

Culturally Inclusive Practices in Online Learning: A Systematic Review of Empirical Literature

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Abstract

Online learning enrollment has grown rapidly worldwide, yet challenges persist in ensuring instruction is effective, engaging, relevant, and accessible for learners from diverse cultural backgrounds. This study systematically reviewed 72 peer-reviewed articles on culturally inclusive online learning published between 2016 and 2023. Using a systematic search, retrieval, coding, and synthesis process, the review found limited attention to underrepresented student populations and emphasized the need for community-based approaches that involve stakeholders in culturally inclusive online learning (CIOL) design and evaluation. The selected literature was informed by educational, cultural, intercultural, critical, and social justice theories, with culturally relevant pedagogy, universal design, community of inquiry, and social constructivism most frequently applied. Learning management systems were shown to support inclusion when paired with practices such as culturally responsive assessments, intercultural learning spaces, and holistic pedagogies, though application remains uneven across disciplines, particularly in STEM. Recommendations highlight expanding research on overlooked populations and advancing consistent integration of CIOL strategies across online course design elements, including objectives, materials, assessments, and interactions.

Keywords: Cultural inclusion, online learning, systematic review, culturally responsive teaching

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Data confirms the expansion of higher education online learning, defined as “education being delivered in an online environment through the use of the internet for teaching and learning” (Singh & Thurman, 2019, p. 302). In Fall 2020, 75% of U.S. undergraduate students were enrolled in at least one online course (NCES, 2022), and by 2022, nearly 3 million students attended college fully online (Welding, 2022). Online learning encompasses various modalities, including fully online (asynchronous, web-based), mixed-mode (online and in-person), and flipped learning (pre-class online learning combined with in-person components) (Lee & Choi, 2019).

Key benefits of online include increased access (Apana, 2008), flexibility (Gillett-Swan, 2017), wider audience reach (Dumford & Miller, 2018), and cost savings for students (Nguyen, 2015). However, challenges persist, such as compensating for reduced real-time communication (Hirumi et al., 2021), increasing instructors’ social presence and meaningful interactions (Keengwe et al., 2013), and providing engaging, relevant, and accessible instruction for learners from diverse cultural backgrounds (Pacansky-Brock et al., 2020).

Online courses attract diverse learners, often more so than hybrid or face-to-face modalities (Online Education Research, 2023). Online student populations are more racially diverse (ClassesandCareers, 2018), and international student enrollment increased by 80% in 2021 compared to 2020, reflecting post-COVID-19 growth (Institute of International Education, 2022). However, cultural barriers, such as language, time zones, and limited multicultural content, can hinder culturally diverse students’ engagement in online learning modalities (Liu et al., 2010). Moreover, minority students often experience isolation due to one-dimensional teaching approaches and assumptions of high self-regulation (Reedy, 2019; Yeboah & Smith, 2016). Cultural differences in knowledge, communication, learning preferences, and social conduct further emphasize the need for culturally responsive online learning (Gong, et al., 2021).

This article synthesizes research to inform equitable and accessible online learning experiences. It first analyzes the concept of cultural inclusion in online learning (OL) to define the study’s scope. Next, it reviews prior literature to identify efforts, gaps, and the study’s purpose. The methodology section outlines research identification and analysis procedures. Findings are presented by aggregating results, followed by a discussion interpreting evidence, comparing issues with prior reviews, and critically analyzing practices aimed at enhancing cultural inclusion in online learning environments.

Culture in the Context of Online Learning

Since this paper explores cultural inclusion in online education, it is essential to examine the complexity of the concept of culture. The consideration of culture significantly impacts the design and effectiveness of online learning environments, yet it is often overlooked as a pedagogical element of online course design (Gunawardena & Jung, 2023; Kumi-Yeboah & Amponsah, 2023). Callahan (2005) cited by Kinasevych (2010) defines culture as a complex construct encapsulating shared values, group behavioral patterns, mental models, and communication styles, which is crucial for online learning interactions. Cultural considerations should be integral to developing these environments to ensure meaningful interactions between learners and instructors.

Culture influences learners’ perceptions and interactions with other learners, the content, and online tools. Kinasevych’s (2010) research highlights that online learning environments are not culturally neutral; they are shaped by the cultural backgrounds of both designers and users. The importance of culture is evident as learners approach online

environments with their own cultural perspectives and expectations. Therefore, understanding and integrating cultural dimensions into the design of online learning environments can enhance learner satisfaction and academic success.

Cultural Inclusion in Online Learning

Cultural inclusion has been defined in multiple ways. The literature suggests a lack of consensus in the definition of cultural inclusion by interchangeably using cultural inclusion (Marrone, 2013), cultural inclusivity (Dreamson et al., 2016), cultural responsiveness (Ballenger & Jiang, 2021; De la Mora Velasco et al., 2026), and cultural sensitivity (Foronda, 2008). For example, cultural inclusion is considered a collection of shared perceptions of the world and our place in it that persists by way of interaction (Frechette et al., 2019). Similarly, inclusion in the context of online learning fosters a sense of belonging to a community, and feeling appreciated for one's unique characteristics, perspectives, contributions, and ways of thinking (Gunawardena, 2020).

In the context of cultural diversity in online learning, it is important to understand learning as referring to a multifaceted process influenced by cognitive, social, and motivational factors unique to each cultural group (Illeris, 2018). Pedagogy involves the implementation of inclusive teaching practices, integration of technology, and curriculum design that respects and reflects cultural diversity (Tapanes et al., 2009). For cultural inclusivity to occur, pedagogy in online learning should be flexible, adaptable, and meaningful to students from various cultural and language backgrounds (Gurjar & Bai, 2023). Similarly, teaching an inclusive online course involves recognizing people historically excluded from educational opportunities and underscoring the development of certain skills and knowledge to incorporate effective practices into the curriculum (Milheim, 2015). In sum, inclusive online teaching reaches beyond nationality and ethnicity to also include cultural attributes such as ability, language, age, lifestyle, and other “sub” cultural differences (Marrone et al., 2013).

The above-cited definitions lay the foundation for the importance of online learning design that incorporates differing perspectives and cultural norms as well as online delivery that is flexible, engaging, and adaptable. However, the panoply of definitions may obfuscate the understanding and application of the term. Therefore, for comparative reasons and to facilitate the analysis of the existing literature, we use the definition posited by (Gay, 2018) referred to as the pedagogy that focuses on understanding the cultural backgrounds of students in online environments, acknowledging students' differences, and applying teaching strategies and materials that are culturally relevant. This definition was selected for its comprehensive integration of cultural responsiveness with practical pedagogical strategies, providing a robust framework that bridges theoretical understanding with classroom application.

Prior Reviews on Cultural Inclusion in Online Learning

Uzuner (2009) reviewed twenty-seven studies on asynchronous learning networks to understand the cultural influences on online learning, highlighting that international students were less critical online than their American peers and calling for future research to explore domestic diversity cultures and avoid homogenizing learners. Marrone et al. (2013) examined four MOOC platforms through Universal Instructional Design principles, finding that adaptability, intercultural dialogue, and contextual support are vital for cultural inclusion. Similarly, Dreamson et al. (2017, 2018) emphasized the need for individual-focused pedagogies and the need to identify LMSs (define LMS) as sociocultural spaces impacting academic success. Kumi-Yeboah et al. (2020) identified barriers to integrating cultural diversity in online teaching, including the absence of clear definitions and insufficient support

for instructors. In consonance, Yamo et al. (2022) proposed a framework for cultural engagement, highlighting community relationships and representation in communications as critical for fostering cultural inclusion.

