

Features of High-Quality Online Courses in Higher Education: A Scoping Review

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Abstract

What are the features of high-quality online courses in higher education? In this scoping review, we explore peer-reviewed scholarship related to the features of online learning in postsecondary contexts. We searched ERIC (EBSCO), Education Research Complete, and SocINDEX with Fulltext to retrieve peer-reviewed literature from 2010-2022 pertaining to features of online learning in higher education. Two reviewers independently conducted the initial title and abstract screening (n = 1,574), full text review (n = 483), and data extraction of the included articles (n = 38). Using thematic content analysis to explore the data extracted from each article, we found that the literature predominately included scholarship related to quality online course design, instructor facilitation in online courses, quality assessment of online courses, and student engagement in online courses. The breadth of these themes included a multiplicity of strategies and approaches to consider when designing online learning experiences. We recommend that administrators, faculty members, and instructors responsible for designing online courses and programs for postsecondary contexts continue to incorporate these considerations to promote high-quality and consistent online offerings. We conclude the review by presenting four high-level considerations to guide these discussions.

Keywords: Higher education, online learning, features, high-quality, course design

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The last three years have witnessed immense growth in the demand for high-quality online learning in all education systems due to the global pandemic that shifted nearly all of us online (Bhagat & Kim, 2020). Now more than ever, the online learning scholarship that has flourished for more than two decades is in the spotlight, attracting new and experienced audiences and contributors in droves. The momentous growth of the field of online learning prior to and during these unprecedented times has resulted in a depth and breadth of research studies and associated information for educators to draw upon (Martin et al., 2020; Mayer, 2019; Greenhow et al., 2022). The current landscape of higher education has morphed into a diverse mix of face-to-face, fully online, and blended learning environments. As fully online courses and programs gain more prominence in higher education, a tremendous need exists to curate and synthesize the mountain of scholarship about online learning. What features of online learning create high-quality learning experiences for both students and educators in diverse contexts?

Broadly, high-quality online learning experiences provide stakeholders with an understanding of purpose, connection, and achievement through intentional course design, strategies, and interaction (Esfijani, 2018). Since the term “high-quality” is both subjective and nuanced, we approached this work with the understanding that scholars have identified and elaborated upon principal features of online courses that contribute to positive learning experiences for students and improve the teaching experience for educators. Contextually, features of high-quality online learning include specific frameworks that guide the creation and evaluation of online learning, such as the Community of Inquiry framework (Garrison et al., 1999), which defines quality teaching, social, and cognitive presences. We also utilized the Universal Design for Learning (UDL) framework (King-Sears, 2009), which explains that accessible tools and strategies can be implemented within the classroom to promote the success of all students. Third, we relied on the Quality Matters (QM) framework (Lowenthal & Hodges, 2015), which focuses on eight standards to evaluate courses. Features of high-quality online learning also encompass specific tools to engage students, such as synchronous chats, asynchronous discussion boards, video conferencing services, news forums or announcements, calendars, intelligent agents, automated email reminders, and adaptive quizzes and assessments. Feedback/assessment strategies and evaluation rubrics are also considered to be features of online learning in higher education. To design with these features in mind, the Online Learning Consortium Scorecard Suite (Online Learning Consortium, n.d.) has provided educators with a robust repository of online course design rubrics, checklists, and resources that have been developed based on best practices and evidence in the literature and practice.

To date, research about online learning in higher education has been predominantly focused on the systemic and structural components of online learning, such as evaluation frameworks for online learning (Hosiea et al., 2005), quality features of teaching and learning online (Keengwe & Kidd, 2010), virtual interactions between teachers and students (Wallace, 2003), and student engagement in online environments (Dumford & Miller, 2018). Since the start of the pandemic, online learning scholarship has expanded to include topics related to UDL in online classrooms during COVID-19 (Dickinson & Gronseth, 2020; Havens, 2020; Ntombela, 2022), strategies and tools to ensure quality online learning during the pandemic (Chu et al., 2021; García-Morales et al., 2021), and faculty development and responses to the immediate transition to online learning (Johnson et al., 2020; Tucker & Quintero-Ares, 2021). These recent contributions have highlighted the relevance of student-centered online course design and created possibilities for merging structural and interpersonal elements in online learning moving forward.

The recent reliance on online environments has increased our awareness of the need to create accessible, equitable, and inclusive learning experiences that reduce the barriers to student engagement and achievement of learning outcomes. As highlighted here, researchers and scholars dedicated time to these considerations prior to the pandemic and their work has gained renewed attention. For example, one may draw upon research conducted about increasing access to education for people living with disabilities through the adoption and creation of accessibility tools and technologies (Batanero et al., 2019; McKeown & McKeown, 2019). Such practices may help expand the utility or impact of the UDL framework to spotlight key accessibility strategies that have been previously used to support people living with disabilities and can be reimagined for use with students of all abilities.

While there is a preponderance of research and scholarship about instructional strategies and approaches to the design of online learning experiences, persistent gaps have been identified. Tuncay (2021) concludes that gaps in online education pertain to the capabilities of instructors to teach online and for students to learn online. As she stated, “the most accepted gaps are Internet gaps, age gaps, digital gaps, knowledge gaps, access gaps, economic gaps, and performance gaps” (Tuncay, p. 2). Interestingly, a 2019 study with award-winning instructors who taught online courses found that their ability to bridge these and other gaps contributed to their success as faculty members (Martin et al., 2019). By conducting this scoping review in which we synthesize key features of high-quality online learning, we hope to provide educators with access to high-impact strategies and approaches that may help them fill in these gaps in their teaching practice.

