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## A Proposed Framework for Quality E-learning Programs in Center for Languages and Translation, Ibb University

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Keywords	Abstract
E-Learning, Quality, Quality Assurance/Enhancement, Benchmarking, Quality Models And Frameworks,	<p>This paper aimed at developing a framework for quality e-learning programs in the Center for Languages and Translation at Ibb University in Yemen (henceforth CLTIUY). To this end, the paper utilized a descriptive qualitative method of analysis, drawing on a benchmarking approach, which is a standardized approach on the topic. In particular, an extensive review and thorough meta-analysis of almost all relevant research and literature in the field of e-learning were carried out, with a particular focus on international quality models and frameworks developed so far for assuring and enhancing quality in e-learning programs. Conclusions drawn in this paper revealed that: most of the existing e-learning quality models and frameworks have approached the notion of quality in e-learning mechanistically rather than holistically; and that most of those models and frameworks have been designed in developed countries, where the state and challenges of e-learning are not the same as those in developing countries. Consequently, adapting these models and frameworks to the local, cultural contexts of developing countries, like Yemen, is crucial for the successful implementation of e-learning programs. Addressing the concerns of quality and cultural contexts, a comprehensive quality e-learning framework was developed. The proposed framework was developed to address the local needs and unique requirements of CLTIUY. It can be used by policymakers as a roadmap for implementing successful quality e-learning programs.</p>

## A Proposed Framework for Quality E-learning Programs in Center for Languages and Translation, Ibb University

### إطار مقترح لبرامج تعلم إلكتروني ذو جودة في مركز اللغات والترجمة بجامعة إب

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قسم اللغة الإنجليزية، كلية الآداب، جامعة إب، اليمن

المخلص:	الكلمات المفتاحية:
<p>تهدف هذه الورقة إلى تطوير إطار لبرامج تعلم إلكتروني ذو جودة في مركز اللغات والترجمة بجامعة إب في اليمن. ولتحقيق هذه الغاية، استخدمت الورقة أسلوب التحليل النوعي الوصفي، بالاعتماد على نهج المقارنة المرجعية، وهو نهج معتمد في مثل هذه المواضيع. وعلى وجه الخصوص، تم إجراء مراجعة شاملة وتحليل تفصيلي مكثف تقريباً لجميع البحوث والأدبيات ذات الصلة في مجال التعلم الإلكتروني، مع التركيز بشكل خاص على نماذج وأطر الجودة العالمية التي تم تطويرها حتى الآن لضمان وتعزيز الجودة في برامج التعلم الإلكتروني. وقد كشفت الاستنتاجات التي توصلت إليها هذه الورقة البحثية أن: معظم نماذج وأطر جودة التعلم الإلكتروني الحالية قد تناولت مفهوم الجودة في التعلم الإلكتروني بشكل ميكانيكي وليس بشكل شمولي؛ وأن معظم هذه النماذج والأطر قد تم تصميمها في الدول المتقدمة، إذ تختلف حالة وتحديات التعلم الإلكتروني عن مثيلاتها في الدول النامية. ومن ثم فإن مواءمة هذه النماذج والأطر مع السياقات المحلية والثقافية للبلدان النامية، مثل اليمن، أمر بالغ الأهمية لتنفيذ برامج تعلم إلكتروني فعّالة. بناءً على ذلك، تم تطوير إطار شامل لتعلم إلكتروني ذي جودة مع الأخذ بعين الاعتبار الاهتمامات المتعلقة بالجودة والسياقات الثقافية. وقد تم تطوير الإطار المقترح لتلبية الاحتياجات المحلية والمتطلبات الخاصة لمركز اللغات والترجمة بجامعة إب في اليمن، ومن ثم يمكن استخدامه من قبل الجهات المعنية بوضع السياسات بوصفها خارطة طريق لتنفيذ برامج تعلم إلكتروني ناجحة وذات جودة عالية.</p>	<p>التعلم الإلكتروني، الجودة، ضمان/تعزيز الجودة، المقارنة المرجعية، نماذج وأطر الجودة،</p>

## 1. Introduction

Advancements in the online technical revolution in the early 1990s had a significant impact on education. The incorporation of technology in teaching and learning has given rise to a distinct educational model referred to as e-learning (Stella & Gnanam, 2004). More specifically, e-learning has become a hot issue in higher education with the introduction of the first web-based courses in the mid- to late 1990s (Hill, 2012; Bichsel, 2013).

Although e-learning has recently become the dominant form of distance learning delivery in higher education institutions worldwide, there is still doubt among many as to what actually constitutes e-learning. It should be noted, however, that the defining feature of most forms of distance and online learning is that learning involves a web-based component, enabling collaboration and access to content that exists beyond the classroom (Bichsel, 2013). Whereas teaching can be inside (or outside) the classrooms, the use of new multimedia technologies and the Internet is the main component of e-learning (Rekkedal, 2006; Aboagye, Yawson & Appiah, 2020).

In fact, with the widespread adoption of e-learning in higher education, there are worldwide calls for assuring quality in e-learning (Martin, Polly, Jokiah & May, 2017; Shraim, 2020). In this regard, Abdous (2009) views quality assurance as a dynamic and iterative process intertwining with the e-learning development process. Similarly, Ehlers et al. (2005, as cited in Shraim, 2020) argue that quality plays a key role in the success of e-learning, and suggest that higher education institutions should treat quality development as a core process in all e-learning programs.

E-learning, as a new buzzword for web-based and/or internet-based education, is a rapidly growing market in the digital economy (Seufert, 2001). Holmes (2006) maintains that e-learning plays a vital role in

achieving the three strategic goals (i.e., quality, access, and openness to the world) set by the European Council in 2001. He adds that continuous education, or lifelong learning, is an essential pre-requisite for Europe to achieve its aspirations for improving competitiveness, innovation, and growth. He goes on to say that e-learning is of paramount importance in the 21<sup>st</sup> century and should become mainstreamed within higher education institutions. Moreover, Holmes (2006) emphasizes that massification, lifelong learning, and education in a global market are some driving forces for mainstreaming e-learning in higher education.

E-learning has begun to embed itself as a part of today's educational environment, especially in the higher education sector. Nowadays, e-learning is becoming more and more popular among institutions and individuals for a variety of reasons, such as increased accessibility, flexibility, and desire for lifelong learning. In the words of Anderson (2008, p.3), "the ubiquity and multiplicity of human and agent communication, coupled with tremendous increases in information production and retrieval, are the most compelling characteristics of the Net-based culture and economy in which we now function." Subsequently, e-learning improves access to learning and helps increase availability, effectiveness, and efficacy of learning. Additionally, it offers a unique experience of learning and an opportunity to elevate education systems through removing obstacles to lifetime learning, building new partnerships with the community at large, and empowering learners to take charge of their own learning (Holmes, 2006). More specifically, the ability of students to engage in synchronous and asynchronous interactive learning activities is viewed as a unique characteristic of an e-learning environment. Indeed, as a result of the revolutionary advances in information technology, e-learning is now more focused on collaboration, interaction, and participation (Ossiannilsson & Landgren, 2012).

Undoubtedly, e-learning is revolutionizing both the physical and conceptual dimensions of the learning environment, leading to a fundamental change in the way we teach and support learning in the 21<sup>st</sup> century. It shifts the paradigm from teaching to learning, from "push learning" to "pull learning" (Norton, 2006, p. 80), and from knowledge transmission to knowledge construction via active interaction with learners, teachers, and content (Holmes, 2006). The shift from a teacher-centered approach to a learner-centered approach brings about significant changes in learning methodologies, delivery methods, and assessment practices (Kayed, 2013). According to Holmes (2006), the learner-centered approach is more adaptable and responsive to the learner's needs. However, it presents greater challenges to traditional educational institutions. Holmes also notes that in such a learner-centered system, the teacher acts as a facilitator, guiding the learners and inspiring and motivating them to follow their learning paths.

Considering the increasing importance of e-learning in this dynamic world and the need for integrating e-learning programs into higher education institutions as a panacea, the main aim of this paper is to develop a comprehensive framework for quality e-learning programs in CLTIUY, while taking into account the center's unique requirements and challenges. Basically, CLTIUY is based only on the traditional methods of teaching and learning. That is to say, it follows the traditional set up of face-to-face lectures in classrooms. Very rare are instances of e-learning delivery, and those are confined to efforts by some qualified teachers in the center. Even though the center has a computer laboratory, it is not operational. Also, the quantity of computers available is inadequate relative to the large number of students. The center, moreover, lacks even the basic technology tools and infrastructure to integrate e-learning. Overall, neither in-

ternet access nor steady electric current are available. Accordingly, successful implementation of quality e-learning programs requires a high level of investment in faculty, staff, technology tools, and technical infrastructure.

It also depends on building a strategy that responds to the needs of learners, meets the goals of the educational institution, and raises society awareness with regards to the importance and value of e-learning.

## 2. Literature Review

E-learning has embedded itself as part of the international educational landscape of today (Ossiannilsson, Williams, Camilleri & Brown, 2015). Indeed, this new paradigm has revolutionized the learning process in the 21<sup>st</sup> century and has become the primary mode of delivery for many higher education institutions all over the world. In light of the wide spread of e-learning initiatives in recent times, nevertheless, there are worldwide calls for improving and assuring quality of e-learning programs in higher education (Masoumi & Lindstrom, 2012; Shraim, 2020). In this sense, it has become apparent that quality improvement is the most decisive factor determining the successful implementation of e-learning programs. With this in mind, Crow (2011, as cited in Ossiannilsson, 2012) is of the view that benchmarking in higher education institutions can result in significant quality improvements that meet national and international standards. Accordingly, the benchmarking approach offers practical techniques and real-world standards that higher education institutions can use to assure and improve quality of their e-learning programs (Ossiannilsson, 2012).

The present paper is grounded in the foundation of benchmarking and quality assurance in the field of e-learning in higher education. It attempts to develop a framework for quality e-learning programs in CLTIUY by utiliz-

ing a benchmarking approach. Thus, the current discourse in the field and the theories behind the main concepts, i.e., e-learning, quality and benchmarking, have been selected as a theoretical foundation for this paper.

