



Bridging Cultural Divides: A Comparative Analysis of AVR and Conventional Approaches in EFL Teacher Professional Development

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Abstract

Highlighting the inseparable link between language, culture, and technology in English as a foreign language education, this qualitative exploratory study examined the impact of cultural and multicultural awareness on Iranian EFL teachers' professional development within augmented virtual reality (AVR)-based and conventional teacher education programs. Thus, 28 EFL teachers participated in semi-structured interviews and reflective inquiries following eight-week training courses. Data analysis was done manually via qualitative thematic analysis and by MAXQDA according to Guskey's (2002) professional development model. Consequently, seven themes for the conventional group (maintaining a culturally responsive environment, enhanced teachers' behavior, curriculum improvement, creative ideas, enhanced skills, efficient communication, and preparing students for effective communication) and five themes for the AVR group (experiencing authentic material and environment, accessibility features, less interactivity in the classroom, teachers' passion and confidence improvement, and less cultural boundaries) were extracted. The study highlighted the crucial role of cultural and multicultural immersion and adaptive teaching strategies in creating culturally responsive environments. This approach equipped EFL instructors to address diverse student needs and foster inclusive learning spaces effectively. Moreover, the AVR technology deepened cultural immersion and supported modern teaching approaches, enhancing educators' ability to engage with diverse cultural classrooms. Despite the observed improvements in trainees' passion and confidence, a need for reconsidering technological aspects in contemporary teacher education was identified. Ultimately, the findings offered pedagogical implications for EFL teacher

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education and teacher trainers to equip teachers with the necessary skills to address cultural and multicultural challenges in EFL teaching and stimulate their professional growth.

Keywords: Cultural Awareness, Multicultural Awareness, Professional Development, Augmented Virtual Reality

Since the 1980s, applied linguists have directed their attention toward the practical application of language, exploring its interplay with culture and context at a fundamental level of examination (Chapelle, 2013). Hence, the intricate relationship between language and culture has remained a central point of interest within the realm of applied linguistics. This significant connection means that mastering one without the other is nearly impossible (Akhmedovna, 2024; Khatib et al., 2016). Many scholars advocate for the inclusion of cultural elements in EFL instruction, emphasizing that a thorough understanding of language inherently involves an understanding of its cultural context (Hernandez et al., 2021; Kramsch, 2014). In recent years, EFL teachers have increasingly integrated cultural and multicultural knowledge into language teaching, prompting classroom restructuring and highlighting the growing importance of cultural understanding alongside linguistic proficiency (Yang, 2014).

In this context, cultural awareness involves appreciating the nuances of diverse cultures, while multicultural awareness requires educators to adapt their perspectives and self-awareness to effectively integrate cultural diversity into the classroom (Yurtsever & Özel, 2021; Shey & Fangwi, 2020). According to the related literature, the increasing diversity of students' demographics, driven by rising immigration to urban and developing areas (Salimi & Rad, 2024; Parkhouse et al., 2019; Tebben, 2021), necessitates English language teachers' engagement in professional development processes to navigate heterogeneous educational settings (Howard, 2007) adequately. Consequently, successful professional development programs require educational stakeholders and teacher trainers to understand teachers' opinions on cultural and multicultural awareness training, their confidence in understanding cultural consciousness, its impact on their teaching methods, and their interest in further training to improve their effectiveness in teaching students with diverse backgrounds (Tebben, 2021).

With the rise of technology, stakeholders should consider integrating modern technological devices such as augmented virtual reality (AVR) within English language education to engage individuals with diverse cultural backgrounds in an authentic and real-world communication experience (Eren, 2023). Research suggests that AVR is a powerful tool for constructivist education (Robinson & Coltz, 2013), allowing individuals to overcome limitations of time and place and gain exposure to diverse cultural and multicultural contexts. This immersive experience not only enhances language learning but also fosters cross-cultural understanding and empathy, ultimately enriching the educational experience for both learners and educators. However, despite the promising potential of AVR in language education, challenges related to the diverse backgrounds of individuals may hinder its effective integration into teaching methodologies (Tafazoli, 2024). Therefore, it is crucial to empower teachers with social and cultural awareness “to embrace the constructivist basis of culturally embedded teaching” within AVR-based contexts (Salimi & Rad, 2024, p. 3). This approach is grounded in culturally responsive pedagogy, an educational method rooted in multicultural education principles that aims to ensure educational equity for all students, regardless of their racial, ethnic, exceptional, and social backgrounds (Banks et al., 2005).

According to the literature, culture significantly influences technology experiences and usage patterns for both teachers and students (Arpaci, 2015; Lai et al., 2022; Li & Kirkup, 2007). Several studies have shown the advantageous impacts of cultural and multicultural factors on teachers’ professional development within conventional teacher education contexts (Amin & Saukah, 2015; Kavaklı, 2020; Soodmand Afshar & Yousefi, 2019). However, there is a notable lack of research focusing on AVR integration in this area, specifically examining EFL teachers’ perceptions regarding its advantages and capabilities in affecting their instructional practices considering cultural concepts. Consequently, this study aimed to compare traditional and AVR-based environments for EFL teacher training concerning cultural and multicultural awareness.

This research enhances the current body of knowledge and sheds light on the significance of cultural and multicultural awareness in EFL teacher education. Furthermore, the study offers valuable insights into the development of EFL teachers’ professional competencies using contemporary approaches. Moreover, by identifying the

critical aspects of cultural and multicultural awareness in EFL teacher development in both traditional and AVR-based contexts, these findings can greatly enrich the existing literature on EFL teachers' professional growth. Finally, the insights gleaned from this research contribute to the broader discourse on EFL teacher education and underscore the need for continued exploration of cultural and multicultural dimensions in pedagogy, particularly within AVR contexts. By shedding light on how cultural and multicultural awareness intersects with technological advancements such as AVR in EFL teacher training, this study paves the way for innovative approaches to teacher education.

Literature Review

Professional Development

Recent trends in language teaching have increasingly emphasized intercultural competence (Mostafaei Alaei & Nosrati, 2018; Álvarez, 2020; Kong et al., 2024) that focuses on understanding cultural influences on behaviors and communicative teacher training approaches is crucial for educational authorities to help educators adapt to ongoing changes (Cowie & Alizadeh, 2022; Mensah, 2021). Therefore, understanding teachers' perceptions of cultural and multicultural awareness in EFL teacher education programs and their professional growth is vital for shaping instructional practices, which is the primary objective of this study. However, there remains a significant gap in scholarly literature on this topic across diverse contexts (Frank, 2013). As per Dewey and Patsko (2018), developing intercultural competence involves cultural awareness as a crucial aspect of second-language professional practice. In response to growing diversity and rapid technological advancements in the EFL context, educators must enhance cultural awareness and adapt teaching methods to align with contemporary, culturally responsive practices. To fulfill the variety of needs among the students, identifying effective subjects is a crucial area that this study aims to address.