Although prior reviews have advanced understanding, they have limitations. Most focus on Asian learners rather than local cultural diversity, and distinctions between cultural and individual learning preferences are often unclear. Additionally, the COVID-19 pandemic has magnified issues of inclusion, creating both challenges and opportunities. Students in low-income and rural areas faced challenges due to a lack of access to necessary technology and reliable internet connectivity. Additionally, students with accessibility needs often found courses that had shifted to remote learning did not have the needed tools to facilitate their learning. In many cases the sudden shift to emergency remote learning revealed gaps in teacher training and preparedness, and teachers struggled to engage students from diverse backgrounds in virtual settings (Akpen et al., 2024). Additionally, there is a lack of synthesized, research-based practices for stakeholders to inform the design of inclusive online courses. Addressing these gaps, this review systematically analyzes key literature to identify theoretical underpinnings, methodologies, and actionable guidelines for advancing culturally inclusive online learning.

Purpose and Research Questions

The purpose of the present study is to systematically review empirical research on Culturally Inclusive Online Learning (hereinafter referred to as CIOL). The CIOL abbreviation was developed by the authors to address the lack of a comprehensive term that encapsulates the concept of cultural diversity in online learning environments. By introducing CIOL, the authors aim to provide a unified framework that highlights the importance of culturally inclusive online education. The research questions that guided the present study are listed as follows:

1. What are the theoretical underpinnings of the research on CIOL?
2. What instructional technologies have been applied and what are their outcomes?
3. How have learning theories and frameworks informed technological implementations in the CIOL context?
4. What research-based practices for CIOL have been proposed in the OL literature?

Method

Search and Inclusion/Exclusion Criteria

We used Cooper's (2015) systematic approach to standardize and make explicit the search and analysis methods, to ensure all relevant literature was included, and to reduce potential biases in accounts of research. Cooper's framework outlines key stages of research synthesis, including problem formulation, literature search, data evaluation, data analysis and interpretation, and presentation of results. By following this structured process, we sought to ensure methodological rigor and transparency in our review. First, the research team along with a subject matter librarian discussed the research questions and the purpose of the study. The Boolean search (*online learning* or *e-learning* or *distance learning* AND *inclus**) was used to search within articles' subject terms. The terms *online learning*, *e-learning*, and *distance learning* were employed in the Boolean search to ensure a broad capture of relevant literature. Although it is acknowledged that these terms are often used interchangeably, they possess distinct nuances (Moore et al., 2011). Nevertheless, recognizing that some articles or

authors may use these terms variably in their research, all three were included to ensure comprehensive coverage in the literature review.

A subject matter librarian and the coauthors selected four databases to search the key terms: (1) *EBSCOhost Education Source*, (2) *Applied Science & Technology Source*, (3) *Education Resources Information Center (ERIC)*, and (4) *Library Literature & Information Science Full Text (H.W. Wilson)*. These four were selected because they focus on indexing major journals in the field of education. This strategy increased the likelihood that the search would yield a comprehensive set of relevant research that meets the search criteria while minimizing the inclusion of irrelevant results.

Research published in English between 2016 and 2023 in scholarly, peer-reviewed, and full-text journals was included. The decision to include articles published between 2016 and 2023 is supported by the exponential growth in OL that began around this period. After 2016, OL platforms such as Coursera saw significant increases in user enrollment, reflecting a growing global shift towards digital education (World Economic Forum, 2021). This expansion was further accelerated by technological advancements and increased access to internet-based learning (O'Bryan, 2018), making this period critical for capturing relevant research on cultural inclusion in OL environments.

Articles were included if they explicitly addressed cultural inclusion, provided empirical or theoretical insights into OL practices, and aligned with the study's research questions. Conference proceedings and dissertations were excluded to ensure the selected articles were checked by academic peers in terms of validity, suitability for publication, and methodological soundness. Articles were excluded if they lacked a clear focus on cultural inclusion, presented insufficient data or analysis, or primarily discussed general aspects of online learning without addressing cultural contexts. No limitations were placed on the locality of the research, and search results yielded studies produced from several different countries across the globe. This decision allows the authors to get a broader perspective of the research questions on a global scale, rather than limiting results to the cultural inclusivity practices in one country or region.

Screening of Articles

The search yielded 123 records that were integrated into an electronic dataset for initial screening. Two of the coauthors manually screened the titles and abstracts of the retrieved research to confirm that the articles were centered on aspects of cultural inclusion (e.g., ethnicity, race) and online learning (e.g., contents, activities, assessments). After the initial screening, 63 articles were excluded for duplication, a central focus on the inclusion of students with disabilities or special needs, a K-12 setting, a focus on COVID-19 emergency remote teaching, a focus on non-academic aspects of distance education (e.g., immigration services), or foreign language learning as the outcome. Seventy-two articles were included in the review and were further examined through manual coding.

Coding

The three coauthors coded the totality of the articles by conducting full-text screening, selecting coding categories to fit the research questions. The *a priori* codes were defined by the research team to address the research questions and then extracted from the selected articles. The codes included type of article, subject matter, learning modality, theoretical or conceptual underpinning, key outcome, sample or audience, sample size, key finding or proposition, course component, technology used, and challenges reported by the participants

included in the selected study. Each coauthor independently coded a subset of the articles, after which the team convened to compare coding results, resolve discrepancies, and reach a consensus on how the codes represented the data. Through this iterative and collaborative process, the codes were analyzed for patterns, grouped into broader categories, and synthesized to address the research questions. The coding dataset was also used to filter, sort, and represent the data to highlight trends and relationships across the coded data, ensuring that the categories presented were grounded in the systematic analysis of the articles.

Limitations

To minimize bias, we followed Cooper's (2015) systematic approach, applying explicit criteria and independent screening procedures to guide study selection and coding. Nonetheless, some limitations should be noted. Restricting searches to a few databases and English-only publications may have excluded relevant non-English and gray literature, and time-frame limits may have omitted older yet valuable studies. In addition, we did not conduct a formal appraisal of article quality. This decision was based on both the limited number of available studies and the lack of a single, standardized instrument for assessing quality across the diverse research designs included in CIOL scholarship. Future reviews could address this gap by applying design-specific appraisal tools or by developing criteria tailored for multidisciplinary evidence.

Results

Descriptive Findings

Seventy-two articles on CIOL were selected for this review; publications averaged 9 per year between 2016 and June 2023. Research output decreased from 2016 to 2018, peaked in 2021, and declined thereafter (Figure 1). Nearly half of the studies were conducted in the U.S. ($n = 35$), with smaller contributions from Australia ($n = 5$) and Canada ($n = 4$), while the rest were distributed globally. The primary publication outlets were *Online Learning* ($n = 5$), *Australian Journal of Educational Technology* ($n = 3$), and *Journal of Teaching and Learning with Technology* ($n = 3$) (Figure 2).

Figure 1

Number of articles published on cultural inclusion and online learning between 2016 and 2023.

