

Transition of E-Service Quality Dimensions from Diverse Business Settings to E-Learning : A Review from Learners' Perspective

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Abstract

The purpose of this article was to review the existing literature on dimensions of electronic service quality (E-SQ) with a focus on the e-learning context. The study aimed to establish the dimensions of e-learning service quality applicable to e-learning in developing countries from the learners' perspective. The study compared and contrasted E-SQ dimensions in diverse business settings and provided a comprehensive view of important studies. An extensive literature review was conducted to find relevant papers on E-SQ and e-learning from various databases, including Scopus, Web of Science, and Google Scholar, with a time horizon ranging from 2005 – 2022. The study revealed immense variations in the nature and number of factors affecting E-SQ. However, ease of use, privacy & security, responsiveness, website design, and reliability are amongst the most cited ones. Additionally, a unique set of dimensions were discovered in this research to assess the online service quality of e-learning activities, namely quality course content, interactive interface, innovative technology features, and customer service support. The research implication is that it will help to evaluate online service quality in the virtual learning environment. This study will benefit academic researchers, application developers, educators, and policymakers.

Keywords : electronic service quality, e-learning, online education, dimensions

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E-learning, also referred to as electronic learning or online learning, is a learning system based on the use of electronic devices and internet connectivity (Abou El-Seoud et al., 2014). It can be defined as a learning environment where the learners need not be present in bricks-and-mortar classrooms (Sun & Chen, 2016). It is used to impart and acquire knowledge any time from anywhere across the globe (Nguyen, 2015). Due to its ease of use and interactivity, the demand for online courses increases, but at the same time, the dropout rates also become higher when compared with traditional classroom-based learning (Diaz & Cartnal, 1999; Doherty, 2006; Levy, 2007; Sheshasaayee & Bee, 2018). It is mainly due to the low quality of content, lack of interaction with peers, and poor features of the portal (Willging & Johnson, 2019). Since the beginning of the 21st century, a sparkling revolution has been experienced in the field of online education in most countries, particularly in developing countries like India, but the COVID-19 pandemic has brought an overnight change in the education

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sector throughout the world (Bao, 2020 ; Shehzadi et al., 2021). Consumers are quickly adapting to the 'new normal' as they embrace digital technologies conveniently (Jain, 2022). It has positively affected the e-learning industry and accelerated its growth.

E-Service Quality and Online Learning

The extent of quality experienced by the users is one of the most important critical factors required for the business to sustain itself in the present competitive world. The quality of service is essential for both traditional as well as online service delivery. The shift from traditional service quality to electronic service quality is the new paradigm shift in the field of online services. De Ruyter et al. (2001) described e-service as “content-centered and internet-based customer service, driven by the customer . . . with the goal of strengthening customer-service provider relationships” (p. 186). Subsequently, the E-SQ can be defined as “the customer overall evaluation and judgment of the excellence and quality of e-service offering in the virtual marketplace” (Santos, 2003, p. 235). It is essential to assess the service quality of e-learning content and the portal (Elango et al., 2008). Better electronic service quality and e-information quality can motivate the students to learn through an online system (Shehzadi et al., 2021). The principal instrument to measure the quality of service is the SERVQUAL scale, which is widely used in various sectors and holds relevance in higher education (Gupta & Kaushik, 2018). However, this scale does not fit all kinds of services and thus needs modification (Buttle, 1996; Francis, 2007).

Need for the Study

Formal and informal educational institutes have started adopting digital education platforms to meet the rising demand in the education sector while maintaining social distancing amid the COVID-19 pandemic. Various e-learning portals have been developed recently (Zoom, Google Meet, etc.), and this emerging trend has the ability to surpass the learning boundaries to promote the globalization of education. The identification of dimensions of service quality in an online learning environment from the learners' perspective has the utmost importance because the majority of studies in the past outlined the dimensions of online service quality from the perspective of online shoppers, internet banking, retail, and government agencies (Jung, 2011). In this study, we have tried to identify the dimensions of E-SQ in an e-learning environment that learners undertake to evaluate the quality of the virtual learning environment.