There is a paucity of systematic and scoping reviews that examine specific features of high-quality online learning in higher education institutions. Contextually, a systematic review focuses on the impact that treatments have on a specific outcome, whereas a scoping review seeks to uncover evidence regarding a specific topic through a comprehensive search of the available literature (Munn et al., 2018). Previous reviews that pertain to the high-quality features of online learning have predominantly focused on blended and hybrid learning (Anthony et al., 2020; Leidl et al., 2020), K-12 education (Cavanaugh et al., 2009), nursing programs (Leidl et al., 2020), and physical education (Killian et al., 2019). In our review, we set out to synthesize the key features of high-quality online learning experiences in higher education across disciplines using a scoping review framework.

Currently, online learning across all disciplines is a global reality for higher education institutions, and the authors presume that these environments will continue to be influential moving forward. The findings from this scoping review may be relevant to our audience of instructors, professors, course designers, and faculty members, as they outline key features of fully online courses essential for the quality engagement and success of student and faculty experiences in these courses.

Review Questions

The purpose of this review was to explore the features of high-quality online learning in higher education and to identify any existing areas of inquiry in the literature regarding these features for further investigation. This was the primary research question: What features of high-quality, fully online higher education courses have been identified in the existing literature?

Methods

Scoping Review

A scoping review is a type of knowledge synthesis that maps existing scholarship and literature across a broad topic for the purpose of identifying key concepts, gaps, and opportunities for further research (Munn et al., 2018). A scoping review follows similarly rigorous and transparent processes as systematic reviews; the key difference between them is that scoping reviews are intended to examine a broad body of scholarship on a topic whereas systematic reviews are intended to answer a focused research question based on a body of empirical literature. We adapted the Joanna Briggs Institute scoping review protocol for this study, comprised of the search strategy, inclusion and exclusion criteria, evidence screening and selection, data extraction, and synthesis (Khalil et al., 2020; Peters et al., 2020). The JBI protocol provides guidance on the organization of scoping review manuscripts, and we have organized our manuscript with the following sections in order: (a) abstract; (b) introduction; (c) review questions; (d) methods, including the search strategy, inclusion and exclusion criteria, source of evidence screening and selection, and data extraction; (e) results; (f) discussion; (g) recommendations and conclusions; and (h) conflicts and acknowledgements (Peters et al., 2020).

Search Strategy

The draft protocol was developed in collaboration with the research team, comprised of three graduate research assistants and a faculty member from a large research university in Western Canada. The first and fourth authors were responsible for the development of the protocol, including database searches and importing references into Covidence, an online screening and data extraction application, for review. The second and fourth authors independently reviewed the titles and abstracts of the references. Subsequently, the second and third authors independently conducted full-text screening, data extraction, and quality assessment (Khalil et al., 2020; Tricco et al., 2016). The first author engaged in consensus discussions and provided supervision of the search process, analysis, and synthesis.

Inclusion Criteria

We included peer-reviewed publications from 2010-2022 with a focus on fully online learning and course design in higher education in this review. In effect, a decision was made to focus on recent literature due to the exponential change and growth in the online learning landscape during the past decade. This focus also included changes in learning technologies and diversity of learning needs among students and educators. We considered qualitative, quantitative, and mixed methods studies about the features, principles, and/or characteristics of high-quality online learning in higher education, including university, two-year college, and trade and professional schools.

Exclusion Criteria

We did not include publications that focused on blended, hybrid, or flipped classrooms because we sought to focus on fully online learning environments. We excluded articles that were concerned with evaluating learning management systems (LMS) for the purpose of institutional adoption or decision-making, as those articles tended to focus on administrative functionality rather than student learning experiences. Moreover, we excluded articles focusing

on massive open online courses (MOOCs) because our focus was only on academic online courses offered in higher education institutions. Thus, we also excluded articles that focused on K-12 education, community education, and professional/corporate online training courses. Finally, we excluded dissertations and conference proceedings from our criteria, as we wanted to ensure that our sources were peer-reviewed articles published in academic journals.

Source of Evidence Screening and Selection

The research team developed the scoping review protocol and conducted the database searches between October 2021 and December 2021 (Table 1). Using five search strings with relevant keywords, we searched the following databases to identify relevant documents and literature: ERIC (EBSCO), Education Research Complete, and SocINDEX with Fulltext. The search strategy was limited by the following parameters: (a) articles published between 2010 and 2022; (b) full text available, (c) English only, and (d) peer-reviewed. We collected and imported 2,173 references to Covidence, a cloud-based platform that researchers use to conduct systematic, scoping, and other forms of evidence synthesis of scholarship and literature on various topics. Covidence has been designed to promote reliable and transparent evidence-syntheses by adhering to the PRISMA guidelines for conducting scoping and systematic reviews. The software removed 599 duplicates, leaving 1,574 references for title and abstract screening.

