Navigating E-Learning Horizons: Exploring Challenges and Opportunities in Higher Education Integration from the German vs. Iranian EFL Teacher's Lens

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Abstract: The e-learning integration has emerged as an alternative strategy, significantly improving teaching and learning experiences in higher education worldwide. However, it has also presented different challenges and opportunities for teachers and students. This comparative, cross-cultural study explored the perspectives of German vs. Iranian EFL teachers on e-learning integration in higher education. The data were collected utilising a mixed-methods design and based on convenient sampling through two questionnaires on challenges and opportunities, semi-structured interviews, and observations from 26 German EFL teachers and 92 Iranian EFL teachers. The study focused on the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology. The questionnaire findings revealed that both groups recognised significant challenges and opportunities in e-learning. German teachers appreciated organisational improvements and evaluative innovations, whereas Iranians valued stress reduction and access to materials. Both groups faced technological and administrative challenges, with Iranians reporting more severe difficulties, highlighting the need for tailored support and resources to enhance online education. Interviews indicated a preference for face-to-face instruction among Germans, with greater resistance to online formats compared to Iranians. Younger teachers in both contexts showed more positive attitudes towards e-learning, with a consensus on the future of blended learning. The observations also supported the findings. Results indicated significant differences and similarities between the two contexts, highlighting technological, academic, pedagogical, and cultural factors influencing e-learning integration. The study findings could offer practical implications for policymakers and material developers, emphasising the need for custom-made e-learning strategies for different educational contexts. This cross-cultural comparison could suggest insights for teachers interested in integrating e-learning into their teaching.

Keywords: Blended Learning, Challenges, Cross-cultural Study, EFL Teachers, E-learning Integration, Higher Education, Opportunities.

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Introduction

Due to the swift advancements in technology, learning methods, and changing pedagogical paradigms, e-learning has gained widespread acceptance across various educational settings, driven by our dependence on devices like laptops, tablets, and smartphones. Consequently, e-learning integration has emerged as a pivotal strategy for enhancing teaching and learning experiences in higher education institutions worldwide. E-learning, characterized by utilising digital technologies to augment and support learning processes, has progressively garnered attention for its potential to revolutionise educational practices and increase interest in online learning. For example, Osadcha et al. (2023) reported that in 2021, approximately a third of people aged 16-74 within the EU indicated they had finished an online course or utilised online learning resources, and this demand is still increasing. The emergence of e-learning tools and digital technologies has enabled universities to admit a broader spectrum of students from various nations (Alyouseff, 2023). Moreover, it offers a range of opportunities and challenges for educators, students, and administrators.

This comparative research investigated e-learning integration in higher education by focusing on developed vs. developing countries. This niche highlights the global differences in access to technology, infrastructure, pedagogical approaches, and challenges faced by higher education institutions in integrating e-learning. It investigated the multifaceted aspects of e-learning integration within higher education institutions, navigating through its intricacies and implications within the specific contexts of German and Iranian universities, particularly emphasising its impact on teaching and learning English as a Foreign Language (TEFL). It was tailored for a comparative analysis of the English departments of two university contexts, identifying the challenges and barriers encountered in effective e-learning integration, considering the unique institutional structures, policies, and cultural factors inherent in the two educational systems, as well as the perspectives of EFL teachers. It also evaluated the opportunities and impact of e-learning integration on teaching effectiveness, student engagement, and language proficiency outcomes. It employed a mixed-methods design to explore potential differences and similarities between the two contexts.

By addressing these objectives, the study tried to contribute to understanding e-learning integration in TEFL, facilitating the development of contextually relevant strategies and interventions to enhance English teaching and learning practices in both settings. It would seek to inform policy development, institutional practices, and professional development initiatives, fostering innovation and excellence in language education. Moreover, a cross-cultural perspective could hold significant implications for academic research and practical

applications in educational technology and English language learning and teaching. This comparative study could enable the recognition of unique elements within each context that impact e-learning integration, including organisational structures, policies, teaching methodologies, and cultural norms.

Literature Review

E-learning, short for electronic learning, employs the Internet and digital technologies to deliver educational content and facilitate learning experiences beyond traditional classroom environments. It encompasses a range of activities, such as online courses, virtual classrooms, interactive multimedia modules, and digital resources accessible via computers, tablets, and smartphones. The roots of e-learning can be traced back to the 1920s when radio broadcasts of classroom lessons were launched (Masie, 2007). According to Aparicio et al. (2016), the term was first coined by White (1983) and defined as "learning via electronic sources, such as television, computer, videodisk, teletext, and videotext" (p. 13). However, the definition varies depending on the context and field. Wheeler (2012) describes it as all forms of learning using electronic or digital media for presenting and distributing materials and supporting interpersonal communication. Arkorful and Abaidoo (2015) see it as leveraging "information and communication technologies to enable access to online learning/teaching resources" (p. 398). Clark and Mayer (2023) narrow it down to instructions delivered through digital devices. In the context of TEFL, e-learning involves digital technologies, online resources, and interactive platforms to facilitate English learning and instruction, highlighting its flexibility, interactivity, and access to authentic materials (Zakarneh, 2018). Despite the varied definitions, common elements include the reliance on electronic technologies, the potential to enhance teaching and learning processes, and flexibility in delivery and access.

Historical Background of E-learning in Germany and Iran

The development of e-learning dates back to the late 20th century with the advent of the Internet and digital technologies (Harasim, 2006). Initial experiments in computer-based instruction during the 1960s and 1970s set the foundation, but significant growth occurred in the 1990s, driven by advancements in web technologies and greater Internet accessibility (Corbeil & Corbeil, 2015). The 21st century saw a rapid expansion of e-learning platforms, thanks to high-speed Internet, multimedia tools, and Learning Management Systems (LMS). This opportunity enabled diverse e-learning models, allowing institutions worldwide to offer

online courses, virtual classrooms, and interactive educational resources, meeting the increasing demand for flexible and accessible learning opportunities. Today, e-learning continues to evolve with new technologies like artificial intelligence, virtual reality, and adaptive learning, shaping global education and training (Alone, 2017). In Germany, e-learning integration in higher education has progressed over the past few decades, influenced by technological advancements and shifting educational paradigms (Gaebel et al., 2021; Hesse et al., 2022). While early experiments in the 1970s-1980s, significant strides were made in the late 1990s and early 2000s with the advent of the Internet. During this period, universities began systematically incorporating e-learning by offering online courses and developing LMS (Sagafe & Wendebon, 2023). Government initiatives further promoted e-learning to improve education access and foster innovation (Zawacki-Richter, 2021). Despite its growing importance in German higher education, with many universities integrating digital tools and resources into their curricula, fully sustainable integration of digital media across all higher education levels has yet to be achieved (Bernath & Stöter, 2018).

E-learning integration in Iran's education sector began in the early 2000s when the government recognised digital technologies' potential to address educational challenges. The National E-learning Project launched in 2003 marked a significant step towards modernizing education through technology. According to Omidinia et al. (2011), e-learning traces back to 2004 with the National Program on Technology Enhanced Learning (NPTEL), involving some Iranian universities. Leading universities like Iran University of Science and Technology, Shiraz University, and Amirkabir University implemented e-learning programmes. The electronic campus of IAU, established in 2004, aimed to provide higher education access through online courses, promoting fair education and productivity. Universities developed infrastructure, trained educators, and created digital content to support e-learning, leading to its increased adoption. Universities incorporated online courses, virtual classrooms, and digital and electronic resources into their curricula, with the government recognizing e-learning's potential to overcome geographical barriers and reach a broader student population. However, despite significant investments and efforts from private and governmental entities, e-learning in Iran remains in the developmental stages (Mahmoodi-Shahrebabaki & Yaghoubi-Notash, 2014). The COVID-19 pandemic accelerated the adoption of online systems in Iranian universities, mirroring trends in Germany and other countries, as institutions improved infrastructure to enhance e-learning processes.

Theoretical Background

This study borrowed different theories as its theoretical background, including *Constructivism, Social Cognitive Theory, Connectivism, the Technology Acceptance Model,* and *the Unified Theory of Acceptance and Use of Technology. Constructivism* posits that individuals actively construct or generate their knowledge, with reality being shaped by the learner's experiences. In e-learning, constructivist principles emphasise learner-centered approaches, collaborative learning, and interactive multimedia to facilitate knowledge construction. The *Social Cognitive Theory* highlights how personal factors, environmental influences, and behaviour interact to shape learning and development. It emphasises learning through observation and imitation, focusing on cognitive processes like attention, retention, reproduction, and motivation (Bandura, 2008). This theory informs the design of e-learning environments to foster social interaction, peer collaboration, and behaviour modeling through online discussions, group projects, and virtual communities. *Connectivism* (Siemens, 2005) applies to e-learning, stressing networked learning environments and distributed knowledge. It views learning as connection-making across diverse information sources. Learners use digital tools to access, share, and co-create knowledge across platforms and communities, emphasising social media and open educational resources for connected learning.

