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The CARE² Model: Action Research Study Exploring Multicultural Experiences in Higher Education

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This study explores the development of the CARE² model, an instructional design framework aimed at enhancing curriculum engagement and performance for international learners in higher education. Grounded in action research, the study was conducted at a private business college in Copenhagen, Denmark, where 240 first-year marketing students from Nepal, Bangladesh, and India engaged with a U.K.-based curriculum. The study led to the creation of the CARE² model, a framework for instructional designers to develop relevant learning experiences for international students. Limitations include challenges in asynchronous settings, as the model was tested in a fully in-person environment. Further research is needed to explore the model's applicability across different educational contexts. The study concludes by demonstrating how the CARE² model fosters culturally responsive and co-created learning experiences.

Keywords: *instructional design, culture, design and development model, multicultural learners*

Introduction

At the college level, students are often expected to demonstrate personal autonomy and independence (Wu & Dong, 2024; Lerner & Steinberg, 2009), which also means learners are expected to choose their level of engagement and investment in their learning experiences (Darvin & Norton, 2023; Zimmerman, 2000). Several scholars have examined self-regulation theory and international students' behaviors in this context. Some studies found that international students might struggle to adapt their self-regulatory practices in new educational environments (Vardaman & Mastel-Smith, 2016; Yan & Berliner, 2013), while others found that supplemental support is important to assist students in developing study skills and metacognitive strategies to help learners adjust to new learning environments (Irvine, Williams, Smallridge, Solomonides, Gong, & Andrew, 2021; Kudo & Simkin, 2003).

With diversity in educational institutions and workplaces, there is an increasing emphasis on culturally responsive and inclusive instructional design. Ladson-Billings (1995) initially defined culturally responsive pedagogy as teaching that empowers students intellectually, socially, emotionally, and politically by using cultural referents to convey knowledge and skills. Helsel (2020) expanded this concept by arguing that culturally relevant pedagogy integrates students' cultural backgrounds, experiences, and learning preferences into instructional materials and activities. Later, Howard (2021) expanded the concept further to recognize the rich knowledge and skills students from diverse groups bring, promoting dynamic teaching practices, multicultural content, varied assessments, and a holistic philosophy supporting students' academic, social, emotional, cultural, and psychological well-being.

Researchers have examined various instructional design strategies that align with the principles of culturally responsive pedagogy. Henkin (2019) recommended providing opportunities for students to share their cultural perspectives, incorporating diverse examples and case studies, and designing learning activities that encourage cross-cultural collaboration that can enhance the learning experiences of international students. Similarly, Leask (2015) advocated for internationalizing curriculum by integrating global perspectives, diverse cultural references, and intercultural learning opportunities into course content and delivery. Kumi-Yeboah and Amponsah (2023) found that incorporating culturally diverse content can be challenging, and when content is unavailable in learners' home cultures, fostering discourse can be an opportunity for instructors to support learners in engaging in meaningful interaction with peers and instructors on multicultural topics.

Some instructional design frameworks explicitly address culture. For instance, Smith and Staudt Willet's Culturally Sustaining Instructional Design (CSID) model emphasizes inclusive, equitable, and culturally responsive environments through five principles: Community, Content, Pedagogy, Demonstration, and Support, with particular attention to community-building (Smith & Staudt Willet, 2023). However, unlike Howard's (2021) definition of culturally

responsive pedagogy, CSID does not focus on multiple assessments or positioning learners as co-creators. Similarly, Gunawardena, Frechette, and Layne's (2018) Wisdom Communities (WisCom) framework promotes collaborative, inquiry-based online learning centered on real-world problem solving, emphasizing Collaboration, Inquiry, and Cultural Inclusivity. While WisCom incorporates multiple assessments, it could better integrate project-based learning tied to real-world cultural contexts. Beyond culture-specific models, Heaster-Ekholm (2020) noted that standard instructional design frameworks, such as ADDIE, Bloom's Taxonomy, Dick and Carey, Kemp, Gagne's Nine Events, and Universal Design for Learning, require adaptation to support culturally inclusive and global learning experiences. Collectively, these studies highlight the need for a comprehensive instructional design framework that synthesizes cultural responsiveness with established design practices. This study builds on prior models to propose a holistic approach for global and multicultural learners.

