

## E-Learning quality assurance is an act of symbolic control in Higher Education Institutions (HEIs).

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### Abstract

There has been a dominance of e-learning Quality Assurance (QA) discourse since the adoption and increased usage of e-learning by HEIs. Research has shown that majority of graduates from HEIs were failing to meet industry expectation due to explicit mismatch between industry expectation and HEIs offering. This study aims to establish how e learning QA can act as a symbolic control in HEIs. The study used systematic literature review research methodology to understand the how e-learning quality assurance can be guaranteed in HEIs. The results of the study proposed a framework to be adopted and used by HEIs for e-learning QA. Of interest to note in the framework is the -e-learning QA was difficulty in HEIs due to the following aspects financial resources, culture, technological advancement, IT skills, leadership, staff retention, resistance to change and employee involvement. This study recommends that HEIs need to put the much-needed infrastructure, financial resources, develop the IT skills and benchmark their practices with international standards to effectively ensure e-learning QA.

**Keywords:** Higher Education Institution, Quality Assurance, Total Quality Management, e-learning.

### 1. Introduction

The transformation in the teaching and learning environment has greatly compromised quality assurance in tertiary institutions due to the ill-timed migration from traditional methods to online methods. This study proposes the quality assurance framework for online learning from a tertiary education perspective. The study is based on a systematic literature review on quality assurance that is considered applicable in teaching and learning at tertiary institutions. Kundu (2017) citing Garvin (1988) argues that quality in HEIs should be viewed from their dimensions namely product based (based on attributes), system-based (conformance to requirements), user-based (satisfying the consumer), value-based (offering acceptable cost or price). Dimensions of quality in HEI vary and are not exhaustive as alluded to by Gora, Ștefan, Popa, and Albu, (2019) citing Harvey and Green (1993) who define quality as fitness for purpose. Prisacariu (2015) citing Campell and Rozsnayi (2002) posits that quality in HEIs can be viewed as excellence, zero errors, and as enhancement and improvement. These different dimensions of quality make quality

assurance issues subject to discussion among academics as part of their continuous improvement initiatives.

Lederman (2020) states that the Covid-19 pandemic has left instructors with no other option but to embrace online teaching modes. In the new phenomenon, instructors must face the challenge of navigating through the systems in teaching, assessment, and improving academic integrity. This calls for academic institutions to train instructors on how to use the technology in teaching, learning, and assessment in a manner that promotes quality before, during, and after the delivery process. Assurance and training must also be offered to students to adapt to the new phenomenon. This observation was shared by Mishra *et al.* (2020) who opine that proficient computer skills, communication skills, and emotional connectivity with learners are important as these improve the teaching, learning, and assessment of online learning modes. Online learning is not only peculiar to higher education institutions; it is also being used in pre-university schooling (Xia, Qiu, & Cheng, 2019). Research reflects that due to the favorable environment, online learning has been adopted due to its ability to allow learning, teaching, and assessment simultaneously. Online teaching gives learners an opportunity to revisit the teaching material at their own time and pace. When online learning started, it was limited to a didactic method where it was mainly instructive with no room for active interaction with the learners and among learners; however, currently (2022) learners can learn and be assessed in real-time. Biometrics and plagiarism software are now being incorporated as a way of improving the credibility of the assessment. Based on the ongoing discussion on online learning, teaching, and assessment methods, there is a likelihood of quality compromise. On the other hand, students might compromise quality as they battle to balance learning with other tasks they need to accomplish when not in a physical classroom. This scenario calls for quality assurance of learning, teaching, and assessment on the online platform to ensure the product of higher education is fit for purpose thereby giving the industry assurance that the output has gone through the intensive and extensive learning process. It is against this background that the research will explore concepts surrounding quality assurance, e-learning, and assessment on the online space. The transmission of learning material over electronic means such as computers, satellite transmission, videotape, audio records, and telephone is referred to as e-learning or online learning (Nassoura,

2020). The delivery of the teaching material is faster, easier, and more efficient when compared to the face-to-face approach (Nassoura, 2020). Darman et al., (2019) postulate that using an online mode instructor in real time to learners for both formative and summative assessments improve the quality of education in HEIs. Online learning is expected to grow globally to USD240 billion by 2023 up from USD165 billion in 2016 representing a 5% growth (Nassoura, 2020). Different names are now being used to refer to different forms of online learning such as flipped, blended, synchronous, and asynchronous (Davies et al., 2013). A comparison of the results of online teaching and learning to the traditional approach shows that online teaching produces better results (Bernard et al., 2004; Barbara et al., 2010; Gursul & Keser, 2009).