## 2.1 The concept of e-learning

E-learning has emerged as a new paradigm in today's globalized world of education and thus many higher education institutions all over the world are increasingly moving towards the use of e-learning as the main mode of delivery (Ossiannilsson, 2011; Ossiannilsson, 2012; Ossiannilsson et al., 2015; Thi, 2015; Shraim, 2020). This strategic move towards e-learning has largely been facilitated by the exponential growth of, and the increasing access to, the Internet and the Power of the Web (Ossiannilsson, 2012; Kayed, 2013).

In practice, different terminologies have been associated with e-learning, which makes it difficult to provide a precise definition of e-learning. Terms commonly used for e-learning include online learning, internet-based learning, web-based learning, distributed learning, networked learning, virtual learning, computer-assisted learning, and distance education (Seufert, 2001; Ally, 2011; Ossiannilsson, 2012; Ossiannilsson et al., 2015). These terms are becoming synonymous with the latest approach to offering high-quality learning environments. All of them imply that the learner is at a distance from the instructor. They also indicate that the learner uses some form of technology to access the learning materials and interacts with the instructor and with other learners (Kaplan-Leiserson, 2000; Seufert, 2001; Paulsen, 2002; Weippl, 2005; Norton, 2006; Ally, 2011; Ossiannilsson, 2012; Kayed, 2013; Thi, 2015; Shraim, 2020). For the purpose of this paper, nevertheless, we use 'e-learning' as an umbrella term that covers all the aforementioned terms. We also adopt the definition of e-learning developed by Kaplan-Leiserson (2000) in his *E-Learning*

*Glossary* due to its broadness. Kaplan-Leiserson (2000) states that:

[E-learning] covers a wide set of applications and processes, such as web-based learning, computer-assisted learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, and CD-ROM. (p. 5)

Hence, any form of learning that involves electronic components and/or utilizes a network for delivery, interaction, or facilitation should be considered e-learning.

Dating back to the rise of 'e-commerce', e-learning is widely used in different ways (Weippl, 2005). LineZine (cited in Weippl, 2005), for instance, views e-learning as:

The convergence of the Internet and learning, or Internet-enabled learning or the use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere or the delivery of individualized, comprehensive, dynamic learning content in real time, aiding the development of communities of knowledge, linking learners and practitioners with experts. (p. 7)

According to Ally (2011), e-learning can be defined as:

The use of the Internet to access learning materials; to interact with the content, instructor and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience. (p. 17)

E-learning is defined as using new multimedia technologies and the Internet to enhance learning quality by making information and services easier to access, as well as enabling

virtual exchanges and cooperation (e-Learning Action Plan, 2001, cited in Holmes, 2006, p. 22). The idea of improving learning through an increased collaboration, better access to resources, and improved services is at the heart of this definition. E-learning is not an end in itself, but rather a means to an end. It is most effective when used in conjunction with suitable teaching methods and recognizes that learning is a social process (Holmes, 2006).

## 2.2 The concept of quality

Today, quality has become a matter of paramount importance for higher education institutions, particularly for those involved in e-learning (Twigg, 2001). With the proliferation of e-learning initiatives in recent times, the focus of attention has turned to quality processes. Simply put, it has become more and more evident that higher education institutions working toward developing e-learning programs must demonstrate the quality of their services in ways that are intelligible to potential learners, faculty, and staff if those initiatives are to succeed and prove effective (Lee & Dziuban, 2002; Parker, 2011).

Quality is viewed as the most significant element driving the future of e-learning. Achieving excellent quality is, indeed, a highly disputed and much desired goal in all aspects of society and education (Ehlers & Pawlowski, 2006). The absence of a holistic universal definition of the notion of quality, however, makes the task to provide a high-quality educational experience—especially in the field of e-learning—an extremely difficult challenge. What, then, is quality and what constitutes the concept of quality?

As a matter of fact, the concept of quality is debated to a high extent. It is a poorly defined notion that is interpreted and perceived differently by different people in different contexts at different times (Mishra, 2006, cited in Ossiannilsson, 2012). Parker (2011), for instance, maintains that quality remains a relative and subjective experience that is

largely realized through an individual's level of expectation. He argues that "quality, like beauty, rests on the eye of the beholder" (p. 307). Following Green (1994), "quality, like freedom or justice, is an elusive concept. [It] is also a value-laden term" (p. 22).

It is often argued that the concept of quality is complex and thus difficult to define because it is influenced by a variety of factors, including the student, the curriculum, the instructional design, the technology used, the faculty's characteristics, and the situation in which it is employed (Meyer, 2002; Ehlers & Pawlowski, 2006; Parker, 2011; Ossiannilsson, 2012). It is seen as absolute, as relative, as a process, and as a culture (Ossiannilsson, 2011; Ossiannilsson, 2012). Defining quality, therefore, means exploring this multidimensional space (Ehlers & Pawlowski, 2006).

Quoting Cleary (2001, as cited in Parker, 2011, pp. 307-308), quality in higher education is a construct "relative to the unique perspectives and interpretations of different stakeholder groups (students, alumni, faculty, administrators, parents, oversight boards, employers, state legislatures, local governing bodies, accrediting associations, transfer institutions, and the general public)." Harvey and Green (1993, cited in Van Vught, Brandenburg & Burquel, 2008, p. 20) distinguish five approaches to quality in higher education:

- 1) Quality as exceptional ('excellence');
- 2) Quality as perfection or consistency ('zero errors', achieving standards);
- 3) Quality as fitness for purpose (mission-based 'do what you promised', or 'delight customers');
- 4) Quality as value for money; and
- 5) Quality as transformation (in Harvey & Green's words: "Education is not a service for customer but an ongoing process of transformation of the participant", associated with 'value added' and 'empowerment').

Institutions are obviously searching for strategies to manage quality processes as a result of the growing concern with quality in higher education (Inglis, 2005). A close review of the literature on quality in higher education reveals a wide variety of terms that refer to distinct yet closely related functions, including quality control, quality audit, quality assurance, quality improvement, and accreditation. A brief description of each is given below.

### 2.2.1 Quality control vs. Quality audit

It is widely agreed that to know quality, it has to be measured or assessed. A very general synonym for making a judgment on quality is evaluation or assessment. **Quality control** refers to internal or external quality assessments as well as the processes and structures utilized by higher education institutions to maintain current state of quality. Whereas an assessment of these processes and structures to enhance quality, usually by external agents, is often called **quality audit** (Frazer, 1994; Van Vught et al., 2008).

### 2.2.2 Quality assurance

Quality assurance, according to Inglis (2005), is a process meant to ensure that the quality of a product or service meets some predetermined standard. In essence, the process of quality assurance compares the quality of a product or service with a minimum standard set either by the producer/provider or by some external awarding agent. Consequently, quality assurance in the context of higher education is seen as a means through which an institution ensures and confirms that the conditions are in place for students to achieve the standards set by it or by some external standards authority (Ossiannilsson, 2012).

### 2.2.3 Quality improvement

Quality improvement is primarily concerned with enhancing the quality of a product or

service. In quality improvement, the type of comparison made is between the current standard of a product or service and standard being aimed for. Thus, quality improvement has to do with the self rather than with the other (Inglis, 2005). In higher education settings, quality improvement is meant as a continuous process of taking deliberate steps at the institutional level to enhance the quality of learning opportunities.

### 2.2.4 Accreditation

In the words of Van Vught et al. (2008), "accreditation is a quality assessment with an attached judgment that the evaluated unit (program or organization) meets the minimum standards required to operate in a national higher education system" (p. 17). It can apply either to institutions or to programs (Frazer, 1994). Chernay (1990, cited in Frazer, 1994, p. 112), describes the purposes of accreditation as follows:

Accreditation assures the educational community, the general public, and other agencies or organizations that an institution or program (a) has clearly defined and educationally appropriate objectives, (b) maintains conditions under which their achievement can reasonably be expected, (c) is in fact accomplishing them substantially, and (d) can be expected to continue to do so.

Nowadays, there are worldwide calls for improving and assuring quality in e-learning due to the rising demand for e-learning in addition to the pursuit of excellence associated with the globalization of education (Connolly, Jones & O'SHEA, 2005; Oliver, 2005; Masoumi & Lindstrom, 2012). In more details, scholars argue that assuring quality is fundamental to the successful implementation of e-learning programs (Zhao, 2003; Inglis, 2005; Ehlers & Pawlowski, 2006; Ossiannilsson, 2012). Consequently, it is highly recommended that higher education institutions worldwide, particularly

those in developing countries, implement a quality assurance plan that is explicitly focused on e-learning initiatives. Oliver (2005), addressing this issue in terms of the 'quality agenda', states that:

As more and more universities seek to use e-learning as a mode of delivery for their units and courses, and as more and more they are being held accountable for the quality of the services they provide, the need grows for accepted standards and benchmarks against which performance can be judged. (p. 138)

For a long time, nevertheless, quality in e-learning has unfortunately been seen as separate from quality assurance work in higher education institutions and has been considered and managed in a disconnected manner (NAHE, 2008). For this reason, Ehlers and Pawlowski (2006), Hopbach (2010), and NAHE (2008) emphasize that e-learning should be an integral part of the ordinary internal and external quality assurance systems. Taking a similar position, Dumont and Sangra (2006) articulate that quality assurance should be connected directly with the strategic planning of higher education institutions involved in e-learning.

Quality in e-learning is too diverse and multi-faceted to encompass the perspectives of all stakeholders; a learner's view, for instance, may differ considerably from that of a teacher, developer, policy maker, or the government (Green, 1994). Benson (2003) illustrates the diversified perceptions of quality in e-learning in terms of efficient and effective course development process, accreditation, and effective pedagogy.