This article presents a new instructional design framework to aid designers in developing culturally responsive learning experiences for global learner populations. Using design principles identified from action research, this study presents a culturally relevant instructional design framework titled CARE^2. The CARE^2 model integrates several important design constructs, including C (culture and collaboration), A (agency and agility), R (relevance and repetition), and E (engagement and evaluation). Overall, the study aimed to explore instructional design adaptations by modifying a prefabricated curriculum to support international learners. The central research question was: What instructional design revisions are optimal for enhancing learning competencies among international learners?

Literature Review

Culture can shape the learning experiences of international students in higher education settings (Bai & Wang, 2024). In their broad conceptualization of learning and culture, Leung, Ang, and Tan (2005) conceptualize culture as a dynamic, multilevel process influenced by national identity and global forces. Within this mental model, learners enter educational environments with ingrained cultural norms and values from their home countries (Leung et al., 2005; Leung Ang, Tan, 2014). Studying abroad requires engagement with the host country's culture and the emerging culture of the international classroom (Duke, 2023). In a globalized education context, classrooms act as cultural microcosms where learners negotiate their identities with peers and instructors (Le Thanh & Trut Thuy, 2025). Hofstede's canonical work (1980) *Culture's Consequences* explores how cultural dimensions can influence behavior and interactions, which is crucial for understanding how international students adapt in academic settings. His later works reinforce the importance of cultural dimensions on behavior and interactions (Hofstede, 2011; Hofstede, 2021). International learners often face challenges in learning non-instructional classroom elements, including navigating cultural values, social norms, and learning experience behavior expectations (Gong, Gao, Li, & Lai, 2021). Additionally, language can be a barrier, affecting comprehension of lectures, participation in discussions, and the ability to communicate understanding (Bakay, 2023).

Research on international learners and culture within instructional design emphasizes the importance of relationship-building, cultural reflection, and learner agency. For instance, some studies highlight how encouraging peer support and collaboration can foster meaningful connections that aid learners in developing sociopolitical consciousness and understanding broader contexts affecting their lives (Andrade, 2006; Helsel, 2020). Engaging with learners' perspectives can allow instructional designers to create valuable learning experiences that support cultural and educational transitions by encouraging reflection and integration of learner identities (Cook-Sather, 2006; Tran, 2013). Leask (2015) highlighted the role of instructional technologies in promoting critical reflection on cultural assumptions to support enhancing intercultural understanding and global competencies. Despite these insights, a notable gap exists in design-based frameworks that systematically integrate culture within instructional design for multicultural environments. While "knowing your learners" is a foundational principle, the research suggests that "knowing your cultures" is equally vital for supporting international learners' engagement and adjustment. Addressing this gap requires developing frameworks that prioritize cultural considerations throughout the instructional design process, ensuring learning experiences are inclusive and responsive to the diverse needs of global learners.

Methods

Research Design

This study used an action research design to explore instructional design modifications to a collegial course for international learners. Action research is a research design used by educators to address real-world classroom challenges through a cyclical process involving planning, action, observation, and reflection (Zuber-Skerritt, 2021). A key component of this approach is problem identification, where educators analyze their teaching environments, student outcomes, or institutional goals through classroom observations, interviews, and surveys (Mertler, 2019).

Action research can include several elements, including planning research, reviewing the literature, aligning actions with objectives, and implementing evidence-based instructional changes (Sagor, 2011). Moreover, evaluation often plays a central role in action research, requiring careful documentation of participant engagement and contextual factors (Stringer & Aragon, 2020).

Educational Background and Context

The study was conducted at a private business college in Copenhagen, Denmark, which enrolls a diverse international learner population. All participants were first-year marketing students pursuing a bachelor's degree in business in Denmark. The private business college uses a United Kingdom (UK)-based curriculum that must be taught to learners. All learners are international students from Nepal, Bangladesh, and India. In addition to the institution and curriculum representing two different countries, the institution employs educators from over 25 countries. The study used control and intervention groups, and the control and intervention group instructors were the same for semesters 1 and 2. Instructors in the control group were from different countries, including Asia, the Americas, and Europe, while the intervention group instructor was from the Americas.