This paper aims to discover and examine the factors that play an important role in framing and molding students' perceptions about online learning in the context of developing countries. The approach while writing this paper aimed at exploring a set of dimensions from learners' viewpoint and understanding the perceptions with regard to the various quality dimensions of online portals through literature review. We attempt to answer two specific research questions, namely:

✎ **RQ1.** What dimensions of E-SQ were identified by the previous researchers in diverse business settings?

✎ **RQ2.** How to integrate the identified dimensions of E-SQ with e-learning from the learners' perspective in the context of developing countries?

Review of Literature and Gap Identification

The literature review is broadly classified as systematic review and non-systematic review (Antony et al., 2020). It uses an exhaustive search to develop a foundation and support a new insight that one can contribute (Ramdhani et al., 2014; Tranfield et al., 2003). Assembling, arranging, and assessing the existing body knowledge are the three

steps involved in reviewing existing literature (Fernandez, 2019). In order to discover answers to the research questions framed for the current study, an extensive literature review was conducted by the authors of the following methodology suggested by Tranfield et al. (2003) and Fernandez (2019). The research papers published with a time horizon ranging from 2005 – 2022 in various databases, including Scopus, Web of Science, and Google Scholar, were identified. Those papers relevant to the current study were thoroughly reviewed to identify the factors influencing E-SQ to identify, integrate, and recommend the use of E-SQ dimensions in the context of e-learning.

Challenges to E-Learning

The concept of online education flourished with the rise of internet usage in the 1990s, and since then, many new terms related to online learning emerged, that is, collaborative learning (Laal & Laal, 2012), distance learning (Diaz & Cartnal, 1999; Guha & Maji, 2008), blended learning (Khan et al., 2012), learning management system (Adzharuddin & Ling, 2013), massive open online courses (Bozkurt et al., 2016), etc. Various e-learning platforms like Coursera, Unacademy, Edx, and Udemy provide flexible access to a large set of course materials irrespective of place, time, resources, etc. (Raspopovic & Jankulovic, 2017). In the literature, online education is known by varied terms such as online learning, e-learning, blended learning, web-based learning, virtual learning, and many more (Sun & Chen, 2016).

The authors, in the past, discovered that students going for e-learning were more proactive and rational in their approach to education (Ali et al., 2018). In a few cases, it is reported that the learners feel isolated because of less or insignificant human interaction (Bolliger et al., 2010; Shaw & Polovina, 1999). Satisfaction is considered the strongest predictor for the persistent usage of online service channels led by perceived usefulness and confirmation of expectations and attitude, significantly affecting usage continuity led by perceived enjoyment (Gadhiya & Panchal, 2021). Further, it was also noted that not all learners complete the course they enrolled for one reason or another (Naresh & Reddy, 2015). Low-quality content and poor service quality tend to increase dropout rates of online courses (Diaz & Cartnal, 1999; Levy, 2007; Sheshasaayee & Bee, 2018). It can be judged from the above discussion that online learning has received a mixed response from learners owing to its pros and cons. So, stakeholders felt an imperative need to address these issues and discover new ways to address the online learning service setting.

Motivation Behind Going Digital

Motivation is considered an important factor for offline education, and it is true for the online environment, too (Jones & Issroff, 2007). There are varied motivational forces that enthrall the learners to go for online learning, including intrinsic factors (fun experience, aesthetics, etc.) and extrinsic factors (rewards, punishment, etc.) (Deci & Ryan, 2000; Xie & Ke, 2011). The motivation of an individual can also play an important stimuli in assessing the performance of online education platforms (Sankaran & Bui, 2001) and ultimately lead to a satisfying experience (Clayton et al., 2010). A large number of researchers emphasized the motivation-performance notion in the past. Andersson (2008) highlighted the importance of various intrinsic and extrinsic factors leading to the adoption of online learning. Go'mez Puente et al. (2011) explained the relationship between perceived motivation and learners' experience with the online portal. Hartnett (2012) urged future researchers to determine the relevant factors that would enhance user motivation toward online education in the future.