Cultural awareness involves recognizing, understanding, and valuing cultural differences and their impact on teaching and learning (Yurtsever & Özel, 2021). Similarly, multicultural awareness refers to educators acknowledging and embracing cultural diversity as a valuable resource in the classroom by adapting their attitudes, beliefs, values, assumptions, and self-awareness to enhance interactions with students

(Shey & Fangwi, 2020). Consequently, integrating this awareness into teacher education is crucial, as educators have a responsibility to promote peaceful coexistence in multicultural communities (Borg, 2003; Cochran-Smith, 2004). For instance, Tebben's (2021) qualitative study explored teachers' perceptions of professional development in cultural awareness in Minnesota. Limited coursework during their initial training led to the need for more targeted and effective professional development. Teachers found collaborative opportunities with educators and community members most effective. Therefore, integrating these perspectives into teacher training is essential to cultivate culturally responsive teaching practices and promote effective instruction (Moore et al., 2021).

Culturally responsive pedagogy (CRP) is an educational approach that enriches the learning experience by leveraging students' cultural backgrounds (Ladson-Billings, 2009). Ladson-Billings (2014) defines CRP within three domains: academic success through classroom learning, cultural competence by appreciating one's own and others' cultures, and sociopolitical consciousness to analyze and solve real-world problems. Thus, in today's multicultural educational settings, teachers face challenges of enhancing productivity, aligning the curriculum with the local context, and integrating students' backgrounds into the classroom (Ladson-Billings, 2009; Lee, 2007). For instance, Salimi and Rad (2024) examined multiculturalism in Iran's ELT system, identifying key themes like equity, communicative skills, positive thinking, multicultural content, and varied assessment methods. They highlighted the importance of integrating cultural elements into education through robust professional development and curriculum enhancements to improve teaching practices.

Guskey (2009) emphasized the critical role of well-planned professional development in teachers' educational improvement. Consequently, as Chen and Yang (2017) argued, cultural and multicultural awareness is not innate to instructors, necessitating ongoing professional development to implement effective culturally responsive strategies in teaching. Teacher professional development as a lifelong process involves collaborative and autonomous learning and is essential for improving pedagogical and content knowledge (Sancar et al., 2021). One of the most prominent models of professional development was proposed by Guskey (1986), including three

interrelated concepts: change in teachers' classroom practices, their attitudes and beliefs, and students' learning outcomes. Guskey (2002) further refined the sequence of these outcomes and provided an alternative model (Figure 1). Although the initial intention was that efforts to enhance teacher professionalism would result in changes within these three aspects, modifications to these concepts or the professional development programs themselves may lead to reciprocal improvements.

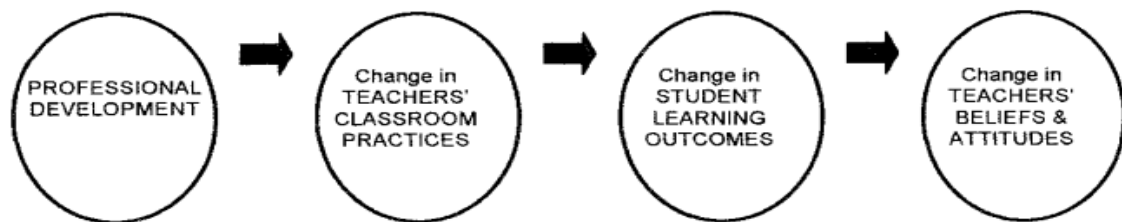


Figure 1. A Model of Teacher Change (Guskey, 2002, p. 383)

Professional development courses have traditionally sought to enrich preservice teachers' subject knowledge and teaching methods to enhance their classroom effectiveness, with the assumption of improving student outcomes. However, studies have revealed that these courses have not fulfilled their intended purpose (Darling-Hammond et al., 2009). Traditional teacher professional development programs have often been criticized for their lack of alignment with the practical demands of classroom teaching (Abakah, 2019; Abakah, 2023; Abdulrazak, 2020; Zein, 2017). These programs, typically consisting of workshops, seminars, and conferences, are frequently characterized as brief, fragmented, and insufficiently tailored to the specific needs of educators (Meng et al., 2013). Such interventions may be ineffective in fostering significant improvements in teaching practices due to their rigid and linear approach to learning (Simon & Campbell, 2012). The initial preparation of future teachers is paramount, as it necessitates the creation of training experiences that offer suitable platforms and approaches for acquiring effective teaching skills (Sáez-López et al., 2020). Hence, educators increasingly prefer novel, non-standardized approaches over conventional methods of teacher training to experience real-world classroom settings. As societal needs evolve, high-quality teacher education programs are crucial, particularly when addressing cultural diversity (Bennett, 2009).

Teacher education programs aiming to prepare culturally responsive educators should support preservice teachers by redesigning institutional structures, organizational features, and program practices (Zeichner & Conklin, 2008). For instance, Azizpour's (2021) qualitative study on Iranian EFL teachers highlighted the importance of integrating cultural awareness into teaching. Conducted through semi-structured interviews with twelve teachers from various districts, the study identified key themes such as the role of English culture in teaching, the challenges and benefits of teaching English culture, and recommendations for effective cultural integration. The study advocated for enhanced professional development to improve cultural knowledge and teaching strategies, indicating the inseparability of language and culture in EFL education. In other words, a clear vision and strong commitments are essential for developing effective, culturally responsive teacher preparation programs, which can further strengthen teachers' adaptability, communication, and capacity to incorporate culturally relevant materials, ultimately promoting their professional growth and enhancing instructional effectiveness (Gist et al., 2019).

Augmented Virtual Reality in EFL Teacher Training

Augmented reality (AR) and virtual reality (VR) were introduced in the 1970s with VR headsets by Daniel Vickers. VR gained traction, but AR developed significantly later in the 1990s. Despite early introduction, technical limitations delayed their widespread adoption, especially in education, until around 2014 (Elmqaddem, 2019). VR immerses users in an artificial world using a headset with a 3D display and head tracking, allowing real-time interaction with the environment (Elmqaddem, 2019). In contrast, AR overlays digital content onto the real world in 2D or 3D, enhancing reality without fully immersing users in a virtual environment. Augmented and virtual reality (AVR) represents the fusion of both AR and VR technologies to create more immersive experiences. While there isn't a standardized definition for this term, it aligns closely with the concept of mixed (MR) or extended reality (XR), which can be understood as “the virtual and real worlds come together to create new environments in which both digital and physical objects—and their data—can coexist and interact with one another,” as defined by Kunkel and Soechtig (2017, p. 49).