However, this study primarily relied on the *Technology Acceptance Model (TAM)* and the *Unified Theory of Acceptance and Use of Technology (UTAUT). TAM*, developed by (Davis, 1989), explores factors influencing individuals' acceptance, adoption, and use of new technologies. It focuses on perceptions of usefulness, ease of use, and adoption attitudes, which was the focus of this study. Additionally, *TAM* guides strategies for enhancing technology acceptance and user satisfaction in e-learning environments. *UTAUT*, an extension of *TAM* (Venkatesh et al., 2003), incorporates additional factors like social influence and facilitating conditions. It offers a comprehensive framework for analyzing e-learning technology adoption within higher education. These theoretical frameworks provide a comprehensive overview of this study's foundational theories and models that inform the design, implementation, and evaluation of e-learning initiatives in higher education. They highlight the importance of considering sociocultural, cognitive, and technological factors in shaping students' and instructors' experiences with e-learning.

Challenges and Opportunities of E-learning Integration in Higher Education

The literature review highlights numerous opportunities for e-learning integration in higher education. One key advantage is accessibility, which enables personalized learning and

reaches diverse learners by overcoming geographical constraints and disabilities (Ufuophu-Biri & Ijeh, 2021). E-learning platforms provide flexibility and convenience, support anytime, anywhere access, and help students balance academic and personal commitments. They enhance learning experiences through interactive multimedia resources, such as videos, simulations, and interactive exercises, fostering engagement, comprehension, and collaborative learning opportunities (Ifkarina & Rojabi, 2023).

E-learning is also cost-effective, reducing infrastructure expenses and benefiting from economies of scale. This scalability allows institutions to reach broader, even international, audiences, facilitating lifelong learning, cross-border collaboration, and global citizenship. Furthermore, it promotes innovation in pedagogy and assessment through blended learning models, combining online and face-to-face instruction to optimize learning outcomes and flexibility (Ortega et al., 2023; Taghizadeh & Hajhosseini, 2021). Authentic assessment strategies, such as project-based assessments and e-portfolios, align with real-world contexts and promote deeper learning (Masaeli & Chalak, 2016; Torabi & Safdari, 2020). Additionally, e-learning supports lifelong learning and professional development, offering continuous learning opportunities and just-in-time learning to help individuals upskill or reskill throughout their careers (Çirakli, 2022; Lim et al., 2024; Zawacki-Richter, 2021). By leveraging these opportunities, institutions can expand access, enhance educational quality, and promote lifelong learning.

The literature on e-learning integration also highlights several key challenges. Technical infrastructure issues, such as bandwidth and connectivity, interoperability and compatibility between different LMSs, and data security and privacy, are significant hurdles (Baldock et al., 2021; Karimi et al., 2023). Pedagogical designs also present challenges, including creating effective online learning experiences, structuring courses, presenting content, and designing interactions to maintain academic rigor equivalent to traditional face-to-face learning (Barton & Dexter, 2020; Oktoma et al., 2023).

Faculty resistance, the need for training, concerns about job security, workload, and unfamiliarity with technology are significant barriers (Al-Seghayer, 2020; Dashtestani & Hojatpanah, 2020). Therefore, providing adequate professional development for faculty is crucial (Zawacki-Richter, 2021). Quality assurance and assessment integrity, consistent standards, and authentic evaluation methods to prevent cheating and plagiarism are challenging (Elzainy et al., 2020; Ninkovic et al., 2021). Additionally, infrastructure and support, technical assistance for students and faculty, and ensuring accessibility of online materials for everyone is critical (Karimi et al., 2023). Sociocultural and institutional factors,

including the digital divide, resistance to change, and regulatory compliance, also pose significant challenges (Alvarez, 2021; Mahmoudi-Dehaki et al., 2021). Addressing these challenges requires technological investments, pedagogical innovation, faculty support, quality assurance mechanisms, and attention to sociocultural and institutional contexts.

Empirical Studies

The review of literature on e-learning integration in higher education covers a broad range of topics, highlighting its significance and multi-layered nature. During the Covid-19 pandemic, extensive research investigated attitudes and perceptions regarding e-learning. Studies such as Arora and Chauhan (2021), Fonseca et al. (2023), and Mathew et al. (2019) have explored educators' perspectives on the benefits, challenges, and effectiveness of e-learning compared to conventional methods. Moreover, some studies have investigated cultural adaptation and cross-cultural comparisons, investigating how cultural factors influence e-learning acceptance and efficiency (e.g., Arenas-Gaitán et al., 2011; Hameed et al., 2016). International collaboration has also been a key point in some studies exploring the opportunities and challenges of adopting partnerships or global e-learning (Lima et al., 2020).

Organisational change management is another critical area of study, emphasising strategies to cultivate an innovative and collaborative culture necessary for successful e-learning implementation (Mathew et al., 2019; Riwayatiningsih & Sulistyani, 2020). Research highlights the importance of interdisciplinary collaboration in integrating e-learning across academic departments and the use of online collaborative platforms like discussion forums and peer mentoring programmes to foster peer support and knowledge exchange (Hariri Asl et al., 2021; Ludwig & Van de Poel, 2017). Addressing digital equity has also been a significant concern, with studies exploring socio-economic factors affecting e-learning access and proposing strategies to bridge the digital divide, advocating for equitable participation in e-learning (Alvarez, 2021; Mahmoudi-Dehaki et al., 2021; Ufuophu-Biri & Ijeh 2021; Žmuk et al., 2023).

Faculty development, support, and resistance to e-learning adoption are crucial topics explored by researchers. Some studies investigated the training and support needed for faculty to adopt e-learning technologies and factors influencing their acceptance or resistance, such as workload perceptions and concerns about online education quality (Putro et al., 2023; Rafiee & Abbasian-Naghneh, 2021). Additionally, emerging technologies like virtual reality, augmented reality, and artificial intelligence in e-learning and their impact

on teaching have received attention (Cicek et al., 2021; Delello et al., 2015; Sáez-López et al., 2020).

Accessibility and inclusivity in e-learning environments are vital areas of research, focusing on students with disabilities, diverse learning needs, and non-traditional backgrounds. Studies by Badi and Noor (2024) and Fenta et al. (2023) have explored the use of assistive technologies and universal design principles to create inclusive e-learning experiences. Additionally, research on student engagement, motivation, satisfaction, readiness, and preparedness for e-learning has been extensive (Chalak & Ahmadi, 2017; Dashtestani & Hojatpanah, 2020; Osadcha et al., 2023; Panahandeh & Chalak, 2022; Taghizadeh & Hajhosseini, 2021).

The role of e-learning in supporting lifelong learning and continuing education initiatives has also been a significant area of research, exploring professional development programmes, certificate courses, and online degree programmes. These investigations focus on pedagogical design, professional, faculty development, and training programmes, institutional policies and support structures, instructional strategies, and best practices for promoting effective learning outcomes in online environments to bolster e-learning adoption and implementation (Baig et al., 2022; Hassani, 2021; Lim et al., 2024; Nouraey et al., 2023; Shahnama et al., 2021; Sagafe & Wendebon, 2023).

Finally, ethical issues, legal considerations, and sociocultural and privacy concerns in e-learning have received considerable attention. Studies have covered topics such as data security, student privacy rights, and the ethical use of learner data for assessment and analytics purposes (Ali & Zafar, 2017; Arumugam et al., 2024; Joseph et al., 2021; Kim, 2021). These investigations have highlighted the need for robust policies and practices to ensure ethical and legal compliance in e-learning environments, addressing digital equity, and maintaining academic integrity.

The integration of e-learning in higher education in Germany has been extensively studied, highlighting the country's significant investments in digital education and technology (Brosser & Vrabie, 2015; Heidkamp & Kergel, 2018; Kattoua et al., 2016; Osadcha et al., 2023; Sagafe & Wendebon, 2023; Schüll & Brocksieper, 2023; Stolz, 2023; Zawacki-Richter, 2021). These studies have explored various aspects, such as the impact on teaching and learning practices, student engagement and satisfaction, and institutional readiness and challenges. For instance, Sagafe and Wendebon (2023) examined the effectiveness of different e-learning tools and platforms in German universities, considering factors like student performance, retention rates, and learning outcomes. Additionally, content analysis

by Osadcha et al. (2023) showed a rise in interest in e-learning during the COVID-19 pandemic (2019-2020) and an immediate drop in 2021-2023, with a focus on tools like MOOCs, mobile applications, and virtual laboratories.

According to Kerres (2020) and Kerres and Getto (2018), Germany's integration of digital technology in education has sparked debate about its utility, reflecting concerns about the health effects of wireless LAN and resistance to technology adoption. Despite technological advancements, the German educational system is perceived to be lagging in terms of digital technology use for teaching and learning. Germany's stringent privacy and information protection laws, rooted in cultural and historical contexts, contribute to a cautious approach to technology in education. For example, German teachers are prohibited from using certain social platforms, cloud services, and software hosted outside the EU due to privacy standards. Universities have developed systems like HIS University Information System to comply with EU data protection regulations.