A range of cultural dynamics across national cultures was observed during a first-year marketing course over two semesters. The course was initially designed with content purchased and implemented without adaptation for international learners. While the curriculum contained rich content, many learners struggled to fully engage with and comprehend the material due to its UK-centric structure. This action research study aimed to pilot and refine instructional adaptations to better align with the learners' diverse cultural and educational backgrounds. This study was conducted over two academic semesters and focused on refining a first-year marketing course curriculum through iterative revisions. The goal was to enhance learning experiences among international learners by revising instructional content, activities, and delivery methods based on continuous feedback and assessment results. While the study focused on curriculum iterations for one course, two control groups were utilized to compare findings. The control groups contained first-year international learners at the same institution. The control groups had the same learning objectives and course content as the intervention used in this study, but differed in terms of instructors and learners.

Participants

Over two consecutive semesters, the study involved 240 participants. In total, these learners made up three cohorts, with six participating classes in total; four classes were used as control groups, and two classes were used for the intervention during semester 1 and 2. All the participants were enrolled in a full bachelor's degree program and had relocated from their home countries, primarily Nepal, with smaller proportions from Bangladesh and India, to study in Denmark. Although precise nationality counts were not recorded, cohort composition was predominantly Nepali, typically resembling a distribution of approximately 24 students from Nepal, 4 from Bangladesh, and 2 from India, in a class of 30. Gender distribution data were not collected. Participants ranged in age from 18 to 26 years, reflecting both recent high school graduates and a subset of students who entered higher education after a period of work experience. Admission to the program required candidates to pass extensive selection criteria, including English-language proficiency exams, assessments, and interviews, indicating a relatively high and standardized level of prior educational preparation across the sample.

Baseline comparability across cohorts was primarily established through shared institutional context, program requirements, curriculum, admission criteria, and learner stage, as all participants were first-year undergraduate students enrolled in the same degree program. In addition, qualitative feedback collected early in each semester revealed consistent patterns of conceptual difficulty, perceived cognitive load, and unfamiliarity with the UK market across cohorts. Together, these shared contextual conditions and convergent learner experiences indicate comparable baseline learning conditions prior to instructional adaptation.

Instruments

Qualitative data were further collected through open-ended questions designed to elicit learners' reflective experiences, perceived challenges, and contextual decision-making during the course. These questions prompted students to articulate their level of comfort or discomfort with specific marketing concepts (e.g., "Describe why you are feeling comfortable or not with concept X"), enabling insight into conceptual understanding, confidence, and areas of difficulty. Additional prompts asked learners to evaluate the perceived difficulty of individual modules (e.g., "How easy or difficult was that module for you?"), capturing subjective assessments of cognitive load and instructional clarity. Students were also asked to identify the brand selected for their assignments, providing contextual information that supported interpretation of their analytical choices and the application of marketing frameworks. Collectively,

these qualitative questions generated rich, explanatory data that complemented quantitative performance measures by illuminating how learners experienced, interpreted, and enacted course concepts in practice.

The study instruments combined formative and summative assessments to evaluate learners' understanding and application of core marketing concepts. Quantitative formative tests included formative assessments covering key theories, models, and brand-related knowledge, including PESTEL analysis, Porter's Five Forces, and macro-environmental factors. The first summative test, Assessment 1, was a PowerPoint-based individual presentation worth 50% of the course grade; it required students to conduct marketing analyses using approved models and to follow a structured slide and narrated audio, with credible Harvard-style references. The second summative test, Assessment 2, was a 2,000-word individual written report. Learners had to demonstrate conceptual mastery of the Marketing Mix and Segmentation, Targeting, and Positioning (STP), alongside the development and critical analysis of a digital marketing communication example. For both summative assessments, students were required to draw on credible sources, including academic databases, brand websites, company annual reports, and reputable mainstream media outlets (e.g., the BBC).

Data Collection

The study employed a sequential mixed-methods design over two semesters, with qualitative data collected first to inform the quantitative evaluation. Qualitative data included instructor-led feedback sessions, classroom observations, and anonymous Padlet responses, which identified instructional challenges and guided iterative course refinements. Insights from this qualitative phase were used to iteratively refine instructional strategies and course design. In the subsequent phase, quantitative data were collected to assess the effectiveness of these revisions. Quantitative data were then assessed to determine the effectiveness of these revisions through Kahoot-based retention quizzes, summative final assessments, and post-course institutional surveys, enabling triangulation of learner performance, perceptions, and instructional impact.

Data Analysis

The study combined thematic and reflexive feedback analysis (Braun & Clarke, 2006) to review learner feedback and test results, informing cyclical content and instructional iterations. Learner feedback and formative assessments guided ongoing refinements to activities and strategies. To evaluate performance across conditions, analyses included descriptive statistics, multiple one-way ANOVAs, and robust non-parametric supplements (Kruskal-Wallis, Post-hoc Mann-Whitney U), with Cohen's d to examine effect sizes.