Many authors think that online learning is a new phenomenon. Online learning can be traced back to the 1950s with learning done through radio and television. This form of online evolved to be called Internet learning. Around the 1960s the University of Illinois pioneered the online learning mode. It was done using a network of computers in a local community. In 1984 the University of Toronto managed to run a complete course using online mode using the DOS application and Commodore 64 computers. During the 1990s technology witnessed tremendous growth. Adoption of technology started to accelerate in most developed countries and academic institutions were seen as recipients of the technology boom. In the 1990s the University of Phoenix launched a wholly online bachelor's and master's degrees (Swan, 2021). Since then, online teaching, learning, and assessment have been gaining momentum. Its adoption started with distance learning where students would learn online and physically sit for their examinations under supervised conditions.

The outbreak of COVID-19 in December 2019 has led to an increase in demand for education and globalization has witnessed the exponential growth of tertiary institutions' online quality globalization. Due to high-speed Internet, smart technology, and globalization, the adoption of online learning is unprecedented. The flexibility of online learning has made it very popular with both the student and institutions of higher education. For students, online learning is preferable because it allows them to learn anywhere and at any time unlike face-to-face learning (Zimmerman et al., 2020). Based on the literature discussion presented, this paper investigates the aspect of E-Learning quality assurance as an act of symbolic control in HEIs. The discussion will be guided by a wide spectrum of literature-based empirical studies.

## 2. Main research objective

Establish a framework for the implementation of e-learning quality assurance in higher and tertiary education.

1. Establish the current state of e-learning in higher and tertiary education.
2. Establish factors affecting the implementation of e-learning quality assurance in higher and tertiary education.
3. Recommendations for e-learning quality assurance.

## 3. Literature review

### 3.1. State of quality assurance in the HEIs

It is vital to have a logical "road map" or structure when implementing quality in HEIs (Davis, 2014). Total Quality Management (TQM) has been defined as a journey and not a destination and this calls for continuous improvement even if a company was the best at a given time. The implementation of quality requires committed top management and organizational steering committee, and the commitment of resources. Top management support is required not only for internal operations in HEIs but also for external interactions and interrogations. HEIs have experienced inevitable and rapid change recently, as such the task of top management in relation to quality is to ensure that even though some alterations might be made to accommodate change, quality has to be maintained.

The implementation of quality assurance has many challenges for institutions as they try to abide by standards and benchmark with other HEIs. National standards or institutional standards are often used in Europe to formulate the implementation of plans for quality assurance (Alzafari & Ursin, 2019). The former carries an advantage of unifying quality assurance within the country while the latter tends to individualize with a possibility of needs crafted around the top management. The biggest challenge of the latter is that when the top management leaves the institution, new rules will be applied which might not be easy to follow. The implementation of quality assurance in HEIs is often affected by country settings as observed in their study in Europe given different sets of strengths and weaknesses faced by these countries (Alzafari & Ursin, 2019).

Despite efforts by different stakeholders to effectively implement quality assurance in higher education systems, some challenges have been observed. Houston and Paewai (2013) argue that despite the long-standing dissatisfaction and criticism of the impact and outcomes of quality assurance implementation, these schemes persist. These authors stress that academics are included in quality assurance implementation programs although they are not involved in the design of these programs. Another challenge has been the lack of qualified staff members who match the requirements of the higher education regulatory bodies. According to Houston and Paewai (2013), knowledge and power distances as well as differences in meanings between systems designers and academics result in quality assurance systems that are unable to contribute to the implementation of teaching and research in institutions of higher education.