E-learning integration in Iranian higher education has attracted research attention over the past decades, reflecting the growing interest and importance of this topic in educational research (Alizadeh, 2012; Bozorgian, 2018; Mahmoudi-Dehaki et al., 2021; Nouraey, 2023; Omidinia et al., 2011, Salahshouri et al., 2022). These studies have explored various aspects of e-learning implementation, including its impact on access to education, quality of learning outcomes, challenges and barriers, pedagogical approaches, and technological infrastructure. Studies such as Abbasi Kasani et al. (2020) have examined the effectiveness of e-learning platforms, focusing on student satisfaction, engagement, and academic performance. Additionally, research has assessed the readiness of universities and educators to adopt e-learning, considering their technological competencies, attitudes, and training needs (Aali et al., 2020; Vahdani Asadi et al., 2023), as well as the role of government policies in promoting e-learning and the challenges faced by institutions (Abbasi Kasani et al., 2020; Mahmoodi-Shahrebabaki & Yaghoubi-Notash, 2014; Shahmoradi et al., 2018). The diverse research topics reflect the challenges and opportunities of integrating e-learning into higher education in Iran, reflecting the multi-dimensional nature of the challenges and opportunities inherent in this endeavor. They highlight the need for comparative analysis across different cultural and educational contexts to provide comprehensive insights.

This study aimed to address the gaps by examining the strategies, infrastructure, and pedagogical approaches employed in both German and Iranian higher education. By analyzing the perspectives of users in both countries, the research sought to illuminate the cultural, technological, and pedagogical factors that influence the successful implementation

of e-learning, ultimately fostering informed strategies for enhancing digital learning initiatives globally.

Research Questions

1. What challenges are associated with the integration of e-learning in higher education as perceived by German vs. Iranian EFL teachers?

2. What opportunities are associated with the integration of e-learning in higher education as perceived by German and Iranian EFL teachers?

3. How do cross-cultural differences between German and Iranian EFL teachers manifest in the perspectives on the challenges and opportunities associated with e-learning integration in higher education?

Methodology

Design and Context of the Study

This study employed a concurrent mixed-methods design (Convergent Parallel type) based on both qualitative and quantitative research paradigms to investigate German vs. Iranian teachers' perspectives towards integrating e-learning in higher education. The study was conducted in two settings at the English Department of Freiburg Albert Ludwig University and the English Department of Islamic Azad University (IAU), Isfahan (Khorasgan) Branch, Iran, from December 2023 to May 2024. The reason for selecting these two settings was because of availability and convenience. The researchers were faculty members in these universities, and it was more convenient for them to distribute the questionnaires, interview the participants, or observe some classes. The time for collecting the data was six months. Since privacy and ethical issues were essential in implementing the questionnaires, interviews, and observations, this period gave the researchers enough time to collect the data.

Participants

The target population of the study included all German and Iranian EFL university teachers. The accessible population included EFL teachers at Freiburg Albert Ludwig University, Germany, and IAU, Isfahan (Khorasgan) Branch, Iran. The sampling procedure was based on availability and convenient sampling. The first group of participants were 26 EFL teachers at Albert Ludwig University with 4-43 years of experience in teaching English (16 females and 10 males). Five teachers were native English speakers, but the rest were German NNES teachers, and some of them were familiar with more than two languages. The second group

consisted of 92 Iranian teachers at BA, MA, and PhD programmes in the English Department (60 females and 32 males) with 4-40 years of experience in teaching English. Only one teacher was a native English speaker, and a few teachers listed themselves as native Arabic, Turkish, or Kurdish speakers, knowing Persian as the standard language. The rest were native Persian speakers, and all listed English as their target language. Participation in the project was voluntary, and participants could withdraw at any time. Their privacy was guaranteed, and a clear privacy statement was included in the questionnaires and interviews. The higher number of Iranian participants was due to more teachers in Iran and a higher participation rate because of familiarity with one author. In Germany, participation required follow-up emails, leading to some non-responses and excluded questionnaires. Most participants were female due to the gender distribution in the teaching field. Demographic details like age, teaching experience, programme levels, and country of residence are presented in Table 1.

Table 1. Demographic Background of the German and Iranian Teachers

Features		German Teachers		Iranian Teachers	
Percentage/Frequency		F	P %	F	P %
Level of Proficiency	NES	5	19.2	1	1.1
	NNES	21	80.8	91	98.9
Gender	F	16	61.5	60	65.2
	M	10	38.5	32	34.8
Native Languages	Persian	----	----	85	92.3
	Turkish	----	----	4	4.4
	Kurdish	----	----	1	1.1
	Arabic	----	----	1	1.1
	English	5	19.3	1	1.1
	German	19	73.1	----	----
	Finish	1	3.8	----	----
	Russian	1	3.8	----	----
Country of Residence	Iran	----	----	89	96.7
	Turkey	----	----	2	2.2
	UK	----	----	1	1.1
	Germany	26	100	----	----
Age Range		27-65		26-62	
Years of Teaching		4-43		4-40	
Total		26		92	

Instruments

Three instruments were used to investigate German and Iranian teachers' perceptions about e-learning integration in higher education and to examine cross-cultural differences: (a) Two researcher-made questionnaires on e-learning challenges and opportunities were sent via Google Forms, (b) Semi-structured interviews with volunteer teachers, conducted face-to-face, via Zoom, or online platforms, (c) Observations of both onsite and online classes to assess student behaviour and feedback. Triangulating these methods aimed to increase the validity of the findings. The decision to use researcher-made questionnaires was supported by the need for specificity, flexibility, and relevance to the study's particular focus on academic, technological, and administrative challenges and opportunities in a comparative study. The careful validation process involving a systematic literature review, pilot testing, revisions, and expert opinions ensured that the researcher-made questionnaires were both appropriate and reliable for this particular study. Moreover, existing questionnaires might not capture the nuances required, while researcher-made tools could allow for a more tailored and precise approach. Therefore, the questionnaires were first piloted with a small group, revised for clarity, and reviewed by colleagues for content validity and expert opinions. Final versions were prepared in four Google Forms. The questionnaire items were categorised into three domains: academic, technological, and administrative challenges and opportunities.

Data Collection and Analysis Procedures

Meetings were held with the English Department administration to collect data at the Albert Ludwig University of Freiburg for ethical approval. An official invitation was sent to professors and teachers to participate in the project by answering two questionnaires on challenges and opportunities. Links to the questionnaires were distributed directly or through the department. Volunteers for interviews had sessions arranged either in person or via Zoom (at https://zoom.us/signin#/login) based on their preferences, with most preferring face-to-face meetings. Interviews lasted 15-25 minutes, during which permission to record was obtained and agreed upon. Recordings were transcribed using Otter.ai (https://otter.ai/), which also summarised key topics. The transcriptions were checked for accuracy, and themes were extracted for the report's findings and discussion section. Participation was voluntary for both German and Iranian groups, with ethical considerations such as informed consent and confidentiality guaranteed. Questionnaires avoided requesting names or personal IDs for ethical reasons, asking instead for background information like age, gender, native language, teaching experience, and email address. Email addresses were used for follow-ups, reminding

some participants to complete both questionnaires. Missing or unfinished questionnaires were excluded from the final analysis.

The stability (intra-rater reliability) and reproducibility (inter-rater reliability) of the coding schemes were established by two raters: the researcher and an experienced colleague. They analyzed and categorised the data, computing reliability coefficients using Cronbach's Alpha. The inter-rater reliability was high ($\alpha = 0.98$) and statistically significant ($p \leq 0.000$). The intra-rater reliability was also satisfactory ($\alpha = 0.93$) and significant at the 0.000 level. After codifying the themes, the data were tabulated, and the frequency and percentage of each item's occurrence were reported (see Appendixes A and B). The first rater reassessed the classified domains after a one-month interval to ensure stability and reproducibility in domain extraction. Then, for inter-reliability, she reviewed the domains classified by an experienced colleague. This dual-check method minimised potential biases and discrepancies, enhancing the robustness of the findings. This meticulous verification ensured the extracted domains accurately reflected the underlying data and adhered to common practice and literature.

Results and Findings

To summarise the data, descriptive statistics (means and standard deviations) were calculated and reported for ease of presentation and alignment with common practice. Frequencies and percentages of questionnaire items on opportunities and challenges for GTs and ITs are presented in Appendixes A and B. Then, the Mann-Whitney-U test was run to compare responses between the two groups. The significant (low) p-values indicate that it is likely above chance level that one group, German vs. Iranians or vice versa, produces consistently higher values on an item than the other. The conventional significance thresholds of $p < 0.05$ (*), $p < 0.005$ (**), and $p < 0.001$(***) were reported (see Tables 2-7), though there would always be a level of imprecision. Table 2 compares GTs' and ITs' perspectives on academic opportunities from e-learning integration in higher education. It includes mean scores and standard deviations for each opportunity, highlighting perceptual differences and similarities between the groups.