In the last resort, quality is a philosophical concept, and there is not a single, universally-accepted definition of quality in higher education (Green, 1994). The underlying premise of this argument is that quality is a relative concept and that different interest groups or 'stakeholders' in higher education

have various priorities and their focus of attention may be different (Harvey & Green, 1993). Therefore, discussing quality as a unitary concept is impossible.

### 2.3 The concept of benchmarking

Basically, the notion of benchmarking has its origins in the business and management context, namely in the private sector. During the 20<sup>th</sup> century, organizations around the world employed a variety of tools, techniques, and strategies in order to compete and survive. However, benchmarking is a relatively new concept (Abbas, 2014).

Jeffries (1999) defines benchmarking as:

A process for improving performance by constantly identifying, understanding and adapting best practices and processes followed inside and outside the company and implementing the results. The main emphasis of benchmarking is on improving a given business operation or a process by exploiting 'best practices', not on 'best performance'. Simply put, benchmarking means comparing one's organization or a part of it with that of the other companies. (p.2)

Benchmarking is often defined as a diagnostic instrument, a self-improvement tool involving the systematic collection of data and information and collaborative comparison of practice and performance with similar organizations (Inglis, 2005; Van Vught et al., 2008). It starts by learning about good practices in other, better-performing organization, and building on evaluation of relevant performances in own and others' organization (Inglis, 2005).

In fact, the concept of benchmarking is well-defined by Van Vught et al. (2008, p. 16) as a systematic process that helps organizations enhance their performance by learning from others. It involves examining and comparing their primary and support processes with those of high-achieving organizations to

identify areas for improvement. Bhutta & Huq (1999), moreover, view the process of determining best practices and the highest standards of excellence for products, services, or processes, followed by the necessary improvements to meet those standards and best practices, as the essence of benchmarking.

Benchmarking is not a one-off process, but rather a continuous and systematic process of comparing products, processes, services, and outcomes with other organizations or exemplars for the purpose of improving performance and outcomes by identifying, adopting, and implementing best practice approaches (Alstete, 1995; Bhutta & Huq, 1999, Inglis, 2005). Comparisons can be applied against specific benchmarking partners or organizations, other programs within a university or organization, sets of established standards, or previous performance data from inside or outside a particular business or industry (Bhutta & Huq, 1999; Stapenhurst, 2009; Scott, 2011). This process-based benchmarking is a novel and revolutionary approach to benchmarking since it focuses on the process—that is, how it functions and what makes it work—instead of the data that was initially the emphasis of problem-based benchmarking (Bhutta & Huq, 1999).

Benchmarking, or the 'best practice' approach, is an essential concept for enhancing the quality of e-learning initiatives due to the fact that it offers practical techniques and real-world standards that higher education institutions can use to assure quality (Bhutta & Huq, 1999). Basically, best practices are applicable to both newly implemented e-learning projects for quality assurance and to already-existing e-learning initiatives for ongoing improvements (Masoumi, 2010).

A concise and thorough definition of benchmarking that applies to many benchmarking projects is developed by Stapenhurst (2009): "benchmarking is a method of measuring and improving our organiza-

tional performance by comparing ourselves with the best" (p. 6).

According to Moriarty (2008, cited in Ossiannilsson & Landgren, 2012, p. 30), benchmarking is a teleological process that is driven by exemplars and aims to purposefully transform an existing state of affairs within an organization into a better one. Furthermore, as noted by Moriarty and Smallman (2009, p. 484), the locus of benchmarking is situated between the desired and actual states of affairs and plays a role in the transformation process that brings about these improvements.

Based on these definitions, it is evident that benchmarking is a systematic and ongoing process designed to enhance quality, identify gaps, and implement changes (Ossiannilsson, 2011). Moreover, it should be noted that all of these definitions have roots in Robert Camp's definition. According to Camp (1989), benchmarking is the search for industry best practices that will lead to superior performance.

As a matter of fact, there is no one comprehensive system for classifying benchmarking so far, despite several attempts by academics and practitioners to classify it into different categories (Bogan & English, 1994; Boxwell, 1994; Alstete, 1995; Codling, 1995). According to Codling (1995), there are three types of benchmarking: internal, benchmarking with partner from same organization; external, benchmarking with partner from different organization; and best practice, benchmarking with the best-in-class partner. A slightly different classification of benchmarking is proposed by Bogan and English (1994). They classify benchmarking into three categories: performance, which refers to benchmarking the performance measures and product characteristics such as reliability, durability and cost; process, which focuses mainly on benchmarking specific work processes such as recruitment process and shipping process; and strategic, which entails benchmarking an

organization's strategic direction in relation to a competitor.

Another classification is offered by Boxwell (1994) who subdivides benchmarking into competitive, cooperative and collaborative. Competitive benchmarking, as the term suggests, means benchmarking with a competitor. In cooperative benchmarking, parties of the benchmarking exercise can be from different sectors. Whereas in collaborative benchmarking, a group of organizations share information about a specific task/project and exchange best practices.

It is worth mentioning, however, that one of the highly-cited classifications of benchmarking is that proposed by Camp (1989), who identifies four types of benchmarking: internal benchmarking, competitive benchmarking, functional/industry benchmarking and generic process/'best-in-class' benchmarking.

Additionally, Camp (1989) outlines five sequential steps to describe the benchmarking process: (1) determining what to benchmark; (2) forming a benchmarking team; (3) identifying benchmarking parties; (4) collecting and analyzing benchmarking information; and finally (5) taking action. Alstete (1995), on the other hand, suggests a four-step process for benchmarking as thus: Plan-Do-Check-Act (PDCA). The first step, planning, is concerned with selecting administrative or teaching process to be studied. In other words, it involves planning what to benchmark and who will carry out the benchmarking exercise. The second step utilizes primary and/or secondary research to gather the data – e.g., through professional associations, personal contacts, a library, or online computer services. The third step consists of analyzing the data collected to calculate the research findings and develop recommendations. The differences or gaps in performance of the parties involved in the benchmarking exercise/project are identified in this step. Adapting, improving and implementing the findings is the final step of the benchmarking process.

O'Reagain and Keegan (2000, cited in Inglis, 2005) view that the benchmarking process involves the following four steps: (1) understanding in detail one's own processes; (2) analyzing the processes of others; (3) comparing your own performance with that of others analyzed; and (4) implementing the steps needed to close the performance gap.

After all, e-learning involves distinct teaching and learning elements that can be isolated and identified for benchmarking purposes. In practice, many researchers and organizations have developed a variety of models, frameworks, benchmarks and guidelines to enhance and assure quality in e-learning, including Khan's E-Learning framework, Frydenberg's e-Learning quality standards, the e-Quality framework of Masoumi and Lindstrom, the Swedish E-Learning Quality model, the University of Pennsylvania quality course design standards, the British Open University e-Learning approach, the Norwegian Association for Distance Education model, the New Zealand e-learning Maturity Model (eMM), the E-xcellence quality benchmarking instrument, the Online Learning Consortium (OLC) quality scorecard and the Hamdan Bin Mohammed Smart University model (Shraim, 2020). Ossiannilsson et al. (2015), however, argue that all these models, frameworks and benchmarks suffer deficiencies such as restricted applicability, failure to clarify which maturity levels they are best for, widely divergent quality of reviews and of information provided, and poor response to change (Shraim, 2020). Stracke (2019) maintains that there is currently no holistic quality framework for e-learning that follows the total quality management philosophy. Moreover, Farid, Ahmed, Alam, Akbar & Chang (2018) note that existing e-learning quality models and frameworks have been designed in developed countries, where the state and challenges of e-learning are not the same as those in developing countries. Therefore, adopting these models and frameworks by higher education institutions in other countries without adapting them to their local contexts is questionable (Masoumi & Lindstrom, 2012). With this in

mind, Esfijani (2018) suggests that higher education institutions should ensure quality in e-learning by adopting a universal quality framework/model, while responding to advanced technologies and techniques within the requirements of their particular contexts. In view of this, the present paper aims at developing a comprehensive framework for quality e-learning programs in CLTIUY by exploring the most prominent global quality models and frameworks for best practices of quality assurance in e-learning in higher education, with a view to adapting international standards in e-learning to the local needs and requirements of the center.

Against the backdrop of the gaps stated above, two key research questions (*RQs*) posed for this paper are as follows:

- RQ1.* What are the prominent global quality models and frameworks that focus on assuring and enhancing quality in e-learning?
- RQ2.* How can a customized framework for quality e-learning programs be developed specifically for CLTIUY, considering the center's unique requirements and challenges?

### 3. Methodology

The study attempted to answer the research questions stated above by adopting a descriptive qualitative method of analysis, drawing on a benchmarking approach, which is a standardized approach on the topic.

#### 3.1 Phases of the study

Basically, developing a framework for quality e-learning is a sequential and ongoing process that needs to be modified and contextualized taking into account several factors, including quality and cultural aspects. It involves a systematic approach to ensure that the framework is comprehensive, effective, and meets the needs of its users. Accordingly, the procedures undertaken in this

study can be articulated in five essential phases. The first phase started with covering and formulating the research area and reviewing the relevant theoretical foundations. That is, this phase was based on the theoretical and practical knowledge produced in the fields of e-learning, quality and benchmarking. A qualitative review of the concepts, definitions, models and frameworks that had been previously researched was provided. Moreover, an extensive literature review in indexed journals, government reports, webpages, research papers and books was carried out to collect and review all available benchmarks, best practices, guidelines, models and frameworks pertaining to quality assurance in e-learning in higher education. In this phase, the research questions to be addressed were carefully considered. The second phase involved the data collection and analysis procedures: conducting an in-depth review of the existing literature on e-learning; using multiple sources of data such as theoretical frameworks and models, documents, and case studies; identifying gaps and limitations in current e-learning frameworks and models; identifying e-learning critical success factors; and analyzing the data to identify patterns and themes. The third phase involved selecting three of the prominent global e-learning quality models and frameworks (i.e., the E-xcellence Model, the E-quality Framework, and the National Standards for Quality Online Programs) as case studies, and analyzing them for best practices in e-learning. In this phase, the selected e-learning quality models and frameworks were briefly explored and analyzed with a view to developing a quality e-learning for this study. In the fourth phase, the study framework was designed and developed. It should be mentioned, however, that the framework proposed in this study is heavily inspired by the frameworks and models selected as case studies for this paper, namely the E-xcellence Model and the E-quality Framework. The fifth and final phase was the validation of the framework. To ensure that the proposed quality e-learning framework meets stated objectives

and requirements, it was reviewed and validated by a number of experts in the field of e-learning. Then, it was adjusted based on feedback from the expert validators. (See **Appendix B** for a list of expert validators.)