Empirical studies by Sari et al. (2016) on quality assurance issues in higher education sectors of developing countries reveal that assurance in Cyprus was inadequate hence the need for HEIs to be instrumental in working for quality. The study recommends that HEIs need to collaborate with government regulatory authority bodies that have the highest sanction power towards quality assurance practices. According to Forum (2008) and Sari et al. (2016) quality assurance needs to be viewed from a stakeholder

perspective. This involves the considerations of competitive hiring, creating opportunities for funding, and creating multi-tier communication amongst the different disciplines to allow the sharing and development of practices across organizations. In addition to these interesting discussions and narrative on quality by Rodriguez *et al.* (2018) citing Sulaiman *et al.* (2013) and Al-Amri and Talib BinBon (2012), alludes that in Qatar and Yemen teamwork and member participation were important factors in the quality assurance practice. These two important factors involve the empowering of employees so that there is creativity and innovation at HEIs. Empowerment is viewed as an ongoing process and management support is crucial through the provision of continuous development, seminars, and improving educational qualifications to hone the competencies, confidence, and commitment of employees. The review on international geographical education quality assurance in HEIs, a global perspective by (Yuan *et al.*, 2021) indicates that leadership, management, corporation, and collaboration have an impact on the institution's international credibility. The study concludes that quality assurance in higher education hinges on three perspectives namely accreditation, accountability, and continuous improvement of the institutional system.

### **3.2. Factors affecting the implementation of quality assurance in the HEIs.**

Quality has been associated with the production of tangible products for a very long time however, recently the subject of quality has gained much attention in the service industry and the education sector has not been spared from adopting such an initiative. Internationalization and globalization, growing demand for distance learning, the emergence of the multi-cultural workplace environment, and increased staff and students' mobility, quality aspects have been pivotal in online learning quality control (Nair, C. S., Patil, A., & Mertova *et al.*, 2011). To keep in line with international standards, tertiary institutions are required to participate in teaching and learning reviews in which they outline clear procedures and processes to ensure the quality of their students' learning process. According to Hadar *et al.* (2020) the higher education quality is compromised due to the VUCA (volatile, uncertain, complex, ambiguous) international quality expectations. Masengu & Ruzive (2021) find operating environment needs educationists to be agile and keep pace with radical changes in quality expectations. Masengu & Ruzive (2021) and Nair *et al.* (2011) elude professionals in HEIs from business and engineering background, quality plays an important role in determining graduate employability and professional practice. According to Hadar *et al.* (2020) in most engineering and business courses practiced across national boundaries, aspects of quality assurance and practice are mandatory. Perception from Harris (2021) citing the US National Science Foundation (NSF) Task Force on Total Quality Management, quality in engineering, and other practical courses across the divide calls for the

development of intellectual skills and knowledge that will equip graduates to contribute to society. Quality in the teaching and learning in HEIs allows students to be innovators, decision-makers, and leaders in globalised economy of the 21<sup>st</sup> century. It involves continuous improvement of and dramatic innovation in student, employer, societal satisfaction, and the environmental adaptation of the stakeholders.

The dynamics of quality assurance has been a major debate in academic discourse. The results of Harvey and Green (1993, p.28)'s study reveal that "Quality of higher education is stakeholder relative. The fact that it is primarily in the eyes of the beholder". In Krause (2012) measuring quality is a difficult aspect hence quality in higher education is difficult to theorize and measure. Quality assurance involves various stakeholders across multiple levels of governance that are expected to collaborate in quality assurance practices. To ensure accountability and/or enhancement purposes, all HEI stakeholders should be involved. According to Gora *et al.* (2019) and Prisacariu (2015) quality management in HEIs needs the involvement of all actors involved in the education process (students, government, teachers, etc.). There is a need to create a culture of quality amongst the stakeholders to ensure international recognition of higher institutions. The teachers play a very crucial role in education quality assurance through their teaching activities that contribute to the competencies and performance of other stakeholders (Gora *et al.*, 2019)