The educational use of AR and VR aligns with constructivist and situated learning theories. According to Dunleavy and Dede (2014), learning occurs within specific contexts, shaped by interactions among people, places, objects, processes, and culture. Constructivism emphasizes active learning through authentic tasks and interaction, while situated learning focuses on community-based learning within real-life contexts. AR facilitates constructivist learning (Robinson & Coltz, 2013) by allowing interactive material exploration and integration of novel concepts with existing knowledge, fostering an autonomous and personalized learning experience (Wang et al., 2018). Therefore, it supports both theoretical frameworks by providing immersive, student-centered experiences that encourage experiential learning and deep understanding (Belda-Medina, 2022). VR enhances collaboration and learning through immersive virtual environments, supporting joint problem-solving and feedback exchange and nurturing community and social presence (Marougkas et al., 2023). Thus, VR, by offering immersive and interactive environments, enables exploration, experimentation, and discovery, making it an ideal platform for constructivist pedagogy. Research shows VR successfully enhances constructivist learning outcomes across diverse educational settings (Huang et al., 2018).

In language teaching, adapting teaching methods to students' social, cultural, and political contexts is crucial (Liu, 2015). Hence, providing realistic practice scenarios is vital for teacher trainees' development, though challenging to implement comprehensively (Chernikova et al., 2020; Dalgarno et al., 2016; Grossman, 2018). When addressing the needs of linguistically and culturally diverse students, various technological platforms can facilitate culturally responsive teaching, thereby raising teachers' cultural and multicultural awareness. AVR has significant potential to enhance culturally relevant teaching through innovation (Smith et al., 2021), which opens up novel avenues and prospects for situated practice in teacher education by simulating authentic experiences within virtual settings. For instance, McGarr (2021) examined the use of virtual simulations in preservice teacher education, focusing on their role in developing classroom management skills. The results revealed that VR offers controlled environments for preservice teachers to practice without real-world consequences, enhancing their preparedness for classroom challenges.

Additionally, AVR creates engaging and immersive environments catering to diverse cultural backgrounds and learning needs, providing a dynamic and interactive platform for EFL teachers to refine their teaching strategies, develop culturally responsive teaching methods, and improve their overall instructional effectiveness. Billingham and Duenser (2012) argued that AVR can transform conventional teaching by boosting individuals' motivation, engagement, and retention within an experiential and interactive context. As classrooms increasingly integrate technology, educators must prepare to incorporate AVR into their practices (Peterson & Stone, 2019). For instance, Zhang (2021) explored the integration of VR in K-12 ESL classrooms, emphasizing its potential benefits for teacher educators. The research highlighted collaborative curriculum design examples using VR and stressed the need for careful consideration of technological readiness and pedagogical strategies. Despite promising educational benefits like increased engagement and realistic cultural simulations, challenges such as technological support and age appropriateness were identified. Zhang advocates for thoughtful integration of VR into teacher training programs to align with learning objectives and provide effective classroom scaffolding.

Moreover, AVR scenarios offer opportunities for teaching practice in a controlled environment and realistic simulations, ultimately improving individuals' professional development. For instance, Cheng (2021) conducted a five-phase teacher training course to evaluate the use of AR/VR technology in Chinese education and identified challenges faced by nineteen intern teachers. According to the results, challenges included limited Chinese learning content availability, time-consuming course preparation, technical issues, and a lack of pre-training guidelines. The study highlighted the importance of well-designed training programs to fully utilize AVR technology in Chinese lessons. Tafazoli (2024) also investigated the advantages of employing VR in teaching cultural aspects from in-service Iranian TPSOL (teaching Persian to speakers of other languages) teachers' perceptions. Results showed that teacher trainees were concerned about the effectiveness, practicality, and limited awareness of VR applications, technological apprehension, and a preference for conventional teaching methodologies. At the end of the training sessions, teachers showed positive views of improvement in cultural immersion, students' involvement, genuine and authentic cultural experiences, and interactive learning environments.

Overall, the literature review demonstrates the need to improve teacher training courses to enhance teachers' instructional practices in diverse classroom environments. While numerous studies have explored AVR technology's impact on cultural and multicultural awareness among EFL learners (e.g., Ebadi & Ebadijalal, 2022; Gao et al., 2021; Hadjistassou & Avgousti, 2024; Liu et al., 2023; Shadiev et al., 2021), there remains a notable gap in research focusing specifically on EFL teachers' perceptions. Although some studies have examined EFL teachers' professional development related to cultural and multicultural awareness, none have focused on the role of AVR technology in mediating these effects. This exploratory qualitative study aims to fill this gap by investigating Iranian EFL teachers' perceptions toward conventional and AVR-based training programs, contributing to the literature on integrating modern technological tools in teacher education. This study investigates the following research question:

How do EFL teachers perceive the role of cultural and multicultural awareness in their professional development within AVR-based and conventional teacher education contexts?

Method

Design

This exploratory qualitative study aimed to investigate EFL teachers' insights regarding the impact of cultural and multicultural awareness on their professional development within the Iranian ELT context in AVR-based and conventional environments. The reason behind choosing an exploratory approach is the fact that “its purpose is to discover new ideas and insights, or even generate new theories” (Heigham & Croker, 2009, p. 9). Given the exploratory nature of this study, which seeks to discover new ideas and insights, an Interpretative Phenomenological Analysis (IPA) for investigating and interpreting participants' lived experiences (Creswell, 2013; Smith et al., 2009) was utilized to understand EFL teachers' personal experiences and how these experiences affect their professional growth in teaching English. This approach aligns with previous research by Creswell (2014) and Worthington (2013), who advocate for the use of phenomenology to delve into participants' subjective understandings and lived experiences. It enables researchers to analyze participants' narratives and interviews to

uncover themes and patterns that highlight their distinct experiences in particular educational settings (Bhattacharya, 2017). In line with IPA methodology (Smith et al., 2009), the research design involved three stages: (1) initial immersion in the data through in-depth readings, (2) identification of emerging themes from participants' narratives, and (3) iterative analysis to interpret the meanings behind these experiences, supported by participant validation and coder consensus.

Participants and Context of the Study

Selecting appropriate participants is vital for ensuring the validity and applicability of research findings. Researchers employed purposive sampling since they wanted to "garner a variety of perspectives on an issue" (Vogt et al., 2012, p. 220). This method allowed researchers to focus on Iranian EFL teachers who could provide rich and in-depth insights into this study's objectives. To ensure a diverse range of perspectives within this group, they recruited 28 teachers from various universities and educational institutions in Tehran. Participants varied in their levels of experience in English language teaching, ranging from novice to experienced educators. This approach helped us capture a broader spectrum of experiences and perspectives on teachers' professional development. Due to the complexity of the research topic and the need to focus exclusively on the primary research question, researchers prioritized data collection and analysis related to the key variables. This decision led to the exclusion of demographic information about the participants.

Instruments

A multi-method triangulation approach was used to fulfill the objectives of the current study. Thus, two instruments were employed to collect the required data. The first instrument was a semi-structured interview with additional open-ended questions to obtain participants' perceptions of cultural and multicultural awareness within specific environments. This would allow the researchers to explore factors such as participants' perceptions, views, attitudes, and beliefs (Mackey & Gass, 2005), which are elaborated "on the issues raised in an exploratory manner" (Dornyei, 2007, p. 136).

