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ORIGINAL ARTICLE

Let's do COVID: cultural orientation in online education—via instructional design

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Abstract

This literature review investigates the role of cultural diversity in instructional design within online learning environments. Through a structured review of literature from 2010 to 2023, including seminal works and recent studies, this research examines how culture is defined, researched, and implemented in instructional design. The review was guided by five research questions exploring: definitions of culture in instructional design literature, research approaches to studying culture, implementation in the instructional design process, differences in cultural considerations before and during the COVID-19 pandemic, and challenges arising from cultural diversity. Key findings reveal an evolution from static to dynamic definitions of culture in instructional design. While theoretical frameworks for implementing culture in instructional design have matured, practical application remains challenging. The COVID-19 pandemic catalyzed both innovations and setbacks in cultural considerations for online learning design. Persistent challenges include creating materials accessible across diverse populations, addressing socioeconomic barriers, and overcoming resource constraints in evaluation practices. This review contributes to the field by synthesizing current knowledge about cultural considerations in instructional design while identifying significant gaps in research and practice. Findings can inform more effective approaches to incorporating cultural considerations in instructional design, particularly in increasingly diverse online learning environments.

Keywords Culture · Orientation · Instructional design · Online learning · Instructional designer · ERT

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Introduction

The concept of "culture" can be found in much of the educational research that promotes the inclusion of cultural considerations in teaching and instructional design. Researchers seem to agree that culture influences the learning process (Driscoll 2005), and that "cultural considerations" should be a part of learning designs (Gunawardena et al. 2018). However, the complexity and fluidity of the definition of culture and its wide concept (Grant 2013; Tange 2020; Young 2007, 2008) make it difficult to adhere to one single meaning for educational researchers, educators and those who design for learning. When one term has so many meanings, it becomes difficult to know which meaning meets the needs of all the stakeholders when designing instruction. In addition, when practitioners (educators, instructional designers, content creators) are expected to demonstrate "cultural competencies", it is important not only to ensure a consistent meaning across domains but also for practitioners to be able to apply these competencies in their teaching and instructional design (ID) practices (Castagno and Brayboy 2008; Heaster-Ekholm 2020). In the realm of online learning, it has become increasingly relevant to understand more clearly the concept of culture and how it applies to the design and delivery of online instruction as the use of online learning becomes more commonplace in education and training globally (NCES 2023; Rogers et al. 2007).

Rationale

Decades of educational research literature explore the topic of culture from a variety of perspectives such as culture and organizations (Hofstede 1980, 1991); cultural diversity in ID (Zhang 2001); cultural competence (Rogers et al. 2007); cultural exploration within ID (Grant 2013); the influence of culture on ID (Sharif et al. 2015); inclusivity of culture in the instructional design (Gunawardena et al. 2018); and preparation of instructional designers for different career environments (Larson and Lockee 2009) which highlights the various ways researchers approach the topic of "culture" in educational research. Although there has been an influx of education research on the relevance of cultural considerations when designing online instruction (Cheng 2020; Daniel 2020; Lockee 2020) likely due to the immense push to get courses online during the Covid-19 pandemic emergency remote teaching (ERT) (Hodges et al. 2020), there are still gaps in the instructional design literature in need of exploring.

First, there is a notable shortage of reviews of studies that cover cross-cultural design aspects among instructional designers (Gurjar and Bai 2023; Young 2008). Second, there is a cluster of studies that address the theoretical frameworks of using culture in the actual design of instruction; however, the focus of these studies is on the design product itself, not the educational stakeholders (instructors, designers, content creators, and learners) (Asino et al. 2017; Gunawardena et al. 2018; Oyedotun 2020; Young 2007, 2008). Third, addressing culture in a design process remains a standing issue that has been under-researched in the field of instructional design (Grant 2013; Sharif and Gisbert 2015). Fourth, the existing instructional design models and frame-

works are limited in the way that they do not completely contextualize the learning experiences and are themselves shaped by specific cultures (Branch 1997; Reiser 2001; Tracey and Unger 2011). It is for these above-mentioned reasons this current literature review explores the following questions:

1. How is "culture" defined in instructional design literature?
2. In what ways is culture being researched in instructional design literature?
3. What does the literature say about how culture is being used in the instructional design process?
4. What does research tell us about the use of culture in the design of online learning before and during COVID-19?
5. What are the challenges that exist because of cultural diversity and multiplicity of cultures?