The 21<sup>st</sup> century has drastically changed the traditional way of teaching in HEIs. According to Prisacariu (2015), HEIs need to harmonize the whole system where departments, divisions, and faculties achieve the university missions and goals in the context of quality assurance of education. An empirical study by Jungblut *et al.* (2015b) shows that in European countries, students have varied perceptions of quality in HEIs. Their results reveal a similar perception with regards to quality as transformative but rather polarized with regards to quality as the value for money perspective. The study concluded that the students prefer to be put at the centre of quality assurance, and not necessarily as active participants and co-creators of the higher education experience but as passive participants.

Ethics are also believed to be one of the key factors of concern in quality assurance in HEIs. "It has been said politics without principles, business without morality, education without character is equally dangerous for the country" (Narayan Biswal, 2016). The relationship between quality assurance and ethical conduct is unquestionable. According to Warter (2019), ethics are critical in HEIs quality assurance since they focus on the human good. The institutional culture of ethics allows management to communicate beliefs organizational beliefs and values to employees. The absence of ethics at any institution may result in failure to strengthen responsibility between the internal and external environment. In conclusion (Warter, 2019) stated that quality and ethics are essential in any organization. To guarantee graduates' employability, HEIs must create ethical rules and recognize that their desire

for continuous improvement is ethics based not a strategy-based decision. Debate in the academic field is concurring with the fact that ethics and culture are instrumental in achieving quality assurance. According to Warter (2019), some believe that the link is ambiguous (Sullivan, n.d.), some assert that it should be treated separately, and the ethics are critical in an organization that is focusing on quality assurance. Narayan Biswal (2016) posits that education is considered the enabler of social transformation and knowledgeable societies rely on good quality education in the 21<sup>st</sup> century. Products or services that can be relied upon and have low defect rates are a true reflection of an ethical approach of the team that is concerned about the well-being of its customers (Foster, 2004). In Higher education, graduates who can be relied upon and are usually quickly absorbed into the market reflect the ethical approach that an institution of higher education would have embraced. A set of ethics that includes taking care of employees is usually developed by companies that focus on their customers. Disgruntled employees do all sorts of things to discredit a firm such as short-changing raw materials combination and product weight. In higher education, instructors may deliberately award wrong marks to students who really do not deserve the marks or ignore cheating attempts by students in both formative and summative assessments. The usual excuse given by instructors will be there is no benefit for me or there is nothing that I lose if I give undeserved marks. Formative and summative assessments require a careful approach for the attainment of high-quality products. This usually requires express support in the form of a policy document that should be made available to both instructors and learners. For instance, in summative assessment, the policy might categorically state that no candidate will be allowed into the examination hall/venue after thirty minutes of the examination. This will be done to reduce the chances of candidates conniving with both internal and external people to get access to examination papers before they get into the venue/hall, thus giving them the chance to cross-check their course material before entering the examination hall. Ethics means integrity, integrity boils down to being honest to customers and the society whose stakeholders include family members, employees, colleagues, and even us. Relatedly, quality assurance is linked to benchmarking issues. Some scholars have associated benchmarking with coping, but this debate has not yielded any weight as quality assurance programs have created better than evil for most HEIs. Willingness to open doors for other firms to have access to a firm's operations and tour its facilities is a good benchmark (Foster, 2004). Companies and institutions that are open to scrutiny have unique features of benchmarking and this openness gives an impetus for continual improvement. Foster (2004) contend that that openness gives a firm competitive advantage as those firms that come to observe often get some psychological barriers. There are several approaches to benchmarking, but they mainly revolve around the following types, and these include financial benchmarking, process benchmarking,