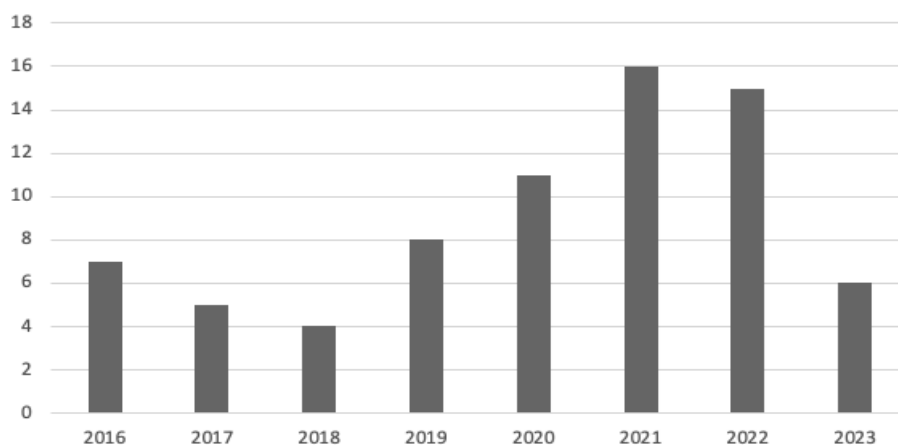
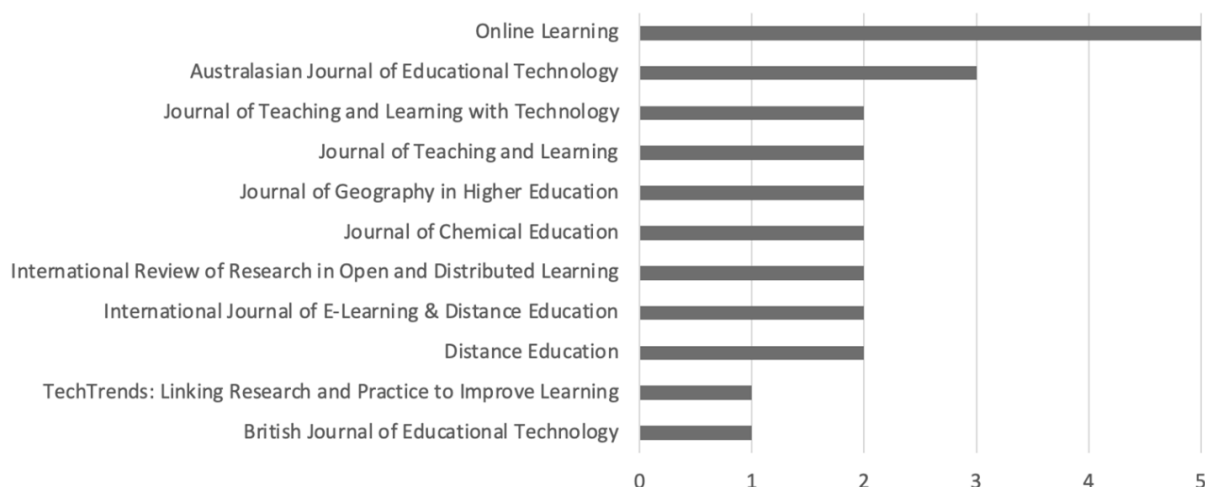


Figure 2*Main Journals That Publish Research on Cultural Inclusion and Online Learning*

The selected literature employed diverse terminology to describe the student populations studied. Figure 3 visualizes audience terms, with “international” and “diverse” appearing most frequently in abstracts. Some studies focused on specific populations, such as indigenous, Chinese, military, or first-generation students. Others used broader terms like “intercultural,” “global,” “multicultural,” and “marginalized.” These findings indicate that underrepresented student populations have not been equally explored.

Figure 3*Word Cloud of Audience Examined in the Selected Articles*

The selected articles include empirical qualitative studies (e.g., analysis of syllabi, forums, interviews, thematic reviews), and quantitative research (e.g., surveys, group comparisons). Nearly a quarter of the studies used mixed methods (e.g., design-based studies), conceptual approaches (e.g., essays), theoretical frameworks, or case studies. This

Abramenka -Lachheb 2022	2	2	2	2	2	1	11
Al-Azawei et al. (2016)	2	1	1	1	2	1	8
Al Hashlamoun (2021)	2	1	1	1	2	1	8
Araujo Dawson et al. (2022)	2	1	2	2	2	1	10
Ballenger & Jiang (2023)	2	1	2	1	2	1	9
Brooks et al. (2021)	2	1	2	2	2	1	10
Castrillo & Sedano (2021)	2	2	2	2	2	2	12
Chang & Benson (2022)	1	1	2	2	2	1	9
Chen et al. (2020)	2	1	1	2	2	0	8
Cochrane & Maposa (2018)	2	1	2	2	2	1	10
Collier & Ross (2017)	2	0	1	1	2	0	6
Dreamson (2017)	2	1	1	2	2	1	9
Dreamson (2018)	2	1	1	2	2	1	9
Dube (2020)	2	1	2	2	2	2	11
Dunn (2021)	2	1	2	2	2	2	11
Eppard & Rudd (2021)	2	2	2	2	2	2	12
Fermín-González (2019)	2	2	2	2	2	2	12
Finkelstein et al. (2022)	2	2	1	2	2	1	10
Foltz & Brown (2022)	2	1	2	2	2	1	10
Gourlay et al. (2021)	2	1	2	2	2	2	11
Green (2017)	2	1	2	2	2	1	10
Gronseth (2018)	2	2	2	2	2	2	12
Gunawardena et al. (2020)	2	2	2	2	2	2	12
Guo-Brennan (2022)	2	2	2	2	2	2	12
Heitner & Jennings (2016)	2	1	1	2	2	1	9
Hunt & Oyarzun (2020)	2	1	2	2	2	1	10
Hutchins & Goldstein Hode (2021)	2	2	2	2	2	2	12
Jabbar & Mirza (2017)	2	1	2	2	2	2	11
Kang & Han (2016)	2	1	2	2	2	1	10
Kanwar et al. (2020)	2	2	2	2	2	2	12
Kerr & Merciai (2015)	2	1	2	2	2	2	11
Khoo et al. (2022)	2	2	2	2	2	2	12
Knauf (2016)	1	1	2	2	2	1	9
Koponen (2019)	2	1	1	2	2	1	9
Kumi-Yeboah et al. (2016)	2	2	2	2	2	2	12
Lambert (2019)	2	2	2	2	2	2	12