At large, applying and testing the developed quality e-learning framework in CLTIUY or other higher education settings, which is beyond the scope of this study, should be the next step. The framework should also be evaluated and refined continually. This refinement takes place via ongoing feedback from all involved stakeholders (e.g. students, teachers, administrators, policymakers, etc.).

### 3.2 Selected case studies

Addressing *RQ1*, three internationally recognized quality models and frameworks—namely, The E-xcellence Model, The E-quality Framework, and The National Standards for Quality Online Programs Framework—are briefly explored and then comparatively analyzed for similarities and differences in terms of themes and the number of sections/categories, standards and/or indicators included in each of them, followed by a brief thematic analysis in terms of strengths and weaknesses of each. These models and frameworks were particularly selected as case studies because they have been trialed and applied in several leading higher education institutions and organizations around the world, more specifically in the United States and continental Europe. They are also considered as most influential for developing quality e-learning initiatives as well as assessing quality of already existing e-learning programs and courses.

#### 3.2.1 The E-xcellence Model

Originally, the E-xcellence Model is coordinated by the European Association of Distance Teaching Universities (EADTU) in the early 2000s as part of the European e-learning 2004 initiative. It is based on knowledge gained from experts in quality assurance from several European countries, as well as from experiences in flexible and lifelong learning. The primary goal of the

project, as outlined by Williams, Kear, and Rosewell (2012, p. 6), is to create a methodology and accompanying resources to ensure the quality of e-learning programs in higher education institutions. The E-xcellence Model consists of a manual, assessors' notes, and the online tools, the quick scan and the full scan (Ossiannilsson, 2011; Ossiannilsson & Landgren, 2012; Ossiannilsson, 2012). The manual serves as a valuable resource for evaluating e-learning programs, but it also offers practical guidance for institutions involved in designing, developing, assessing, and supporting e-learning initiatives (Williams et al., 2012). The benchmarking criteria of the E-xcellence Model are grouped into six parts, namely, “strategic management, curriculum design, course design, course delivery, staff support, and student support” (Williams et al., 2012, p. 6). Each part involves a set of benchmarks with a corresponding number of indicators and notes at excellence level. Put differently, the benchmarks are assumed to be relevant to all e-learning situations. These benchmarks are followed by a number of indicators which focus on particular topics related to the benchmark statements. Indicators, in turn, are followed by a description of what can be regarded as excellence (Ubachs, 2009; Ossiannilsson, 2011; Ossiannilsson & Landgren, 2012; Ossiannilsson, 2012).

*(Refer to Ubachs & Konings (2016) for a complete review of the E-xcellence Model.)*

#### 3.2.2 The E-quality Framework

Masoumi and Lindstrom (2012) propose the E-quality Framework for enhancing and assuring quality in virtual institutions. According to them, the framework attempts to cover most aspects of e-learning quality in virtual institutions. They add that the proposed framework focuses on evaluating the ability of virtual institutions to create and maintain effective e-learning environments in a sustainable manner. It allows institutions to compare their approaches with others and identify areas for improvement. Notably, the framework is grounded in socio-cultural

theory, recognizing the importance of social interactions, such as student collaboration and community building, in the learning process (Masoumi, 2010).

The E-quality Framework covers 113 benchmarks categorized into 29 sub-factors across seven main factors/building blocks. The main factors are: institutional factor, instructional design factor, evaluation factor, technological factor, pedagogical factor, student support, and faculty support (Masoumi & Lindstrom, 2012). These factors provide a range of related benchmarks that are primarily focused on a particular aspect of e-learning environments. Moreover, the framework needs to be viewed holistically by taking into account all of the provided benchmarks together as well as how they relate to one another (Masoumi, 2010).

*(Refer to Masoumi (2010) for a complete review of the E-quality Framework.)*

### 3.2.3 The National Standards for Quality Online Programs Framework

The National Standards for Quality Online Programs (NSQ) offer a framework for interested educational institutions to improve online and blended learning programs. The standards are meant to provide guidance while allowing users a much greater flexibility (NSQ, 2019). The National Standards for Quality Online Programs are grouped into 14 standard categories. Each standard is accompanied by a set of indicators with corresponding explanations and examples. Institutions adopting the standards and indicators to fit their own needs will find the explanations and examples particularly useful. Furthermore, the explanations and examples will make it possible for a range of program types—including full-time virtual schools—to apply the standards to competency-based, blended, or other learning strategies being employed. Accordingly, they are meant to balance the need for a usable set of benchmarks for quality online learning practices with the need for flexibility to accommodate

the wide range of program types and available resources (NSQ, 2019).

*(Refer to the National Standards for Quality Online Programs (2019) for a complete review of the framework.)*

### 3.3 A brief analysis of the selected models and frameworks

In this section, the three international models and frameworks for assuring and improving the quality of e-learning programs in higher education discussed above are briefly analyzed for commonalities and differences in terms of themes and the number of sections/categories, standards and/or indicators included in each of them. Thereafter, a brief thematic analysis in terms of strengths and weaknesses of each is provided.

Actually, the largest number of sections is in the National Standards for Quality Online Programs Framework; it has 14 sections/standard categories and 72 indicators associated with them. The E-quality Framework comes in the second place with regards to the number of sections, i.e. 7 sections, whereas the E-xcellence Model has the fewest number of sections, i.e. 6 sections. In terms of standards and indicators, however, the E-xcellence Model has the largest number of standards and indicators—35 and 162 respectively—followed by the E-quality Framework, with 28 standards and 113 indicators. It should be noted, moreover, that authors of the E-xcellence Model and the E-quality Framework created sets of standards that were thorough and contained lengthy descriptions of multiple indicators related to quality in e-learning.

A total of 77 standards are included in the analysis of the selected models and frameworks. The analysis of the section headings indicates that topics like institutional commitment, instructional design and development, and student and teacher support are the most cited when determining quality for e-learning programs. On the other hand, course design and delivery, evaluation and pedagogical standards are the most empha-

sized standards for indicating quality in e-learning.

To elaborate, the E-xcellence Model, the E-quality Framework, and the National Standards for Quality Online Programs Framework all offer useful guidelines for evaluating and enhancing online education, but they have distinct strengths and weaknesses. The E-xcellence Model's strengths include its emphasis on institutional commitment and strategic alignment, as well as its support for benchmarking against best practices to identify areas for improvement. However, it has some weaknesses including its inflexibility in adapting to unique contexts or needs and a primary focus on institutional quality, which may overlook individual learner experiences. On the other hand, the E-quality Framework's strengths include its holistic approach to quality, focus on user experience, and encouragement of continuous improvement through feedback loops. The weaknesses include a lack of specificity in certain areas, leading to ambiguity in implementation, and its resource-intensive nature. The National Standards for Quality Online Programs Framework's strengths include its clear, measurable standards, credibility, and support for accountability and transparency. The weaknesses of this framework include the potential to stifle innovation and unique pedagogical approaches, as well as the potential to become outdated due to its slow adaptation to emerging technologies and methodologies. In a nutshell, each model and framework has its strengths and weaknesses, making them suitable for different contexts. A blended approach, combining aspects from each model and framework, can help institutions create a comprehensive quality assurance strategy tailored to their specific needs and goals in online education.

## 4. The Proposed Quality E-learning Framework

To address *RQ2*, an extensive review and thorough meta-analysis of almost all relevant research and literature in the field of e-learning, with a particular focus on international quality models and frameworks developed so far for assuring and enhancing quality in e-learning programs, were carried out. Taking into account the strengths and weaknesses of the e-learning quality models and frameworks discussed above, a comprehensive quality e-learning framework was developed.

### 4.1 The framework development stages

The stages involved in developing this quality e-learning framework are briefly described in this section. In the first stage, the context, scope, and boundaries of the framework were defined. Then, the center's needs, requirements, and challenges were identified and analyzed. After that, a thorough analysis of the existing models, frameworks, best practices, and relevant data was conducted to understand the current state of e-learning and identify best practices. The second stage involved the design of the framework. In this stage, the framework was structured into key standard categories and sub-categories. This stage also involved developing a conceptual model or representation of the framework, including the relationships between key components of the framework. The third stage marked the development of a detailed design of the framework. Benchmarks and quality assurance indicators for each standard category and sub-category were outlined in this stage.

The fourth stage was the validation of the developed framework by a group of experts in the field of e-learning. In more details, the framework was sent to eight experts in the field of e-learning for validation. 62.5% of them (i.e., five expert validators) responded while 37.5% of them (i.e., three expert validators) did not respond. The re-

spondent experts carefully reviewed the proposed framework to ensure it meets the objectives and requirements of the study and provided valuable feedback. The final stage involved making adjustments to the framework based on the feedback from the expert validators. The framework was sent back to the validators after modification for final review and feedback. All the respondents (i.e., 100%) approved the proposed framework. See **Appendix B** for a list of respondent and non-respondent expert validators.

In practice, most of the existing e-learning quality models and frameworks have been designed in developed countries, where the state and challenges of e-learning are not the same as those in developing countries (Esfiyani, 2018). Therefore, adapting these models and frameworks to the local, cultural contexts of developing countries, like Yemen, is crucial for the successful implementation of e-learning programs. Accordingly, the quality e-learning framework proposed here was designed to address the local needs and unique requirements of CLTIUY.

However, it is important to note that the developed quality e-learning framework is subject to ongoing changes and modifications. Similarly, it is inevitable that other research and e-learning frameworks and models will incorporate additional factors and standards, thereby expanding and refining the existing landscape of e-learning.