Table 2. German vs. Iranian Teachers' Perspectives on Academic Opportunities

No	Academic Opportunities	German		Iranian		Sig	
		Mean	St Deviation	Mean	St Deviation		
1	Online teaching makes it possible to teach from anywhere at any time.	4.69	0.57	4.41	1.03	0.372	n.s.
2	It provides teachers with ease of access to online materials, resources, etc.	3.69	0.75	4.17	1.10	0.004	**
3	At the time of pandemics it creates less mental/physical stress for teachers and students.	3.69	1.02	4.13	1.17	0.010	*
4	It provides the possibility of discussion for teachers and students on online forums and sends immediate reactions.	3.77	0.97	3.96	1.01	0.320	n.s.
5	Online teaching could boost students' motivation & positive attitudes.	2.77	1.30	3.11	1.06	0.175	n.s.
6	Alternative/innovative online evaluative practices are available for teachers.	3.69	1.02	3.52	1.10	0.561	n.s.
7	Online teaching could encourage students to practice continuous self-learning & increase autonomy.	3.62	1.02	3.76	0.94	0.421	n.s.
8	Online teaching creates a collaborative learning environment and increases interaction	1.92	1.31	3.00	1.20	1.69E	***
9	It gives opportunities for recording and storing lectures, for teachers' reflections, and for students' review.	4.46	0.66	4.30	0.92	0.763	n.s.
10	Teachers can organise a library of sources/materials into folders to share with different groups/students.	4.85	0.36	4.30	0.93	0.0007	***
14	It ensures equitable access, support, and learning for more students.	3.31	0.95	3.80	1.08	0.015	*
15	It increases teachers' and learners' innovation and creativity.	3.15	1.08	3.74	0.93	0.006	**

[p <0.05 (*), p <0.005 (**), and p <0.001(***)]

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As shown in Table 2, both GTs and ITs highly valued the flexibility of teaching from anywhere at any time and similarly rated the encouragement of self-learning and autonomy. However, Iranian teachers found online teaching provided greater ease of access to materials, likely due to sanctions limiting their resources. Iranians viewed online teaching as more effective in boosting student motivation, reducing stress, and creating a collaborative environment. They also perceived it as better for ensuring equitable access and increasing innovation and creativity. GTs, meanwhile, found more opportunities in alternative evaluative practices and benefited more from organising and sharing materials. Both groups appreciated the ability to record and review lectures, with Germans rating this slightly higher.

Table 3 compares how GTs and ITs perceived various technological opportunities in online teaching. It includes mean scores and standard deviations for each domain, highlighting differences and similarities between the two groups. Both GTs and ITs acknowledged the importance of technology in facilitating online connections and video-conferencing. GTs rated this aspect slightly higher than ITs. Additionally, Germans saw greater benefits in enhancing teaching staff efficiency through technical online skills than Iranians. Conversely, ITs perceived a stronger advantage in accessing and utilising a variety of free and paid applications compared to GTs. They also felt that online teaching could provide better familiarity with cybersecurity and codes of conduct compared to GTs.

Table 3. German vs. Iranian Teachers' Perspectives on Technological Opportunities

No	Technological Opportunities	German		Iranian			
		Mean	St Deviation	Mean	St Deviation	Sig	
11	It has the advantage of viewing and using a variety of free and non-free applications.	3.77	1.11	4.17	0.97	0.067	n.s.
13	Offering technical online skills improves the teaching staff's efficiency.	4.31	0.92	3.98	0.95	0.065	n.s.
17	Technology facilitates online connections, video-conferencing, and meetings with students and colleagues worldwide.	4.77	0.42	4.30	0.94	0.017	*
18	It facilitates familiarity with cybersecurity and the code of conduct.	3.08	1.21	3.91	0.98	0.0006	***

[p <0.05 (*), p <0.005 (**), and p <0.001(***)]

Table 4 presents a comparative analysis of how GTs and ITs perceive administrative opportunities facilitated by e-learning integration. Four key administrative opportunities were assessed, reporting mean scores and standard deviations for each group:

Table 4. German vs. Iranian Teachers' Perspectives on Administrative Opportunities

No	Administrative Opportunities	German		Iranian		Sig	
		Mean	St Deviation	Mean	St Deviation		
12	Online teaching could help the administration to make up for school flaws, inadequate facilities, or absentee teachers.	3.00	1.56	3.96	1.08	0.005	**
16	Online teaching makes the administration prepared for other disruptions like pandemics or disasters.	4.08	0.92	4.28	0.98	0.203	n.s.
19	It provides partnerships/opportunities with universities & organisations.	4.15	0.83	4.13	0.97	0.585	n.s.
20	It helps the administration train a new generation of technologically skilled and self-empowered students/teachers.	3.85	0.89	4.17	0.86	0.027	*

[p <0.05 (*), p <0.005 (**), and p <0.001(***)]

Both GT and IT teachers recognised the pivotal role of online teaching in addressing administrative challenges. Both groups expressed strong potential for partnerships with universities and organisations through online teaching, with similar levels of agreement. Regarding technological and self-empowerment training, both groups acknowledged the value of online teaching. ITs rated its potential slightly higher for training technologically skilled and self-empowered students and teachers compared to GTs. ITs also showed greater optimism than GTs regarding the effectiveness of online teaching in compensating for inadequate facilities or absentee teachers, indicating a higher expectation for mitigating school deficiencies. Both groups perceived e-learning as crucial for administrative preparedness during disruptions such as pandemics or disasters, with Iranian respondents expressing slightly higher confidence in its effectiveness.

Regarding the domains of challenges, the same classification was used: (a) academic challenges, (b) technological challenges, and (c) administrative challenges. Table 5 depicts a

comparison of the perceptions of the two groups and highlights the mean scores and standard deviations for both groups across several specific challenges.

Table 5. German vs. Iranian Teachers' Perspectives on Academic Challenges

No	Academic Challenges	German		Iranian		Sig	
		Mean	St Deviation	Mean	St Deviation		
1	Online teaching is time-consuming, and it is difficult to develop appropriate e-learning content, exams, or assignments.	2.92	1.44	2.72	1.23	0.503	n.s.
2	Online teaching limits the direct interaction among students and teaching staff.	3.69	1.20	3.93	0.92	0.4665	n.s.
6	Online teaching changes the faculty's roles and responsibilities.	3.54	1.08	3.37	1.11	0.546	n.s.
9	Students' lack of enthusiasm or motivation to interact, answer questions, or learn new technology is a challenge for teachers.	3.62	1.15	4.11	1.05	0.043	*
10	Online teaching is not suitable for teaching practical subjects.	3.00	1.18	3.78	1.02	0.003	**
12	There are difficulties with verifying students' knowledge/skills reliably (e.g., cheating during tests).	3.08	1.07	4.39	0.82	2.33E	***
17	The online environment at home might not be suitable for teaching (because of the presence of children or family).	4.38	0.92	4.04	0.91	0.031	*
19	The lack of body language in virtual communication makes it difficult to understand a student accurately	3.79	1.21	3.98	0.92	0.763	n.s.
20	There is a mismatch of the existing content or curriculum with the mode of online delivery.	3.31	0.99	3.67	1.12	0.092	n.s.

[p <0.05 (*), p <0.005 (**), and p <0.001(***)]

As illustrated in Table 5, both GTs and ITs believed that developing e-learning content, exams, and assignments was time-consuming, with GTs perceiving it as slightly more laborious. However, both GTs and ITs were disturbed by the limited direct communication among students and teachers, with Iranians agreeing more strongly. Both groups acknowledged changes in faculty roles because of online teaching, with GTs observing these changes slightly more. Both groups mentioned the difficulty in reliably assessing students' knowledge and skills, such as preventing cheating, with ITs finding it more challenging. Finally, both groups rated the mismatch of existing content with online delivery, but Iranians highlighted it more.

ITs perceived students' lack of enthusiasm or motivation to interact and learn technology as a more significant challenge than GTs. They also found online teaching less suitable for practical subjects compared to GTs. Both groups recognised the challenge of understanding students without body language in virtual communication, with ITs rating it slightly higher. GTs felt home distractions made online teaching environments less suitable compared to ITs. Table 6 compares the perceptions of GTs and ITs regarding various technological challenges based on mean and standard deviation.