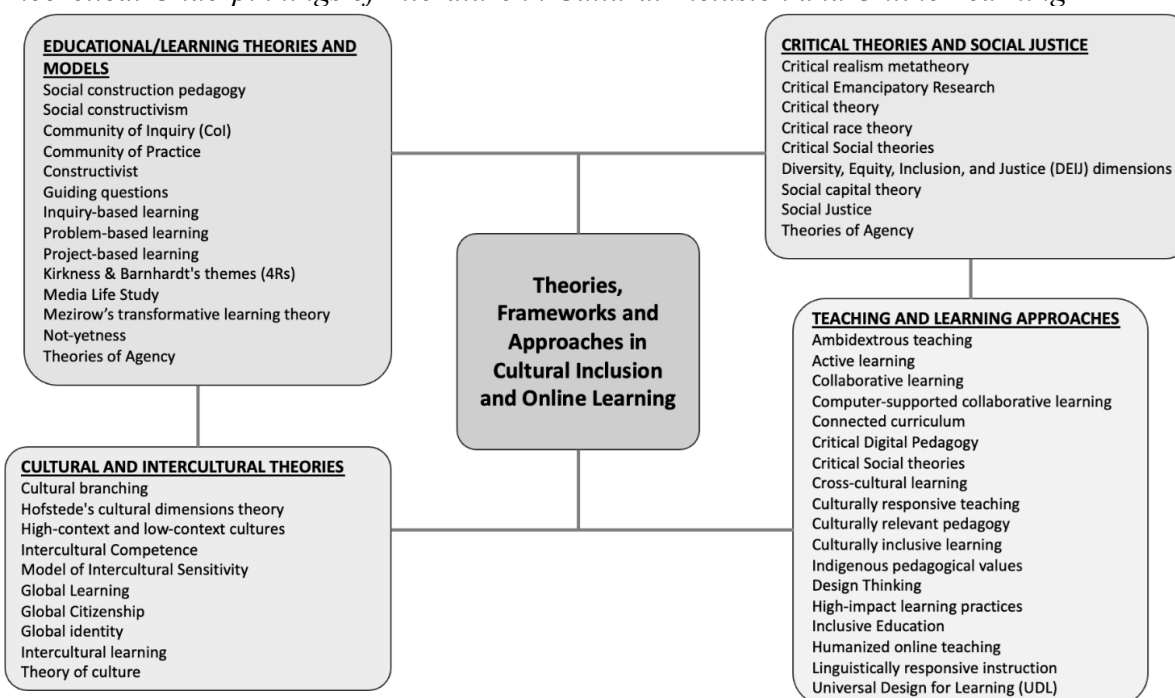
Lee & Bligh (2019)	2	2	2	2	2	2	12
Lowenthal et al. (2020)	2	2	2	2	2	2	12
Manna & Mennicke (2022)	2	2	2	2	2	1	11
Mays (2016)	2	1	2	1	2	1	9
McCarron & Yamanaka (2022)	2	1	1	2	2	1	9
McLaughlan (2021)	2	1	2	2	2	1	10
McLaughlan (2023)	2	1	2	1	2	2	10
Morong & DesBiens (2016)	2	2	1	2	2	1	10
Munger et al. (2023)	2	2	2	2	2	2	12
Herrera-Nieves et al. (2019)	2	2	2	2	2	1	11
Nkomo & Daniel (2021)	2	1	2	1	2	2	10
Ortiz-Rodríguez et al. (2022)	2	2	2	2	2	2	12
Osei-Tutu et al. (2021)	2	2	2	2	2	2	12
Pacansky-Brock et al. (2020)	2	2	2	2	2	2	12
Reedy et al. (2019)	2	1	2	2	2	1	10
Reid et al. (2021)	2	2	2	2	2	2	12
Ricardo-Barreto et al. (2022)	2	2	2	2	2	2	12
Sadykova & Meskill (2019)	2	2	2	2	2	2	12
Salvo et al. (2019)	2	1	2	2	2	2	11
Schieble & Pollcek (2021)	2	2	2	2	2	2	12
Schirmer & Lockman (2022)	2	2	2	2	2	2	12
Siergiejczyk (2020)	2	2	2	2	2	2	12
Soroka (2022)	2	1	2	2	2	1	10
Sousa et al. (2021)	2	2	2	2	2	2	12
Steyn et al. (2021)	2	2	2	2	2	1	11
Sunasee (2023)	2	2	2	2	2	2	12
Thomas et al. (2021)	2	1	2	2	2	1	10
Torras et al. (2017)	2	2	2	2	2	2	12
Vail (2018)	1	1	2	1	2	1	8
Valcarlos et al. (2020)	2	2	2	2	2	2	12
Van Houweling (2021)	2	2	2	2	2	2	12
Wilks et al. (2020)	2	2	2	2	2	1	11
Winstead et al. (2022)	2	2	2	2	2	2	12
Yeboah et al. (2023)	2	2	2	2	2	2	12
Yesmin et al. (2021)	2	2	2	2	2	1	11
Zhu et al. (2022)	2	2	2	2	2	2	12

Results of RQ1

It was found that CIOL research has been informed by existing theories, models, and frameworks that can be categorized into educational, cultural, and intercultural, critical, social justice, and teaching approaches (Figure 4). In our categorization of theories, models, and frameworks, the boundaries of each theoretical category were determined by examining the primary focus and objectives of the theories in relation to their application in online learning. Educational theories primarily emphasize learning processes, instructional design, and pedagogy, while teaching theories focus on specific methodologies for delivering content. Critical and social justice theories are distinguished by their focus on challenging power structures, promoting equity, and addressing systemic inequalities in educational environments. Cultural and intercultural theories, on the other hand, center on the impact of cultural contexts, cross-cultural communication, and the inclusion of diverse perspectives in learning experiences. Each category was defined by the theoretical underpinnings that guided the study's design, objectives, and intended outcomes.

Figure 4

Theoretical Underpinnings of Literature in Cultural Inclusion and Online Learning



Of note, the culturally relevant pedagogy theory (Ladson-Billings, 1995), universal design (UDL) (Rose & Meyer, 2002), community of inquiry (Garrison, Anderson and Archer, 2000), and social constructivism (Vygotsky, 1978) were the most recurrent in the CIOL literature. Culturally responsive pedagogy was probably predominant because it supports online learners' awareness, community building, cognitive development, and critical consciousness to make the curriculum equitable and inclusive. Constructivism, community of inquiry (CoI), and social constructivism were also noted in the literature because of the focus on student-led practices in assignments and activities and active, collaborative, high-impact, humanized teaching, and learning. Critical theories based on social justice, such as critical race theory and theories of agency were found. Cultural and intercultural theories, such as cultural

branching, module of intercultural sensitivity, and global identity emphasize high critical thinking expectations for all students, connecting real-world issues to students' lives, and providing historical and multiple perspectives of societal inequities against marginalized groups (Kayser & Starks, 2021).

A multiplicity of theories informed the selected CIOL research. Researchers frequently employed theories of different traditions, ranging from educational and intercultural to critical and teacher-oriented. However, the high number of theories utilized may also complicate the advancement of this research area, as it introduces a wide range of variables and measurement instruments, leading to inconsistencies and challenges when measuring the impacts of interventions and their related outcomes.

Results of RQ2

Table 2 highlights the main technologies used in CIOL literature. The analysis of recent literature on CIOL highlights a clear emphasis on leveraging Learning Management Systems (LMS) as the most recurrent technology, often coupled with discussion forums and videoconferencing tools. The studies demonstrate that LMSs are instrumental in promoting inclusivity through thoughtful pedagogical practices such as culturally responsive assessments, intercultural learning spaces, and holistic pedagogies. However, there is a notable challenge, particularly in STEM fields, that culturally inclusive strategies may not yet be universally applicable or effectively implemented across all disciplines.

Additionally, Massive Open Online Courses (MOOCs), virtual exchanges, and social media (e.g., Instagram) show promising trends for enhancing inclusivity by facilitating international and intercultural connections, particularly benefiting migrants, refugees, and geographically diverse students. Despite these advancements, critical issues persist; mobile-based learning, for instance, has exposed a digital divide experienced by rural learners (Wahyuni et al., 2024). Thus, while technology broadens opportunities for inclusivity, its effectiveness remains contingent upon equitable access, sustained instructor engagement, and culturally relevant pedagogical frameworks.