To ensure interview data triangulation, participants were supplemented with reflective narrative inquiry tasks after each course session. Narrative inquiry explores personal experiences over time and how they relate to cultural context (Clandinin & Connelly, 2000). As per Farrell (2011), reflective practice involves teachers reflecting on classroom events to analyze learning outcomes and improve teaching strategies. Recently, teacher education research has increasingly emphasized teachers' perspectives and stories, highlighting the importance of reflective practice (Akinbode, 2013; Arefian & Meihami, 2023; Faghihi & Anani Sarab, 2016). Consequently, narrative inquiry has emerged as a valuable method to explore how teachers' experiences shape their professional development (Burton, 2009). The type of narrative adopted in this study was autobiography, which is a means of collecting and analyzing personal stories written by individuals (Narváez et al., 2013). In the context of teacher education programs, it is used to explore and understand teaching practices, beliefs, and actions. By examining teachers' personal experiences and perspectives, researchers can gain insights into their thoughts, motivations, and the factors that influence their pedagogical decisions.

Procedure and Data Analysis

The process of gathering data began with a clear explanation of the main aims and objectives of the study to the participants. The ethicality of the study was upheld by obtaining consent from all participants, accompanied by assurances regarding the confidentiality and anonymity of their identities and responses. Therefore, participants were enrolled in two distinct teacher training courses: one based on AVR and the other conventional. Both programs comprised 8 weeks of theoretical and practical training, including teaching practice and final demonstration sessions.

Conventional teacher trainees received theoretical instruction on teaching contemporary strategies twice a week for eight weeks. The course materials, designed and developed by the researchers, underwent validation by a panel of experts in applied linguistics studies. During two online sessions, modern technologies used in English language teaching were introduced. Trainees were also tasked with researching various methodologies for incorporating cultural and multicultural knowledge into lesson plans and preparing for teaching practice and final demonstration sessions. Teacher trainees

took turns as teachers and learners in separate practice session groups to refine their teaching abilities. Furthermore, participants were requested to write narratives after each session detailing their experiences with the content received. Upon completion of the entire program, they engaged in a semi-structured interview to articulate their thoughts and perceptions regarding the integration of cultural and multicultural concepts into teaching. They were also encouraged to share their perspectives on the significance of this issue in their professional growth.

The AVR-based program trainees, similar to the conventional ones, received theoretical instructions on modern teaching strategies twice weekly over an eight-week period. The materials were identical to those used in the conventional program. Trainees analyzed diverse teaching styles and strategies by observing real-world classrooms recorded with a VR headset facilitated by the Insta360 X3 camera and the Side Quest application. Additionally, trainees were asked to study different culturally responsive teaching strategies to prepare lesson plans and materials on assigned topics for teaching practice sessions. A software application was developed using the Unity game engine and C# language, with Android and Windows versions for headset and computer use during practice and demonstration sessions.

Participants engaged in VR sessions using Oculus Quest 2 headsets, teaching English to avatars controlled by real foreign language learners with diverse backgrounds and language proficiency levels. They also experienced teaching in separate groups, acting dual roles as teachers and students during practice sessions, allowing them to compare VR with real classroom settings and assess the impact of cultural and multicultural knowledge across both environments. During the demonstration session, trainees practiced teaching in a VR context for 15-20 minutes, working with avatars. Similar to the conventional group, participants wrote narrative inquiries about their experiences. Afterward, they participated in a semi-structured interview to share insights and experiences on cultural and multicultural knowledge in EFL teaching within the AVR context.

Data analysis was conducted using a combination of manual and MAXQDA software-supported qualitative thematic analysis. In line with Joffe (2011), this study employed a deductive-inductive thematic analysis to ensure a comprehensive and

rigorous examination of the research data. Guskey's (2002) professional development model, with its three underlying constructs (Change in teachers' beliefs and attitudes, Changes in student learning outcomes, and Change in teachers' classroom practices), provided a theoretical framework for the coding process of this study. The deductive phase involved using Guskey's constructs to identify initial codes, while the inductive phase allowed for the discovery of unexpected themes and sub-themes concerning teacher professional growth. This dual approach enabled researchers to both validate existing professional development theory and uncover new insights. Firstly, the researchers transcribed all recorded interviews. Next, utilizing the In Vivo coding technique, 283 codes were identified based on participants' language in interviews and narratives. Then, textual data were thoroughly scrutinized to identify salient themes relevant to the research objectives. Finally, to extract the broad professional development themes, the researchers indicated commonalities among codes within both groups for each concept.

Multiple measures were implemented to ensure the trustworthiness of the research. Initially, credibility was enhanced by utilizing two data collection tools: a semi-structured oral interview and reflective narrative inquiries, which helped to ensure the consistency and reliability of data interpretation in the study. Confirmability was established through member checking, a process that involved verifying the accuracy and confirmation of participants' response interpretations, thereby minimizing potential bias. Furthermore, a code-recode strategy (Ary et al., 2019) was employed to ensure the intra-rater dependability of the data analysis process. To ensure an inter-coder reliability coefficient, an independent researcher was invited to analyze a portion of the coded data (30%) of the current study (Cofie et al., 2022), which resulted in 90% coefficient of agreement. To resolve the 10% coding discrepancy, the two coders held a consensus discussion. In cases where disagreements remained, the third coder examined the disputed codes to ensure they aligned with the study's thematic framework and upheld analytic consistency. Finally, in line with Ary et al.'s (2010) suggestions for transferability, the similarity of the findings of the current study is the focus through the comparison with other fields of the study. Additionally, Bitsch (2005) emphasized a thick description of the study and used purposeful sampling to ensure the transferability of research findings. By providing descriptions of the participants' selection, settings, and research procedures in the method

section, it can be ensured that the findings are grounded in the specific context of the study.

Results

The researchers utilized Guskey's (2002) professional development model as a basis for data analysis, focusing on its three major key concepts. As illustrated in Figure 2 (Appendix), the results of the thematic analysis within conventional teacher education programs revealed seven overarching themes and their corresponding sub-themes concerning EFL teachers' perceptions of professional growth. Data extracts are labeled according to their source, with (Interview) indicating data from individual interviews and (Narrative) marking data from written narratives.

Change in Attitudes and Beliefs

Guskey (2002) proposed that changes in teachers' attitudes and beliefs signify their success in fostering students' achievements. This study focused on integrating cultural and multicultural awareness in teaching and its impact on teachers' professional development by exploring teachers' perceptions and understanding of the concept, its perceived benefits, and its application in teacher education. Thus, two major themes emerged from the numerous codes extracted from interviews and narratives.