Table 6. German vs. Iranian Teachers' Perspectives on Technological Challenges

No	Technological Challenges	German		Iranian		Sig	
		Mean	St Deviation	Mean	St Deviation		
5	There are problems with Internet access.	4.00	0.96	4.33	0.96	0.070	n.s.
7	Inadequate ICT skills of the teachers or students are challenging.	3.62	1.15	4.11	0.79	0.058	n.s.
8	Teachers' need to purchase equipment (a computer, laptop, smartphone, headphone, microphone) is an issue.	3.31	1.32	3.96	1.10	0.020	*
11	There are always cyber threats and decreased privacy (risk of being recorded/photographed/ screenshotted).	3.23	1.48	4.07	0.92	0.015	*
13	There are always technical problems on the part of the teachers or students.	3.15	1.35	4.02	0.77	0.003	**
14	The amount of time spent in front of a computer, smartphone, or other devices is too much	3.62	1.33	4.04	1.00	0.207	n.s.
15	The cost of electricity and the Internet is high.	2.85	1.10	3.57	1.25	0.005	**
16	Teachers' excessive use of their own technological equipment for teaching is an issue.	3.15	1.51	3.96	1.18	0.016	*

[p <0.05 (*), p <0.005 (**), and p <0.001(***)]

As shown in Table 6, both GTs and ITs identified Internet access as a significant challenge, slightly more so in Iran. Iranian respondents also rated inadequate ICT skills among teachers and students as a greater challenge compared to GTs. The need for teachers to purchase equipment like computers, laptops, and headphones was perceived as more burdensome by ITs. Additionally, ITs showed more concern over cyber threats and decreased privacy, reflecting more concerns.

ITs constantly rated technical problems for both teachers and students higher, demonstrating more severe technical problems in Iran. They also presented greater concern about the amount of time spent in front of laptops, PCs, or other electronic devices. They also rated electricity and Internet costs higher than GTs, highlighting expenses as more challenging. Additionally, the excessive use of personal technological equipment for teaching was a more prominent challenge for ITs. In general, ITs consistently evaluated technological challenges higher than GTs, representing a greater concern for such problems in Iran. The domains of administrative challenges were also categorised in the data obtained from the two groups. Table 7 depicts the challenges regarding support, training, and attitude towards e-learning integration in higher education.

Table 7. German vs. Iranian Teachers' Perspectives on Administrative Challenges

No	Administrative Challenges	German		Iranian		Sig	
		Mean	St Deviation	Mean	St Deviation		
3	In online teaching, there is not enough support required by administration for home access.	3.54	1.28	2.83	1.19	0.010	*
4	There are not enough training courses or administrative support provided by institutions.	3.46	1.08	3.87	0.95	0.075	n.s.
18	Some administrative and teaching staff resist and have negative attitudes towards e-learning.	4.23	0.80	4.20	0.88	0.969	n.s.

[p <0.05 (*), p <0.005 (**), and p <0.001(***)]

Regarding administrative challenges, both groups recognised insufficient administrative support for home access. GTs rated this issue higher than ITs, indicating stronger dissatisfaction in Germany. In contrast, ITs felt there was a greater deficiency in training and

administrative support compared to GTs, as shown by higher mean scores. However, both groups similarly perceived resistance and negative attitudes towards e-learning among administrative and teaching staff, with nearly identical mean scores.

The figure highlights the most obvious differences and similarities between the perspectives of GTs and ITs on the opportunities and challenges of e-learning integrations. For collaborative learning environment and interaction (Question 8), it is shown that GTs see this as a significant opportunity more than ITs. The opportunity to record and store lectures (Question 9) was recognised similarly between the two groups. Meanwhile, verifying students' knowledge and skills reliably (Question 12) was noted as a challenge where there was a significant difference in perceptions of GTs and ITs. However, GTs and ITs shared a similar challenge regarding staff resistance and their negative attitudes towards e-learning (Question 18).
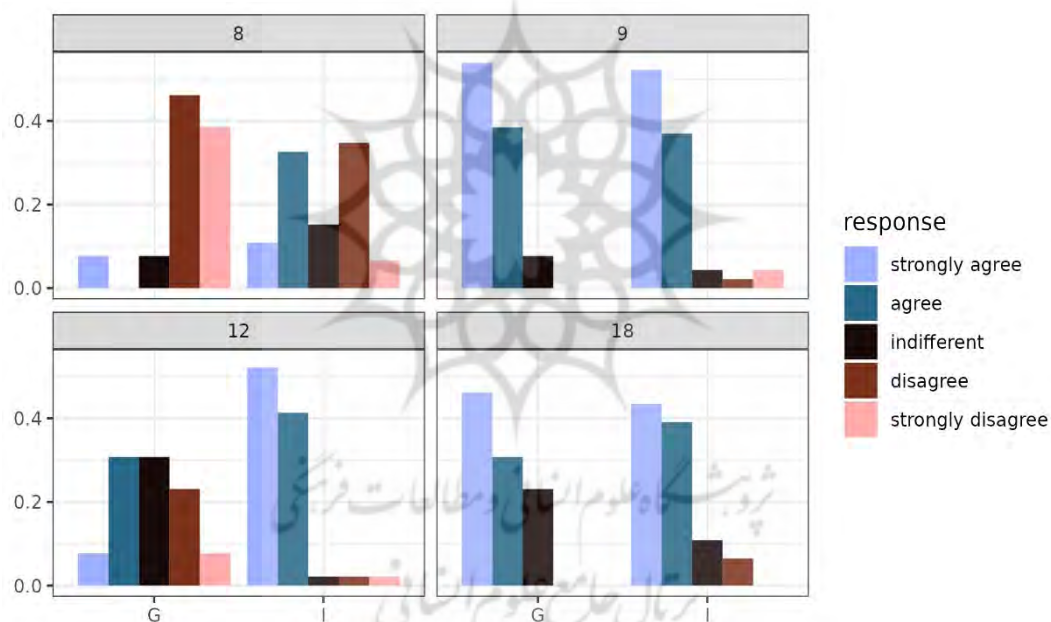

Figure 1. Opportunities and Challenges (Differences and Similarities Between GTs and ITs)

The interview findings with volunteer teachers (see Appendix C) revealed that all GTs and ITs had experience with online teaching. Among the 13 GTs interviewed, a strong preference for face-to-face instruction was evident, with three expressing particularly negative attitudes towards online teaching. In contrast, while 15 ITs also preferred face-to-face classes, their negative sentiments towards online teaching were not as pronounced. Some ITs even found online teaching beneficial for specific courses and levels, especially during challenging common situations like air pollution or weather conditions. This situation

suggests a more flexible approach among Iranians towards integrating e-learning in certain conditions. It is worth mentioning that younger teachers mostly displayed a more positive attitude towards e-learning integration, while older teachers expressed a preference for face-to-face teaching. Abbreviations and numbers were used to anonymise the interviewees, and the answers were selected randomly to present diverse perspectives with no bias.

For instance, GT5 responded:

It was, it was awkward at first, I think for all of us, there was a bit of a learning curve there getting used to the reduced contact with the students. I felt like the discussions that I had with my students were more one-sided, it turned into more of a monologue, more frontal style teaching and less interactive because of the online environment. But, my experience, I would describe as overwhelming in the sense that the need to teach online came unexpected and found me unprepared

IT9:

My experience with online teaching has been rather positive because I am using the same material and I only change the mode of delivery in the online platforms. Of course, it was difficult at the beginning, but as I got more familiar with different strategies or ways of presenting materials, it became easier. During COVID, it was difficult at first, but became later easier. I still teach some online courses, or workshops.

GTs commonly structured online classes using a mix of pre-recorded videos, Zoom meetings, PowerPoint presentations, and YouTube videos uploaded on ILIAS. This combination allowed them to maintain a structured and comprehensive teaching approach. Iranian teachers utilised platforms like Adobe Connect, BBB, and social media applications such as Telegram, WhatsApp, and even Skype. This reliance on diverse and often non-educational platforms led to complaints about constant availability and loss of privacy, as students could contact them at all times. The difference in platform usage highlights varying cross-cultural approaches and challenges in online teaching environments.

GT4:

I am not a fan of PowerPoint or recording my own voice.... I don't make any teaching videos. I use the flipped classroom approach by uploading many materials to an LMS platform. And then, I conduct regularly scheduled lectures and meet with my students in online sessions. I encourage them to engage with the materials before the lecture because I know that my abilities are limited to show them things and to work directly with them in classes. So, the emphasis on

preparation on their part was much higher. We use Zoom and the online platform for the material exchange is ILIAS.

IT7:

I have some prepared materials to share in the online classes because I use PowerPoint files and electronic versions of sources, so it is easy to share them with students. I used to use Mydrive and CDs; at the time of Covid, I used social media like many colleagues and made some groups on Telegram or WhatsApp to upload file. The university gave us access to Adobe Connect and, later BBB. But, still, I use social media or online platforms like Shatel to hold online sessions.

Both GTs and ITs identified common challenges in online teaching, such as technical issues, reduced student engagement, and difficulties in facilitating interactive discussions. However, ITs faced additional significant hurdles related to the Internet infrastructure, speed of the net, constant disconnection, not being able to use webcams because of technical problems, and the expectation of being always available to students, which was less problematic for GTs. For Germans, such issues were not major concerns, reflecting the more robust digital infrastructure in Germany.