Table 1
Scoping Review Search Process

Stage	Details
Databases	ERIC (EBSCO) Education Research Complete SocINDEX with Fulltext
Search Terms	(high quality) AND (online teach*) OR (online learn*) AND principles AND features AND (high* educa*) Factors AND Quality AND E-Learning AND (high* educa*) Effective AND Features AND Online learning AND (high* educa*) Quality AND Features AND (online learn*) AND (high* educa*) Quality AND Features AND (Online Learn*) AND (high* educa*)
Inclusion Criteria	Full Text: Yes Date: 2010 to 2022 Language: English-only Type: peer-reviewed; journal articles; books; book sections Education Level: Post-secondary; higher education; university; two-year colleges; trade or professional schools Focus: quality online learning; faculty and students' perspectives on quality online learning; online course design; instructional design
Exclusion Criteria	Education Level: K-12, community or professional/corporate training online courses Type: Dissertations, conference proceedings Focus: Blended/hybrid/flipped learning, MOOC

Data Extraction

The second and third authors independently conducted a quality assessment and data extraction for each of the 38 included articles. Once completed, they met to come to consensus for each component. We adopted the *JBI Critical Appraisal Checklist for Qualitative Research*

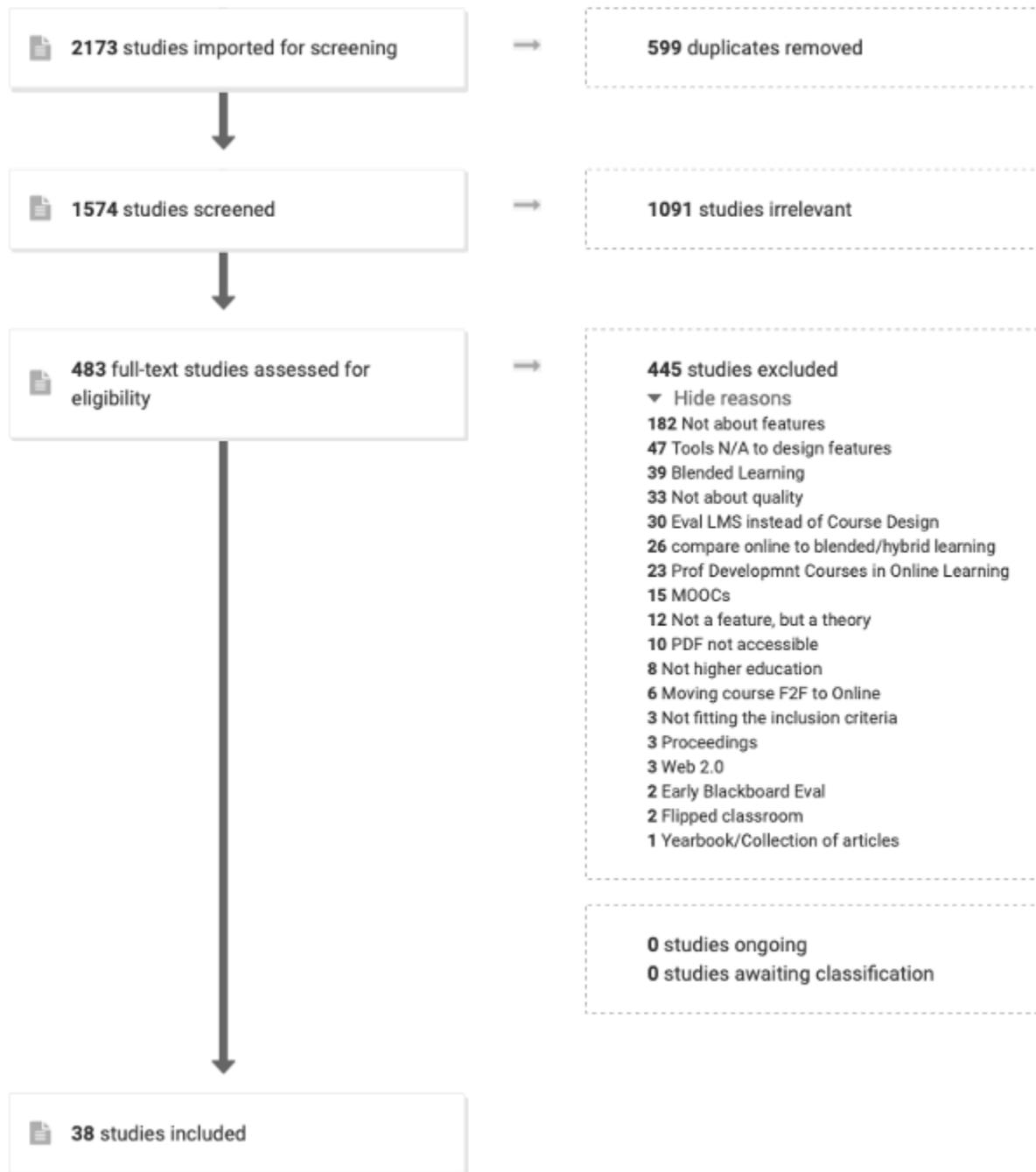
to determine the overall quality of the studies included in this review. The appraisal focused on congruence between the research questions, methods, analysis, interpretation, and representation of data, as well as ethical considerations such as the influence of the researchers on the study, the representation of participants' voices, and ethical approval for the research (JBI Global, 2020). These considerations were used to determine an overall assessment of quality of the included studies.

We used a pre-defined charting form to extract data from the included articles, specifically study characteristics (e.g., location, year conducted, etc.), methods (e.g., aims, study design, methods, analysis, etc.), participant characteristics, key findings, supporting evidence (e.g., quality of supporting evidence), and authors' conclusions (e.g., implications and recommendations). After the two independent reviewers had reached consensus on the data extraction, they exported the data to a spreadsheet and extrapolated the key findings from each study. Once complete, the research team conducted a thematic content analysis to identify themes within the key findings.

Search Results

Two graduate research assistants (both master's level) used Covidence to screen the titles and abstracts of 1,574 references. To ensure screening reliability and consistency, the two research assistants and the first author conducted a test screen of 100 references using the inclusion and exclusion criteria listed above. Upon completion of the test screen, the two research assistants independently screened each title and abstract to determine inclusion based on the inclusion and exclusion criteria and met to resolve conflicts and determine the final references to include for full-text review. After screening the title and abstracts, 483 articles were included for full-text review. Two research assistants followed the same inclusion/exclusion criteria for the full-text review. Of these 483 articles, 445 articles were removed because they did not meet the inclusion criteria (Figure 1). Following full-text review, 38 articles were included for data extraction.