Findings

Following Sagor's (2011) action research methodology, the study used qualitative insights to aid in problem identification and quantitative data to evaluate the learner performance. The study identified eight core learning dimensions (i.e., culture, collaboration, agency, agility, relevance, repetition, engagement, and evaluation) that were iteratively adapted to support international learners. The findings suggest that targeting content, activity, and pedagogical materials can enhance learner engagement and comprehension of core course principles compared to learning experiences without instructional, content, or activity modifications.

Qualitative Findings

Problem identification. Using formative assessments and observational notes, four core challenges were identified within the course's initial weeks. These challenges included:

1. **Misaligned Technological Literacy Expectations:** Variability in learners' familiarity with digital tools created discrepancies between curriculum requirements and learner readiness.
2. **Limited Engagement with Core Concepts:** Learners exhibited minimal interest in course materials and activities.
3. **Insufficient Relevance of U.K.-Based Use Cases:** Learners struggled to contextualize curriculum examples rooted in the U.K. market, which differed significantly from their home cultures.
4. **Variability in Academic Communication Proficiency:** Differences in fluency and academic writing skills affected participation and comprehension.

Based on these initial findings from qualitative data collection, the learning experience intervention was rapidly and continuously revised. The revised plan, a strategy in action research recommended by Sagor (2011), included ensuring alignment between the learning objectives and instructional materials to support learner knowledge and skill development.

Instructional Revisions

Given the problems identified during the first few weeks of the course, revisions were made to the content, activities, and pedagogical strategies. The following revisions were implemented: 1/ Reduced lecturing and increased interactive activities (e.g., discussions, peer collaboration), 2/ Introduced technological literacy-building exercises to bridge digital proficiency gaps, 3/ Introduced cultural relevance by diversifying case studies and allowing learners to select brands from their home countries, and 4/ Implemented formative assessments to monitor engagement and comprehension continuously. These iterative adjustments were deployed to the same learner cohorts to ensure real-time improvements and ongoing formative assessments.

Instructional evaluation. After completing the course, all iterations, alongside formative and summative qualitative data, were compiled and analyzed using Braun and Clarke's (2006) reflective thematic analysis. The thematic analysis revealed eight distinct yet interconnected themes that were important to the learning experience and guided iterations. The eight themes are presented in more detail as follows:

Table 1
Themes and Sub-Themes

Themes	Sub-Themes	Sub-Theme Details
Cultural Context	Learner's home culture Institution's national culture Classroom as global culture	This theme focused on ways cultural backgrounds can influence learners' learning experiences. It found that learners from various home cultures had different formative learning experiences and expectations before the learning experience. Home cultures influenced learners' behavior and classroom expectations, requiring them to navigate a new national culture. To support cultural navigation, instructional strategies that integrate aspects of learners' home cultures were valued by learners.
Collaborative Learning	Learner-to-learner partnership Instructor-to-learner partnership Collaboration as a process Collaboration as an outcome	This theme highlighted the importance of relationships and collaboration in a learning environment. It found that when an instructor encourages peer-to-peer interactions, and learners support one another, productive partnerships between instructors and learners can foster a healthy global culture. Collaboration was a continuous process that fostered deeper relationships and supported problem-solving among learners.
Learner Empowerment	Behavioral self-management Social setting, knowledge, and engagement Mutual respect and trust	To achieve this, an instructor established ground rules agreed upon by the class, and learners accepted the ramifications for breaking them without pushback (e.g., allowing phone use in class if it did not hinder learners' classroom engagement).
Adaptive Instruction	Instructors' intentional modification of learning experience	This theme showed the importance of instructor flexibility and responsiveness to addressing learners' evolving needs. When an instructor adjusts their methods, content, or pedagogy based on learners' needs, this can support