Table 2

Articles That Reported Uses of Technologies in Cultural Inclusion and Online Learning and Key Findings

First Author	Year	Strategy/ technology	Key Finding
Knauf	2016	Audio	Students are open and positive about audio feedback and perceived it as more personal.
Finkelstein	2022	Cloud-learning solutions and Videoconferencing	A multidimensional model of Culturally Relevant Academic Evaluation (CRAE)
Guo-Brennan	2022	CMS, discussion forums, blogs, email, web-conferencing, chats, and videoconferencing.	Virtual environments and available digital tools offer new possibilities to enhance equity and inclusion in higher education.
Eppard	2021	Collaborative online document	Educational technology helps establish dialogue between instructors/students
Zhu	2022	Instagram	Instagram-Based Inclusive Online Learning Community helps embrace demographic and location Diversity.
Araujo Dawson,	2022	Laptops available for students	Equity-minded approach can strategically address the academic, social, and cultural integration of racialized people.
Sadykova,	2019	LMS	Thoughtful accommodations and online language socialization can lead to positive learning experiences.
Dreamson	2018	LMS	Indigenous students expect to experience more human-to-human interactions and develop a sense of community.
Abramenka-Lachheb	2022	LMS	Guidelines and examples are provided to implement Authentic Assessments Designed Through the DEIJ lenses.
Reedy	2019	LMS	Identified 10 themes and 6 principles for course design
Dreamson,	2017	LMS	Indigenous holistic pedagogies have a metaphysical strength to be the ontological foundation for cultural inclusivity.
Torras	2017	LMS	Awareness of cultural differences and willingness to integrate participants from other cultures facilitate intercultural learning spaces.

Kumi-Yeboah	2023	LMS	Instructors used culturally responsive pedagogy by integrating multicultural content and cross-cultural activities; challenges existed in STEM fields to adopt culturally inclusive strategies.
Winstead	2022	LMS and 3D simulations	Community engagement (addressing health disparities) helps create more culturally relevant online courses.
Schirmer	2022	LMS and discussion forums	Discussion prompts could be written to culturally incorporate responsiveness in online learning.
Vail	2018	LMS, discussion forums, videos, social media, cell phones	Incorporating digital learning requires more dynamic, and culturally responsive pedagogy
Koponen	2020	LMS, online collaborative tools, social networks	Media Life Study is reflexive pedagogical method brings opportunities and awareness of the transcultural society.
Thomas	2021	LMS, Videoconferencing	Module evaluation becomes an ongoing process in which alterations are made in real-time and to subsequent learning encounters with students.
Dube	2020	Mobile App	Online learning excludes rural learners due to a lack of resources.
Castrillo	2021	MOOC	MOOCs help migrants/refugees to integrate in their new communities.
Siergiejczyk	2020	MOOC	International exchange provides tool for equitable, diverse classrooms.
Kerr	2016	MOOC	There are three drivers of diversity in online learning: approach, language, and personalization.
Brooks	2021	MOOC	Learner's region impacts propensity to open emails.
Nieves	2019	MOOC	ADDIE and UDL can inform the creation of MOOCs o
Jabbar	2019	MOOCs, portfolios	Additional emphasis needs to be placed on developing a practical and functional approach which embeds cultural branching via technological platforms.
McCarron	2022	Narrative video, posting of video and audio, discussion boards, OER, Video-based	Addressing cognitive, social, teaching, and learner presence in the pursuit of culturally relevant/sustaining and equitable online leadership education is fundamental.

			role play, virtual experiential learning, synchronous backchannel discussion.
Collier	2017	OERs	Pedagogies such as federated wikis and agents beyond the course can engage with boundary-crossings between openness and closure and demonstrate the value of perspectives that such engagements bring to the fore.
Foltz	2022	Videocasting and discussion boards.	Incorporating interpersonal connections as part of the course design, community-focused courses, considering how time zones, faculty empathy.
Sunasee	2023	Video discussions	Weekly DEI activities and assessments enhanced student awareness of DEI in STEM and promoted an inclusive environment.
Ortiz-Rodríguez	2022	Videoconferencing	Virtual Co-classes offered concurrently with academic courses can be used to provide inclusive environment and reduce equity gaps for underrepresented students to succeed academically and provide them skills.
McLaughlan	2023	Videoconferencing	Students feel preference for social engagement in F2F compared to OL.
Chang	2022	Virtual classrooms	Jigsaw-based case discussion integrating cloud-based collaboration enable to connect with students from different cultures in class.
Schieble	2021	Virtual field experiences	Virtual field experiences depend on strength of pedagogy.
Munger	2023	Virtual exchange (videoconferencing and LMS)	Virtual exchange activities facilitated intercultural communication and awareness, leading to stronger culturally inclusive experiences in online learning.
Mann	2022	Virtual platform	Students and faculty engaged virtually in real time, using the physical environments in each location can enhance collaboration and active learning.

Results of RQ3

Analysis of the 72 appraised studies revealed relationships between theoretical frameworks and the technologies employed. Table 3 shows the relationships between key focus areas, theories or frameworks, and associated technologies. The dominant learning paradigms were constructivist, transformative, and social learning theories, which guided the

use of collaborative and reflective technologies that positioned learners as active participants in meaning-making (Kumi-Yeboah et al., 2017; Kang & Han, 2016; Zhu et al., 2022). Instructional design frameworks such as Universal Design for Learning (UDL) and the Community of Inquiry (CoI) framework were prevalent, particularly in studies leveraging LMS-integrated tools and adaptive feedback mechanisms to enhance accessibility and social presence (Gronseth, 2018; Lowenthal et al., 2020; Reedy et al., 2019)

Table 3

Theoretical Frameworks and Related Technologies Across the 72 Appraised Studies

Focus Area	Dominant theories and frameworks	Associated Technologies
Learning Theories	Constructivism, Social Constructivism, Transformative Learning, Connectivism	Learning Management Systems (Canvas, Moodle), collaborative tools (Zoom, Microsoft Teams, Google Docs), and discussion boards supporting reflection and peer interaction
Instructional Design Frameworks	Universal Design for Learning (UDL), Community of Inquiry (CoI), Design-Based Research (DBR)	LMS-integrated accessibility tools, adaptive course shells, online rubrics, and embedded analytics for engagement and feedback
Critical & Intercultural Perspectives	Culturally Responsive Pedagogy, Critical Pedagogy, Critical Race Theory, Global Citizenship Education	COIL platforms, virtual exchanges, multilingual course sites, and reflective e-portfolios for intercultural dialogue
Student-centered approaches	Authentic Learning, Experiential Learning, Situated Learning	MOOCs, virtual simulations, immersive role-play tools, and digital storytelling platforms (e.g., VoiceThread, Flipgrid)
Emerging topics	Humanizing Pedagogy, Socio-emotional Learning, Inclusive Digital Design	Video-based learning (Panopto, YouTube), AI feedback systems, AR/VR simulations, and social media (Padlet, Instagram, X)

The integration of critical and intercultural perspectives (Abramenka-Lachheb & Lachheb, 2022; Houweling, 2021; Osei-Tutu et al., 2021; Lambert, 2019) was evident in the widespread use of CIOL environments, virtual exchanges, and multilingual course interfaces, all designed to foster equity, diversity, and global collaboration. Technologies supporting authentic and experiential learning, including MOOCs, simulations, and digital storytelling, reflected situated learning principles by emphasizing application and contextual problem-solving guided by the student-centered paradigm (Gunawardena et al., 2020; Cochrane & Maposa, 2018; Thomas et al., 2021). Finally, a newer category of studies incorporated emerging and humanizing technologies, such as AI-enabled feedback, social media for

reflective interaction, and video-based learning for affective connection (Sunasee, 2023; Winstead et al., 2022; Yeboah et al., 2023).