Figure 1
PRISMA Diagram



Analysis and Synthesis

The authors used thematic content analysis to determine key themes within the included articles. Thematic content analysis is a process by which researchers examine qualitative data (e.g., written text or content) to identify patterns (Vaismoradi et al., 2013). These patterns are then presented descriptively, usually segregated by thematic terms or statements (Erlingsson & Brysiewicz, 2017; Sandelowski & Leeman, 2012). Two authors reviewed the key findings from the studies to identify initial patterns and recurrences within the data. The research team then met

to discuss and refine these initial themes, organizing studies according to similarities in content and focus. We identified four themes related to online course design within the findings of the included articles: (a) design, (b) technology, (c) evaluation, and (d) student engagement.

In accordance with the JBI framework for conducting scoping reviews, the results section was organized in the following manner (Khalil et al., 2020; Peters et al., 2020JBI citation). First, we provide an overview of the characteristics of the 38 articles included in this review. We then present a summary of the four themes, subthemes, and considerations identified in the literature. We conclude this section with a brief summary of the findings before discussing the implications of these findings for the features of high-quality online learning in higher education.

Results

Inclusion of Sources of Evidence

Nearly all studies included in this review were published between 2014 and 2021 (73.6%) and most were conducted in North America (68.4%). The most common study designs were qualitative (47.4%) and evidence synthesis (36.8%), encompassing systematic, scoping, and literature reviews.

Table 2
Study Characteristics

Characteristic		Count (%)
<i>Year Published</i>	2018-2021	14 (36.8%)
	2014-2017	14 (36.8%)
<i>Study Design</i>	2010-2013	10 (26.3%)
	Qualitative	18 (47.4%)
	Evidence Synthesis	14 (36.8%)
	Quantitative	3 (7.9%)
	Mixed Methods	2 (5.3%)
	Experimental	1 (2.6%)
<i>Continent</i>	North America	26 (68.4%)
	Asia	4 (10.5%)
	Not specified	3 (7.9%)
	Europe	2 (5.3%)
	Australia	1 (2.6%)
	Africa	1 (2.6%)
	South America	1 (2.6%)

Themes

We identified four distinct themes related to online courses in the 38 articles included in this review: (a) design, (b) instructors' facilitation, (c) student engagement, and (d) quality assessment. Most of the articles focused on the design (n = 15; 39.5%) and instructor facilitation (n = 12; 31.6%) in online courses, and both themes included the role and use of technology. Here, it is important to distinguish the role of technology in online courses from evaluations of

learning management systems (LMSs) for the purpose of administrative and information technology (IT) decision making for software adoption or rejection. The role of technology in online courses extends beyond the LMS to include the use of artificial intelligence agents, accessibility software, integration of third-party learning technologies, and use of non-academic technologies to enhance learning experiences. As such, we excluded studies that focused on the evaluation of specific LMS components and aspects, as they extended beyond the scope of this review. Other themes, less evident in the literature, were student engagement (n = 9; 23.7%) and quality assessment of online courses (n = 2; 5.2%). While only two of the included articles were about quality assessment of online courses, we found that the content provided in both articles were relevant to the scope of this review and provided important considerations for high-quality online learning. We summarize the themes, subthemes, and considerations for each subtheme in Table 3 for reference.

Table 3
Summary of Themes, Subthemes, and Considerations for High-Quality Online Course Design

Theme	Subthemes	Considerations
Design	Communication	<ul style="list-style-type: none"> • Multiple pathways for communication • Flexibility in roles • Promote peer-to-peer interaction • Timely feedback • Administrative support • Universal Design for Learning (UDL)
	Frameworks	<ul style="list-style-type: none"> • Universal instructional design • Community of Inquiry • Create a new framework • Collaborative pedagogies and competencies
	Principles	<ul style="list-style-type: none"> • Clear learning outcomes • Humanize and chunk course content
Facilitation	Asynchronous Discussions	<ul style="list-style-type: none"> • Personal anecdotes and emotion • Student-student collaboration • Discussions support course objectives • Constrained, anchored, and visualized environments • Timely responses and availability
	Instructor Presence	<ul style="list-style-type: none"> • Clear communication and instruction • Rapport with students • Encouragement instead of discouragement
	Feedback	<ul style="list-style-type: none"> • Constructive and personalized feedback • Outline the limitations of the student's work • Private messaging features
	Use of ICTs	<ul style="list-style-type: none"> • Surveys • Hand-raising functions • Interactive whiteboards • Chat rooms
Student Engagement	Use of ICTs	<ul style="list-style-type: none"> • Virtual reminders of deadlines • Combination of ICT tools internal and external to the institution • Wireless, accessible, able to be used by many students at once • PowerPoint presentations

	Course Organization	<ul style="list-style-type: none"> • Accessible course navigation • Class community and collaboration • Detailed expectations of the course in the syllabus • Multiple options to demonstrate knowledge
	Course Modification	<ul style="list-style-type: none"> • General changes to course design were favourable • Passive instructor presence and interaction was preferred by students
Quality Assessment	Assessment Rubrics and Framework	<ul style="list-style-type: none"> • Focus on evaluation instruments that assess course design and assessment, interaction, technology, accessibility, and collaboration. • Engage with course quality frameworks that examine policy, course design, interaction, and teaching practices.