performance benchmarking, functional benchmarking, and product benchmarking, and strategic benchmarking. Process benchmarking involves studying the process flows, operating systems, process technologies, and the operations of target institutions of higher education (Nugroho & Jaqin, 2021). Financial benchmarking is mainly making a comparison of the financial statements and results of an institution or firm performing better financially. Results are analyzed to understand how a firm or institution is achieving better results. According to Yeung *et al.* (2019) quality assurance can be done through the process of benchmarking or assessments by set standards. HEIs across the globe have set various benchmarks, standards, and rubrics to assess the new normal (e-learning). According to European Commission (2019), HEIs describes benchmarking as a contemporary management tool and the most effective quality enhancement method. It encompasses building on the work of others that can lead to synergies and cooperation that is win-win. In Alstete (1995), benchmarking is suited for HEIs since it relies on hard data and research methodology that are proven. In a dynamic and complex environment, it helps institutions to overcome resistance to change, provides the structure for external evaluation, and promotes sharing of information with different stakeholders about the organization's quest for better. Benchmarking against similar businesses or institutions can serve to enhance processes in all departments, improve university level and determine the university strategy, set up the proper quality assurance infrastructure. It is essential for HEIs to benchmark so that they improve the quality of education that provides sustainability to the education sector (Nugroho & Jaqin, 2021 and Sandra Caeiro *et al.*, 2021).

### 3.3. Genichi Taguchi Theory- Quality Assurance in HEIs.

Taguchi's theory emphasized that many scholars believe that quality assurance can be enhanced if HEIs production process of products or even services (Foster, 2004). This may involve making decisions guided by questions such as: How many courses should a degree program contain? How many hours should each course be taught? How long should course lines be to cover relevant topics? What are the components of formative assessment and how should summative assessment be conducted? Taguchi's method suggests determining parameters to achieve quality through the design of experiments (DOE) (Foster, 2004). The basic approach of the Taguchi method is to provide a method for identifying the correct mix of quantities and qualities of inputs to produce high-quality products or services. Control factors in the production process should not be ignored including the upper and lower limit tolerances. For instance, in higher education, the lower limit for a pass mark in summative assessment might be agreed to as forty-nine percent (49%). The Taguchi method deviates from the traditional view of conformance to quality by clearly

stating an acceptable value for what is regarded as an ideal quality, and this becomes a reference point. The Taguchi theory believes that in as much as we are focused on increasing product there is need to apply the economic or cost factor. Taguchi developed a quadrant that is applicable in HEIs. adopt the scientific approach to quality assurance approach. Taguchi’s theory was used in the manufacturing industry but (Gora *et al.*, 2019; Krause, 2012; Ree *et al.*, 2014; Sullivan, n.d.), the theory is relevant to contemporary quality assurance issues in HEIs. Taguchi’s method of achieving quality uses standardized approach to determining the best combination of inputs in the power of Taguchi methods to impact in the US Companies (Sullivan, n.d.) citing Taguchi reveals that HEI needs to learn from the Taguchi quadrants so that they aim for the desired level of quality assurance. Quality assurance in HEIs can be achieved when institutions can have “high quality at low cost”. The lesson learnt from this quadrant is in as much as HEIs are emphasizing the improvement of quality assurance there is a need to focus on the desired scenario. There is a need to get rid of “Bad Business, Junk, and NASA quadrants”.

**Table 1: The Taguchi theory of Quality Assurance**

Cost	Quality		
		Low	High
	Low	Junk	Desired
	High	Bad business	NASA

**Note: The Table outline Taguchi concepts of QA**

There are quite several researchers who have proposed the Taguchi theory of quality assurance as the best theory which helps in understanding QA in HEIs. The Japanese and the American are well known to have orchestrated total quality or quality assurance management. Due to increase in research and investment in education the International Network for Quality Assurance in Higher Education (INQAAHE) was formed in 1991, with its main objective to collect, disseminate current developing theory and practice in assessment, improvement, and maintenance of quality in HEIs (Akpan, n.d.). The major focus of Taguchi’s theory was to make sure that employees are focused on exceeding customer requirements (Akpan, n.d.) citing Robbins and Coulter (1998) reveal that quality management/ quality assurance in HEIs uses Total Quality Management theories that put much emphasis on several concepts namely customer’s needs; continual improvement wide use of teams and task forces for finding and solving problems; teamwork and emphasis on participation. In that regard (Akpan, n.d.; Gora *et al.*, 2019; Jungblut *et al.*, 2015b; Kundu, 2017) concur that assurance focus on the prevention of wastage, involvement of students, teachers, head teachers, quality inspectors, and parents in the quality process, and securing the right attitude and commitment to quality. The next section