Online Education in Developing Economies

E-learning is in its infant stage in developing countries and is experiencing a variety of constraints in comparison

to online education in developed countries (Andersson, 2008; Bozkurt et al., 2016). The development of e-learning in developing countries depends upon various social and financial factors (Meskhi et al., 2019). The main issues pertaining to the success of online learning in the developing countries include a lack of vital e-learning elements like electricity, internet connectivity, information and communications technology (ICT), and an inadequate supply of trained instructors (Aung & Khaing, 2016; Lwoga, 2012; Omidinia et al., 2011). The research on e-learning is extensively done in developed countries, but these findings cannot be directly implied in developing countries (Abbas, 2016; Boateng et al., 2016).

Dimensions Describing Quality in E-Learning: A Review

Identifying the dimensions of e-learning service quality from developing countries' perspectives is essential. A study conducted by Namisiko et al. (2014) found that perceived usefulness, portal performance, ICT infrastructure, and instructor efficiency are the key determinants leading to e-learning effectiveness in private universities in Kenya. Panigrahi et al. (2021) concluded that – information, system, and service quality (environmental factors) were positively related to student engagement which was further related to perceived learning effectiveness. Instructors' characteristics and course design also played an essential role in the actual use of e-learning systems along with performance expectancy, as discovered by Almaiah and Alyoussef (2019) in Saudi Arabia.

Kim et al. (2019) analyzed the relationship between student engagement and PLE on student satisfaction and usage continuity towards e-learning and confirmed the significance of student engagement and shaping user behavior towards e-learning. Kahu and Nelson (2018) conceptualized the relevance of three dimensions of student engagement, that is, behavioral, emotional, cognitive, and socio-cultural engagement theories in the internet-based learning system. Moreover, a high level of engagement positively affected the satisfaction and usage continuance, as Thakur (2019) quoted. Table 1 provides a tabular description of the literature identified in the past for identifying factors leading to a quality e-learning experience from the users' perspective.

Table 1. Summary of Research Studies from 2010 – 2020 on Factors Responsible for Quality E-Learning Experience

Authors	Type of Study	Factors Identified	Country
Selvi (2010)	Qualitative	Technical infrastructure, learning teaching process, measurements and evaluation	Turkey
Jung (2011)	Quantitative	Interaction, staff support, institutional quality assurance mechanism, institutional credibility, learner support, information and publicity, learning tasks	South Korea
Bhuasiri et al. (2012)	Quantitative	Curriculum design for learning performance, technology awareness, motivation, changing learners' behavior	Asian Perspective
Laal & Laal (2012)	Qualitative	Considerable interaction, individual accountability, social skills	Iran
Adzharuddin & Ling (2013)	Qualitative	Instant notifications, easy access, better communication	Malaysia
Namisiko et al. (2014)	Quantitative	Availability of ICT infrastructure, e-learning curriculum, instructors' competencies, performance expectancy, perceived usefulness of e-learning by students, perceived ease of use of e-learning	Kenya
Sugant (2014)	Quantitative	Content, usability, technology, responsiveness	India