	Learner observation and instructional iteration	refining and enhancing the learning experience to ensure it is relevant to learners.
Meaningful Learning	Content/activities that are socially or culturally familiar	This theme highlighted the importance of connecting the instructional materials to learners' lived experiences. Presenting information or activities that are relevant or culturally familiar can support learner engagement. More specifically, when an instructor invites learners to co-create materials or content, learners show engagement and motivation to learn and support each other during the learning experience.
Content Repetition	Material spacing repetition	This theme focused on spacing content and repeating important content throughout the learning experience. Spacing content throughout a learning experience helped learners recall core concepts, rather than covering them only once with little or no additional content.
Active Engagement	Learner behavior in learning experience Instructor engagement with learners Incorporation of humor	This theme focused on the direct involvement between the learners and instructors within a learning experience. It found that learners can engage with their peers and activities, and instructors can support learner engagement by providing feedback and facilitating meaningful interactions that keep learners involved. Two-way engagement between learners and instructors can elicit fruitful dialogue and interactions. In addition, incorporating humor can be a helpful tool to make the learning experience enjoyable, fun, and humanize instructors.
Continuous Improvement	Eliciting feedback	This theme reinforced the value of ongoing evaluation during a learning experience to ensure learners' needs are being met. Soliciting feedback early in a learning experience and identifying areas for improvement can enhance learner experiences when focusing on revising content based on learner needs and identified problems.

Quantitative Findings

The results of the quantitative data analysis provide empirical evidence to support the optimization of the instructional design iterations. Across two semesters, students who participated in the intervention course demonstrated significantly higher assessment performance than the control groups, courses with identical content and learning objectives but different instructors and learners. A combination of non-parametric and parametric statistical analyses confirmed the robustness of these findings, ensuring validity despite minor violations of normality in certain groups. The results indicate that adaptive instructional strategies positively influenced learning outcomes, reinforcing the value of culturally responsive, interactive, and iterative pedagogical approaches.

Semester 1 Summative Assessment Results. An analysis of the course final assessment revealed significant differences between the intervention and control groups (Kruskal-Wallis $H = 29.4941$, $p < 0.001$). Due to violations of normality in two of the three groups (Shapiro-Wilk: Control 1, $p = 0.0045$; Control 2, $p = 0.0050$), non-parametric tests were primarily used, though traditional parametric analyses showed similar results. Given the significant omnibus effect, post-hoc pairwise comparisons were conducted using Mann-Whitney *U* tests. The intervention course showed significantly higher performance compared to both control groups (Mann-Whitney U tests: Intervention vs Control 1, $p < 0.001$; Intervention vs Control 2, $p < 0.001$), with large effect sizes (Cohen's $d = 0.71$ and 0.75). Mean scores in the intervention group ($M = 67.79$, $SD = 12.71$) were approximately 15-16% higher than both control groups (Control 1: $M = 59.21$, $SD = 11.33$; Control 2: $M = 58.26$, $SD = 12.53$). Importantly, the control groups showed no significant

differences (Mann-Whitney *U* test: $p = 0.2823$; Cohen's $d = 0.08$), with minimal mean difference (0.94 points, 1.62%), indicating a stable baseline in learner performance, which supports the validity of the intervention effects.

Semester 2 Summative Assessment Results. Building upon the first semester's success, an analysis of the course final assessment for semester two demonstrated a significant difference among the groups (Kruskal-Wallis H = 18.4749, $p < 0.001$). Due to violations of normality in two of the three groups (Shapiro-Wilk: Intervention, $p = 0.0039$; Control 2, $p = 0.0013$), non-parametric tests were primarily used, though homogeneity of variance was maintained across groups (Levene's test: $p < 0.5995$). Following this significant omnibus result, post hoc Mann-Whitney *U* tests were conducted to determine which group comparisons accounted for the overall effect. The intervention group demonstrated significantly higher performance compared to both control groups, with a notably more substantial effect against Control 1 (Mann-Whitney *U* test: $p < 0.001$; Cohen's $d = 0.73$) than Control 2 courses (Mann-Whitney *U* test: $p < 0.0092$; Cohen's $d = 0.41$). Mean scores in the intervention group ($M = 66.85$, $SD = 16.31$) were 21.13% higher than Control 1 ($M = 55.19$, $SD = 15.44$) and 10.79% higher than Control 2 ($M = 60.34$, $SD = 15.09$). Interestingly, unlike semester 1, the Control 2 group performed marginally better than Control 1 (absolute difference = 5.15 points), though this difference was not significant in non-parametric testing (Mann-Whitney U test: $p < 0.1082$) despite reaching significance in parametric analysis (ANOVA: $p < 0.0433$).