presents the results of the literature discussion

#### 4. Methodology

This study adopted the (Liberati *et al.*, 2009) framework which uses the literature-based methodology as another dimension in the creation of knowledge. The methodology constitutes three main parameters namely designing the literature review, conducting the review, and lastly contextual analysis and writing up the study’s findings. This study adopted the same methodology in which systematic literature was guided by the main research objective which was to produce a framework for the implementation of e-learning service quality. The systematic literature will explore the online quality dimension by looking at:

1. Current state of e-learning quality assurance in the HEIs.
2. Factors affecting the implementation of e-learning quality assurance in the HEIs.
3. Proffering recommendations for e-learning quality assurance in the HEIs.

#### 5. Findings

Table 2 presents the summary of finding from the comprehensive literature discussion of e-learning QA.

**Table 2: List of literature findings**

Current state of quality assurance in the HEIs.		
Name of author	Finding	Emergent themes
Davis, D. (2014). Quality	<ul style="list-style-type: none"> <li>• Lack of top management commitment</li> <li>• Commitment of resources</li> <li>• Absence of organization steering committee</li> </ul>	Financial resources, Technology, IT skills and training, Resistance to Change, Culture, Leadership, Staff retention, Teamwork, and involvement
Alzafari, K., & Ursin, J. (2019).	<ul style="list-style-type: none"> <li>• Failure to benchmark</li> <li>• Lack of organization memory</li> <li>• Lack of inclusion of academics</li> </ul>	
Houston, D., & Paewai, S. (2013).	Knowledge and power distance	
Sari, A., Firat, A., & Karaduman, A. (2016).	HEIs involvement in QA standards	
Rodriguez, J., Valenzuela, M., & Ayuyao, N. (2018).	<ul style="list-style-type: none"> <li>• Lack of teamwork and member participation.</li> <li>• Lack of corporation and collaboration among departments.</li> </ul>	
<b>Factors affecting the implementation of quality assurance in the higher and tertiary education</b>		

KALI Cloud-based repository would be responsible for the storage of entire application data. The KALI application data would be hosted over the cloud. This cloud storage

at the initial stage is intended to be taken from a public cloud service provider.

Nair (2011).	<ul style="list-style-type: none"> <li>• Growing demand for online learning</li> <li>• Multi-cultural workplace</li> <li>• Increased staff and student mobility</li> </ul>
Hadar, L. L., Ergas,O., Alpert, B., & Ariav, T. (2020).	<ul style="list-style-type: none"> <li>• Teaching and learning review</li> <li>• VUCA environment</li> </ul>
Harris, L. A. (2021).	<ul style="list-style-type: none"> <li>• Lack of development in intellectual skills</li> <li>• Lack of knowledge</li> <li>• Lack of innovation</li> <li>• Environment</li> <li>• adaptation</li> </ul>
Jungblut, J., Vukasovic, M., & Stensaker, B. (2015b).	<ul style="list-style-type: none"> <li>• Stakeholder relative</li> <li>• Quality</li> <li>• measurement</li> </ul>
Foster, S. (2004).	<ul style="list-style-type: none"> <li>• Willingness to accept criticism</li> </ul>
Nugroho, B. H., & Jaqin, C. (2021).	<ul style="list-style-type: none"> <li>• Process benchmark</li> <li>• Financial benchmark</li> <li>• Lack of accountability</li> </ul>
Gora, A. A., Ștefan, S. C., Popa, Ș. C., & Albu, C. F. (2019).	<ul style="list-style-type: none"> <li>• Stakeholder participation (student, teacher government)</li> <li>• Culture of quality</li> </ul>
Prisacariu, A. (2015).	<ul style="list-style-type: none"> <li>• Lack of system harmonization</li> <li>• Lack of student participation</li> </ul>
Narayan Biswal, B.(2016).	<ul style="list-style-type: none"> <li>• Lack of ethics</li> </ul>
<ul style="list-style-type: none"> <li>• Akpan, C. P. (n.d.).</li> <li>• Gora, A. A., Ștefan, S. C., Popa, Ș. C., &amp; Albu, C. F. (2019). the context</li> <li>• Krause, K. L. (2012)..</li> <li>• Ree, S., Park, Y.H., &amp; Yoo, H. (2014). A.</li> <li>• Foster, S.(2004).</li> <li>• Davis, D.(2014).</li> <li>• Alzafari, K., &amp; Ursin, J. (2019).</li> <li>• Houston, D., &amp; Paewai,</li> </ul>	<ul style="list-style-type: none"> <li>• Genichi Taguchi Theory</li> </ul>