Ngampornchai & Adams (2016)	Quantitative	Technology support, interactivity, user friendliness	Thailand
Kisanjara et al. (2017)	Quantitative	Student engagement, student cognitive performance expectancy, students' control, student satisfaction, continue using student enjoyment, students' self-esteem, students' confidence in the e-learning system	Tanzania
Widjaja & Chen (2017)	Quantitative	Online participation and course design	Asia and Africa
Kahu & Nelson (2018)	Qualitative	Behavioral, emotional, cognitive, and socio-cultural aspects of engagement	China
Uppal et al. (2018)	Quantitative	Reliability, assurance, tangibility, empathy, responsiveness, learning content, and course website	Pakistan
Oluyinka & Endozo (2019)	Quantitative	Electric supply, technical resources, ease to use, perceived usefulness	Nigeria and Philippines
Pham et al. (2019)	Quantitative	System quality, instructor and course material quality, administrative and service support	Vietnam
Almaiah & Alyoussef (2019)	Quantitative	Instructor's characteristics and course design, performance expectancy	Saudi Arabia
Kim et al. (2019)	Quantitative	Student engagement and PLE on student satisfaction and usage continuity towards e-learning	South Korea
Bao (2020)	Qualitative	Relevance between content design and student learning, effective delivery support, high-quality participation, contingency plan	China
Panigrahi et al. (2021)	Quantitative	Information, system, and service quality (environmental factors) and perceived learning effectiveness	India

Dimensions of Electronic Service Quality – A Review

Researchers in the past have used a variety of dimensions to assess the E-SQ of online services delivered through the internet. In software-based services, Xu et al. (2013) demonstrated that e-service quality is determined by three types of qualities: information quality, system quality, and service quality. Benlian et al. (2011), on the other hand, identified different dimensions of e-service quality for software-based service delivery, namely fulfillment, system availability, security, flexibility, efficiency, and privacy. Similarly, in the banking industry, Singh and Chahal (2017) proposed six dimensions to assess the e-service quality, while Agrawal et al. (2018) identified 10 dimensions, and there is a disparity between them, irrespective of the study confined to the same industry. Numerous scales are developed from time to time to bring standardization for measuring the quality of electronic services. E-S-QUAL is the most widely used measurement tool (Parasuraman et al., 2005).

Nevertheless, these scales need modifications to fit into various e-service delivery mechanisms. Khan et al. (2019), in a study conducted on online shopping in Pakistan, confirmed five dimensions of electronic service quality in the online shopping experience, namely, website design, responsiveness, trust, privacy, and reliability. Mohammadi (2015) confirmed that the system's quality positively affected the learner's satisfaction and intention to use e-learning in standard courses. Students' satisfaction with e-learning will be enhanced by characteristics and other situations highlighted in earlier studies, such as clarity of design, interaction with instructors, and active interaction in the context of the course (Swan, 2001). By integrating comprehensive learner models and emerging new technology, e-learning promises to create the future learning ecosystem (Harris et al., 2020). Taking a note from the above discussion, a tabular description of research studies conducted in the past on dimensions of E-SQ in diverse fields is presented in Table 2.

Table 2. Summary of Research Studies on Dimensions of E-SQ in Diverse Business Settings

Authors	Industry	Items Chosen by Previous Researchers
Bauer et al. (2005)	Online banking	Security and trust, basic service quality, cross-buying service quality, added value, transaction support, responsiveness
Parasuraman et al. (2005)	Online retail	Reliability, responsiveness, access, flexibility, ease of navigation, efficiency, assurance, security, price knowledge, site aesthetics, personalization
Kim et al. (2006)	Online apparel websites	Efficiency, fulfillment, system availability, privacy, responsiveness, contact, personalization, information, graphic style
Li et al. (2009)	Online travel service	Reliability, system availability, privacy, website design, responsiveness, empathy, ease of use, experience, trust
Benlian et al. (2011)	Software-based services	Fulfillment, system availability, security, flexibility, efficiency, privacy
Kritikos et al. (2013)	Software-based services	Quality of service, quality of experience
Xu et al. (2013)	Software-based services	Information quality, system quality, service quality
Blut et al. (2015)	Online shopping	Website design, fulfillment, customer service, security, and privacy
Singh & Chahal (2017)	Online banking	Ease of use, security, functionality, customer support, availability of information, website design
Agrawal et al. (2018)	Online banking	Efficiency, customer satisfaction, reliability, fulfillment, ease of use, security and trust, website aesthetics, responsiveness, contact, personalization
Rita et al. (2019)	Online shopping	Website design, customer service, security and privacy, fulfillment
Zhou et al. (2019)	Telecom setting	Functional completeness, performance, interface and interaction quality, content and information, support or service
Chandel & Vij (2019)	E-banking	Reliability, responsiveness, efficiency, security, ease of use, ease of access
Khan et al. (2019)	Online shopping	Website design, responsiveness, trust, privacy, and reliability
Bulsara & Vaghela (2022)	Online shopping	Trust, subjective norms, perceived risk