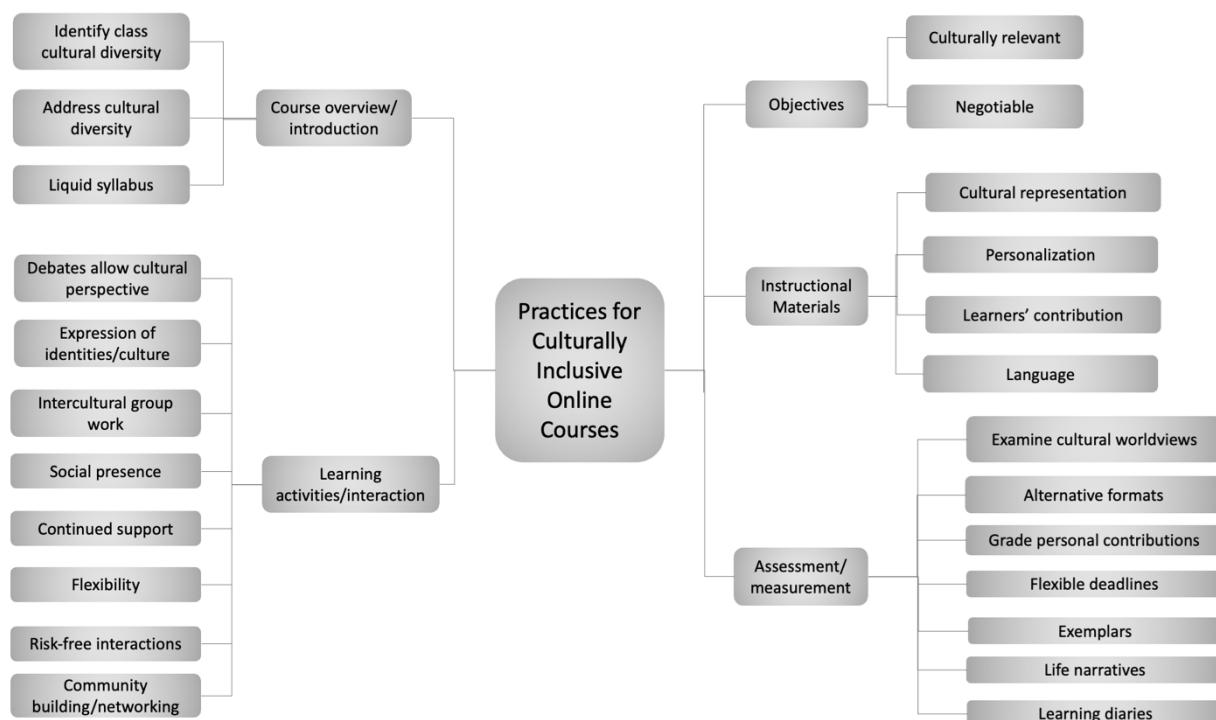
Together, these findings indicate a clear trend toward integrating theoretical frameworks with digital tools that support participation, reflection, and personalization. The most effective designs were those that aligned technology affordances with pedagogical intent, reinforcing Gordon et al.'s (2011, 2020) emphasis on theory-informed, contextually grounded educational practice (Hirumi et al., 2021).

Results of RQ4

The selected research distilled numerous practices to enhance cultural inclusion in online courses. Figure 6 and Figure 7 encapsulate the reported CIOL practices. To facilitate its practical application, the reported practices (Quality Matters, 2023) are organized based on key aspects of online courses: course overview and introduction, learning objectives, instructional materials, assessments, and measurement, and learning activities and interactions, which are first explicated in Figure 6. Then, course technology, both as a conduit for inclusion (e.g., enabling access and communication, and assistive tools) or as an integrated element in a course design component (e.g., virtual field experience, video discussion) are depicted in Figure 7 and explained further.

Figure 6

CIOL Practices for Objectives, Instructional Materials, Assessments, Course Overview and Introduction, and Learning Activities/Interactions.



Course Overview and Introduction

Multiple practices have been applied to enhance cultural inclusion in course introductions. Pre-course communication helps accommodate students from diverse locations (Foltz & Brown, 2022). A positive virtual presence with warm greetings fosters belonging for

culturally diverse students (Sousa, 2021). Similarly, discussing access to materials and submissions expectations benefit students from various backgrounds (Chen et al., 2020). Surveys can help to identify students' preferred communication methods, barriers to success (Pacansky-Brock et al., 2020) and cultural heritage (Abramenka-Lachheb & de Siqueira, 2022; Kumi-Yeboah et al., 2017). Strategies to humanize online learning include fostering empathy and creating judgment-free environments (Pacansky-Brock et al., 2020). A "Module 0" can connect content to cultural experiences, reducing alienation (McCarron & Yamanaka, 2022), while liquid syllabi enhance social presence and encourages collaborative course guidelines (Dawson, 2022; Pacansky-Brock et al., 2020). Instructors can set the tone by including a welcome message that acknowledges cultural diversity, encourages participation from all backgrounds, and affirms inclusion as a course value (Kumi-Yeboah et al., 2018).

Course Objectives

Course objectives should be meaningful to learners from diverse backgrounds and tailored to varying interests and motivation levels (Dawson, 2022; Lowenthal et al. 2020; Kang & Chang, 2016). Learning objectives should include cultural perspectives or competencies to signal the value of diversity and global understanding in the course outcomes (Sunasee, 2023). Our findings also suggest that allowing learners to negotiate and define personally relevant learning goals within their cultural contexts enhance inclusivity and engagement (Dawson, 2022; Morong & Desbiens, 2016).

Instructional Materials

Guo-Brennan (2022) highlights the importance of instructional materials with diverse cultural perspectives to create inclusive curriculum. McCarron and Yamanaka (2022) suggest involving guest contributors to enrich students' understanding of their culture and lived experiences, while also ensuring course materials, such as texts, videos, and assignments, reflect students' diverse backgrounds. Dawson (2022) emphasizes the value of including underrepresented scholarly works, addressing diversity throughout the course, and using ethnically diverse visuals in course materials. Similarly, Cochrane and Maposa (2018) recommend selecting culturally relevant learning tools, such as case studies from various cultural contexts. Reedy (2019) further advocates for incorporating indigenous and diverse perspectives in learning materials to recognize and value the richness of varied cultural viewpoints. Additionally, Sunasee (2023) suggests including readings, videos, and case studies that represent scholars and practitioners from various cultural and racial backgrounds to reflect the diversity of the student body. These practices collectively enhance the inclusivity and breadth of academic discourse.

Learning Activities and Interactions

CIOL interactions require faculty to recognize their own cultural biases and shift from a "deficit mindset" to an "assets mindset" when engaging with multicultural students (Mann & Mennicke, 2022). These interactions focus on communication strategies, social presence, and course design. Effective strategies include instructors sharing personal experiences, providing timely feedback, and addressing students by name to foster safe, inclusive environments (Van Houweling, 2021). Personalized and supportive instructor interactions help students feel valued and recognized (Pacansky-Brock et al., 2020). Peer interactions and activities that encourage self-expression and exploration of others' backgrounds promote social connection (Guo-Brennan, 2022). Combining open discussions, problem-based learning, and reflective activities allows students to present themselves in diverse ways. Universal Design for Learning (UDL) strategies further enhance inclusion by offering multiple modalities for assignments, assessments, and interactions (Frechette et al., 2018b).