Maintaining a Culturally Responsive Environment

Participants agreed that awareness and sensitivity to cultural differences create inclusive and equitable learning environments. Most teachers felt the need to enhance their understanding of cultural and multicultural concepts to develop the necessary skills for navigating potential issues. For instance, participant 5 emphasized, "people's ideas and culture, their identity and personality should be considered in the class to keep the balance." (Interview) This participant believed that being open to cultural diversity and various beliefs and attitudes would result in ensuring class equilibrium, in which all learners have equal rights to express themselves and achieve their goals. She also signified cultural sensitivity in avoiding misunderstandings.

Teachers stressed that cultural and multicultural awareness extends beyond merely recognizing differences. They believed that understanding the distinction between awareness and dominance is crucial to prevent hegemony and promote respect.

Participant 5 highlighted this idea by mentioning, “A class is a small community. Every person needs to feel comfortable and respected.” (Narrative) This understanding can lead to improved teacher attitudes towards students and their overall teaching journey. Additionally, teachers noted that this knowledge assists them in choosing appropriate content and textbooks for their classes. For example, Participant 7 stated, “You should be able to differentiate between cultural dominance and awareness, try to give your students awareness about things that are okay or not in other cultures.” (Narrative) These practices could help them make careful decisions about the content and methodology. Participant 3 noted, “I noticed that when I used stories that reflected students' own cultures, they were more engaged and eager to participate. It was clear that it resonated more with them.” (Interview) Likewise, Participant 9 mentioned, “In one of my teaching practice sessions, I used a discussion-based method to explore social norms in different cultures. The students had to compare their own culture with those from English-speaking countries, and they became more open to understanding cultural differences.” (Narrative) Therefore, teachers acknowledged the interconnectedness of cultures and upheld ethical principles in their practices, helping to avoid stereotyping.

Enhanced Teachers' Behavior

For enhanced teachers' behavior, many participants emphasized the importance of empathy and respect for students' diverse backgrounds. Participant 23 noted that “Good behavior outweighs other skills. Teachers must respect and understand all students with a wide range of beliefs and backgrounds. So, students feel valued and trust their teacher” (Narrative), highlighting the need for a comfortable and trustworthy learning environment through cultural awareness and sensitivity. Participant 2 added, “We need to embrace and respect our students' diverse cultural backgrounds and teach them to do the same for others.” (Interview) Thus, actively engaging with cultural or multicultural diversity within educational contexts helps teachers develop a deeper understanding of their students' purposes, needs, and well-being, creating a more embracing and encouraging atmosphere within the classroom.

Change in the Classroom Practices of Teachers

Guskey (2002) contends that change in a teacher's classroom practice is the result of "a new instructional approach, the use of new materials or curricula, or simply a modification in teaching procedures or classroom format" (p. 383). In the context of this study, an analysis of recurrent patterns in the data revealed four main themes pertaining to this change.

Curriculum Improvement

One sub-theme was the practicality of teaching content, emphasizing culturally responsive material that is not only engaging but also relevant to students' diverse backgrounds. Participant 6 noted, "Ignoring cultural aspects of the language you're teaching is impractical. Like Shakespeare, which is English but is irrelevant to students." (Narrative) Therefore, this approach would enable EFL teachers to create a more meaningful learning experience and improve their instructional practice. Teachers recognized the need to adapt teaching content to meet each student's needs and learning styles, reflecting increased attention to individuality. This adaptation was evident in practice sessions as teachers tried out different methods and materials. Participant 8 reflected on this by saying, "Once, I applied group projects where students could bring in their cultural experiences...they created presentations on cultural differences in food customs. They really liked it! They had more meaningful discussions, as they could relate them to their own lives." (Interview) Similarly, Participant 12 stated, "it really helped me in raising my students' cultural awareness, for example, role play! I asked students to act out scenarios from different cultural perspectives, and they became more aware of cultural differences." (Interview) Additionally, Participant 11 indicated, "My students from one city have their individual tastes! So I should be aware of the culture when I'm going to use content because they have their own identity and preferences!" (Narrative) This adaptation would enable teachers to cultivate more diverse and fair learning spaces and promote successful educational experiences.

Creative Ideas

Creative ideas is another theme that reflects the role of multicultural awareness in teacher education, as it encourages teachers to think creatively and develop innovative teaching strategies that cater to diverse student populations. Participant 28 mentioned, "I

had a Christian student in my class. I brought in Christmassy things around the holiday season. It was a fun way to learn vocabulary, and that student felt included and connected with the rest of the class!” (Interview) This indicates the creative effects of multicultural aspects in teaching, which prevent students from feeling isolated or discouraged and ultimately create a more collaborative environment. In addition, it helps teachers provide a more student-centered and experiential learning environment which enables learners to learn through exploration.

Enhanced Skills

Cultural diversity in teaching contributes to the development of unique management skills and adaptability to diverse backgrounds. As participant 10 noted, “Language teaching is a process that requires interaction and negotiation with individuals” (Narrative); by attending professional development courses and engaging with teachers from various backgrounds and perspectives, educators can benefit from a multitude of ideas for professional growth. Participant 25 stated, “When you constantly collaborate with others and get opinions and ideas from different colleagues, it makes managing the class much easier” (Interview). This indicates that interacting with educators from diverse backgrounds enhances their management strategies to handle conflicts or misunderstandings that may arise due to cultural differences.

Efficient Communication

This theme represents the positive impact of modifying teaching procedures on classroom dynamics. Participant 16 stated, “We should be active listeners and show our students that we are there for them. Empathy can help to have better and more efficient communication with them.” (Narrative) This not only increases trust between teacher and student but also helps teachers realize the unique needs and experiences of their students. In fact, this empathetic communication ensures students that their identities and backgrounds are valued. Effective communication requires cultural and multicultural awareness, as Participant 12 acknowledged, “Verbal and non-verbal communication is something that I didn’t know before this TTC. Now I realize why some kids in my class don’t like to talk or answer my questions.” (Interview) This result highlights that individuals from diverse backgrounds employ different communication strategies, which teachers must understand by improving their cultural and multicultural knowledge.

Change in the Learning Outcomes of Students

Following Guskey's (2002) model, learning outcomes encompass any evidence that teachers employ to evaluate their teaching effectiveness, including cognitive, achievement, behavioral, and attitudinal aspects of students' learning. In this study, interviews and narratives were analyzed, and approximately 30 recurrent codes were revealed that were related to preparing students for effective communication. Although numerous factors influence learners' outcomes, the successful cultivation of efficient, communicative skills supports students' educational goals and enhances teachers' professional development.

Preparing Students for Effective Communication

Integrating cultural and multicultural aspects into teaching enhances learners' communication abilities. Thus, promoting intercultural understanding through activities that expose learners to diverse perspectives is crucial. Participant 2 emphasized, "In TEFL, we need to contextualize the common cultural values of the target language to help learners communicate properly and understand how native speakers use that language." (Interview) Since culturally responsive teaching strategies can be highly effective in nurturing appropriate communicative skills in language learners, adapting materials and lesson plans to learners' preferences can encourage them to practice English language communication efficiently. Participant 22 shared his experience: "Role-playing was a very useful activity I used during teaching practice sessions. Students learned about each other's backgrounds and interacted better even though they didn't know each other beforehand!" (Narrative) As a result of being a culturally or multicultural aware teacher or curriculum designer, the integration of diverse values, beliefs, and multicultural elements into collaborative learning experiences can motivate learners to enhance their interpersonal and intercultural communication skills.