#### 4.2 A Framework for Quality E-learning Programs in CLTIUY

To start with, it is important to note that almost all e-learning models and frameworks developed so far, including those selected as case studies for this paper, discuss more or less the same standards and themes (e.g., institutional context, curriculum design, learner and teacher support, content quality, technology infrastructure, etc.). The case is so because these are the most emphasized standards and themes that ensure the implementation of successful e-learning initiatives. Hence, it is inevitable that those

frameworks and models exhibit great similarities in their themes and structures as well. The framework proposed here is not an exception, though. It exhibits a good deal of similarities with the frameworks and models selected as case studies for this paper. Despite that, a considerable number of differences exist. In other words, the quality e-learning framework proposed here is different from those models and frameworks mentioned above in many aspects. First, it is specifically tailored for Center for Languages and Translation at Ibb University in Yemen, where the state and challenges are not the same as those in the cases of the Excellence Model, the E-quality Framework, and the National Standards for Quality Online Programs Framework. Therefore, the context is more specific here whereas the models and frameworks discussed above are more general or tailored to different contexts (i.e., the European context in the case of the Excellence Model, the Iranian context in the case of the E-quality Framework, and the United States context in the case of the National Standards for Quality Online Programs Framework). As a result, the level of detail and use of specific benchmarks differ accordingly. Second, the proposed framework is both benchmark-driven and quality-centered. That is to say, the use of a wide range of benchmarks (135 benchmarks) with corresponding sets of quality assurance indicators across various categories provides concrete and measurable targets for the center to aim for. This focus on measurable outcomes is crucial for implementing effective e-learning programs and fostering continuous improvement. Finally, the proposed framework is more geared towards implementing quality e-learning initiatives from scratch, whereas the Excellence Model and the E-quality Framework are more geared towards evaluating and ensuring the quality of already existing e-learning programs.

The quality e-learning framework developed in this paper (see **Fig. 1**) can be regarded as a roadmap for the implementation of successful, quality e-learning programs since it provides comprehensive guidelines to sup-

port policymakers at Ibb University, namely in Center for Languages and Translation, in developing effective e-learning programs. Similarly, it can be adopted by any public and/or private higher education institutions and departments, at the local and national level, for developing quality e-learning programs, with minor changes and modifications related to the content and subject matter of the program or course intended to be developed and delivered online.

Based on the e-learning quality models selected as case studies for this paper, a comprehensive quality e-learning framework was developed. The framework covered 135 benchmarks divided into 11 sub-categories, which were grouped into 7 main standard categories: institutional management, technical infrastructure and technology support, instructional design, e-learning assessment procedures, faculty support, learner support, and program evaluation

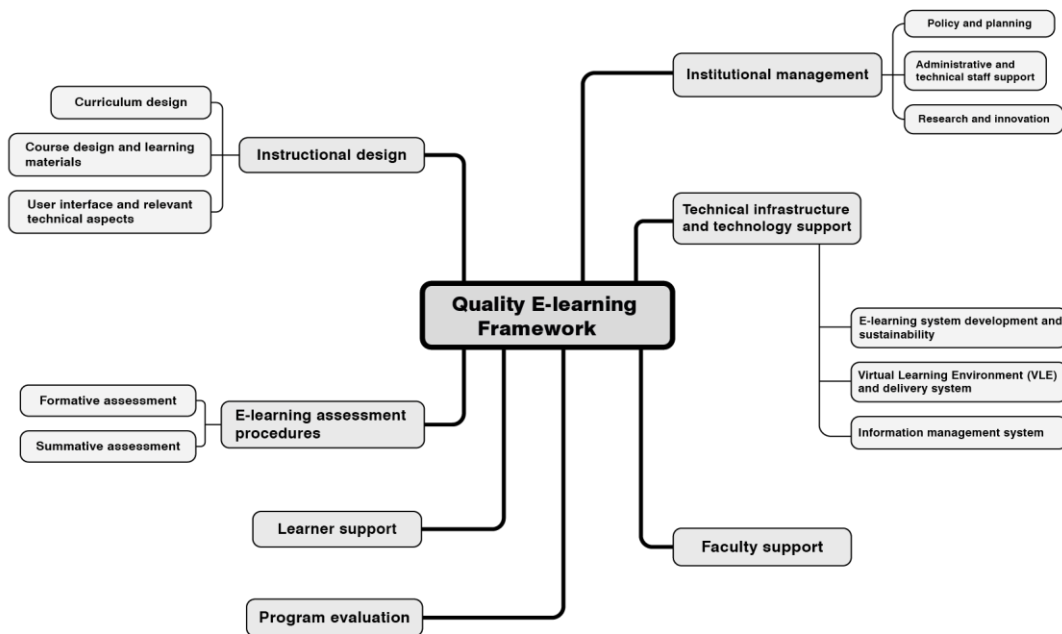


Fig. 1 Quality E-learning Framework.

portance. Given below is a brief outline of the framework developed in this paper. A more detailed outline of the given benchmarks is presented in **Appendix A**.

#### 4.2.1 Institutional management

It is generally accepted that successful implementation of e-learning programs depends on explicit institutional mission and goals. The institution should have clearly defined management structures, policies and strategic plans for the development of quality e-learning pro-

In more details, the e-learning framework was constructed on four levels, including 'standard categories', 'sub-categories', 'benchmarks' and 'quality assurance indicators'. More specifically, the framework was divided into 7 standard categories and 11 sub-categories, covering 135 benchmarks and a set of corresponding quality assurance indicators, which characterized and exemplified the standard categories and sub-categories. It is important to be aware that the benchmarks are not numbered in order of im-

## 4.2.2 Technical infrastructure and technology support

Robust technical infrastructures are a prerequisite for institutions that provide e-learning programs, as they shape the basic structures for student-faculty and student-content interactions. The provision of a stable and reliable technical infrastructure is vital as it directly affects learning, student satisfaction, and student retention. Institutions can ensure the efficacy of e-learning programs delivery by acquiring, operating, and maintaining a computer-based system capable of: registering students to programs and authenticating their identities; distributing e-learning materials to students; maintaining and updating records of student performance; conducting aspects of e-business with respect to student fees, etc.; and facilitating communication between the institution, its student and staff. Such a system is often referred to as Learning Management System (LMS) or Virtual Learning Environment (VLE) and may be commercially acquired or developed by the institution itself.

### 4.2.2.1 E-learning system development and sustainability

The development and sustainability of the institution's technical infrastructure is a key factor in effective and successful delivery of e-learning programs. Therefore, the technical infrastructure for e-learning, along with its development and management, should be guided by a strategic plan at the institutional level.

### 4.2.2.2 Virtual Learning Environment (VLE) and delivery system

The institution should prioritize professional design, management and maintenance of its technical infrastructure to meet capacity and availability targets. It should also ensure that the programs are delivered in a way that promotes flexible learning paths, various delivery modes, and diverse teaching methods, giving students a sense of autonomy.

The e-learning materials delivery system is the core of the Virtual Learning

grams. It should also have the necessary systems and technological infrastructures in place for implementing and administering such programs.

### 4.2.1.1 Policy and planning

The institution has a clear sense of purpose and direction, which is informed by national priorities as well as by the demands of providing cost-effective, quality e-learning programs. The institution's mission and strategic goals are set out clearly and unambiguously. Moreover, the mission statement is made available to the public and is reviewed periodically by programs management. The institution has pre-set policies and plans that well align with its mission and goals.

### 4.2.1.2 Administrative and technical staff support

The significance of efficiently operating administrative processes and good administrative support is considered as an essential prerequisite for establishing and maintaining high quality e-learning programs. Hence, quality e-learning programs should have a clear governance and administrative structure with transparent roles and responsibilities intended to ensure long-term success and sustainability.

### 4.2.1.3 Research and innovation

Basically, research and instruction are seen as interdependent in any higher education settings. Thus, it is crucial that institutions pay close attention to the process by which the teaching staff determines the best teaching methods for e-learners while accounting for innovation, pedagogical practice, and the program's specific goal. Institutions should focus on demonstrating the need for e-learning provision in relation to the mission and goals of both the program and the institution. In light of this, the institutional management needs to ensure there is an explicit policy framework that allows for the identification, evaluation, dissemination, and, where applicable, adoption of new research findings, innovations, and emerging techniques.

learner. Hence, determining the needs of the learners, defining the end goals and objectives of instruction, designing and planning assessment tasks, and designing teaching and learning activities to ensure the quality of instruction are all part of the instructional design process. With this in mind, the institution should adopt and implement instructional design methods that enable effective and efficient online teaching and learning. At large, quality e-learning programs can be provided through constructive alignment of pedagogy, technology, and learning resources.

#### 4.2.3.1 Curriculum design

Curriculum design is an important aspect of the quality of e-learning. It should address the needs of the target audience for e-learning programs. Any e-learning program curriculum should, by default, be designed in a way that offers personalization and flexibility for the learner in terms of time, place and pace of learning, while ensuring the achievement of learning outcomes. The curriculum should also provide opportunities for building online learning communities and supporting communication between teachers and students, and between students and their peers.

#### 4.2.3.2 Course design and learning materials

Designing and developing an e-learning course is a very challenging task that needs to be planned and managed carefully while following all the formal practices that are part of the e-learning program development cycle. There should be a clear statement of the learning goals/outcomes to be achieved for the successful completion of each course. These outcomes, which must be appropriate to the level and subject domain of the course, are further expressed in terms of knowledge, skills, and professional competencies. Additionally, the development of each course should include a clearly documented course specification which sets out the relationship between learning outcomes, teaching and learning activi-

Environment (VLE), which is also known as a learning platform. Another aspect provided by a VLE is a Learning Management System (LMS) that handles administrative tasks like assigning students and staff to courses, managing assessment submissions, and similar tasks. In practice, VLEs provide more flexibility in terms of instruction, learning and evaluation. Moreover, they can be used to foster critical thinking, creativity and in-depth subject knowledge. VLEs may contain a wide range of tools, including blogs, forums, online video conferencing platforms, internet voice communication, social media, etc. Though such systems can be developed by the institution itself, most institutions opt to purchase commercial systems or use open source systems that may be modified to suit institutional requirements.