Design of Online Courses

Fifteen (39.5%) of the studies discussed the design of online courses, specifically examining various frameworks and approaches that inform course design strategies. Additionally, principles noted by scholars as being beneficial to the design of online courses were also analyzed.

Communication Within Online Classrooms. Dalton (2018) posited that fundamental aspects of designing higher education online courses include multiple communication modes between instructor and student that instructors can contribute to frequently, flexible design features that all students can use, and multiple avenues for assessment. Additionally, Khan et al. (2017) and Martin et al. (2019) argued that discussion forums with explicit expectations, mentorship opportunities among students, and a flexible instructor role that adapts to the specific expectations of the classroom are key strategies in online course design. Notably, Kamlaskar and Killedar (2015) evaluated 10 online courses at a specific university, which promoted three fundamental ideas: student-student and student-instructor interaction; the administration of feedback, specifically through email; and engaging with students through opportunities to exercise critical thinking. Further, Hadullo et al. (2018) conducted a qualitative literature review supported by interviews with higher education students and faculty to uncover the technological and administrative background required for effective course design. The results of this study specified that administrative support for students pertaining to enrollment and registration, academic advice, and the general description of the strengths of the university are all pertinent. From a faculty perspective, e-learning technicians are necessary to ensure that the digital organization and functions of a course operate smoothly.

Frameworks Creating an Online Classroom. Scholars also focused on the use of specific frameworks to guide the design of online courses. Both Dell (2015) and Houston (2018) explained that the UDL framework ensures that information is presented in multiple ways to ensure cohesive cognition of course content among all students. UDL can be implemented in a variety of forms, including closed captioning technologies for media with audio and screen readers for documents with text, which benefits those who live with disabilities and those who do not live with disabilities. Similarly, Elias (2010) evaluated their online course based on eight principles of universal instructional design, which revealed that virtual documents should have

accessible fonts and font sizes, cursor magnifiers, and text-to-speech features. In addition, she found that instructors should be aware of the physical capabilities of their students. Finally, Elias noted that discussion forums are effective for fostering efficient communication in classrooms. Similarly, deNoyelles et al. (2014) promoted the Community of Inquiry framework in their article, which demonstrated the importance of a strong cognitive, teaching, and social presence in the classroom to nurture community and critical thought among virtual students (Garrison et al., 1999).

Instead of proposing a specific framework to guide the design of online classrooms, Al-Aghbari et al. (2021) strove to create their own framework. Their process included evaluating current interaction among students, the effectiveness of one's current instructional design, how students are being evaluated, and the various modes in which students are being supported in their online studies. Further, the authors postulate the consideration of contextual logistics in the design of virtual classrooms, in that students' personal affairs can impact their participation in the classroom.

Principles in Designing an Online Classroom. Beyond design frameworks for online classes in higher education, scholars discussed various principles essential to consider when envisioning the design of online courses. For instance, Brown et al. (2013) noted that effective pedagogies, universal competencies, disciplinary knowledge, and effective connections among students and instructors are all overarching principles that should be considered when designing online courses in higher education. A year later, Afifi and Alamri (2014) conducted a literature review of the design of online courses, recommending that learning outcomes need to be clear, that different styles of learning are pertinent, and that feedback should be detailed yet administered quickly. More recently, McGuire (2017) and Baldwin (2019) used interviews with higher education instructors to reveal that humanizing and chunking course content increases student engagement, alongside the engagement that is fostered when utilizing course technologies to replicate in-person learning environments. In contrast to interviews, Jung (2011) employed qualitative surveys completed by higher education students to promote the importance of faculty development and support when undertaking the task of designing an online course, as such professional development is often important to faculty and students alike.

These 15 articles explored the multiplicity of designing online classes and the key considerations, strategies, and frameworks to be cognizant of when creating a digital higher education classroom. Broadly, the considerations of efficient feedback, discussion boards, and multiple forms of assessment were commonly noted. Many scholars also described the importance of using or creating an interface that is interactive and accessible. Regarding frameworks or models, it was not productive to identify only one as the quintessential framework or model, but instead to be aware that implementing frameworks or models that work for instructors and students contextually is beneficial to the virtual classroom.

Instructors' Facilitation in Online Courses

Twelve (31.6%) of the studies examined how instructors facilitated quality experiences within online courses. The main aspects of this theme include discussion forums, instructor presence, feedback, and information communication technology (ICT) tools.

Asynchronous Discussion Forums. Fear and Erikson-Brown (2014), Gao et al., (2013), and Tibi (2016) conducted literature reviews on the impact that asynchronous discussion forums had on the quality of higher education online learning. Two common themes from the instructor's perspective were the significance of instructors' use of personal anecdotes and emotion in these forums to humanize the content (Fear and Erikson-Brown, 2014) and urging students to support each other in their learning capabilities through exchanging knowledge and asking each other questions (Tibi, 2016). Further, the structure of online asynchronous discussion forums requires comprehensive expectations and guidelines to streamline the direction of topics being discussed (Tibi, 2016) and each forum must support the course objectives to ensure high-quality instruction (Fear & Erikson-Brown, 2014). Notably, Gao et al. (2013) described three forms of asynchronous discussion forums: constrained, anchored, and visualized environments. Constrained environments ensure that the topics of these forums are well organized and structured. Anchored environments, by contrast, include interactive functions for students to interact with as they engage in the forum. Finally, visualized environments give students the ability to view the relationships among discussions through visual media. Additionally, the authors posited a fourth type of asynchronous discussion environment, which combines aspects of two or more of these environments together to uphold quality standards of online learning.