AVR-Based Themes

In the AVR-based program, researchers explored the AVR technology's impact on cultural and multicultural awareness and its influence on teachers' professional development. Five main themes emerged, as illustrated in Figure 3 (Appendix), reflecting changes in Guskey's (2002) professional development elements, including significant shifts in specific sub-themes.

Experiencing Authentic Material and Environment

As per participants' experiences, they could immerse themselves in realistic culturally diverse classrooms during the course. Participant 14 noted, "Seeing diverse students in VR inspired me to try new approaches. Adapting content to resonate with all students proved effective for me." (Narrative) This exposure to an authentic environment deepened their understanding and appreciation of diverse cultural perspectives, leading to a change in their classroom practices. They experienced teaching individuals with various learning styles, backgrounds, and preferences, which challenged them to improve their materials weekly.

Accessibility Features

Regarding the benefits and challenges of utilizing AVR to integrate cultural content into EFL teaching, participant 1 noted, "In Iran, we need the system. AVR's accessibility offers immense potential for diverse backgrounds. Novice teachers gain valuable experience by practicing with avatars and innovative methods." (Narrative) As per Iranian EFL teachers, AVR can facilitate their professional growth and help manage anxieties in their careers. While acknowledging the potential to engage diverse students, they recognized systematic implementation and support requirements to successfully incorporate AVR into teacher training. Participants from Generation Z expressed comfort in the AVR environment due to their familiarity with technology. Participant 15 reported, "I'm Gen-Z. I took TTC before, but I couldn't practice with REAL learners. Here, even though I couldn't see their faces, I could feel they were real! Fascinating!" (Interview) Similarly, Participant 19 mentioned, "As a Gen Z, I love how AVR blurs the line between theory and practice. Being in a context interacting with avatars with diverse backgrounds feels like I'm truly there, gaining a deeper understanding of cultural elements" (Narrative). Thus, some trainees were able to increase their cultural knowledge and gain authentic experience for their future teaching journey. This confirms teaching practice within the AVR context as an eye-opening experience, highlighting the transformative potential of technology in education and instructional practices. However, some teachers expressed a balanced view, seeing both the advantages and disadvantages of using AVR.

Participant 23 mentioned in her narrative that “While AVR is impressive in simulating cultural settings, it requires a lot of technical support. Not every teacher or school has access to this kind of technology, so it’s hard to rely on it fully in the real world.” (Narrative) Additionally, participant 28 mentioned that “VR is great for immersive experiences, but there’s still a gap in connecting it to real student emotions and reactions. You miss that real human connection, which is crucial in understanding cultural dynamics.” (Interview) The results indicate that AVR offers potential for integrating cultural content into EFL teaching, but its effectiveness depends on factors such as technical support, accessibility, and the specific needs of teachers and students. While it can provide valuable immersive experiences, it's important to balance its use with traditional methods that emphasize real-world human interaction.

Less Interactivity in the Classroom

Despite many positive views toward AVR, some trainees believed that this context was less interactive. Participant 19 noted, “We had emojis, but I couldn't get any facial expressions. I had to guess what students were thinking. If I had actual feedback, I feel I could do a lot more then.” (Interview) While AVR introduces novelty in teaching, unfamiliarity with modern technologies may lead teachers to favor conventional methodologies. This highlights the need for enhanced AVR-based training courses with comprehensive facilities, enabling trainees to confidently practice various teaching methods and engage with diverse students effectively.

Teachers’ Passion and Confidence Improvement

Although some contradictory viewpoints emerged, a majority of participants highlighted the advantages of AVR integration into teaching practices, particularly in terms of increasing their confidence, passion, and job satisfaction. As participant 18 mentioned, “After this course, maybe I will try teaching. And that's a big improvement for me. I could never see myself in a million years ever thinking about it” (Narrative). Novice teachers can have a newfound interest in pursuing teaching careers after completing these types of courses. Furthermore, participants who had previously experienced social anxiety and distractions during their teaching practices, such as

participant 15, “I guess for me it's so much fun. I'm kind of social anxious, it's more comfortable for me to be in that environment rather than in real life classes” (Interview), represented more self-assurance within this AVR-enhanced teacher training course. Consequently, these individuals discovered untapped potential within themselves regarding EFL instruction, showcasing the transformative impact that innovative teaching methods can have on teachers' behavior and professional development. This signifies enhanced confidence and teaching enthusiasm for novice or preservice teachers, as well as an openness to contemporary classroom management techniques and teaching methodologies.

Less Cultural Boundaries

Reduced cultural boundaries within the learning environment allowed teachers to engage with diverse contexts and backgrounds, contributing to culturally responsive teaching practices. As per participant 21, “AVR in our learning environment has been quite advantageous, especially for teachers who lack self-confidence in teaching! The atmosphere encourages them to participate more actively, without the fear of judgment or cultural barriers.” (Interview) Participants acknowledged that AVR environments are highly beneficial because they provide authentic teaching experiences within immersive contexts, allowing them to instruct real students with diverse characteristics and learning styles. This is particularly valuable for teachers who are uncertain about their career readiness, as they can assess themselves without worrying about evaluations or feedback from trainers.

Despite the AVR-based teaching challenges, such as reduced face-to-face interactivity, it encourages teachers to develop creative ideas as per participant 25 quoted: “Here at Allameh University, we seized the opportunity to experiment and adapt teaching methods to the VR landscape, demonstrating our agility and creativity in navigating the challenges of education and EFL instruction.” (Narrative) By addressing the challenges and embracing the opportunities that AVR offers, teachers can create more engaging learning environments, catering to different learning styles, increasing attention to individuality, and leading to significant changes in their classroom practices and professional growth.

Discussion

The findings of this study provide valuable insights into the impact of cultural and multicultural awareness on EFL teachers' professional development within both AVR-based and conventional teacher education contexts. Several key themes emerged from the data analysis, highlighting potential changes in teachers' attitudes and beliefs, classroom practices, and learning outcomes of their students. The findings revealed the transformative potential of AVR technology in teacher education and the significance of cultural and multicultural awareness in facilitating teachers' professional growth, which is aligned with Guskey's (2002) professional development model.