Despite minor differences between semester 1 and 2 final assessment scores, the intervention group consistently achieved significantly higher final assessment scores across multiple statistical approaches. The findings from both semesters reinforce the reliability of the instructional modifications. The sustained improvement suggests that learner-centered, interactive, and culturally responsive instructional strategies may contribute to learner academic achievement.

Implications

The findings of this action research study provide empirical support for the use of culturally relevant instructional design in enhancing learner engagement and performance. The data suggest that when instructional content aligns with learners' cultural contexts, and collaborative, agency-driven learning experiences are prioritized, students demonstrate higher levels of academic achievement. Several instructional strategies were identified in this study. For instance, the results show that instruction materials that intersect home and national cultural contexts can foster a deeper sense of relevance and connection, supporting student engagement and comprehension. In addition, activities that promote social learning and peer-to-peer collaboration indicate supporting learner relationships. The ability to co-create materials, repeat key learning elements, and adapt content dynamically can allow learners to engage with material during different stages in a learning experience, reinforcing understanding in the learning process. These findings highlight the importance of trust-building as a fundamental aspect of learner autonomy and agency to support the learner experience. Additionally, ongoing evaluation and feedback mechanisms were found to be essential in allowing an instructor to practice active agility, making responsive modifications to the learning experience based on student needs.

Recognizing the significance of these instructional strategies, the researchers leveraged these insights to formulate a new, practically applicable instructional design framework: the CARE^2 Model. This model is intended to guide instructional designers in making intentional, culturally responsive design decisions that foster engagement, agency, and learning efficacy.

Reflection and Theory Creation

Borrowing Sagor's (2011) action research methodology, which emphasizes systematic reflection to improve instructional practices, this study examined the iterative cycles of the learning experience, including observation, reflection, and revision. By engaging in structured reflection, the researchers assessed the value of instructional interventions, ensuring that learning experiences aligned with the needs of a diverse student population. This reflective process revealed the necessity of Culture and Collaboration in creating an inclusive learning environment, Agency and Agility in empowering learners to take ownership of their education, Relevance and Repetition in reinforcing key concepts, and Engagement and Evaluation in sustaining learner motivation and measuring instructional impact. The researchers synthesized these findings to create the CARE^2 model as a culturally relevant framework that supports instructional designers and educators to create dynamic and culturally responsive learning experiences to support engagement and performance.

The CARE^2 model was generated through sustained, iterative engagement with the empirical data and extensive researcher deliberation rather than being imposed a priori. Model development followed an inductive analytic process in which qualitative data were repeatedly examined, compared, and refined across analytic cycles. Throughout this

process, the researchers engaged in constant comparison, moving between raw data, emergent patterns, and existing learning and instructional design theory to ensure conceptual coherence and theoretical grounding.

Initial analytic phases focused on identifying recurring learner experiences, instructional tensions, and contextual constraints evident across cohorts. As patterns stabilized, the researchers collaboratively clustered related concepts, examined overlaps, and debated boundary conditions, thereby refining higher-order categories. These categories were not treated as static themes; instead, they were stress-tested against disconfirming cases, revisited as new data emerged, and revised through ongoing analytic memoing and reflexive discussion.

Extensive research deliberation played a central role in shaping the CARE² model. The research team engaged in prolonged dialogue to examine alternative interpretations, challenge assumptions, and ensure that each model component reflected both empirical grounding and practical relevance for instructional design. This deliberative process resulted in a parsimonious yet flexible framework that balances theoretical alignment with design adaptability. The final CARE² model represents the outcome of deep immersion in the data, systematic analytic refinement, and collective sensemaking.