**Note:** Lists of Literature review findings

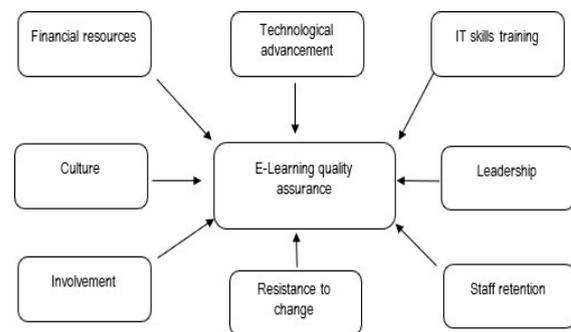
## 6. Discussions and Recommendations

The E-learning service quality has been embraced throughout the world with varying levels of adoptions across all continents. The developed world HEIs are now at any advanced stage with developing countries lagging behind. According to this literature study some of the factors that have led to these discrepancies in levels of e-learning service include lack of financial resources, technological advancement, IT skills and training, culture, leadership, teamwork and involvement, resistance to change and poor staff retention strategies. Figure 1 presents the proposed e-learning QA framework.

The cloud-based repository is expected to provide the backend data for the application and at the same time, it would provide the repository for academicians and students so that different learning material related to

various modules and topics can be accessed through the application itself.

The state of quality assurance has been summarized by several researchers in a few ways. Liu, Meng, & Tang (2015, posit that the “gravitational pull” of quality assurance discourse has not escaped institutions of higher education. Admittedly, the task of quality assurance in institutions of higher learning has been observed as a mammoth task (Alzafari & Ursin, 2019). Different institutional settings, as well as country cultures, pose different challenges to the implementation of quality assurance (Houston & Paewai, 2013). Sari, et al., (2016) state that inadequate assurance calls for strategies in higher education institutions if the quality is to be achieved. Rodriguez et al., (2018) point out that it is vital to share information and communicate both



**Figure 1:** e-Learning quality assurance proposed framework

with and outside the institutional set-ups as supported by Forum (2008) and Sari *et al.* (2016) who suggest that stakeholder consultation is important. Leadership, management, cooperation, and collaboration impact on the institutions’ international credibility and therefore must be guarded with extreme care and caution. For Davis (2014), there is need to competitive hiring, creation of opportunities for funding that will enhance the culture of research with the academics. Research is fundamental to the enhancement of any QA aspects.

Research is pointing to the fact that management commitment, continuous professional development, and training are lacking in most HEIs. The coming of the COVID-19 pandemic and the subsequent disruptions in teaching and learning created a more sophisticated environment for HEIs. Alzafari and Ursin (2019) posit that QA does not exist in isolation, however, there is a need for HEIs to collaborate/ co-exist with the government institutions who are the custodians of the quality parameters. Failure by the HEIs to have synergy with the Ministry institutions is recipe for disaster from a quality perspective. The study viewed that the collaborations and corporation between the HEIs and Ministry organization is paramount to enable the the proposed E-learning quality assurance framework suggests financial resources, technological advancement, IT skills training, culture, and involvement, resistance to change, staff retention and leadership as key factors in attaining the desired result. The research team further suggests that these classified into two groups, that is, soft skills and hard skills. Soft skills are those that are easy to control and

manipulate like IT skills training, leadership, organizational culture, and involvement. Hard skills have been referred to so because there are other external factors that may hinder complete control of that factors. For example, staff retention might be adversely affected by market force and individual staff's decision. Financial resources though available at institutional level, they may be affected by state laws for instance taxes and how much to repatriate when you want to procure assets and software packages for supporting quality.