This study revealed possible shifts in teachers' attitudes and beliefs toward creating learning environments that might embrace diversity and neglect cultural dominance. Teachers reported professional growth in empathy and a deeper appreciation for students' diverse backgrounds, which might lead to the dynamicity of the classroom and enhanced collaboration. Integrating cultural awareness into teacher education was crucial for cultivating environments where all individuals feel valued and respected. The study also highlighted some possible personifications in the teaching process, emphasizing the use of culturally relevant content and creative ideas to engage students. Multicultural awareness seems to be a concern as it is a needed skill for teachers to manage diverse classrooms, adapt teaching strategies, and strengthen communication practices. Integrating cultural aspects into teaching enhanced mutual understanding. Participants in AVR-based training reported experiencing authentic cultural environments that inspired the applicability of novelties in teaching approaches and increased their confidence in adapting content to diverse student needs. Despite challenges like reduced interactivity, AVR training enhanced teachers' confidence and passion for teaching, highlighting its transformative potential in creating dynamic and engaging training courses. These findings underscore the potential of integrating technology such as AVR into teacher education to enhance pedagogical practices and experiential learning.

The results indicate that integrating cultural and multicultural awareness into both conventional and AVR-based teaching programs seems to influence teachers' attitudes and beliefs, thereby supporting their professional development, which results in a crucial

need to incorporate these aspects into teacher training courses curriculum. Both groups emphasized the importance of maintaining a culturally responsive classroom environment to promote inclusivity and equity. This is supported by Tebben's (2021) study that highlighted the necessity for effective professional development opportunities focused on cultural and racial consciousness, particularly in collaborative, job-embedded, and classroom-focused contexts to support diverse classrooms and achieve equity. Unlike Tebben, this study specifically examined EFL teacher trainees' perceptions in the Iranian context, where EFL has gained significant attention. Addressing educators' perceptions could lead to possible progress in their professional growth and students' learning outcomes. Similarly, Azizpour's (2021) study supports these findings by illustrating that Iranian EFL teachers recognize the importance of integrating cultural awareness into their teaching but face significant challenges without adequate training. Azizpour's emphasis on professional development to enhance teachers' cultural knowledge underscores the importance of incorporating cultural and multicultural awareness into teacher training to foster inclusive classrooms.

Moreover, teachers believed that integrating cultural elements into reflective teaching practices enhanced their empathy and respect for students' diverse backgrounds, echoing Pourdavood and Yan's (2020) emphasis on respecting social relations and avoiding biased attitudes. They found that activities such as critical reflections and classroom discussions on diversity enabled teachers to transition from passive to proactive roles in addressing multicultural issues. While they emphasized the pivotal role of ongoing professional development and institutional support in sustaining teachers' growth in cultural competence, the current study specifically explored the impact of cultural factors on professional development. However, Guskey's (2002) model, which posits a reciprocal relationship between teachers' attitudes and beliefs and professional development, suggests that improvements in teachers' cultural and multicultural awareness and their instructional practices contribute to enhanced professional growth. This newfound awareness helped teachers select appropriate content and methodologies, ensuring that all students felt valued and respected. This indicated the crucial role of teachers, not just as knowledge transmitters but as facilitators of a respectful and welcoming classroom environment. This aligns with Yon (2020) and Iwai (2019), who

emphasized the importance of restructuring educational practices to create a place where every student feels welcomed and has an equal opportunity for meaningful learning and academic support. Meihami's (2023) research confirms our findings, concluding that Iranian TEFL programs inadequately address culturally responsive teaching development, revealing a lack of positive and sufficient engagement with courses on cultural knowledge and diversity. Although they reported positive experiences with constructivist teaching approaches, the study suggests revisiting and redesigning curricula to effectively integrate culturally and multicultural responsive teaching principles across various TEFL programs. Likewise, Salimi and Rad's (2024) study complements these findings by identifying key themes in multicultural EFL teacher education, such as eliminating race-related, gender-related, and social class-related inequalities, as well as promoting necessary communicative skills and positive thinking. These themes confirm our results, showing that teachers' awareness of cultural diversity might enhance culturally relevant curriculum development and teaching methodologies in culturally sensitive contexts, leading to more inclusive and effective practices.

Subsequently, this finding supported the value of including culturally pertinent materials, consistent with the principles of a culturally responsive education framework proposed by Ladson-Billings (2009). The focus on practicality and relevance in teaching materials to diverse student backgrounds supports Smolen and Oswald's (2010) assertion that it enhances student engagement and adds meaning by connecting learning to their lived experiences. Various studies (Huynh & Dan, 2022; Samsudin & Sukarismanti, 2023; Sheridan & Tanaka, 2024) highlighted the importance of authentic cultural materials in EFL education. They underscored the crucial role of intercultural competence among educators, advocating for culturally relevant teaching practices and adaptive strategies to engage diverse student populations effectively. These studies also recommended integrating students' cultural backgrounds into curriculum development, supporting policies for local autonomy in education, and specialized teacher training to enhance multicultural classroom dynamics. Overall, they contributed valuable insights into enhancing EFL education through cultural integration, improved instructional methods, and inclusive educational policies.

The AVR-based teacher training program offered possible advantages, including immersive experiences in authentic cultural contexts and the utilization of technology to enhance teaching practices. This aligns with Salimi's (2023) findings that immersive environments, such as those provided by XR technologies, support creativity, innovation, and engagement among educators and students alike. The exposure to authentic materials and environments in AVR settings allowed teachers to refine instructional strategies in a safe and controlled setting, consistent with Kolb's (1984) theory of experiential learning. This immersive learning environment encouraged the development of a novel roadmap for the teaching methods, supporting the notion that exposure to new technologies stimulates teachers' creativity and adaptability, as suggested by Stavroulia et al. (2019).

Furthermore, the research emphasized the significant impact of AVR in boosting teachers' confidence and enthusiasm for teaching. Notably, novice teachers reported increased interest in pursuing teaching careers and improved self-confidence after interacting with AVR technology, aligning with Nissim and Weissblueth's (2017) findings on the profound impact of progressive teaching methods on professional identities and motivations. Similarly, Salimi (2023) explored how XR, including AR and VR, can enhance teaching and learning experiences by enhancing immersion, engagement, and self-efficacy among students and educators. It suggested policymakers and educators integrate these technologies effectively into educational practices to advance pedagogical innovation and prepare individuals for the demands of a rapidly evolving technological landscape. Our findings resonate with Salimi's insights on VR learning environments as safe spaces that enhance problem-solving abilities within realistic virtual settings.

In contrast to the structured environments of virtual simulations, which aim for controlled learning experiences, AVR technologies prioritize immersive and authentic cultural contexts. While virtual simulations may bridge the theory-practice gap and offer a perceived safer learning environment, they also raise concerns about reinforcing stereotypes and limiting critical reflection (McGarr, 2021). This contradicts our findings, which state that immersive experiences fostered creativity and allowed for the exploration of diverse cultural perspectives without the constraints of predefined simulations. McGarr (2021) highlighted the need for guidelines to ensure productive use in education,

cautioning against oversimplifying classroom behaviors. In contrast, our results emphasized the positive impact of AVR on teaching practices and professional development, suggesting that immersive technologies can enhance instructional strategies and teacher efficacy through experiential learning and cultural immersion.