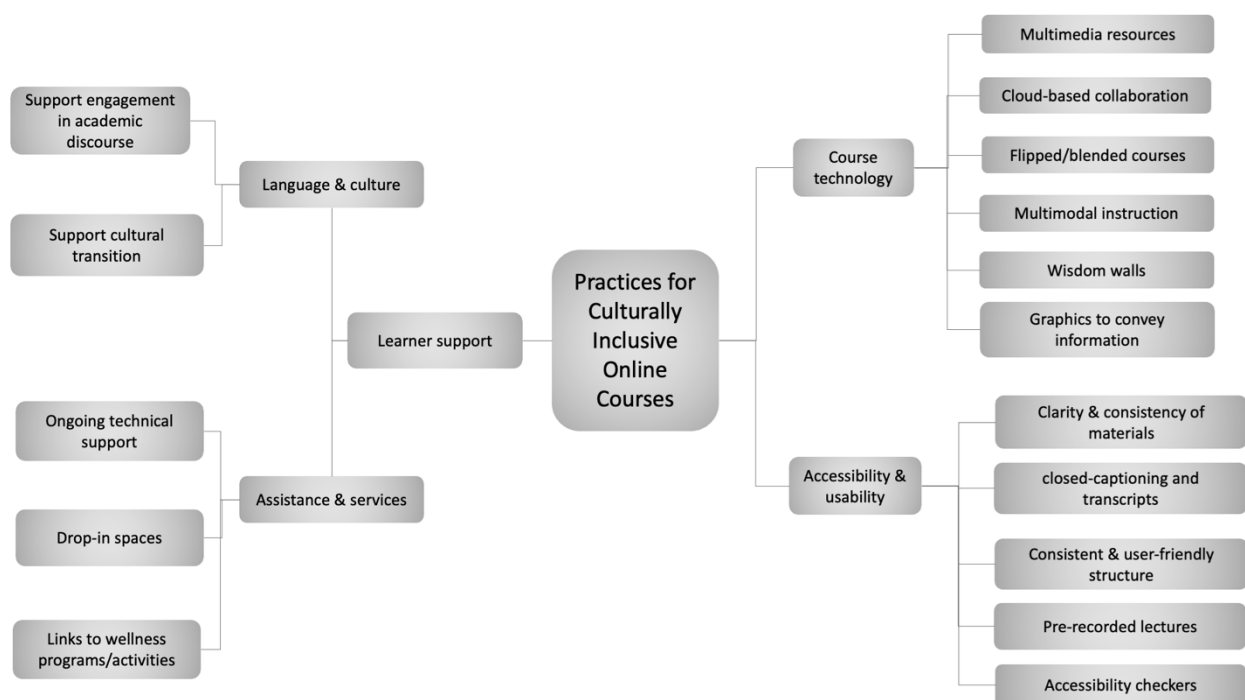
Assessment and Measurement

The selected research offers recommendations for enhancing assessments to promote cultural inclusion in OL. Assignments should honor learners' communities, cultures, and individual stories (McCarron & Yamanaka, 2022; Pacansky-Brock et al., 2020) and assess knowledge of "cultural worldviews" (Morong & Desbiens, 2016). Flexible, student-friendly assessments that amplify learner voices, such as journals, collaborative projects, reflections (McCarron & Yamanaka, 2022), portfolios (Jabbar & Mirza, 2019), life narratives, interviews, video news, and learning diaries (Koponen, 2020), or problem-based learning (Hunt & Oyarzun, 2019) are recommended. Problem-based tasks should be relatable to students' cultures and address diverse populations' needs (Finkelstein et al., 2022; Abramenska-Lachheb & de Siquiera, 2022).

Other strategies include offering multiple means for learners to demonstrate learning (Gronseth, 2018), combining individual and group assignments, and allowing submissions in creative formats such as songs, poetry, or video (McCarron & Yamanaka, 2022). Assignment expectations should be clear, detailed, and include examples (Lowenthal et al., 2020; Hashlamoun, 2021). Inclusive grading practices involve integrating equality and cultural considerations into rubrics, grading group projects based on individual contributions, and providing assertive or audio feedback (Abramenska-Lachheb & de Siquiera, 2022; Knauf, 2016). Flexible deadlines also enhance inclusivity for international students (Sadykova & Meskill, 2019). Last, reflective assessments are recommended to allow different ways for students to demonstrate learning, which respects diverse communication styles (Kumi-Yeboah et al., 2018).

Figure 7

Design Guidelines for Course Technology, Accessibility and Usability, Language And Culture, and Assistance and Services.



Course Technology

The use of technology provides enhanced opportunities for instructors and learners to connect with their peers from different cultures (Chang & Benson, 2022). Online and mixed-mode courses also make learning more accessible for students in communities with fewer resources (Yesmin & Khan, 2021). Best practices shared in the literature include offering multiple channels of communication through an LMS (Dream et al, 2017, Dreamson et al, 2018), visually enhancing courses by incorporating images of order and symmetry (Hashlamoun, 2021) by using graphics to convey meaning (Lowenthal et al, 2020), and creating a space for students to share advice with future students (Pacansky-Brock et al, 2020). The use of video can give the instructor as well as students a chance to introduce themselves and their unique background (McCarron & Yamanaka, 2022). Instructional videos were perceived as more humanistic if they are six minutes or less and have a personal feel (Pacansky-Brock et al, 2020).

Accessibility and Usability

The selected research underscores the importance of consistently applying Universal Design for Learning (UDL) strategies to create a culturally inclusive learning environment (Dawson, 2022). Providing content and assignments in multiple formats enables diverse engagement and enhances accessibility. Allowing students to choose assignment formats, interactions, and assessments improves perceptions of learning and increases their willingness to complete online assignments (Al-Azawei et al., 2016). Ensuring usability features, (e.g., properly formatted headings) and using accessibility checkers can support this process (Lowenthal et al., 2020). Additionally using simple language and visual aids and avoiding idioms and culturally specific references that may exclude non-native English speakers was discussed (Kumi-Yeboah et al., 2018).

For video content, closed captioning and pre-recorded videos that can be paused and rewatched are critical for equitable access (Foltz & Brown, 2022). Instructors should evaluate how content sounds with screen readers, particularly non-text elements like images and charts (Lowenthal et al., 2020). Including a syllabus statement with links to the accessibility of required technologies is also recommended (Lowenthal et al., 2020). Overall, UDL principles provide a foundational approach to fostering inclusivity for diverse learners.

Learner Support

The research also provides insights on steps that educators can take to be supportive of students from a variety of cultural backgrounds. Culturally diverse students may benefit from guidance that helps them surpass any language barriers and adapt to the culture and discourse of education in the country where they are receiving instruction (Kang & Chang, 2016, Sadykova & Meskill, 2019). Educators can also maximize support by providing multiple channels of communication for students and ensuring that students are connected with other resources that will help them achieve success, such as campus programs, wellness, and tech support (Cochrane & Maposa, 2018, Gourlay et al, 2021). Students can be directed to multicultural advising and tutoring that acknowledge and address cultural and linguistic differences (Munger et al., 2021).

Discussion

The discussion is organized into five sub-sections. Together, these sections highlight critical findings and actionable insights for advancing culturally inclusive online education.

Cultural Representation in Online Learning

Our findings indicate that cultural minorities are often categorized broadly as international students. This indicates insufficient attention toward domestic cultural diversity within online learning environments including African, indigenous, Asian, and Hispanic populations. Domestic cultural diversity specifically recognizes that significant cultural differences exist among students who are citizens of the same country whereas international diversity focuses on students from foreign countries. These observations align with Uzuner's (2009) assertion that insufficient emphasis has been placed on examining domestic cultural diversity. Moreover, the tendency to segment cultural inclusion interventions based on race, rather than adopting a holistic approach that acknowledges individual differences among minority students, is still evident (Uzuner, 2009). Our findings highlight a notable lack of attention to ethnic groups in the literature, emphasizing the need for a more comprehensive exploration of cultural inclusion. In online learning environments, cultural representation is critical because students often engage with course materials, instructors, and peers through mediated interactions. Without intentional recognition of diverse cultural identities, online courses risk reinforcing a "one-size-fits-all" approach that limits student engagement, belonging, and equitable participation.