#### 4.2.2.3 Information management system

Conducting research on learners and their needs and expectations is of utmost importance and serves as a foundation for informing all aspects of e-learning. Institutions should ensure that they gather, analyze, and apply pertinent information for the successful management of their programs. Simply put, there should be up-to-date and detailed information about potential learners, including demographic factors, language and technology proficiency, learning needs and motivation, as well as resource factors like financial resources, access to electricity, media and technologies, etc. A good information management system will enable the complete and comprehensive collection of data and indicators derived from all aspects related to e-learning.

#### 4.2.3 Instructional design

By definition, instructional design is the systematic process of planning, creating, and delivering learning materials and experiences to learners. The learning objective is the primary focus of the instructional design process. This learning goal should match the desired outcome for the

to students, whereas summative assessment contributes to their program/course result. It has to be mentioned, too, that the level of challenge of the assessment in a program should be appropriate for the level of the qualification to which it leads.

#### 4.2.4.1 Formative assessment

Formative assessments help monitor student learning and provide ongoing feedback that can be used by students to improve their learning, enabling them to identify their strengths and weaknesses and target areas requiring improvement. They typically do not contribute to the student's final grade. In e-learning contexts, formative assessment can be in the form of online self-assessment tests/quizzes with automated feedback, peer assessment/review via online communication tools such as forums and social media, or teacher/examiner assessment by giving constructive feedback through which students can judge their progress and improve their learning. In brief, formative assessments provide data for targeted remediation or intervention when needed.

#### 4.2.4.2 Summative assessment

Summative assessment is concerned with awarding a grade or mark to the student to determine whether he progresses to the next stage of a program or gains an award on completion. Assessments should be aligned to learning objectives, activities and methods of delivery so that students learn what is intended and are assessed on what they are supposed to be learning. This means that procedures for summative assessment need to be explicit, fair, valid and reliable. Multiple assessment methods should also be applied to assess the degree to which stated learning objectives are met. Furthermore, special care needs to be exercised in online summative assessments to prevent impersonation and plagiarism. There should be an institutional policy for student behavior codes that specifically address issues of impersonation and plagiarism and the

ties, learning materials and assessment methods. More specifically, the teaching and learning activities, the learning materials and the assessment methods facilitate the achievement of the learning goals/outcomes.

#### 4.2.3.3 User interface and relevant technical aspects

The interaction between users (students and teachers or other staff) in e-learning platforms is viewed as an essential factor in the design and use of e-learning environments. The reason for this is that students primarily access learning materials through the user interface. Poorly designed features of this interface may create disturbing barriers to learning achievement. As a result, the institution should establish a set of technical, accessibility and presentational criteria for e-learning materials and delivery systems.

#### 4.2.4 E-learning assessment procedures

Assessments of e-learning programs serve as a digital means of evaluating learners' knowledge. Student assessment should be considered as an integral part of the teaching and learning process of e-learning programs. In this sense, assessments are typically used by curriculum and course designers to assess learner comprehension of the content, and learners can utilize them to evaluate their knowledge and progress as well. E-learning assessments are also used to inform teaching practice and improve the curriculum.

Furthermore, assessments should be aligned to the learning outcomes/objectives of e-learning programs. This normally entails that curriculum and course designers should include a range of formative and summative assessment tasks and methods which reflect the diversity of the modes of knowledge and skills acquisition and ensure that all learning outcomes are validly assessed. Formative assessment provides feedback

modes and assessment methods. The institution should also provide guidance and tutorials for learners in the use of all forms of technologies utilized for program delivery.

#### 4.2.7 Program evaluation

Program evaluation is seen as an indispensable tool for institutions seeking to deliver high quality e-learning programs. It is a means by which institutions set their program goals and measure results against those goals. Program evaluation is used to demonstrate an institution's capacity to deliver the intended outcomes as measuring criteria for how and to what extent it meets demands at different levels. Institutions should regularly monitor and periodically evaluate their e-learning programs to ensure that they achieve the objectives set for them and meet the needs of all stakeholders (i.e., learners, faculty, staff and other interested parties). Put differently, institutions need to provide evidence of accountability to stakeholders by implementing evaluation activities that assess the alignment of pedagogy, educational activities, and desired learning outcomes, as well as address specific issues of usability and standards achievement. These evaluation activities should lead to continuous improvement of e-learning programs, and any action taken as a result should be communicated to all program stakeholders.

Basically, program evaluation should be conducted both internally and externally with a view to informing all processes that affect teaching and learning. Internal program evaluations tend to provide immediate feedback on a specific area of inquiry and are often more informal in nature. External program evaluations, on the other hand, usually take an objective approach to the entire program, which will lend more credibility to the results. After all, an effective program evaluation that supports ongoing improvement includes data collection and evidence of analysis in the following pri-

sanctions applied when these codes are breached. Moreover, where part-time or external examiners are involved in assessment, measures should be put in place to ensure that agreed marking criteria are being adopted consistently.

#### 4.2.5 Faculty support

Institutions offering e-learning programs support their faculty and staff by providing a timely technical assistance and a wide variety of professional development opportunities. It is essential for institutions to provide technical assistance for faculty during online course development and online teaching as well. Besides, institutions must carefully consider how to best staff, promote, plan, and deliver the educational and technical support that academics need for teaching online and creating dynamic online learning communities. Furthermore, it is necessary to provide ongoing technical assistance for the system of learning management, social media tools, graphic design, audio and video recordings, web page development, and new emerging technologies.

#### 4.2.6 Learner support

Learner support services are fundamental to the successful implementation of e-learning programs. Effective learner support increases retention, success and satisfaction of e-learners. To this end, the institution should develop a learner profile that identifies the needs and characteristics of prospective e-learners. This profile should include such information as learners' demographic backgrounds, learning and technical experiences, learning needs and motivations, access to internet and technological equipment, etc.

Furthermore, before starting an e-learning program, learners are provided with information about the program, including admission and registration requirements, tuition and fees, technical requirements, learning materials, learner support services, policies and code of practice, learning platforms, delivery

theless, there are worldwide calls for enhancing and assuring quality in e-learning in general and in developing countries in particular. This striving for excellence is viewed as the most decisive factor determining the successful implementation of e-learning programs. Reflections on the literature and the key conclusions from this paper revealed that quality was seen as the most significant factor driving the future of e-learning, and stressed the explicit need to integrate e-learning in ordinary quality assurance and enhancement processes in higher education. Conclusions from the paper also emphasized the importance of engaging all stakeholders in the decision-making process, through ongoing evaluation activities and feedback, to ensure successful implementation of quality e-learning programs.

A close investigation into the literature currently available on quality in e-learning, furthermore, reveals that many different approaches, frameworks and models exist to evaluate the quality of online education, or e-learning. However, to the best of the researcher's knowledge, no such a framework for implementing quality e-learning programs in higher education institutions in Yemen that is based on a benchmarking approach has been developed so far. Therefore, the e-learning framework developed in this paper is particularly significant as it will provide leadership and policymakers in Ministry of Education and Scientific Research in Yemen in general, and in CLTIUY in particular, with valuable guidelines and recommendations for implementing successful quality e-learning programs. Moreover, the conclusions drawn in this paper will contribute and have practical implications on further work in the area of e-learning in higher education.

### 5.1 Recommendations

Below are some recommendations that can be utilized to support leadership and policymakers in Ministry of Education and Scientific Research in Yemen in

many areas: cost-effectiveness in terms of tuition fees and student enrollment/withdrawal/drop/retention/success rates; learner and faculty feedback on the quality of the e-learning program/course and the effectiveness of their educational experiences; learner and faculty satisfaction with the quality of technical and pedagogical support services; the quality and effectiveness of e-learning materials/resources and delivery modes; and learning outcomes achievement (at the course and program level).

## 5. Conclusion and Recommendations

The present paper was grounded in the foundation of benchmarking and quality assurance in the field of e-learning in higher education. The current discourses in the field and the theories behind the main concepts, i.e., e-learning, quality and benchmarking, have been selected as a theoretical foundation for this study. By exploring these three discourses, it is hoped that this paper can offer a comprehensive framework for implementing quality e-learning programs in CLTIUY in particular, and at any other public or private institution/university in general.

The integration of information and communication technologies (ICT) in modern educational systems has fueled the drive for e-learning initiatives in higher education institutions worldwide. E-learning has become a particularly attractive educational method for the majority of students as the use of web-based technologies offers a greater flexibility in terms of: reducing the costs of sharing vast amounts of data; eliminating communication barriers and geographical distance gaps between individuals; increasing academic mobility in higher education; providing people with disabilities better access to higher education; and providing opportunities for lifelong learning.

In light of the wide spread of e-learning initiatives in recent times, never-

when selecting e-learning technologies, resources, and support services. Cost should not be the primary criterion.

10) Reviewing, evaluating and updating the learning content on a regular basis to ensure ongoing improvement.

11) Collecting feedback from all stakeholders (including faculty, learners and support staff) on a regular and systematic basis and using it for improving the quality of e-learning programs.

### 5.2 Suggestions for future research

The proposed framework needs to be tested empirically in local contexts, and further research needs to be conducted to ensure the framework will perform as stated. Accordingly, further empirical research is needed to examine both the effectiveness of the developed e-learning framework and its impact on students' e-learning experiences. More specifically, how and to what extent do e-learning programs which follow this framework contribute to higher learner outcomes? And how does the proposed framework contribute to the promotion of quality assurance in e-learning within institutions developing e-learning initiatives?

In conclusion, it is crucial to acknowledge that while the quality of e-learning may be questioned and the approach to quality assurance may differ in different contexts, it is evident that the discussion surrounding e-learning quality will persist and fuel competition in the higher education sector.