Findings

It is clear from the above literature review that studies on E-SQ parameters primarily focus on internet banking, online shopping, e-tail, and other customer-oriented services. The past research on electronic service quality involves several diverse and complex issues that make this concept more challenging for future researchers (Ibrahim et al., 2012). Further, it is also identified that ease of use, privacy & security, responsiveness, website design, and reliability are the most cited dimensions of E-SQ, and the results are aligned with the previous literature review studies on service quality dimensions (Gupta & Kaushik, 2018; Kalia, 2017). E-service quality holds relevance in the education sector, but a review of the extant literature revealed a dearth of E-SQ research in e-learning environments. Moreover, very few studies explored e-learning services from learners' perspectives in developing countries, creating a significant knowledge gap. In order to ensure the simplified and customized applicability of service quality in the education sector, it becomes necessary to understand the role of quality in service delivery (Lagrosen et al., 2004; Srikanthan & Dalrymple, 2002). Therefore, we felt an urgent need to examine the concept of E-SQ, focusing on e-learning from developing countries' perspectives. This study attempts to establish dimensions of e-learning service quality from the learner's perspective in developing countries.

E-SQ of Online Learning

Quality assurance is becoming a buzzword in digital education (Zhao, 2003). The foremost priority in an e-learning environment is to assess the quality of online education and enhance student engagement and retention (Elango et al., 2008; Kilburn et al., 2017). Stodnick and Rogers (2008) were the first to use SERVQUAL to measure learning quality in the classroom environment. A web content dimension was added to this scale by Udo et al. (2011) to relate it to the e-learning environment. Since then, measuring e-service quality in the online learning environment has been gaining momentum. Acceptance of e-learning in developed countries has been widely studied, but the findings cannot be generalized to developing countries due to social and contextual differences (Abbas, 2016; Boateng et al., 2016). Thus, the need arises to identify the relevant factors vital for the success of e-learning in developing countries.