Instructor Presence. To examine the features of instructor presence, Baker (2010) and Hodges and Cowan (2012) conducted surveys for undergraduate students to express their perspectives of the aspects of quality instructor presence. Baker's (2010) survey revealed that comparatively, instructor presence and immediacy was high in synchronous online learning environments and instructor presence and immediacy was low in asynchronous online learning environments. Hodges and Cowan's (2012) survey determined four key components of quality instructor presence: (1) timely responses, (2) clear communication and instruction, (3) instructor availability, and (4) the design and layout of the course.

Other research on instructor presence includes Ladyshewsky's (2013) case study that examined course evaluations from a graduate course to inform their analysis. The author discovered that the instructor's ability to nurture a class community was perceived as more important than the overall design of the course, and that instructor-student interaction increased student satisfaction in the classroom. Further, Vlachopoulos and Makri (2019) conducted a framework study which revealed that the instructor can be impactful in the following ways: encouraging and facilitating active learning, reciprocity between instructor and student, and clear expectations of the course; acknowledging that all students learn differently; and administering detailed and efficient feedback. Similarly, Baghdadi's (2011) literature review focused on general features pertaining to the online classroom and found that instructor presence should strive to establish a balance between always being available immediately and not at all.

Feedback. Regarding feedback as an important aspect of higher education online courses, Steele and Holbeck (2018) conducted a literature review explaining that personalized feedback was crucial for student satisfaction. Particularly, feedback should be communicated in a constructive manner that mentions the limitations of the student's work but simultaneously assures the student that they can perform better in the future through implementing specific strategies into their work.

ICT Tools. Diverse ICT tools were also mentioned as key aspects of online courses in higher education. MacKinnon et al. (2020) mentioned that private notes and messaging features embedded within virtual classes is a feature that maintains confidentiality and encourages class participation in multiple ways. Jaggars and Xu (2016) asserted that interaction and technology were key components in improving students' successful completion of online courses. Using an instructor's perspective, Dusing et al. (2012) isolated key ICT tools that benefitted the higher education virtual classroom and helped to foster community, including chat rooms, interactive whiteboards, surveys, and hand-raising functions.

Generally, the 12 aforementioned articles have established that instructors' facilitation of quality in online courses in higher education improve the quality of learning for the students who engage with these courses. Discussion forums are a useful tool that encourage community building and knowledge sharing among students, which is predicated on the facilitation of these environments from the instructor. Instructor presence, although complex, requires the instructor to interact with students within their own boundaries and assure and support students in their experiences within and beyond online classrooms. Ideally, feedback should be administered in an efficient and detailed fashion and rely on how the student accepts feedback, which proves to be difficult when students have diverse needs. Finally, multiple ICT tools can be used in the classroom to benefit students' learning and performances within higher education online classrooms.

Student Engagement in Online Courses

Nine (23.7%) of the included papers discussed student engagement and participation in online classrooms in higher education, specifically, students' experiences with information and communication technology (ICT) tools, course organization and expectations, and general interactions with the course, including interactions with faculty and students.

Student Perceptions of ICT Tools. Çakýrođlu, (2014) and Jiang et al. (2019) both used qualitative surveys completed by undergraduate students which resulted in great insight into the recognition of ICT tools in the virtual classroom. More specifically, Çakýrođlu (2014) reported that text and video reminders of upcoming course deadlines were impactful to students, and although sometimes there were technological problems in the classroom, the students were able to overcome these barriers. Jiang et al. (2019) further contributed to this area of research by outlining ICT tools that students seek out themselves to further their own learning, including YouTube videos, Khan Academy, peer study groups, supplemental books, and the search engine Google. Further, the authors specified that the most impactful ICT tool in the virtual classroom was PowerPoint presentations, as students perceived these to be the most influential instructional mode that improved their learning. From a different perspective, Amemado (2014) conducted interviews with higher education faculty members about the impact that ICT tools had in their classrooms and the reasons these tools were created. The responses indicated that quality ICT tools should be wireless, adaptable for all students and faculty members alike, easy to use, and have capacity for use by many students at once. They should also Web 2.0 tools, interact with learning management systems, and a mix of asynchronous and synchronous tools.

Student Perceptions of Course Organization. To uncover students' perceptions about how the course was organized, Fayer (2014) and Zhang et al. (2020) examined survey responses from undergraduate students. Fayer (2014) posited that the three key components of online

courses as noted by students were the organization of the course, instructor feedback, and relevance of the course content to the course objectives. Similarly, the results of the survey that Zhang et al. (2020) administered to undergraduate students shared the same sentiments. Students stated that course navigation, application of the course content to their everyday lives, and course objectives are key beneficial components to students. Conversely, Secret et al. (2016) collected data from graduate students who completed course evaluation surveys and course reflection papers to garner an understanding of students' expectations of quality online courses. The results demonstrated that comprehensively articulated expectations of class community and behaviour were impactful to students, alongside participatory group discussions that included all members of the group. The online format of this classroom was supported because students stated that they felt more comfortable participating in online course discussions in comparison to in-person class participation. Along these lines, Rao and Tanners (2011) collected qualitative and quantitative course evaluations from graduate students, which specified key organizational features of online courses: a clear and concise syllabus, detailed expectations of the course, short weekly assignments and weekly reminders to complete these assignments, and multiple options to demonstrate and receive knowledge.

Student Perceptions of Course Modifications. Generally, modifications to the course were perceived as positive, as demonstrated by surveys that Carr et al. (2014) administered to higher education students. In other words, implementing general changes to the course created a variety of avenues for student interactions. Likewise, Rasmussen et al. (2018) also conducted a survey with higher education students; however, they focused on the interactions between students and instructors. In their study, students indicated that instructor presence and interactions with instructors were perceived as beneficial for student learning, yet meeting the instructor virtually was not noted as a key component of the course.