GT3:

Because I'm teaching higher-level language courses and I think natural conversation should be part of those courses. The conversation was very unnatural in an online environment because of speech delays, video and, microphone feedback, muting-unmuting. There was a lot of me talking in a monologue style. I felt every week, I felt like I was giving a podcast performance and not facilitating conversations and discussions. I didn't have any internet problems and a very robust internet connection here. But in the first semester of the COVID pandemic, it wasn't strong enough... for video screen sharing. It's much more difficult to know the students, plus I don't know what they are doing.

IT2:

There are many challenges, for me, the main problem was the speed of the Internet, frequent disconnections on my side or students, and not seeing the students' faces because we could not turn on cameras. You are not sure if they are online, listening to you, they are not answering, and participation is limited to active students. At the time of Covid, we had free Internet to get connected, but after that, I had to pay for all the expenses, with the low salaries of teachers....

Another main problem is the students' access to you because they have your number.

When asked about their preferred teaching models and preference to stay with, both groups showed a strong interest in continuing face-to-face or at least blended teaching. GTs predominantly preferred face-to-face instruction, valuing the direct interaction it provides. In contrast, many ITs, particularly the younger ones, exhibited a more positive attitude towards hybrid, blended online teaching. This suggests a generational shift in attitudes towards digital education in Iran, where younger educators are more open to leveraging online teaching methodologies.

GT1:

Um, it was mostly I mean, at best, it was neutral. Everyone had to do it because of COVID. But at worst, it was unenjoyable, because I prefer face to face teaching. It's multi-dimensional. There's a wider variety of activities you can do. It's easier to get to know the students. If I had to teach full-time online. I wouldn't be happy; I'd probably choose another job.

IT15:

I prefer face-to-face classes because of different reasons, meeting and socialising with students and colleagues, better explanation of the material because of using body language or getting their feedback and responses. But personally, I see online teaching as a good potential for teaching some courses, when you don't need a lot of feedback. For teaching some courses like lectures, it is even better. Sometimes, with many students when physically, it is difficult to teach, you can teach online. So, I go for blended teaching but not for all the subjects or levels.

Both GTs and ITs acknowledged the inevitability of e-learning in the future of higher education. They recognised that advancements in technology and the need for flexible learning environments would make e-learning an integral part of education. The consensus was that blended learning models, combining the best aspects of online and face-to-face instruction, would become the norm by providing flexibility, accessibility, and the opportunity for more personalised learning experiences.

GT13:

Yeah, Germany is a bit old school. It's very slow to change and very bureaucratic. I think the future of e-learning in Germany is a little bit slower because of German attitudes towards data protection and privacy. They seem to be slightly luddite in their approach towards adopting new technologies. And there's a lot of

bureaucracy in the institutions of education to implement digital tools. But I've noticed in my classes over the last few semesters there are fewer pens, and pencils and, more. Laptops and iPads are the technologies. Yeah. And sometimes moving slowly isn't a bad thing, right?

IT5:

As a teacher at university, I believe the future of E-learning in higher education is incredibly promising, though not without its challenges. The pandemic showed us the potential of digital platforms to facilitate learning beyond traditional classrooms. Moving forward, I see a hybrid learning model is becoming the norm for some classes, seminars, and meetings. I think the university and institutions try to use it, but to what extent they have access, it is an issue. I see advancements in technology, such as AI and VR and Iranian younger generation is technologically educating themselves. In spite of sanctions, limitations, and filtering.

The observation of the classes and students by one of the researchers in both settings showed that both groups of students had more positive attitudes towards onsite classes than online ones. The teachers' permission was granted to do the observations. Only a few teachers showed agreement to let one of the researchers observe their classes. However, the observations were only to increase the validity of the other instruments because the main two instruments were questionnaires and interviews. In the German online classes, the teachers' cameras were always on, and some students also activated their cameras, enabling a more engaging environment. But, in the Iranian classes, infrastructural issues and slow Internet hindered the use of cameras. Therefore, students and teachers connected only through audio or chat with no camera. This difference significantly affected the smoothness of interaction dynamics in the two settings. Verbal contributions and active participation in discussion from German students were more frequent, while Iranian students tended to speak when directly addressed by their teachers. Instead, they frequently used the chat box to type answers or ask questions monitored by their teachers. This monitoring of the chat was less common in the German context, where written text received moderately less attention.

The pattern of teacher interruptions was also different. Iranian teachers were often interrupted by students to ask for more elaborations or questions, while in German classes, more interactive tasks that naturally integrated student participation were used. The use of emojis or stickers to provide feedback was more common among Iranians, who employed them in chat boxes as virtual feedback. Technical interruptions were more frequent in Iranian

classes, causing disconnections in the process of teaching. GTs made use of YouTube videos and file or screen sharing to improve their lessons. Such activities were less common in Iranian settings due to Internet, speed, and filtering issues. Both groups shared files with their students, but the methods of sharing were not the same. GTs used ILIAS as an academic platform for distributing materials and files, while ITs relied mostly on email, WhatsApp, or Telegram groups. These differences highlight the diverse approaches and challenges confronted in online education across different cultural and infrastructural contexts.

Discussion and Conclusion

The viewpoints of German and Iranian EFL teachers showed they shared many common assurances and concerns regarding online teaching. The data indicated that both groups recognised significant opportunities provided by online teaching, though their perceptions varied. ITs generally saw greater benefits in areas like stress reduction, access to materials, and fostering collaboration. GTs, however, found more value in organisational aspects and innovative evaluative practices. Understanding these differences could help in designing better support systems and resources tailored to the needs of educators in different regions. The data also showed that both GTs and ITs saw significant technological opportunities in online teaching, although their perceptions varied. Iranian teachers valued the variety of applications and cybersecurity familiarity more highly, while GTs placed greater emphasis on the improvement of efficiency through technical skills and the facilitation of online connections. These insights could guide the development of targeted technological support and resources for educators in different regions to enhance the effectiveness of online teaching.

Regarding the administrative opportunities, overall, ITs generally rated the benefits of online teaching slightly higher than GTs across all four areas, indicating a more favourable perception of its administrative advantages. Both groups, however, acknowledged the significant role of online teaching in addressing various administrative challenges and opportunities. The findings of the study are in line with those of (Arkorful & Abaidoo, 2015; Çirakli, 2022; Fonseca et al., 2023; Hassani, 2021; Karimi et al., 2023; Oktoma et al., 2023; Osadcha et al., 2023; and Stolz, 2023) in presenting the challenges of e-learning integration at higher education.

The findings of the study also showed that the two groups of teachers shared common views regarding the challenges of integrating e-learning in higher education. Overall, the data showed that both GTs and ITs faced significant challenges with online teaching, with

variations in the perceived severity of specific challenges. ITs generally reported higher mean scores for most challenges, indicating a greater perception of difficulty in adapting to online teaching compared to GTs. The results of the study also suggested that ITs consistently rated the technological challenges of online teaching higher than German respondents, indicating a greater perception of these challenges in Iran. This challenge encompassed issues such as Internet access, ICT skills, equipment costs, cyber security, technical problems, excessive screen time, and the financial burden of utilities. Considering the administrative challenges, both groups faced challenges with resistance and negative attitudes towards e-learning, showing high levels of agreement on this issue. GTs felt more strongly about the lack of support for home access compared to ITs, while Iranian educators perceived a more significant deficiency in training courses and administrative support compared to GTs, suggesting that this challenge is more pronounced in Iran. These findings highlight the shared and unique challenges faced by educators in Germany and Iran, providing insight into areas where administrative support and training could be improved to enhance the effectiveness of online teaching and the integration of e-learning in higher education. The findings of this study are in line with studies such as Abbasi Kasani et al. (2020), Arora and Chauhan (2021), Badi and Noor (2024), and Mathew et al. (2019) in discussing the challenges of integrating e-learning from the educators' perspectives.

Significant cross-cultural differences were found between the perspectives of German EFL teachers and those of their Iranian counterparts with regard to both the opportunities and challenges associated with online teaching. As for the opportunities, GTs and ITs exhibited differences shaped by their unique educational and cultural contexts. GTs believed that online teaching had the advantage of flexibility and accessibility. They noted how it allowed for teaching from any location and at any time and the ability to organise and share educational materials efficiently. ITs put more emphasis on the capacity of online teaching to enhance students' motivation, autonomy, and equal access to education. These differences suggested that GTs might be more focused on controlling online teaching for logistical and administrative effectiveness, while, for Iranians, it was a transformative tool to democratize education and adopt independent learning. Administratively, both groups saw the value of online teaching in improving institutional resilience and facilitating wider collaborations. However, ITs showed a higher appreciation for how online teaching could address general issues such as inadequate facilities and absence, reflecting perhaps a greater need for improvements in the educational context. Germans also emphasised the potential for enhancing overall efficiency and preparing for future disruptions. This comparison

highlighted how the administrative priorities and perceived advantages of online education could vary significantly based on the existing strengths and weaknesses of each country's educational context and infrastructure.