The present study reviews the literature on the use of culture elements in the instructional design process. More specifically, this review centers on the cultural diversity emerging from multiple instructional design users. The review explores previous studies that tackled culture before COVID-19. It also includes some recent literature that touches upon culture during the emergency remote teaching (ERT) generated by the COVID-19 pandemic. Emergency remote teaching is defined by Hodges et al. (2020) as:

> A temporary shift of instruction delivered to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated (para. 13).

Emergency remote teaching does not have to be specific to COVID-19. It can be implemented during any public health emergency, wars, or natural disasters (Baytiyeh 2019; Davies and Bentrovato 2011; McLennan 2006; Omar et al. 2008).

Research design

The researcher performed a structured literature review (SLR) procedure in three stages. First, a broad search was completed including journal articles (qualitative and quantitative), e-books, and databases such as ProQuest, Springer Link, Journal Storage (JSTOR Arts & Sciences), EBSCOhost, Educational Resources Information Center (ERIC), and Taylor & Francis Group: an information business. Google Scholar was included in the search process.

Some of the key terms used to locate these resources were "cultural diversity in instructional design", "cultural sensitivity in designing instruction", "cultural challenges in instructional design", "culture in online learning", "culture and online education", "cultural aspects in instructional design during COVID-19", and "instructional designers challenges in the online design process". The review analyzed 76

Table 1 Inclusion and exclusion criteria used in the review process

Inclusion Criteria	Exclusion Criteria
• Relevance to the topic such as culture in education, online learning, and instructional design (ID), cultural competencies, cultural sensitivity, and cultural challenges.	• Irrelevant topics, anything not related to the included topics is excluded.
• Publication type: Peer reviewed journal articles (qualitative & quantitative) and ebooks.	• Non-peer reviewed literature such as blog posts and reflections.
• Academically recognized databases and platforms.	• Non- academic databases.
• Timeframe: From 2010 to 2023. This includes foundational and recent perspectives with a focus on the period before and during the COVID-19 crisis.	• Time period prior to 2010.
• Publication language: English	• Non- English materials
• Higher education settings and professional learning	• K-12 education
• Methodology: Empirical studies, theoretical frameworks, or case studies.	• Studies that are descriptive, opinion-based and without practical application.

articles, including seminal works dating back to 1957, but the actual review focused on articles published between 2010 and 2023. The table below displays the inclusion and exclusion criteria that were employed in the search process (Table 1).

Analysis process

The analysis of selected literature followed a systematic approach to content analysis. Each paper was first read in full to understand its overall contribution. During the second reading, key content was coded according to its relevance to the five research questions guiding this review. A coding framework was developed to identify:

- Definitions of culture in ID.
- Research methodologies employed.
- Implementation approaches.
- Temporal context (pre- or during COVID-19).
- Challenges identified.

Findings were synthesized through thematic analysis, looking for patterns and relationships across the literature. Particular attention was paid to:

- Evolution of concepts over time.
- Recurring themes and issues.
- Contradictions or debates in the literature.

- Gaps in current understanding.
- Methodological approaches.

The analysis process was iterative, with themes and patterns being refined as more literature was analyzed. Regular comparison across papers helped ensure consistent interpretation and identification of key insights.

Results and discussion

This systematic literature review examined how culture is understood, researched, and implemented in instructional design, with particular attention to its role in online learning before and during the COVID-19 pandemic. The findings are organized according to the five research questions that guided this review, offering a comprehensive analysis of how cultural considerations have evolved and continue to shape instructional design practice.

The review reveals several interconnected themes across the literature. First, the definition of culture within instructional design has evolved from static characterizations to more dynamic conceptualizations. Second, research approaches have shifted from theoretical framework development to more applied investigations, though methodological documentation varies significantly. Third, the implementation of cultural considerations in instructional design has moved from peripheral to central importance, even as practitioners continue to grapple with effective integration. Fourth, the COVID-19 pandemic catalyzed both challenges and innovations in cultural considerations for online learning. Finally, persistent challenges in addressing cultural diversity highlight opportunities for growth in the field.

The following sections examine each research question in detail, synthesizing findings from the literature to provide a comprehensive understanding of culture's role in instructional design. This analysis not only documents current knowledge but also identifies gaps that suggest directions for future research and practice.

Question 1: How is Culture Defined in Instructional Design Literature?

The definition of culture within instructional design literature has evolved significantly, reflecting the field's growing understanding of culture's role in learning and design. Key instructional design scholars have approached this definition from several distinct perspectives, each contributing to our understanding of how culture shapes both the process and products of instructional design.