The minimization of cultural barriers within the AVR environment further augmented teachers' engagement and inclination to experiment with varied instructional approaches, indicating that technology has the potential to cultivate in a dynamic and vibrant educational setting. Despite that, some challenges, such as less interactivity, the lack of face-to-face communication, sources of distractions, and limited access to resources and technologies, were found. These challenges suggest that while AVR offers valuable opportunities for innovation, it may need improvement to be considered as a complementary tool to traditional methods. This is in line with Sáez-López et al. (2020) findings that emphasize the crucial requirement for further enhancement in teacher education programs utilizing AVR technologies to increase prospective teachers' authentic experiences within this field.

Regarding the change in student learning outcomes as a key factor in Guskey's (2002) model, the results suggested that culturally responsive teaching practices could significantly enhance students' communicative skills. This improvement was attributed to teachers' better-preparing students for effective communication in diverse contexts. The issues at stake are aligned with those of Beresova (2015) and Soodmand Afshar and Yousefi (2019), who emphasized the importance of designing curricula and course books that include authentic communicative tasks and promote cultural awareness. In this regard, the results of the AVR-based program demonstrated possible advantages, as the immersive nature of the AVR context allowed teachers to stimulate real-world cultural settings and authentic interactions.

Conclusion

This study aimed to investigate EFL teachers' perspectives on the influence of cultural and multicultural awareness on their professional development in AVR-based and conventional teacher education programs. It found the importance of cultural immersion and adapting teaching strategies to diverse cultural contexts in cultivating

culturally responsive environments, technology-infused teaching methodologies, and novel practices. Moreover, integrating cultural and technological knowledge was found to yield benefits such as increased student engagement, improved learning outcomes, and enhanced professional growth for teachers.

Subsequently, these findings provide potential pedagogical implications for EFL teacher education and teacher trainers. First, teacher training programs should take into account cultural and multicultural factors by offering deeply engaging experiences and interactive learning opportunities. Thus, culturally sensitive teaching practices can assist EFL teachers in addressing the mutual understanding of students and teachers and preparing inclusive learning environments. Additionally, teacher training can benefit from reflective practices to cultivate cultural empathy and a deeper understanding of classroom dynamics. Integrating culturally responsive assessment tools can help educators gather regular feedback from students to inform and improve their instructional practices. Moreover, while considering the limitations and challenges of AVR technology, teacher education programs should explore its potential benefits, such as providing immersive cultural experiences and enhancing teacher confidence, while providing adequate modules utilizing AVR technology to equip educators with the skills required to engage with diverse cultural contexts effectively. Finally, future research can add to the validity of our findings by exploring the long-term effects of cultural and multicultural awareness on EFL teachers' professional development to develop effective strategies for integrating technology into teacher training courses.

However, this study has a few limitations that should be considered. First, the exclusion of participants' demographic information during data analysis due to the study's complexity may impact the results. Subsequently, the findings may lack generalizability as the study adopted a phenomenology approach and exclusively employed interviews and narratives for data collection. Therefore, future research should consider implementing mixed-methods design and rigorous data collection strategies to expand upon the findings in this field.

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Appendix

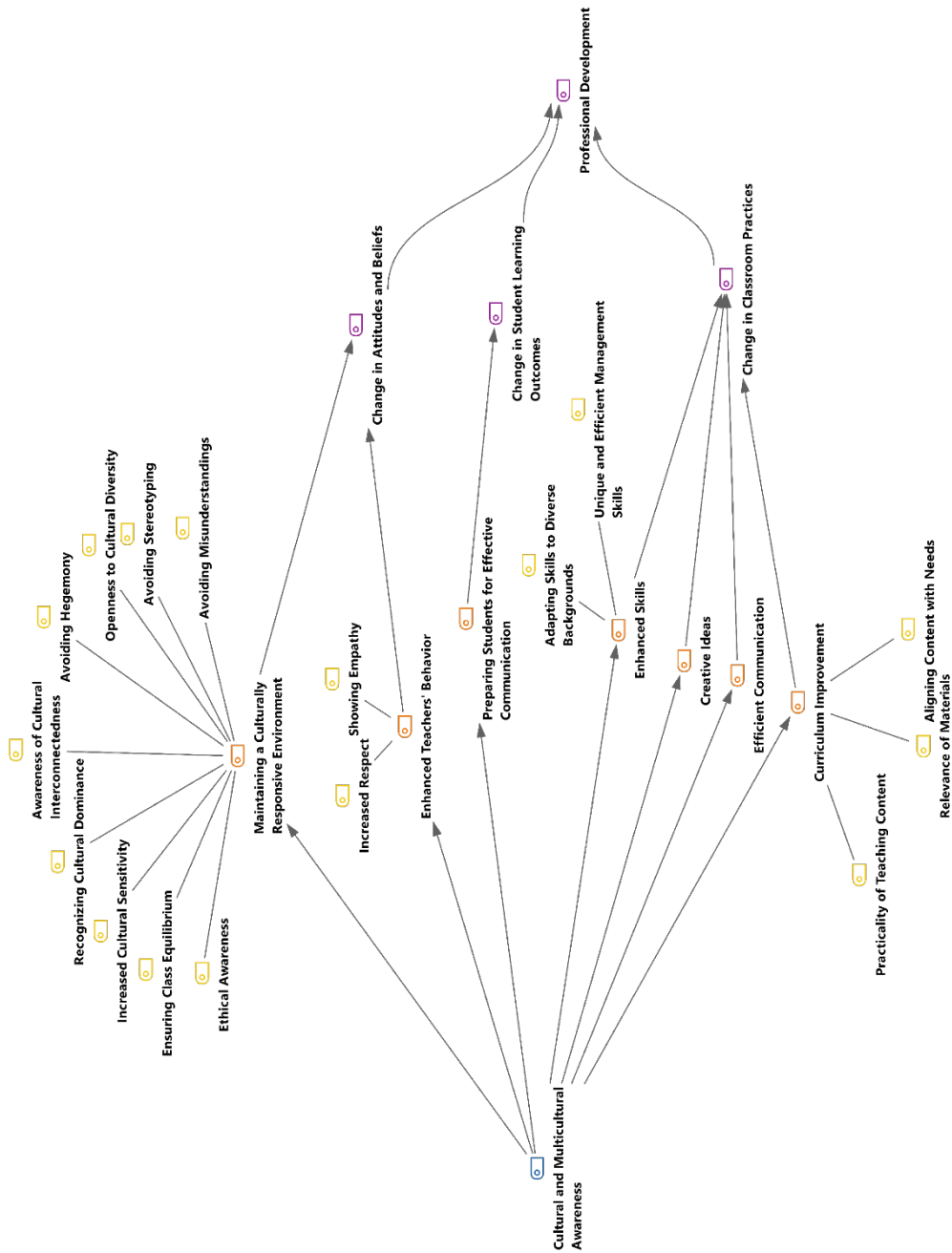


Figure 2. The Concept Map for EFL Teachers' Professional Development in Conventional Teacher Education Program as Illustrated by MAXQDA