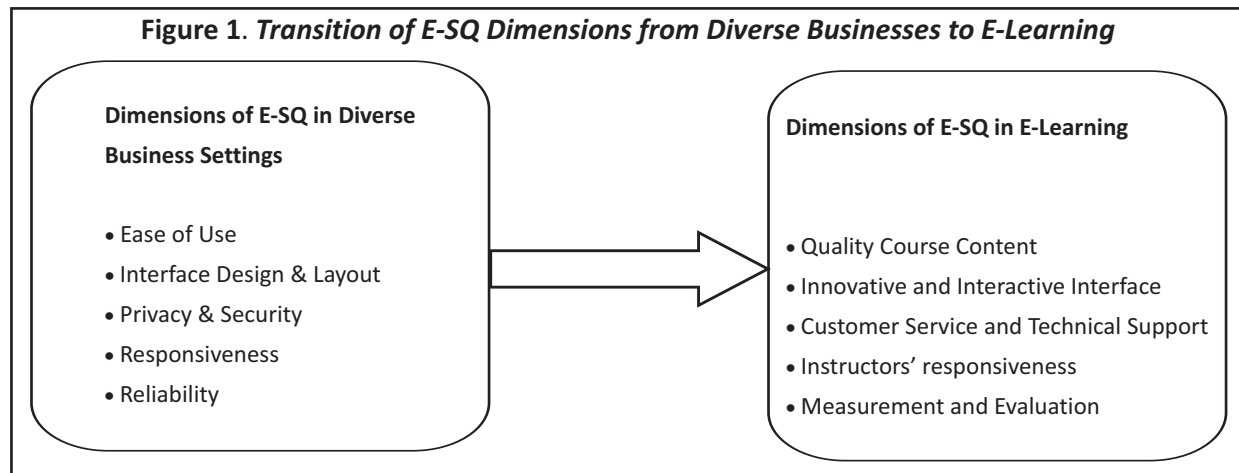
Online learning is convenient for the learners as the content is available 24×7 and can be viewed multiple times (Uppal et al., 2018). The E-SQ of these online platforms must be explicitly assessed to support e-learning so that the service providers ensure the need-based education to cater to the requirements of learners (Ray, 2010). There is a minute incongruity in the significance of e-service quality issues regarding the various online education platforms that play a vital role in students' perception of the quality-of-service delivery portals (O'Neill & Palmer, 2004). Further, there is also a question mark on the quality of online courses available on various e-portals, as stated by Dangwal and Mishra (2020). Thus, the online teaching and learning environment is affected by several factors: content quality, course design, portal and website features, instructor responsiveness, etc. (Cashion & Palmieri, 2002). Reisetter et al. (2007), in their work on the quality of e-learning, concluded that feedback from instructors and course content are the most crucial factors of e-learning quality.

Comparing Dimensions of E-SQ in Diverse Business Settings with E-Learning

Online service quality parameters presented by different researchers in varied fields are not completely congruent in terms of their usability, scope, and assessment. The functionality of e-learning portals is mainly attributed to a unique and innovative service setting. Thus, it becomes vital to identify and differentiate the factors responsible for measuring the E-SQ of online learning from other e-learning platforms. The research on the identification of factors determining the quality of e-learning from learners' perspectives has the potential worth exploring. Online learning is more effective than traditional face-to-face learning (Soffer & Nachmias, 2018). The COVID-19 pandemic positively influenced the demand for online education and acted as a catalyst in mushrooming of a large number of e-learning platforms across the globe. Online systems must increase user engagement by offering better value propositions to encourage usage (Chakraborty & Altekari, 2021).

Further, the quality of content and evaluation criteria must be given utmost importance as it attracts learners to use the portal. Better technical and service support tends to increase e-portal users and helps retain the customers in the long run. We reported a transitional shift in the dimensions of electronic service quality from varied e-services to those specifically associated with e-learning based on an extensive exploration of available literature.

It is predicted that the magnitude of online courses will surpass the number of traditional courses in the near future (Sheshasaayee & Bee, 2018). Social media platforms allow users to acquire new skills through tutorials (Kaur & Kumar, 2021). These platforms could be the future of delivering e-learning services in developing countries. Despite the emergence of online education, due consideration had not been given by the previous researchers pertaining to assessing the motivations of learners and dimensions affecting the e-learning experience (Abou El-Seoud et al., 2014). However, now, after the breakout of the pandemic, continuous research is going on to provide technological up-gradation in the online portal and content availability. The service providers and developers focus on providing enhanced customer experience, ease of use, the latest technology, customer



feedback, quality course content, and value-added services. The present study discovered a unique set of dimensions catering to the quality expectations of learners in a virtual learning environment. These dimensions are different from those used mostly in other diverse business settings like e-tail, e-banking, etc.