Within ID-specific literature, scholars have moved away from static definitions toward more dynamic conceptualizations. Young (2008) notably characterizes culture as "dynamic, malleable, fluid, and always in motion" (p.108), emphasizing that cultural considerations in design must continuously adapt to meet changing learner needs. Building on this dynamic view, McLoughlin and Oliver (2000) frame culture as an essential component woven throughout the instructional design process, manifesting in "task design, communication channels, and structuring of information" (p.2). Rogers et al. (2007) further expanded this understanding by emphasizing cul-

ture as a construct that encompasses both learners' cultural predispositions and their individual uniqueness.

Two dominant frameworks have emerged in how instructional design literature operationalizes cultural definitions. The internalization approach, supported by scholars like Aykin (2005) and Horton (2005), defines culture through its global application, focusing on universal design elements that transcend cultural boundaries. In contrast, the localization framework views culture through the specific needs of target audiences, including their values, learning styles, and cognitive preferences (McLoughlin and Oliver 2000). More recently, the WisCom framework (Gunawardena et al. 2018) has offered a comprehensive definition that views culture as an inclusive design element shaping both formal and informal learning opportunities.

The evolution of how culture is defined in instructional design literature reflects the field's maturation. Early definitions (pre-2000) tended to view culture as a set of fixed characteristics and stable attributes. However, contemporary definitions have shifted toward recognizing culture as a fluid construct that influences both design processes and learning outcomes. This evolution has become particularly apparent in recent years, with post-COVID literature emphasizing culture as a dynamic component that shapes both technological and pedagogical aspects of instructional design (Cheng 2020).

In synthesizing these definitions, a clear trajectory emerges in how instructional design literature has come to define culture. While the field acknowledges definitions borrowed from anthropology, sociology, and psychology, it has developed its own understanding of culture as a dynamic design consideration. This evolution reflects the growing recognition that cultural considerations must be integrated into the core of instructional design rather than treated as an supplementary feature. This integrated approach to defining culture has become increasingly central to how the field conceptualizes effective instructional design.

Question 2 : In what ways is culture being researched in instructional design literature?

The literature reveals several distinct approaches to researching culture within instructional design, though studies tend to focus more on findings and theoretical frameworks than detailed methodological approaches. From the available literature, we can identify three primary research orientations: framework development, empirical investigations, and case studies examining cultural considerations in ID.

Framework development research represents a significant portion of the literature examining culture in ID. This approach is exemplified in the development of the WisCom framework (Gunawardena et al. 2018), which emerged from two decades of research focused on creating culturally inclusive instructional design. Similarly, research has examined two foundational conceptual approaches - internalization and localization (Aykin 2005; Horton 2005; McLoughlin and Oliver 2000; Young 2008). These studies contribute to our theoretical understanding of how culture can be operationalized in ID practice, though specific research methodologies are often not fully detailed in the literature.

Empirical investigations provide another window into how culture is researched in Savard et al. (2020) employed design-based research methodology with five iterative cycles to develop a cultural adaptation knowledge base. Their systematic approach examined how instructional designers consider cultural variables across values, common practices, and human interactions. Large-scale studies have also emerged, such as Bozkurt et al.'s (2018) examination of participation patterns across cultural contexts, which revealed significant disparities between low-context and high-context cultures in online learning environments.

Case studies and contextualized research represent the third major approach evident in the literature. For example, McLoughlin and Oliver (2000) tracked design steps in developing an online unit for Aboriginal learners, while Justis et al. (2020) examined how school personnel maintained cultural considerations during the shift to remote education. These studies provide valuable insights into specific cultural contexts, though they vary in their methodological detail.

An important limitation of the current literature is the relative lack of attention to research methodology itself. While studies present findings about culture in ID, they often do not fully elaborate on their research methods, data collection approaches, or analytical frameworks. This gap suggests an opportunity for future research to more explicitly document and examine the methodological approaches used to study culture in instructional design.

The evolution of research approaches shows a shift from studying culture as an isolated variable to examining it as an integrated component of the design process. However, questions remain about the most effective methods for studying such a complex and dynamic aspect of instructional design. Future research would benefit from more detailed attention to methodological approaches and their effectiveness in capturing the interplay between culture and ID.

Question 3: What does the literature say about how culture is being used in the instructional design process?

The literature reveals both theoretical frameworks and practical applications for incorporating culture into instructional design processes, though implementation approaches vary significantly. Understanding how culture is being used in ID requires examining both the theoretical foundations guiding its implementation and the practical strategies employed by designers.

At the theoretical level, instructional design models serve as the primary framework for implementing cultural considerations. However, as Gustafson and Branch (2002) and Heaster-Ekholm (2020) note, there is limited integration of specific cultural elements in traditional ID models. While these models function as "conceptual, management, and communication tools" (Gustafson and Branch 2002, p. 16), relying on them alone often fails to bring cultural considerations to the forefront of the design process (Young 2008).