Theoretical Foundations of Cultural Inclusion Practices

A key finding is the increasing use of theory to inform CIOL practices. Unlike Kumi-Yeboah et al. (2020), who found cultural inclusion practices were not purposefully integrated into online teaching, our research highlights a growing trend among scholars to intentionally base interventions on established theories. These include learning, cultural, critical, social justice, and instructional theories. The use of multiple theories reflects the complexity of culturally inclusive learning, aligning with Dreamson et al.'s (2017) view that online learning environments function as sociocultural spaces.

The incorporation of diverse theories in the literature is driven by three factors: (1) the multifaceted nature of culturally inclusive learning, involving power dynamics, cultural contexts, and instructional design; (2) the need for holistic approaches to examine interactions among learning, culture, and critical awareness; and (3) the importance of critical theories in addressing oppression, privilege, and inequity. Future research should focus on using single theoretical frameworks in individual studies to advance instrumentation.

Practices for Fostering Cultural Inclusion in Online Learning

Consistent with Yamo et al. (2022), our findings highlight the importance of community building, networking, and representation in communications to engage culturally diverse students. Our research extends beyond communication and representation, compiling research-based practices to guide researchers, instructional designers, and faculty in shaping future work. Key practices include incorporating culturally relevant learning objectives, providing personalized materials that reflect diverse cultures, facilitating intercultural group work, enhancing instructor social presence and support, and promoting flexible, risk-free interactions. Overall, our findings reveal significant advancements in cultural inclusion and social constructivist practices, such as problem-based learning and peer-to-peer interactions, aligning with Dreamson et al. (2017).

The Role of Technology

While earlier studies focused on the instrumental role of certain technologies (e.g., LMS, MOOCs) our findings highlight course-level technology-infused pedagogies, such as video narratives, video feedback, and cloud-based collaboration, which enhance learner

engagement and intercultural dialogue (Marrone et al., 2013). However, few studies have examined the potential of virtual reality, augmented reality, social media, and generative artificial intelligence to create equitable OL experiences and address feelings of isolation reported in prior research (Reedy, 2019).

Building on Marrone et al. (2013), this review identifies specific practices that align with UDL principles. These include flexible access to content, interaction, and response methods (Dawson, 2022), increased use of accessibility checkers (Kieran & Anderson, 2018), accessible content and activities for Indigenous students (Gronseth, 2018), and recorded lectures with captions and transcripts. Together, these findings offer a comprehensive perspective on how overarching principles and targeted practices contribute to cultural inclusion in online learning environments.

Complementing Course Evaluation Frameworks

With students from diverse cultural backgrounds participating in online learning, it is essential for faculty and instructional designers to adopt generalizable guidelines to foster inclusivity. Figures 6 and 7 help higher education institutions worldwide to guide the implementation of instructional strategies to CIOL. These practices could be aligned with existing course review frameworks (e.g., Quality Matters, OSCQR) or adapted for specific institutional needs. Additionally, the practices identified in this review provide higher education administrators with a foundation for faculty development programs that offer theoretical insights, practical knowledge, and actionable strategies to enhance the cultural relevance of online courses and programs.

Implications for Key Stakeholders in Higher Education

Faculty can integrate culturally inclusive practices by adapting course content to reflect students' diverse cultural backgrounds. Strategies like intercultural group work and personalized communication can enhance engagement and learning outcomes. Instructional designers can guide their practice by applying the research-based strategies (Figure 6 and 7) when creating learning objectives, content, and assessments. Administrators are advised to pilot faculty training on culturally responsive pedagogy and emphasize cultural inclusion in institutional policies, faculty evaluations, and course review processes.

Limitations

This study has four limitations. First, our search strategy was limited to articles published in English, potentially excluding foundational studies conducted by non-English speaking researchers. Second, the exclusion of conference proceedings and dissertations aimed at ensuring academic rigor might have resulted in overlooking valuable insights from emerging research. Third, our choice of search terms may have limited our results by failing to find articles that use different, yet related, keywords or subject terms. For example, our search for cultural “inclusion” may not have generated results that emphasize cultural “relevance” or “sensitivity.” While we conducted both keyword searches and subject searches, it's possible that this language still limited our findings. Fourth, cultural background influences learning preferences and how students engage with online learning environments. In collectivist cultures (e.g., Asia, Africa, South America), learning is often viewed as a shared, team-oriented effort. In contrast, individualist cultures (e.g., US, Canada, Australia) tend to emphasize personal success (Dunn & Brown, 2021). Green et al. (2017) also highlight differences between high-context cultures (e.g., Latin America, Middle East) and low-context cultures (e.g., Western Europe, US) in terms of learning preferences and

expectations. These cultural distinctions may create challenges for students in online learning, particularly in areas such as academic integrity and communication. However, our review did not distinguish whether these challenges arise from cultural background or individual learning preferences.

Future Research Opportunities

Community-based approaches and participatory research designs that involve close collaboration with diverse student populations can be conducted to gain a deep understanding of students' contexts, perspectives, and needs. Moreover, design-based research studies could be conducted to enhance the existing practices identified in our literature review through a series of iterative cycles of revision and improvement aimed at informing existing theories that predict/explain cultural inclusion in OL.

Similarly, research is needed to examine how emergent technologies (Generative AI) can be leveraged to create more inclusive online learning experiences. Researchers could examine specific CIOL practices (listed in Figures 6 and 7) and measure impacts on learning engagement, motivation, and learning while controlling variables such as learners' cultural background, prior knowledge, and/or cultural inclusion awareness. Future researchers could also use existing adoption frameworks (e.g., UTAUT, Planned Behavior) to facilitate the application of CIOL practices in courses in modalities that include digital components (e.g., online, mixed mode, video-based).

Conclusion

The present study has four key conclusions. First, most of the literature on CIOL has included students with diverse nationalities, but insufficient emphasis has been placed by researchers on examining domestic cultural diversity. Second, research on CIOL has been informed by different theoretical frameworks, indicating its multifaceted nature but evidencing potential challenges to advance knowledge due to a multiplicity of factors, interventions, and outcomes. Third, technology-infused CIOL pedagogies at the course level can be leveraged to facilitate learner's engagement and learning, but emergent technologies such as virtual reality, augmented reality, and generative artificial intelligence have been largely excluded. Last, existing instructional design practices in CIOL highlight the significance of community building, networking, and representation of diverse students and perspectives in course communications.

While these findings synthesize the current state of CIOL research, they also point toward broader implications. Theoretically, there is a pressing need to consolidate CIOL scholarship under shared conceptual frameworks. The current fragmentation across cultural, educational, critical, and social justice lenses risks limiting cumulative knowledge. Future research should advance integrative theoretical models that connect culturally relevant pedagogy, universal design, and critical perspectives to ensure CIOL develops as a coherent, evidence-based field.

For practice and policy, the findings highlight the urgency of embedding cultural inclusion into the design of online learning at both institutional and course levels. Institutions should invest in faculty development programs that prepare instructors to adopt culturally responsive pedagogies, particularly in STEM disciplines where inclusion remains limited.

Policies that encourage representation, multilingual resources, and technology-mediated intercultural collaboration can further ensure that online learning environments promote equity rather than reproduce exclusion. Moreover, emerging technologies such as virtual reality, augmented reality, and generative AI should not be treated as neutral tools but as design spaces where inclusive practices can be systematically tested, refined, and implemented.

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