## Appendix A: An outline of the given benchmarks

1.1 (1) The institution has documented policy statements and strategic plans. (Adopted from the E-quality Framework)

(2) The institution has explicitly designed systems for administering and delivering e-learning programs and has planned for contingencies in order to meet the needs of e-learners.

(3) The institution defines the strategic value of e-learning programs to its stakeholders, staff and prospect learners—what the program does and whom it serves.

general, and in CLTIUY in particular, in developing and implementing successful quality e-learning programs.

1) Mainstreaming e-learning into higher education and making e-learning initiatives part of the institution's goals, policies, strategic plan and budget.

2) Integrating e-learning into the overall institutional quality assurance systems.

3) Considering the use of benchmarking as a means for identifying best practices and assuring quality in e-learning.

4) Starting with latest educational technologies and robust technical infrastructures to control and administer e-learning initiatives.

5) Supporting faculty professional development through ongoing training programs.

6) Developing technology training programs for technophobic or technologically challenged students.

7) Encouraging, facilitating and supporting research in the field of e-learning and quality assurance.

8) Recruiting adequate academic staff and enough technical and administrative staff to support e-learning programs.

9) Prioritizing criteria such as user friendliness, specific functionalities, contribution to learning objectives, ease of integration, security measures, accessibility options, reliability, and effectiveness

(4) The institution's e-learning strategy is made available to the target learners and stakeholders.

(5) The institution has staff responsible for formulating, evaluating and developing institutional policies and plans related to e-learning. These policies and plans are set out clearly for the benefit of all participants and stakeholders. (Adapted from the E-xcellence Model)

(6) The institutional policies must pay due regard to ethical and legal considerations such as accessibility to learners with particular needs, data protection, security, privacy and freedom of information.

(7) There are mechanisms to support and monitor staff in the implementation of these policies. (Adapted from the E-xcellence Model)

**1.2** (1) The institution has a good administrative support and clear governance structure to enable effective and comprehensive decision making related to e-learning programs. (Adapted from the NSQ Framework)

(2) The institution constantly applies pre-defined and published regulations covering all stages of the student life-cycle, such as admission, progression, assessment, recognition and certification.

(3) There are clear lines of accountability within the institution that define the unique roles and responsibilities of the administrative and support staff, teaching staff and learners.

(4) The institutional plans address issues of resourcing, staffing and staff training and development. (Adopted from the E-xcellence Model)

(5) Students/prospective students are given specific details about the equipment, e-learning platforms and digital skills, pre-knowledge, pre-requisite subjects, and attendance requirements. (Adopted from the E-xcellence Model)

(6) There are effective, secure and reliable systems for communication with learners/potential learners, with administrative and support staff, and with all staff and tutors involved in e-learning programs.

(7) Staff and learners are trained in the use of equipment, facilities, and communication and information systems. (Adapted from the E-xcellence Model)

(8) Proper financial and budgetary procedures are in place to deal with allocation of resources and monitoring of expenditure. (Adapted from the E-quality Framework)

(9) Proper accountability structures are in place to ensure that enquiries, applications and complaints are dealt with quickly and professionally.

(10) Evaluation of staff performance occurs on a regular basis. (Adapted from the NSQ Framework)

**1.3** (1) The institution has a clear strategy for research and innovation with regards to e-learning programs. (Adapted from the E-xcellence Model)

(2) E-learning programs are aligned with the institutional mission and goals. (Adapted from the E-xcellence Model)

(3) The instructional design reflects pedagogical practices and innovation. (Adapted from the E-quality Framework)

(4) The institution's processes for continuous improvement are intrinsically tied to the policies and activities on research and innovation in e-learning, which are informed by monitoring, feedback, and self-evaluation. (Adapted from the E-xcellence Model)

**2.1** (1) The technical infrastructure plan supports the institution's e-learning mission and objectives, and is influenced by the educational requirements (e.g., delivery of learning materials, facilities for online communication, tools for assessment, etc.) of the academic community, both students and staff. (Adapted from the E-xcellence Model)

(2) The technical infrastructure of the e-learning system is fit for purpose and supports academic, social, and administrative functions. (Adopted from the E-xcellence Model)

(3) The systems for communication and storage of data are secure, reliable and protect student privacy. (Adapted from the E-xcellence Model)

(4) The systems should be responsive and operational during peak load times to ensure the least disruptive learning environment is provided.

(5) E-learning systems are interoperable and robust, aligned with the institution's technical infrastructure, and are regularly subjected to internal evaluations, maintenance, updating, and improvements as needed. (Adapted from the E-xcellence Model)

(6) The technical infrastructure should ensure equitable access to the learning and teaching materials and support services by staff and all students, including students with special educational needs. (Adapted from the NSQ Framework)

(7) Measures are in place for system recovery in the event of failure or breakdown. (Adopted from the E-xcellence Model)

(8) There are effective user authentication procedures in place to ensure that the student who registers in an e-learning program is the same student who participates in and completes the program. These include using biometric data, secondary authentication with challenge questions, and webcams.

(9) Effective electronic security measures (e.g. password protection, encryption, proctored

exams, back-up systems, etc.) are in place to ensure information integrity and validity.

(10) Information on how to use the institution's e-learning systems and services is provided to all users in a logical, consistent, and reliable way. (Adopted from the E-xcellence Model)

**2.2** (1) The institution has appropriate funding for learning and teaching activities and ensure that adequate and readily accessible learning resources and student support are provided. (Adapted from the E-quality Framework)

(2) The institution establishes operational standards for its technical infrastructure that are compared to those of other major online customer service providers.

(3) There is sufficient server capacity and bandwidth to handle the planned usage. (Adopted from the E-xcellence Model)

(4) There are secure systems for storing and analyzing data on students' learning activity and interactions with the institution's online systems. (Adopted from the E-xcellence Model)

(5) The VLE supports a variety of methods and tools.

(6) The VLE is appropriate for the type of learning and the requirements of learners. (Adopted from the E-xcellence Model)

(7) The technical infrastructure ensures the accessibility of the e-learning program by all students, including students with special educational needs. (Adapted from the NSQ Framework)

(8) The selection of technologies is based on the needs, resources and capabilities of the learners and the institution, and the purposes of the offered programs.

(9) Learning outcomes guide the selection of teaching methodologies and learning activities.

(10) E-learning materials fit the pedagogical model and facilitate student learning.

(11) E-learning materials and delivery systems undergo rigorous technical testing in real-world conditions prior to actual use.

(12) The content is presented in a learner-oriented fashion.

(13) The VLE and e-learning materials support rich interactivity and communication between learners, faculty and staff. (Adopted from the E-xcellence Model)

(14) The e-learning platform should provide students with a user-friendly environment that allows them to perform learning activities

smoothly and effectively. (Adopted from the E-quality Framework)

(15) The technical infrastructure is aligned with the teaching methodologies, learning activities, and e-assessment methods, and it eases the teaching and learning process.

(16) The institution provides guidance on appropriate online behavior and code of practice (netiquette rules). (Adapted from the E-xcellence Model)

**2.3** (1) There is a robust information management system that provides relevant, updated, and reliable information about the institution and its programs.

(2) The institution regularly publishes information about its programs and activities, which is clear, accurate, objective, up-to-date, and readily accessible.

(3) The information management system allows for tracking learners' performance (e.g., in assignments, examinations, assessments, etc.). It also allows for identifying at-risk and inactive learners.

(4) Collected information about learners is used to design programs, materials, learner support and services that are flexible and learner-centered.

(5) The institution publishes reliable, complete, and up-to-date information on programs (e.g., study requirements, learning objectives, credits, assessment methods, sequence, timing, completion rates, etc.), and institutional technical support provided. (Adopted from the E-quality Framework)

(6) Details of learning materials and delivery systems are provided to learners and staff in a clear and accessible manner.

**3.1** (1) The curriculum is designed with the national needs as well as the needs of potential learners and other interested parties in mind.

(2) The institution has clear policies on program modularity and scheduling, online assessment methods, and provision of personalized and flexible learning to meet different learning needs and aspirations.

(3) The curriculum is structured into coherent and consistent modules with clearly stated learning outcomes for each module. This will enable both staff and learners to gain an overview of module coverage and establish the relationships and interdependencies between modules.

(4) The curriculum is designed to enable participation in online learning communities via social media tools. These online communities provide opportunities for collaborative learning as well as student-student and student-teacher interactions.

(5) The curriculum includes authentic practical work that best suits learners' career requirements and which can be achieved online by virtual facilities.

(6) The curriculum includes opportunities for both asynchronous and synchronous learning. (Adapted from the NSQ Framework)

(7) The curriculum design promotes both student-student and student-teacher communications.

(8) The curriculum supports the involvement of e-learning students in research activities in order to develop appropriate research, critical evaluation and communication skills. (Adapted from the E-xcellence Model)

(9) Where blended learning is considered and employed, the curriculum provides an appropriate mixture of online and face-to-face approaches to e-learning, including assessment. When this is the case, however, learner preferences and needs should highly be catered for and prioritized to assure flexibility, which is one of the essential characteristics of e-learning programs. (Adopted from the E-xcellence Model)

**3.2** (1) For each course, there is a clear and concise description of the learning outcomes (in respect of both knowledge and skills), target learners, teaching and learning activities, learning materials, assessment methods, any prerequisite knowledge and skills, key instructional techniques that will be used, course coverage and size, credit rating, and required study time and key dates of the course. (Adopted from the E-xcellence Model)

(2) Learning outcomes guide the selection of appropriate teaching and learning activities, learning materials and assessment methods.

(3) Experts in both academic and technical aspects of e-learning are brought into the course design, development and evaluation process.

(4) Online educational resources (OER) and other third-party learning materials are selected with the aim of facilitating student learning as well as achieving learning outcomes. They should be tailored to fit the pedagogical approach and the learning context. (Adopted from the E-xcellence Model)

(5) Main aspects of the course and learner context are well-researched and specified. (Adopted from the E-xcellence Model)

(6) The selection of appropriate media and technology is guided by learning outcomes, learner needs, the ability to access and use technology, and the technical specifications of available facilities and support services.