In practice, two primary approaches to implementing culture in ID have emerged: internalization and localization. The internalization approach focuses on globalizing the design process through the elimination of culture-specific elements, aiming to create universally applicable designs (Aykin 2005; Horton 2005). In contrast, the

localization approach emphasizes integrating specific cultural values, learning styles, and cognitive preferences of target audiences (McLoughlin and Oliver 2000).

The implementation of culture in ID has evolved to recognize that "culture pervades learning" (McLoughlin and Oliver 2000, p.2), requiring designers to consider cultural factors throughout the design process. This includes attention to:

- Social and cultural dimensions of task design.
- Communication channel selection.
- Information structuring methods.
- Integration of technological features (Abdulaziz 2015).

Recent frameworks, such as WisCom (Gunawardena et al. 2018), demonstrate a more comprehensive approach to implementing culture in ID, moving beyond surface-level considerations to integrate cultural awareness throughout the design process. This evolution reflects growing recognition that cultural considerations must be "at the core of the design process" (Young 2008, p. 6) rather than treated as supplementary features.

However, the literature also indicates that implementation often falls short of theoretical ideals. As Young (2008) notes, current practices provide "a limited scope of what culture can be in the design process" (p. 6), suggesting a gap between theoretical understanding and practical application. This limitation may stem from confusion surrounding the meaning, relevance, and implementation of cultural elements in ID.

The literature ultimately suggests that while the field recognizes the importance of implementing cultural considerations in ID, practical application remains challenging. The evolution from treating culture as an add-on feature to viewing it as an integral component of the design process represents progress, yet full implementation of cultural considerations in ID practice continues to be an area of development.

Question 4: What does research tell us about the use of culture in the design of online learning before and during COVID-19?

Research reveals distinct shifts in how culture has been considered in online learning design across two key periods: before and during the COVID-19 pandemic. This temporal analysis demonstrates both the evolution of cultural considerations in online learning and how emergency circumstances affected their implementation.

Pre-pandemic research on culture in online learning design largely focused on planned, intentional integration of cultural elements. The rise of MOOCs particularly sparked interest in cultural considerations due to their globally diverse learner populations (Liu et al. 2016). During this period, frameworks like WisCom emerged from two decades of research, emphasizing the need for culturally inclusive instructional design based on careful needs assessment and systematic evaluation (Gunawardena et al. 2018). This pre-COVID era was characterized by:

- Deliberate development of cultural frameworks.
- Focus on global learner involvement in formal and informal learning.
- Emphasis on conducting thorough needs assessments.

- Recognition of the importance of evaluation in culturally inclusive design.

The COVID-19 pandemic markedly shifted how culture was considered in online learning design, primarily due to the rapid transition to emergency remote teaching (ERT). As Hodges et al. (2020) define it, ERT represented "a temporary shift of instruction delivered to an alternate delivery mode due to crisis circumstances" (para. 13). This context created new challenges and considerations for cultural integration in online learning design.

During the pandemic, research showed several key developments in cultural considerations:

- Integration of cultural intelligence into design responses (Cheng 2020).
- Development of culture-centered approaches to remote education (Justis et al. 2020).
- Increased attention to humanizing pedagogy and cultural care in online environments (Karakaya 2020).
- Recognition of culturally diverse responses to the pandemic affecting educational approaches.

Recent research by Kumi and Amponsah (2023) examined faculty perceptions of culturally oriented pedagogy in online education across multiple disciplines, finding that instructors actively incorporated culturally responsive instruction and cross-cultural interactions to facilitate learner engagement. This represents a shift toward more intentional cultural integration, even within emergency contexts.

However, the literature also reveals limitations in both periods. Pre-pandemic approaches, while more systematic, often failed to fully address cultural diversity in online learning environments, as evidenced by Rizvi's (2022) finding that MOOCs still largely employed a one-size-fits-all approach. During the pandemic, while attention to cultural considerations increased in some ways, the emergency nature of the transition often meant cultural integration was reactive rather than proactive.

This temporal comparison reveals both progress and persistent challenges in integrating cultural considerations into online learning design. While the pandemic created new urgency around cultural considerations in online learning, it also highlighted the importance of systematic approaches developed in the pre-pandemic era.

Question 5: What are the challenges that exist because of cultural diversity and multiplicity of cultures?

Research identifies several significant challenges that emerge from cultural diversity and multiplicity in instructional design contexts. These challenges affect multiple aspects of the design process and impact various stakeholders in the online learning environment.

