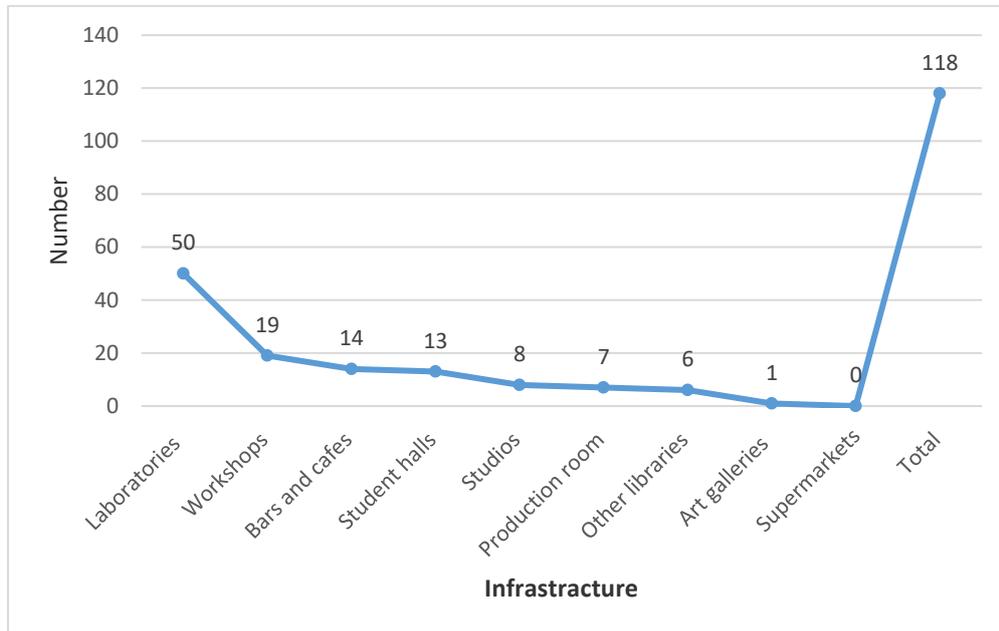


Figure 2:Infrastructure within the TUs

Table 1: The ratio of students to infrastructure

	Total	The average number of infrastructures	The ratio of infrastructure to students
Laboratories	50	12.50	6622.40
Workshops	19	4.75	1742.74
Bars and cafes within the campus	14	3.50	2356.14
Student halls	13	3.25	2547.08
Studios	8	2.00	4139.00
Production room	7	1.75	4730.29
Other libraries part form the main library	6	1.50	5518.67
Art gallery	1	.25	33112
Supermarkets within universities	0	0.00	0.00
<b>Total</b>	<b>118</b>	<b>29.50</b>	<b>280.61</b>

**Note:** The average number of students is 8,278 (SD = of 4139)

It is obvious from the above results that the quality of infrastructure within the TUs is not too good. For

instance, the ratio of one infrastructure to 281 students irrespective of the possibility of some ill-

functioning items, appears problematic and could affect quality because infrastructure is necessary for quality teaching and learning especially in practical oriented courses. The practical experiences thus gained in addition to the theoretical knowledge thereby improve the quality of overall students' learning experience (Subair, Okotoni, & Adebakin, 2012).

**b. Quality of Accountability**

This quality indicator was assessed from the perspective of set-up systems for the gathering of relevant, valid and reliable data for decision-making, quality improvement and outcomes. Interestingly, all the selected TUs had QA policies. Three of them

had QA Offices and Committees. While one TU did not have an office at all, those who had; considered the space provided inappropriate for QA activities. Also, only one TU had a Dean heading the office. Regarding reports produced by the office, half of the TUs felt QA reports lacked regularity, transparency and clarity. Activities leading to such reports included self-evaluation or evaluation of programmes/courses, teaching/learning and facilities (these were done by only one TU). The evaluation of admission processes, staff qualifications and industry/teaching experiences was carried out by two TUs. See Figure 3 below and Table 10 in the Appendix.