Leadership has been defined as the use on no coercive influence on direct and coordinate the activities of group members toward goal accomplishment (Moorhead & Griffin, 1992) Leadership is of paramount importance in quality assurance as it forms the roots of the success of the program. Leadership might not be visible, but their attitude will always be reflected in the fruits of the branches of that institution such the energy and attitude of faculty staff as they are in direct conduct with the output. Leadership has two functions, that is, path clarification and increase the number of rewards available to subordinates by being supportive and paying attention to their personal needs (Cherrington, 1989). If staff are supported, they will be motivated to produce good results, if they lack support, and they relax and will usually not care. Organizational culture is important in the success of quality assurance.

Organizational culture has been defined by (Schein, 1983) as "the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration." Culture is what is embedded in an organization as it thrusts its forces and attention towards attainment of certain goals. In higher education institutional environments, this cultural approach will be directed at achieving quality assurance. Involvement refers to taking a participatory approach in which everyone is involved in the attainment of quality. This goes hand in hand with culture as culture may be referred to as involving culture or one that gives orders to subordinates.

The last two decades (2000-2022) have seen IT skills growing at an unprecedented pace and knowledge of such skills by instructors has become a survival strategy. It is a must that every instructor catches-up, keeps-up and puts up with the ever-changing computer-based technology. A variety of IT tools are available these days for instructors but to achieve quality it is advisable to limit as much as possible the use of external tools and make use of more of an institution's learning management system (LMS) largely because this has internal support for both hardware and software challenges. IT challenges that are identified within an institution can be traced and better managed than those which the institution does not have control over.

The research team proposes quality assurance measures that include prevention of wastage (Gora et al., 2019; Kundu, 2017). Such wastage may be in the form of precious and irrecoverable resources such as time and human capital. Genichi Taguchi theory of quality is recommended as a vital theory because it takes the scientific approach which is hardly questioned and as is

a contemporary quality assurance tool. Taguchi approach is a standardized technique that determines the best combination of inputs (Foster, 2004) to produce best results. This requires investigating and reaching a conclusion about the contents and all the components of a degree program before, during and after the delivery to the best satisfaction of all stakeholders. In Taguchi theory emphasis should be put in balancing the QA issues with economics (profitability). The theory posits that high quality and high cost are not sustainable in QA. The theory recommends that the Japanese philosophy of high quality and low cost is the right way to enhance QA issues in institutions. Value for little money is the key principle in Taguchi philosophy.

## 7. Conclusion

In a nutshell, research has shown that quality assurance is not an end to the teaching and learning in HEIs, but it is rather a way in which institutions can achieve their strategic objectives in a proper way. The study unequivocally accepts that should discover the best approach (internally and externally) so that they provide the best output to the intended assurance. It is pertinent to note that QA remains a continuous process that provides inputs and outputs to the HEIs. QA contribute to determining e-learning and promoting effective learning strategies, improves the entire e-learning process, enhances the continuous development of curriculum development and at the same time improving physical infrastructure of academic institutions. The active participation/involvement of students, teachers, and management is also a key element in QA success. For the students there is need to carry out effective needs assessment, for the teachers there is need to engage in continuous improvement activities which among them include training and continuous professional development activities. This study brings to the afore that HEIs that do not embrace the QA initiatives will have serious challenges in meeting the stakeholders' expectations. Learning from the Taguchi theory, it is relevant to note that QA need to be linked to the economic aspects of profitability and at the same time affordability.

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