Student engagement in higher education online courses is comprised of their perceptions of the aspects and organization of these courses, and the interactions that they have within these courses. Contextually, the ICT tools within and outside of virtual classrooms are generally perceived as beneficial to student learning when they are created and implemented successfully. Further, the organization of the course is important to students, as they feel more comfortable interacting with other students due to the virtual organization of the course, especially when the course content aligns with the course objectives and applicable skills. In addition, general interactions with the course and the instructors are perceived as positive, especially when the course undergoes helpful modifications to adapt to students' needs.

Quality Assessment of Online Courses

Two (5.2%) articles detailed the importance of quality assessment of online courses and programs as a principal component of the design and delivery of high-quality online courses, achieved using rubrics and frameworks.

Assessment Rubrics and Frameworks. Baldwin et al. (2018) and Pedro et al. (2020) conducted Google searches to find different rubrics and frameworks to isolate the key features that need to be evaluated in online courses to ensure continuous quality; yet, the researchers focused on different modes of evaluation. Baldwin et al. (2018) researched the application of six different course evaluation instruments that were commonly used in the United States. Although each of the evaluation instruments focused on a combination of various aspects of the online

course, course design, assessment, interaction, collaboration, accessibility, and technology were the commonly reported facets that these instruments focused on. In contrast, Pedro et al. (2020) researched 13 online quality assurance frameworks that investigate specific services and features of online courses that can be evaluated. The findings of this article detail that faculty development in policy, course design, interaction, and teaching was a commonly reported quality assurance factor within most of the frameworks. Further, administrative services for both faculty and students were another factor that determined the quality of the experiences in online courses.

Summary

Four major themes emerged in from the research regarding online courses within higher education, including: a) effective course design, b) the role of instructors in facilitating quality experiences, c) student engagement, and d) quality assessment. The first theme detailed important qualities of successful course design including ensuring multiple pathways for communication, timely feedback, and administrative support. Additionally, the research highlighted the use of frameworks to support the design of online courses, such as utilizing Universal Design for Learning principles or the Community of Inquiry framework. The research also emphasized various principles that are essential when designing online courses including designing collaborative pedagogies and competencies, creating clear learning outcomes, and humanizing and chunking course content for student accessibility and ease. The second distinct theme the researchers examined was the role of the instructor in facilitating quality experiences. In fact, the research emphasized the essential role of the educator within asynchronous discussions, constructive and personalized feedback, strong instructor presence, and encouraging the use of information and communication technology (ICT) tools. The third theme was student engagement within online courses, and more specifically, students' perceptions regarding the uses of ICT tools, course design, and course modifications. Students were found to be more engaged in class if all the components of the online classroom were accessible, easy to use, and fostered collaboration with other students. The final theme was that of quality assessment, specifically, the use of course evaluation rubrics and frameworks to ensure quality instruction and design of online courses. Key aspects of the online classroom assessed by these rubrics and frameworks include policy, assessment, student-student and student-instructor interaction, accessibility, and technology.

Discussion

In this scoping review, we identified and analyzed articles focused on the design of online courses with the intention of identifying prominent features of high-quality online learning in higher education institutions. Thematic grouping allowed us to identify four key themes: (a) design, (b) instructor facilitation, (c) student engagement, and (d) quality assessment. From these four key themes, we identified four areas where instructors could integrate these features of high-quality online courses in their teaching: (a) collaboration, (b) information and communication technology (ICT) tools, (c) instructor presence and availability, and (d) the role of frameworks in online learning.

Collaboration

Collaboration in online learning environments was identified across all four themes to be critical to student success in online learning (Al-Aghbari et al., 2021; Amemado, 2014; Baldwin et al., 2018; Dusing et al., 2012; Kamlaskar & Killedar, 2015). However, the articles

implemented and suggested various classroom design strategies that spotlighted collaboration. In other words, the authors could not isolate one comprehensive design strategy that was the most effective when integrated within their online learning environments. Although a singular collaboration strategy would be beneficial, the authors recognized that collaboration is not monolithic. Instead, a combination of strategies is contextually necessary in course design to ensure a quality virtual experience. Further, instructors' approaches for the implementation of collaboration strategies need to be concisely articulated to ensure positive impact on student success.

Once instructors recognize strategies that benefit their unique online classroom, they will be able to facilitate effective students-student and student-instructor collaboration. These strategies will also improve upon student engagement, as students will learn from both instructors and fellow students. Finally, collaboration with administrative services and other faculty members through faculty development and course quality assessment are impactful, as it becomes difficult to determine effective approaches to quality online learning independently. Thus, perspectives across faculties can be impactful to gather different approaches in fostering these forms of collaboration in the online classroom. We suggest that future research focus on the evaluation of these collaboration strategies and how they operate in diverse virtual learning environments.

Information and Communication Technology (ICT) Tools

The use of information and communication technology (ICT) tools was also identified as an effective area that instructors employed to improve upon course design and student engagement in the online classroom. The broad impacts that ICT tools had within the virtual classroom included accessibility (Dell, 2015), student-student interaction and student-instructor interaction (Baldwin, 2019), feedback (Kamlaskar & Killedar, 2015), and student participation (MacKinnon et al., 2020). Although student success was common due to the implementation of ICT tools, no discernable tool was the most effective for high quality online learning. Thus, multiple ICT tools may be necessary for high quality online learning in higher education. One potential avenue for future research regarding ICT tools could focus on educator and faculty literacy on effective utilization of these tools to facilitate student engagement and effective course design. In addition, uncovering specific contexts in which diverse combinations of ICT tools could be applied would also be potentially impactful as it could evolve into an ample repository of these impacts. Similarly, further research could also investigate student literacy of ICT tools to make salient any correlation found between ICT tool use and student success when engaging with online class material.