(7) E-learning materials provide sufficient interactivity (student-to-content, student-to-student, and student-to-teacher) to support active engagement and encourage critical thinking and independent learning. (Adapted from the E-xcellence Model)

(8) Course designers should consider the accessibility of e-learning materials and assessment methods by students with disabilities and students with special educational needs.

(9) The content of the course is accurate, up-to-date, relevant, clearly presented, and logically structured and sequenced.

(10) The e-learning content should build on and reinforce prerequisite, as well as new, concepts and skills.

(11) Course designers should ensure the provision of a student-centered approach of learning, teaching and assessment during the course design/development process. (Adapted from the E-quality Framework)

(12) The institution has a policy that clearly defines the roles and responsibilities of all staff involved in the provision of e-learning support and online services (e.g., tutors/teachers, mentors, course designers, technical and administrative support staff, etc.). (Adapted from the NSQ Framework)

(13) The course design incorporates multiple channels of communication and interaction between teachers and learners, with the purpose of providing learners with timely expert advice on course materials and individualized feedback on assignments. Communication routes may be both synchronous and asynchronous. (Adapted from the E-xcellence Model)

(14) Students are furnished with a variety of e-learning resources and support services, including e-libraries, virtual labs, etc.

(15) Independent learning materials (e.g., open educational resources, massive open online courses, etc.) can be integrated into the course content to enable and enrich student learning. (Adapted from the E-xcellence Model)

**3.3** (1) Materials should be accessible to users with special requirements (e.g., students with visual impairment). Where possible, provision of alternative formats of materials (e.g., audio transcripts) should be offered in order to cater for different needs of learners. (Adopted from the E-xcellence Model)

(2) Learning materials should have high quality graphic design and should be neutral as to sex, ethnicity, age and related issues.

(3) Learning materials should be accessible and usable via a variety of devices (e.g., mobile devices, laptops, tablets, etc.). This entails the need to retain major features of the user interface on all devices.

(4) Navigation should be user-friendly: consistent, easy and efficient. (Adapted from the E-quality Framework)

(5) All interfaces conform to usability and accessibility standards.

(6) Elements like font, text and presentation should be consistent. (Adopted from the E-xcellence Model)

**4.** (1) Assessment information (including learning outcomes, assessment criteria, as well as assessment procedures and dates) is provided in all courses or modules. Students should be well-informed about the nature and purpose of assessments during the course, their impact on summative evaluation, and their connection to intended learning outcomes. (Adopted from the E-xcellence Model)

(2) Student assessment, both formative and summative, is considered as an integral part of the curriculum and course design process. (Adapted from the E-xcellence Model)

(3) The program provides opportunities for timely and effective feedback as an integral role of assessment.

(4) Staff involved in marking are competent and well-trained in their role.

(5) The procedures for marking both formative and summative assessments serve to ensure consistency and accuracy in the marking, grading, and feedback provided to learners. (Adopted from the E-xcellence Model)

(6) There are clear procedures to receive, record, process, and return assignments within a specified timeframe, enabling learners to benefit from formative feedback prior to submitting further assessment tasks.

(7) Appropriate arrangements are in place to ensure the security of personal information and

verification of student identity during summative assessment and examinations processes.

(8) Assessment results are recorded securely and reliably and are available to all stakeholders including learners.

(9) Efficient measures are put in place to prevent any compromise to the integrity of certification processes.

(10) An appeal system exists for learners who wish to raise concerns about the fairness of the assessment.

**5.** (1) The institution ensures that faculty receive appropriate training, assistance and support to perform their roles and tasks effectively.

(2) The provision of training programs is guided by a needs analysis plan that identifies training requirements by job function and addresses the needs of existing and newly recruited staff. (Adapted from the E-xcellence Model)

(3) Faculty training programs place particular emphasis on equipping faculty to analyze and assist learners with language and learning difficulties.

(4) The institution ensures that adequate support services and resources (e.g., educational support, technical assistance and administrative support) are available to all academic staff, including part-time tutors.

(5) The institution provides faculty with a wide variety of professional development opportunities related to online teaching and learning.

(6) The institution provides faculty with effective technical support in the use of the e-learning platform, educational technology hardware and software, and delivery system.

(7) The institution ensures that the technical infrastructure supports faculty at all times by providing online access to materials, administrative data and communication facilities.

(8) The institution carefully assesses and monitors the workloads of faculty and other staff involved in online support for learners, and appropriate arrangements are made for the adjustments of workloads as required.

(9) Tutor-learner ratio should be sufficiently small to allow tutors to cater for individual needs of learners, support them in their studies and monitor their progress.

(10) The institution provides e-library services (and, where applicable, virtual labs) for faculty and students, and is responsible for the maintenance of online resources.

(11) Academic staff have opportunities to provide feedback on their online teaching experience. Also, they should be provided regular feedback regarding their performance and student achievement/progress.

(12) The institution encourages participation in induction and mentoring programs related to the development of online teaching and learning. (Adopted from the NSQ Framework)

(13) The institution recognizes and rewards inputs by all staff to e-learning programs.

6. (1) Prior to starting an e-learning program, analysis of prospective learners' needs and expectations should be utilized to inform all aspects of institutional policy and planning.

(2) Before making a decision to enroll in an online program, learners need access to information related to the online program (e.g., admission requirements, technical requirements, student support services, etc.).

(3) The institution has in place clear policies and effective strategies that address administrative, pedagogical, technological, and tutoring aspects of learner support.

(4) The institution has procedures and resources in place to support learners with disabilities.

(5) Learner support is offered according to the learner's profile and specific needs.

(6) Learners have access to technical facilities (e.g., e-library and e-learning resources) and equipment that are necessary for their successful learning.

(7) The institution supports a learner-centered approach of teaching.

(8) Learners receive guidelines and training in using e-learning resources (VLE, e-library, virtual labs, etc.). (Adapted from the E-xcellence Model)

(9) Learners have access to appropriate technical support services and timely academic feedback throughout the program duration.

(10) The institution provides guidance services to support and guide learners during the learning period, including induction, academic workshops, the development of e-learning skills, course/program choice, and career advice. (Adapted from the E-xcellence Model)

(11) Learners have access to counselling for personal difficulties or advice related to their study before and during their course or program, as well as after its completion.

(12) Sufficient academic, technical and administrative support staff are available to deal with learner enquiries, questions and complaints in a supportive and timely manner.

(13) The obligations and responsibilities of learners and the institution are made clear at registration. These include provision of resources and equipment, information on accessibility and expected participation in collaborative activities.

(14) The institution provides learners, academic staff and support staff with clear guidelines and information regarding the expected levels of support and the frequency of learner-tutor and learner-staff interaction during a course or program. (Adopted from the E-xcellence Model)

(15) The institution establishes standards for response time to learners' queries and requests for support (e.g., within 24 hours).

(16) There are opportunities for individual academic support for learners either by telephone, face to face, or online.

(17) Learners are provided with a range of opportunities to build and participate in communities of learning. This is facilitated through a range of learner support mechanisms, including the institution's VLE, social media, peer support sessions, tutorials/contact sessions, mentoring, counselling, email and Internet communications, etc.

(18) There are established mechanisms for the training and development of staff involved in learner support functions. (Adopted from the E-xcellence Model)

7. (1) There is an institutional policy for regular assessments of e-learning programs through an evaluation process that applies specific established standards.

(2) The institution has a strategy in place for using a variety of data (academic and administrative information) to regularly and frequently evaluate programs effectiveness and stimulate continual improvement.

(3) Intended learning outcomes at the course and program level are reviewed on a regular basis (and updated when appropriate) to ensure alignment, clarity, appropriateness and effectiveness. (Adapted from the NSQ Framework)

(4) The institution continuously conducts internal evaluations using valid and reliable measures to assess learner success and to drive instructional and management decision-making. (Adopted from the NSQ Framework)

(5) The institution has mechanisms in place to check the quality of how the learning environment works.

(6) Ongoing internal evaluations are carried out using valid and reliable assessment techniques to measure learner achievement and satisfaction in order to determine program success and plan for continuous improvement. (Adapted from the E-quality Framework)

(7) There is an institutional policy for the assessment of faculty online teaching performance on an ongoing basis to assure instructional quality, using clear and consistent measures and procedures.

(8) External evaluations are carried out on a regular basis by highly qualified parties to provide an objective and thorough evaluation of the program's advancement toward its goals, mission, and strategic plan. (Adapted from the NSQ Framework)

(9) There are effective procedures in place for the assessment of stakeholders' satisfaction with the e-learning programs and the quality of e-learning materials/resources.

(10) The institutional strategic plan takes into account recent developments in the field of information and communications technology and pedagogy, and implement them in an appropriate way. (Adopted from the E-xcellence Model)

(11) Mechanisms are in place for the assessment of technical and administrative support services for faculty and learners.

## Appendix B: List of Expert Validators

### Respondents

The following experts validated the quality e-learning framework developed in this study:

No.	Name of Validator	Position/Designation	Institution
1	Mo-hammed Al-Anesi	Assoc. Prof. of TESOL, Vice-President of Al-Bayda University	Al-Bayda University
2	Ibraheem TaqAddin	Assoc. Prof. of English Literature and Criticism, Dean of Center for Languages	Sana'a University
3	Gamal Al-Gadani	Assoc. Prof. of TESOL, Dean of Faculty of Languages and Translation	Aden University
4	Nabeel Al-Ameri	Assistant Professor of Literature	Ibb University
5	Mo-hammed Al-Kamil	Assoc. Prof. of Applied Linguistics	Al-Qalam University

### Non-respondents

No.	Name of Expert	Position/Designation	Institution
1	Arif Al-Ahdal	Associate Professor of TESOL	Al-Qaseem University, KSA
2	Ali Shajara	Associate Professor of English	Sana'a University
3	Rashad Fayrooz	Assistant Professor of English	Ibb University

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