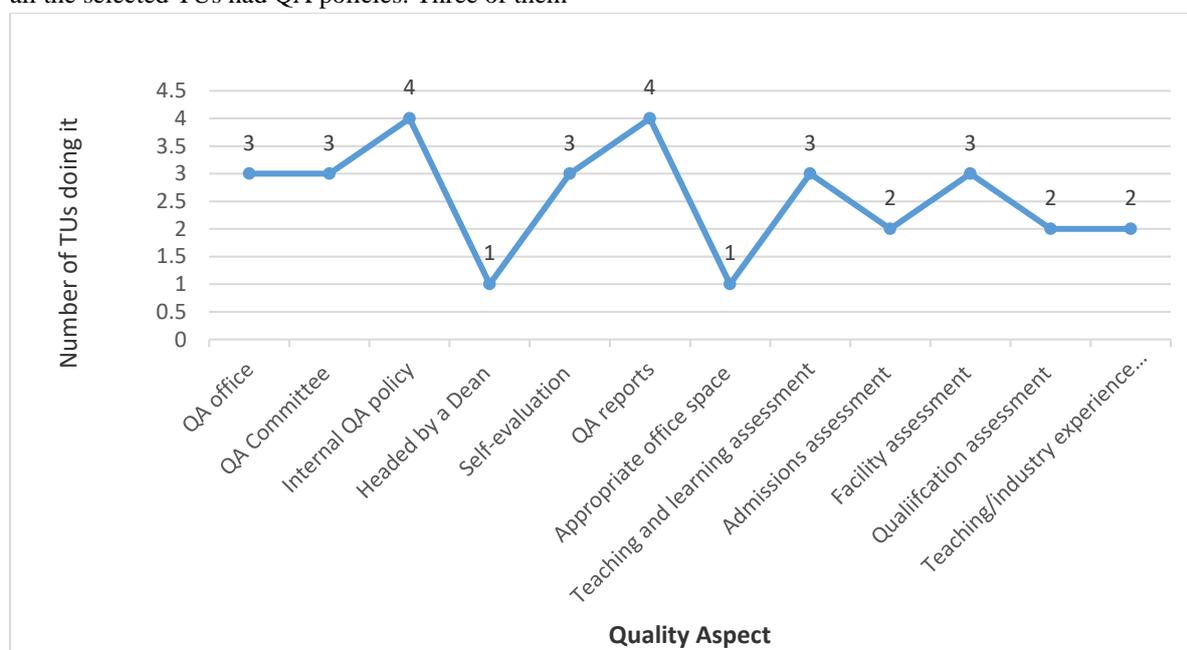


Figure 3: Internal Quality Assurance in the TUs

Regarding external quality assurance, the selected TUs were divided into the following two issues: Regular assessment of institutional achievement and the protection of the meaning and integrity of higher education. For instance, whereas half of the TUs indicated that their achievements were always assessed, the remaining two were of the view that this was only done sometimes or not at all. Another concern was the initial meetings to prepare the grounds for peer review. This in their view was not done at all. Other concerns included the cognition

that: Reviewers were not properly trained; there were compromises in integrity and effectiveness, and suggestions made by internal stakeholders were not often included in the final report. See Table 10 in the Appendix.

The overall picture regarding quality assurance was a bit far from what is desired as suggested by the above findings. However, this is not surprising because the finding that, some internal stakeholders (e.g., Heads of Department, HoDs) were not fully

supportive of quality assurance activities within their jurisdiction is similar to the findings of Seniwoliba (2014) at the University for Development Studies, Ghana. Seniwoliba (2014) also, found that some stakeholders even perceived the role of the QA office as interference or “policing”. As explained by Okae-Adjei, (2012), such thinking is due to inadequate education on the part of those who think as such.

### **Challenges in the way of QA and the way forward**

Key IQA challenges identified included inadequate logistics and technical staff to support IQA activities. Lip service or the absence of commitment on the part of management and the lack of support from other stakeholders including heads of departments/sections and staff. Externally, there were little or no collaborations between institutions and external reviewers with respect to the understanding of what standards are to be. Another challenge was the very long, frustrating and exhausting accreditation processes especially, for new programmes.

### **Conclusions and recommendations**

The aim of this study was to assess the current state of quality in four of the eight TUs in Ghana in the areas of infrastructure and accountability. A mixed-method approach was taken. In terms of findings, there were challenges such as inadequate support from stakeholders, inappropriate office space for QA activities and staff with the necessary expertise. There were also challenges with the adequacy of infrastructure for effective teaching and learning (the student-infrastructure ratio was 1:281).

The way forward based on the absence of commitment on the part of internal stakeholders is the need for the education of all stakeholders through various workshops and strategic plans that emphasize the importance of QA and how individuals could personally, contribute effectively to its attainment and maintenance. The management of the various TUs should further ensure that their respective QA offices are adequately resourced with both material and human resources (those with the requisite knowledge and skills) to be able to carry out their mandate effectively across all sectors of the

university. Improvement in infrastructure within the TUs is further necessary. In other words, the government should target improving infrastructure within the TUs in line with the increasing number of students within the TUs (given the ever-increasing number of students due to the government’s free senior high school policy). The TUs on the other hand, should look for extra-funding through grantsmanship and collaboration to improve their infrastructure.

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