As for the challenges, GTs and ITs displayed differences due to their distinct educational and cultural settings and backgrounds. GTs primarily faced difficulties related to student engagement and the technological infrastructure required for effective online education. Issues such as the high time investment for developing appropriate content, verifying students' knowledge reliably, and the unsuitable home environments for teaching were prominent. In contrast, ITs highlighted more acute challenges with technical skills, internet access, and the financial burden of purchasing necessary equipment. These distinctions underscore the varying levels of technological preparedness and socio-economic conditions in the two countries, influencing the teachers' experiences and highlighting the need for tailored solutions to address these challenges.

The findings of the interview with the volunteer teachers revealed different preferences and attitudes towards online teaching. While all participants had experience with online education, GTs showed a strong preference for face-to-face instruction, with some expressing negative sentiments towards online formats. In contrast, ITs, though favoring traditional classroom settings, displayed more flexibility and adaptability towards online teaching, especially in challenging situations like pollution or adverse weather. Younger teachers in both contexts showed more positive attitudes towards e-learning integration, highlighting a generational shift in teaching preferences. Both groups reported similar challenges, such as technical issues and reduced student participation. However, Iranians reported additional impediments related to poor Internet infrastructure and constant connectivity issues. Despite these challenges, there was a consensus among both GTs and ITs on the inevitability of e-learning in the future of higher education. They suggested blended models that combine the best of online and onsite instruction, providing flexibility, accessibility, and personalized learning to meet the needs of a diverse student population in an evolving educational setting.

The observation of the online and onsite classes highlighted that the students in both Germany and Iran preferred face-to-face sessions over online classes, though with notable differences in interaction and technical capabilities. German students benefited from more visually engaging and interactive online environments. In contrast, Iranian students faced challenges with video usage and frequent technical disruptions, leading to a heavier reliance on chat-based communication and simpler file-sharing methods. These findings emphasise the importance of considering infrastructural and technological differences to improve the

efficiency of e-learning across the two settings. The data collected from questionnaires, interviews, and observations supported each other and were in line with the existing literature.

The implications of this study are significant for both teachers and policymakers at the micro and macro levels. At the micro-level, teachers can benefit from understanding the varied challenges and opportunities that their peers in different cultural contexts face, enabling them to adopt best practices and innovative solutions tailored to their specific environments. This awareness can foster greater empathy and collaboration among educators globally, improving the overall quality of e-learning. At the macro level, policymakers can use these insights to develop more inclusive and effective e-learning policies that address the unique needs of diverse educational settings. By investing in robust technological infrastructure, providing targeted training programmes, and creating supportive administrative frameworks, as suggested by Arumugam et al. (2024), policymakers and decision-makers can enhance the resilience and adaptability of higher education institutions. This study underscores the importance of a culturally sensitive approach to e-learning integration, ensuring that both teachers and students are equipped to thrive in a rapidly evolving digital landscape.

It could offer insights into the diverse approaches, challenges, and opportunities inherent in adopting and implementing digital technologies in higher education. Furthermore, the comparative analysis could identify context-specific factors influencing e-learning integration, including institutional structures, policies, pedagogical practices, and cultural norms. Such insights contribute to the academic understanding of e-learning integration and inform the development of tailored strategies and interventions to support effective implementation in diverse cultural and educational settings. Overall, such cross-cultural studies could enrich the scholarly discourse on e-learning integration and provide practical guidance for enhancing educational practices in higher education from a global perspective.

In conclusion, while this study provided some insights into the challenges and opportunities of e-learning integration from the cross-cultural perspectives of GTs and ITs, it is not without its limitations. The sample size and demographic diversity of the participating teachers may not fully represent the broader population of educators in each country. Factors such as the number of teachers, their gender, faculties, and fields of study could influence the findings, and these variables were not exhaustively examined in this research. Therefore, the conclusions drawn should be viewed as preliminary and indicative rather than definitive. Further research is recommended to address these limitations. Expanding the sample size to

include a more diverse group of teachers from various faculties and disciplines would enhance the generalizability of the findings.

Additionally, incorporating qualitative approaches, such as focus group discussions and in-depth interviews, could provide a richer understanding of the nuanced experiences and perspectives of teachers. This qualitative data could uncover insights that quantitative measures alone might miss, such as personal anecdotes and specific challenges faced in different teaching contexts. Moreover, future studies should also consider analyzing the broader policy and infrastructure frameworks that support or hinder online teaching in Germany and Iran. Investigating specific technological enhancements and their impacts on teaching efficacy would provide actionable recommendations for improving online education. By addressing these areas, subsequent research can build a more comprehensive understanding of how to effectively support teachers in diverse educational environments, ultimately contributing to the development of more resilient and adaptive educational systems.

References

Aali, M., Narenji Thani, F., Keramati, M. R., & Garavand, A. (2020). A model for the effectiveness of e-learning at university. *Journal of Information Technology Management*, *12*(4), 121-140. https://doi.org/10.22059/jitm.2020.298696.2479

Abbasi Kasani, H., Shams Mourkani, G., Seraji, F., Rezaeizadeh, M., & Abedi, H. (2020). E-learning challenges in Iran: A research synthesis. *International Review of Research in Open and Distributed Learning*, *21*(4), 96-116. https://doi.org/10.19173/irrodl.v21i4.4677

Ali, R., & Zafar, H. (2017). A security and privacy framework for e-learning. *International Journal for E-Learning Security,* *7*(2), 556–566. http://doi.org/10.20533/ijels.2046.4568.2017.0070

Alizadeh, I. (2012). Challenges of employing e-learning for teaching language: A case of teaching English in Iran. *E-Learning and Digital Media*, *9*(4), 426-438. https://doi.org/10.2304/elea.2012.9.4.426

Al-Seghayer, K. (2020). Investigating the adequacy of EFL learners' L2 digital literacy skills, consistency of self-assessed competence, and actual performance. *International Journal of Computer-Assisted Language Learning and Teaching,* *10*(2), 1-22. https://doi.org/10.4018/IJCALLT.2020040101

Alone, K. (2017). Adoption of e-learning technologies in education institutions/organizations: A literature review. *Asian Journal of Educational Research, 5*(4), 63-71. https://ir.kiu.ac.ug/handle/20.500.12306/1538

Alvarez, A. V. (2021). Rethinking the digital divide in the time of crisis. *Globus Journal of Progressive Education, 11*(1), 26-28. https://doi.org/10.46360/globus.edu.220211006

Alyouseff, I. Y. (2023). Acceptance of e-learning in higher education: The role of task-technology fit with the information systems success model. *Heliyon, 9*(3), 1-19. https://doi.org/10.1016/j.heliyon.2023.e13751

Aparicio, M., Bacao, F., & Oliveira, T. (2016). An e-learning theoretical framework. *Educational Technology and Society, 19*(1), 292-307. https://www.jstor.org/stable/jeductechsoci.19.1.292

Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, *12*(1), 29-42. http://doi.org/10.12691/education-8-2-4

Arenas-Gaitán, J., Ramírez-Correa, P. E., & Rondán-Cataluña, F. J. (2011). Cross cultural analysis of the use and perceptions of web-based learning systems. *Computers & Education*, *57*(2), 1762-1774. http://doi.10.1016/j.compedu.2011.03.016

Arora, R., & Chauhan, A. (2021). Faculty perspectives on work from home: Teaching efficacy, constraints and challenges during COVID' 19 lockdown. *Journal of Statistics and Management Systems, 24*(1), 37–52. https://doi.org/10.1080/09720510.2021.1875567

Arumugam, S. K., Saleem, S., & Tyagi, A. K. (2024). Future research directions for effective e-learning. In R. Pandey, N. Srivastava, & P. Chatterjee (Eds.), *Architecture and Technological Advancements of Education 4.0* (75-105). IGI Global. https://doi.org/10.4018/978-1-6684-9285-7.ch004

Badi, M. A., & Noor, N. M. (2024). English language lecturers' acceptance of e-learning in Libyan universities, theoretical models and challenges: A systematic literature review. *Sains Humanika*, *16*(1), 77-86. http://doi.org/10.11113/sh.v16n1.2101

Baig, M. I., Shuib, L., & Yadegaridehkordi, E. (2022). E-learning adoption in higher education: A review. *Information Development*, *38*(4), 570-588. https://doi.org/10.1177/02666669211008224

Baldock, B. L., Fernandez, A. L., Franco, J., Provencher, B. A., & McCoy, M. R. (2021). Overcoming the challenges of remote instruction: Using mobile technology to promote

active learning. *Journal of Chemical Education*, *98*(3), 833-842. http://doi.org/10.1021/acs.jchemed.0c00992

Bandura, A. (2008). Social cognitive theory of mass communication. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp. 94–124). Routledge.

Barton, E. A., & Dexter, S. (2020). Sources of teachers' self-efficacy for technology integration from formal, informal, and independent professional learning. *Educational Technology Research and Development, 68*(1), 89–108. https://doi.org/10.1007/s11423- 019- 09671-6

Bernath, U., & Stöter, J. (2018). Germany. In A. Qayyum & O. Zawacki-Richter (Eds.), *Open and distance education in Australia, Europe and the Americas: National perspectives in a digital age* (pp. 65–78). Springer.