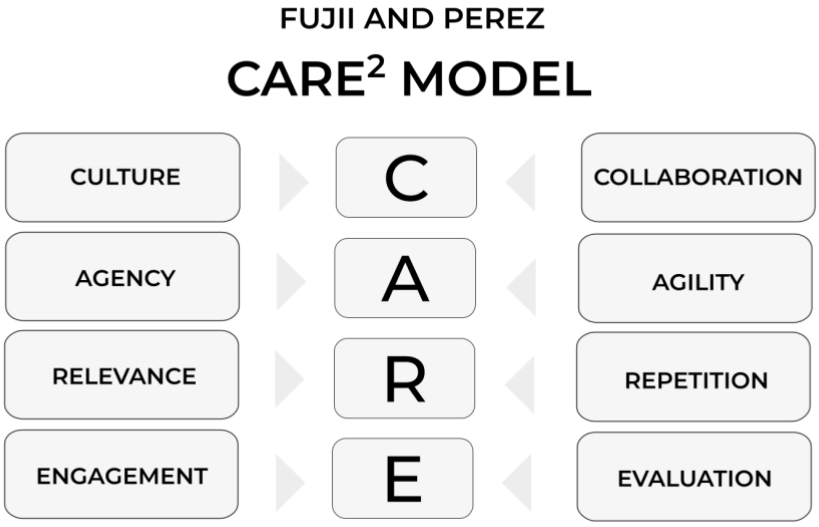
The CARE² Model

The CARE² model (i.e., Culture, Collaboration, Agency, Agility, Relevance, Repetition, Engagement, and Evaluation) is a systematic and flexible framework for designing culturally responsive instructional experiences. The model is grounded in learning and instructional design theory, and it provides structured guidance while encouraging designer adaptability based on learner needs and educational outcomes. At its core, CARE² emphasizes relevance and engagement as drivers of learning engagement and performance. It is designed around eight key principles:

- C – Culture and Collaboration
- A – Agency and Agility
- R – Relevance and Repetition
- E – Engagement and Evaluation

The CARE² model is a systematic design and development framework tool for instructional designers to build multicultural learning experiences. The model supports various content types, activities, and instructional materials across diverse learning environments, including online, hybrid, in-person, and workplace training. Additionally, it can be applied to a variety of learning environments, such as classroom instruction, simulations, and fieldwork experiences, etc. (refer to Figure 1).

Figure 1.
Fujii & Perez CARE² Model



Model Implications

The CARE² model offers important implications for instructional design in culturally diverse learning environments. While existing instructional design frameworks address aspects of learning structure and cognition, they often provide limited guidance for designers seeking to intentionally design for learners from diverse cultural backgrounds. By foregrounding culture and related contextual elements, the CARE² model highlights how culturally responsive design can support learner engagement and adjustment at both the micro-level (classroom) and the macro-level (national or institutional).

The model encourages instructional designers to create learning experiences that afford instructors flexibility and autonomy to co-define or co-create learning with students. Integrating learners' home cultures into instructional activities can facilitate the development of a shared global classroom culture, foster trust, and support meaningful communication between learners and instructors. In this respect, CARE² reinforces the importance of culture as a central, rather than peripheral, component of learning design and offers a framework for designers to more critically consider cultural responsiveness and co-creation across a range of instructional settings.

Limitations

This study contained several limitations that should be acknowledged. First, the CARE² model offers high-level conceptual guidance rather than a prescriptive set of design techniques. As such, instructors and designers may require additional scaffolding or contextual expertise to translate the model into specific instructional practices. Second, the model may be more challenging to implement in fully asynchronous online environments, where opportunities for real-time interaction, co-creation, and trust-building are more limited. In addition, limitations related to baseline comparability should be noted. Although cohorts shared the same institutional context, program requirements, curriculum, admission criteria, and learner stage, baseline equivalence was established primarily through structural and qualitative indicators rather than detailed demographic or pretest measures, as this data was not accessible. Gender distribution and precise nationality breakdowns were not systematically collected, and no formal pre-intervention knowledge assessment was administered. As a result, while early qualitative feedback suggested comparable learning challenges across cohorts, unobserved differences in prior knowledge or learning experiences cannot be fully ruled out. These limitations should be considered when interpreting the observed effects of instructional adaptations and the applicability of the CARE² model across different learner populations and educational contexts.

Conclusion

While instructional designers might not always know who their learners are or where they come from, designers should make every effort to determine whether they are designing and developing materials for a national or multinational group of learners. If designers are tasked with designing and developing learning experiences for an international or multicultural group of learners, they are encouraged to use the CARE² model. The CARE² model presents an approach to support designers in designing with culture in mind by integrating eight critical factors into a learning experience. The strengths of the CARE² model are its flexibility and adaptability, as it offers trainers, instructors, or presenters the ability to integrate and apply design principles across various learning contexts and environments. Focusing on cultural relevance, learner engagement, and iterative evaluation, the CARE² model aims to produce more engaging and inclusive learning experiences.

Culture is the most critical element of the model, emphasizing the importance of balancing learners' home culture with the global culture and the learning environment. This focus on culture reinforces the need to recognize and design for learners with diverse backgrounds. It aims to support instructors or trainers in creating and maintaining a respectful, relevant learning environment that integrates familiar elements from various learners' home cultures.

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