Instructional designers face several core challenges when developing courses for diverse learners. As Vergroesen (2020) documents, these challenges include:

- Creating materials accessible to learners from different racial, cultural, and socio-

economic backgrounds.
- Managing word choices and cultural assumptions in course materials.
- Selecting appropriate symbols and imagery.
- Addressing socioeconomic factors that impact online learning access.
- Accommodating diverse learner circumstances, such as those with multiple jobs or limited technical resources.

Rogers et al. (2007) identify three fundamental barriers that persist in instructional design practice. First, the field's tendency toward one-size-fits-all content development often neglects learner background differences. Second, instructional designers frequently work in isolation from their target learners, limiting their cultural awareness. Third, designers report difficulty in making their "instruction completely culturally bias free" (p. 203).

The challenge of representation and participation emerges clearly in research on online learning environments. Bozkurt et al. (2018) found significant disparities between low-context and high-context cultures in online participation, with low-context cultures (like the US, UK, and Canada) representing 88.7% of participation compared to just 11.3% from high-context cultures. This imbalance suggests a cultural dominance that potentially undermines true diversity in online learning spaces.

Implementation challenges also arise when attempting to address cultural diversity through existing frameworks. While Universal Design for Learning (UDL) principles offer guidance for creating inclusive course designs, Bozkurt et al. (2018) suggest that cultural diversity's complexity may exceed UDL's capacity to address it fully. Similarly, traditional instructional design models show limited integration of specific cultural elements (Gustafson and Branch 2002; Heaster-Ekholm 2020), creating challenges for designers attempting to systematically incorporate cultural considerations.

Resource constraints present additional challenges, particularly in evaluation practices. Budget and time limitations often prevent thorough cultural needs assessment and evaluation (Rogers et al. 2007), leading to incomplete understanding of how well designs serve diverse learner populations. These constraints can also limit designers' ability to conduct thorough research about the international contexts they're designing for.

The literature suggests these challenges are compounded by organizational structures that often position instructional designers in peripheral roles (Rogers et al. 2007), limiting their ability to advocate for and implement culturally responsive design practices effectively. This structural challenge affects both the design process and the potential for systematic change in addressing cultural diversity.

Conclusion

This systematic review of the literature examined how culture is defined, researched, implemented, and challenged within instructional design, with particular attention to changes catalyzed by the COVID-19 pandemic. Through analysis of the literature,

several significant patterns emerge that have implications for both research and practice in instructional design.

First, the evolution of how culture is defined in instructional design reflects the field's growing sophistication. The shift from static to dynamic definitions mirrors the increasing recognition that cultural considerations must be woven throughout the design process rather than treated as supplementary features. This evolution suggests that future definitions of culture in ID may need to become even more nuanced to address emerging challenges in global online learning.

Further, the examination of research approaches reveals both progress and limitations in how we study culture in ID. While theoretical frameworks have provided valuable foundations, the relative lack of detailed methodological documentation in the literature suggests a need for more rigorous and transparent research practices. Future studies would benefit from explicit attention to methodology, particularly in examining how cultural considerations are implemented and evaluated.

The implementation of culture in ID processes has evolved from surface-level considerations to more integrated approaches, yet practical application remains challenging. The contrast between pre-pandemic and COVID-era implementations highlights both the importance of systematic approaches and the need for flexibility in responding to emergency circumstances. This suggests that future ID practices may need to balance careful planning with adaptability to meet diverse cultural needs effectively.

Perhaps most significantly, the persistent challenges identified in addressing cultural diversity point to larger systemic issues in the field. These challenges, from resource constraints to representation disparities, require attention at both practical and theoretical levels. The field's response to these challenges may determine how effectively instructional design can serve increasingly diverse global learning communities.

These findings have several implications for practice. Instructional designers need better tools and frameworks for implementing cultural considerations, particularly in online learning environments. Educational institutions must address structural barriers that limit designers' ability to conduct thorough cultural analysis and evaluation. Additionally, the field needs to develop more flexible approaches that can accommodate both planned and emergency transitions to online learning while maintaining cultural sensitivity.

Future research directions might include:

- Development of more comprehensive methodological approaches for studying culture in ID.
- Investigation of effective practices for balancing global accessibility with local cultural needs.
- Examination of how emerging technologies might better support culturally responsive design.
- Analysis of successful strategies for overcoming resource constraints in cultural implementation.

This review demonstrates that while the field has made significant progress in understanding and implementing cultural considerations in instructional design, substantial work remains. The pandemic has highlighted both the importance of cultural considerations and the challenges of implementing them effectively. Moving forward, the field must continue to evolve its understanding, research approaches, and practical implementations to better serve diverse learning communities.

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