The outcome of the current study is based on the extensive literature survey and comprehension. We attempted to compare and contrast the E-SQ dimensions identified in various business settings with those of e-learning. After an extensive review of the available literature (as presented in Table 2), the dimensions of E-SQ used in a diverse business setting (other than e-learning) based on the similarity in the nomenclature and interpretation are ease of use, privacy & security, responsiveness, website design, and reliability. Similarly, on reviewing varied factors to assess the quality of e-learning through a mix of quantitative and qualitative procedures (presented in Table 1), it was discovered that four categories (based on the analysis of the key terms used in previous studies) namely: quality course content, interactive interface, innovative technology features, and customer service support are most relevant and frequently used by the learners to evaluate their online learning experience in the context of developing countries. Thus, it can be concluded that there is a transitional shift in the dimensions of E-SQ to measure the service quality of e-learning to cater to the service quality expectation of learners, as presented in Figure 1.

Managerial and Theoretical Implications

Developing countries are extremely diverse, ranging from low-human-development countries like Afghanistan to high-human-development ones like Singapore. Asia, the world's largest and most diversified continent, with its five sub-regions (Worldometer, 2020), is home to not just highly productive e-learning researchers and institutions but also the world's greatest e-learning growth rates. In addition, since 2010, there has been a need to pay greater attention to Asia to explore large initiatives in the e-learning environment (Maurer & Salman Khan, 2010). Investigating the environment for e-learning in developing nations might potentially fulfill these voids. Because of the field's growing popularity, it is an excellent time to look into e-learning environment trends in the literature and how the discourse among researchers has developed. It also helps explore virtual learning environments to verify new learning paradigms in social/collaborative environments while utilizing current technology. Learning is a lifelong process that individuals from all walks of life require for various reasons. It should not be limited to academic settings. It is expected to evolve and become more user-friendly. Instructors' new strategies will make online courses more fascinating and engaging. In addition to students, organizations are also using e-learning courses to train their workers.

The findings of this study provide a summary of the output in this subject as a valuable indication of where the field of e-learning environments is headed in the future. Service quality holds its relevance in the e-learning sector. The results of this study will help understand learners' perspectives on e-learning that will be useful for content developers, educators, academicians, policymakers, and portal developers. Education is the key to shaping society, and the promotion of e-learning will take education to every nook and corner of the world.

Conclusion

This study performed a comprehensive review of the relevant literature on E-SQ and E-learning. Based on identified gaps in research and conflicts in previous studies, the study focuses applicability of E-SQ in the education sector. This study seeks to identify the dimension of e-learning service quality in developing nations from the learner's perspective. The findings suggest that a shift in the dimension of E-SQ is observed in the context of online education. Multiple factors affect E-SQ, but when the focus is on the e-learning context, there is a transitory movement in the dimensions of E-SQ used to measure the service quality of e-learning to meet the learners' service quality expectations. To conclude, Quality Course Content, Innovative and Interactive Interface, Customer Service and Technical Support, Instructors' Responsiveness, Measurement, and Evaluation are all crucial dimensions of e-learning service quality.

Limitations of the Study and Scope for Future Research

Unlike other research works, this study also suffers from certain limitations. First, all the studies considered in this literature review are in English; so other languages are ignored. Second, the study focuses on articles from the learner's point of view and the identified dimensions of E-SQ from the e-learning context. Third, the scope of the study is confined to developing countries, thus limiting the generalization of findings. Future researchers can execute the empirical testing of the identified dimensions in order to generalize the results in different geographical environments. Future researchers can also perform comparative research on dimensions of e-learning in the context of developed and developing countries.

Authors' Contribution

Dr. Navjit Singh thought of an idea to explore the dimensions of e-service quality of e-learning from learners' perspectives by conducting an extensive review of past work and executing a review study. He and his co-authors designed the entire approach from study conception to manuscript writing. Dr. Kulvinder Kaur gathered relevant literature required for the review and presented the findings. Dr. Ramandeep S. Deol wrote the introduction and checked the grammar for the entire manuscript. Dr. Navjit developed the discussion and conclusion sections. All the authors contributed equally in writing the first draft of the manuscript. They revised the manuscript as per the reviewers' suggestions and approved the final manuscript.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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