Instructor Presence and Availability

Instructor presence and availability was present within all four themes, as many of the articles reported on the importance of instructor presence and availability as a key aspect of student success (Baghdadi, 2011; Baldwin et al., 2018; deNoyelles et al., 2014; Rasmussen et al., 2018). Positive outcomes related to instructor presence were often articulated, yet further research is still necessary to understand to what degree instructor interaction and presence is sustainable since diverse magnitudes exist as to how an instructor demonstrates her availability within the design of her course. In other words, finding an appropriate balance of instructor interaction and presence within online learning is vital to explore. Further, future research should also consider the instructor's impact on their students and the impact that additional educators,

such as teaching assistants, tutors, or other intelligent agents, have on instructor presence and availability concerning the quality of education of students, as that was not a commonly reported aspect of online courses in the literature. This suggestion includes reassessing course expectations and outcomes to ensure that the inclusion of additional stakeholders within the classroom will be beneficial towards the virtual classroom. Further, this research could help determine what strategies could be recommended to ease the workload of instructors, while simultaneously increasing the quality of online course offerings.

Role of Frameworks in Online Learning

Findings from this review suggest that implementing effective frameworks into the classroom is imperative to successful online learning environments (Çakýrođlu, 2014; Houston, 2018; Pedro et al., 2020; Vlachopoulos & Makri, 2019). Several approaches to these frameworks include cohesive and well-structured discussion forums that allow for collaboration and student interaction, effective use of learning management systems, encouraging and enabling active learning through various technological tools, and student satisfaction through listening to their feedback. However, online learning frameworks encompass diverse directions and ideas towards quality online learning and should be utilized as suggestions to best fit the contextual classroom that an instructor is leading. Therefore, more research is needed to understand the effectiveness of certain strategies in specific virtual contexts that nurture purposeful implementation of these key framework approaches. In addition, certain studies revealed the technological and administrative background required for effective course frameworks (Hadullo et al., 2018; Pedro et al., 2020) which many educators may not possess. Thus, future research on quality professional development or training would be essential in ensuring consistent implementation of these strategies.

Summary

In summary, we found that collaboration within online learning was an expansive area of online courses as it comprises collaboration between instructor and student, student and student, and student and course (Baldwin, 2019; Kamlaskar & Killedar, 2015). A few strategies expedite and improve upon collaboration in online courses, such as asynchronous discussion boards, course announcements, and accessible navigation through online platforms. Further, ICT tools were key indicators of quality in online courses as they are utilized for diverse features of the course: student satisfaction (Amemado, 2014; Jiang et al., 2019), fostering community (Dusing et al., 2012), and upholding the Universal Design for Learning framework (Dell, 2015). Instructor presence and availability was also notable within the features of high-quality online learning, as there are diverse ways to demonstrate instructor presence, including: response time, availability, and clear instruction (Hodges & Cowan, 2012); feedback, frequent posting, and extending invitations for students to engage in discussion (Jaggers & Xu, 2016); and combining social, cognitive, and teaching presence into the virtual classroom (deNoyelles et al., 2014).

Finally, the use of frameworks in designing online courses was central to students' satisfaction with their online learning experiences (Carr, 2014; Fayer, 2014; Rao & Tanners, 2011). Additionally, the way that information is presented also expands upon the quality of online courses (Dell, 2015; Elias, 2010; Houston, 2018). In this section we suggest potential avenues of future research, while also recommending that higher education educators, course designers, policy makers, and administrators consider the findings within this scoping review when evaluating, designing, and restructuring their own online courses.

Recommendations

Based on the findings from this scoping review, we recommend that educators who design and/or deliver online courses and programs consider the significant time and human/technological resources necessary to ensure the quality of their course design, use of ICT tools, approaches to student engagement, and strategies to evaluate their courses. To respond to these considerations, dedicated technological support and teaching development opportunities are crucial to benefit educators' confidence and ability to teach online, as educational knowledge and strategies continue to change as online education evolves. Thus, it is recommended that administrators, teaching and learning support staff, and centres for teaching and learning consider how best to provide these forms of support to instructors and faculties so they can deliver quality online learning experiences for their students.

Further, we recommend that stakeholders collaborate and seek knowledge by other higher education institutions because, as previously noted, there is no singular way to approach learning. However, it is always impactful to continue growing a repository of learning knowledge to implement strategies that best fit one's specific classroom. Moreover, the level of instructional competence in the use of online education tools impacts collaboration, instructor presence and availability, and the frameworks that inform the creation and design of online classrooms. Thus, we recommend that instructors consider disciplinary and pedagogical priorities related to the provision of improving upon these areas to develop a consistent approach that can be integrated into various online offerings while promoting academic autonomy for instructors.

Conclusion

Through a comprehensive scoping review, we asked, "what features of high-quality, fully online higher education courses have been identified in the existing literature?" Our findings suggest that high-quality online courses are predicated upon four themes: course design, instructor facilitation, student engagement, and quality assessment. From these themes, instructional preparation and presence, course design frameworks and approaches, collaboration, and ICT tools were four identified features that reinforce effective online course design and delivery. In summary, the development and sustainability of high-quality online learning experiences is impacted by the administrative commitment to providing the requisite technological, pedagogical, and human resources to design, deliver, and evaluate online courses and programs. These considerations must be continually expanded upon in the future to improve the quality of higher education online learning.

Declarations

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