Bozorgian, H. (2018). Teachers' attitudes towards the use of MALL instruction in Iranian EFL context. *The International Journal of Humanities*, *25*(3), 1-18. http://eijh.modares.ac.ir/article-27-44331-en.html

Brosser, L., & Vrabie, C. (2015). The quality initiative of e-learning in Germany (QEG)-Management for quality and standards in e-learning. *Procedia-Social and Behavioral Sciences*, *186*, 1146-1151. https://doi.org/10.1016/j.sbspro.2015.04.214

Chalak, A., & Ahmadi, B. (2017). Integration of serious games in teaching English as a foreign language to Iranian children. *International journal of foreign language teaching and research*, *5*(17), 77-87. https://sanad.iau.ir/journal/jfl/Article/588047?jid=588047

Cicek, I., Bernik, A., & Tomicic, I. (2021). Student thoughts on virtual reality in higher education: A survey questionnaire. *Information*, *12*(4), 151. https://doi.org/10.3390/info12040151

Çirakli, M. Z. (2022). Loss of spatial interaction in virtual environments and the improvement of cognition: Online literature classroom through Adobe Connect. In F. Kılıçkaya & J. Kic-Drgas, R. Nahlen (Eds.), *The challenges and opportunities of teaching English worldwide in the Covid-19 pandemic* (pp. 183-190). Cambridge Scholar Publishing.

Clark, R. C., & Mayer, R. E. (2023). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. John Wiley & Sons. http://doi.org/10.1002/pfi.4930420510

Corbeil, J. R., & Corbeil, M. E. (2015). E-learning: Past, present, and future. In B. H. Khan, M. (Eds.), Ally *International handbook of e-learning volume 1:* Theoretical *perspectives and research* (pp. 51-64). Routledge.

Dashtestani, R., & Hojatpanah, S. (2020). Digital literacy of EFL students in a junior high school in Iran: Voices of teachers, students and Ministry Directors. *Computer Assisted Language Learning, 12*(4), 1-31. https://doi.org/10.1080/09588221.2020.1744664

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340, http://doi.org/10.2307/249008.

Delello, J. A., McWhoRteR, R. R., & Camp, K. M. (2015). Integrating augmented reality in higher education: A multidisciplinary study of student perceptions. *Journal of Educational Multimedia and Hypermedia*, *24*(3), 209-233. https://www.learntechlib.org/p/148455/

Elzainy, A., El Sadik, A., & Al Abdulmonem, W. (2020). Experience of e-learning and online assessment during the COVID-19 pandemic at the College of Medicine, Qassim University. *Journal of Taibah University Medical Sciences*, *15*(6), 456-462. https://doi.org/10.1016/j.jtumed.2020.09.005

Fenta, H. B., Lake, T. T., & Yemata, B. A. (2023). *Regulatory framework of e-Learning integration with inclusive higher education in Ethiopia: The case of students with disabilities*. Mastercard Foundation e-Learning Initiative Working Paper Series 1.0. https://doi.org/10.14507/MCF-eLi.I12

Fonseca, M. J., Garcia, J. E., Vieira, B., & Teixeira, A. S. (2023). Lecturers' attitude towards the use of e-learning tools in higher education: A case of Portugal. *Engineering Management in Production and Services*, *15*(2), 23-34. https://doi.org/10.2478/emj-2023-0009

Gaebel, M., Zhang, T., Stoeber, H., & Morrisroe, A. (2021). *Digitally enhanced learning and teaching in European higher education institutions*. European University Association absl. https://eric.ed.gov/?id=ED611025

Hameed, N., Shaikh, M. U., Hameed, F., & Shamim, A. (2016). *Cultural differences in e-learning: Exploring new dimensions*. 11th WSEAS International Conference on Education and Educational Technology. Instituto Superior de Engenharia do Porto, Porto, Portugal. https://doi.org/10.48550/arXiv.1607.01359

Harasim, L. (2006). A history of e-learning: Shift happened. In J. Weiss, J. Nolan, J. Hunsinger, & P. Trifonas (Eds.), *The International handbook of virtual learning environments* (pp. 59-94). Springer.

Hariri Asl, M. H., Marandi, S. S., & Maftoon, P. (2021). Collaborative flipped learning through CALL: A recipe for realizing social presence in virtual learning environments.

International Journal of Foreign Language Teaching and Research, *9*(35), 95-114. https://journals.iau.ir/article_679364.html

Hassani, V. (2021). The impacts of COVID-19 pandemic on English language teacher education in Iran: Challenges and opportunities. *Teaching English as a Second Language Quarterly, 40*(3), 83-116. https://doi.org/10.22099/jtls.2021.39716.2941

Heidkamp, B., & Kergel, D. (2018). From e-learning to eBologna in an augmented reality: The past and the future of e-learning in German higher education. In D. Kergel, B. Heidkamp, P. Telléus, T. Rachwal, & S. Nowakowski (Eds), *The digital turn in higher education: International perspectives on learning and teaching in a changing world* (pp. 37-45). Springer. https://doi.org/10.1007/978-3-658-19925-8_4

Hesse, F. W., Kobsda, C., & Schemmann, C. (Eds.). (2022). *Digital transformation of higher education*. Global Learning Council. https://doi.org/10.21241/ssoar.79627

Ifkarina, N. M., & Rojabi, A. R. (2023). EFL learners' experiences of using e-learning in an English course. *Journal of English Teaching*, *8*(02), 167-178. https://doi.org/10.36456/jet.v8.n02.2023.8633

Joseph, D., Nethsinghe, R., & Cabedo-Mas, A. (2021). Online teaching and learning during COVID-19. In R. Chan, K. Bista, & R. Allen (Eds.), *Online teaching and learning in higher education during COVID-19: International perspectives and experiences*. Routledge.

Karimi, P. A., Banihashem, S. K., & Biemans, H. J. (2023). Teachers' attitude towards and experiences with e-learning tools at two universities in different phases of e-learning implementation. *International Journal of Technology in Education and Science*, *7*(4), 571-599. https://doi.org/10.46328/ijtes.487

Kattoua, T., Al-Lozi, M., & Alrowwad, A. A. (2016). A review of literature on E-learning systems in higher education. *International Journal of Business Management and Economic Research*, *7*(5), 754-762. https://www.ijbmer.com/docs/volumes/vol7issue5/ijbmer2016070504.pdf

Kerres, M. (2020). Against all odds: Education in Germany coping with Covid-19. *Postdigital Science and Education*, *2*, 690-694. https://doi.org/10.1007/s42438-020-00130-7

Kerres, M., & Getto, B. (2018). Best of Germany: Developing strategies for digital transformation in higher education, not a trivial pursuit. In T. Bastiaens (Ed.), *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 524-530). Association for the Advancement of Computing in Education (AACE).

Kim, S. S. (2021). Motivators and concerns for real-time online classes: Focused on the security and privacy issues. *Interactive Learning Environments, 34*(9),1-14. https://doi.org/10.1080/10494820.2020.1863232

Lim, Z. Y., Yap, J. H., Lai, J. W., Mokhtar, I. A., Yeo, D. J., & Cheong, K. H. (2024). Advancing lifelong learning in the digital age: A narrative review of Singapore's skills future programme. *Social Sciences*, *13*(2), 73. https://doi.org/10.3390/socsci13020073

Lima, C. D., Bastos, R. C., & Varvakis, G. (2020). Digital learning platforms: an integrative review to support internationalisation of higher education. *Educação em revista*, *36*. https://doi.org/10.1590/0102-4698232826

Ludwig, C., & Van de Poel, K. (2017). *Collaborative learning and new media: New insights into an evolving field*. Peter Lang.

Mahmoudi-Dehaki, M., Chalak, A., & Heidari Tabrizi, H. (2021). The impact of learning through management system vs. learning through experience platform on exam results of digital natives and digital immigrants. *Teaching English as a Second Language Quarterly, 40*(3), 117-158. https://doi.org/10.22099/jtls.2021.39227.2922

Mahmoodi-Shahrebabaki, M., & Yaghoubi-Notash, M. (2014). E-learning in Iran as a developing country: Challenges ahead and possible solutions. *International Journal of Research in Education Methodology, 6*(2), 789-795. https://dx.doi.org/10.2139/ssrn.2514434

Masaeli, N., & Chalak, A. (2016). The Effect of employing electronic portfolio on Iranian EFL learners' writing skill. *Journal of Language Teaching and Research*, *7*(4), 746. http://dx.doi.org/10.17507/jltr.0704.15

Masie, E. (2007). Lies about e-learning. In L. Israelite (Ed.), *Lies about learning: Leading executives separate truth from fiction in a $100 billion industry* (pp.127-140). ASTD Press.

Mathew, N. G., Sreehari, P., & Al-Rubaat, A. M. (2019). Challenges and implications of virtual e-learning platform in EFL context: Perceptions of teachers. *International Journal of English Language Teaching*, *7*(2), 100-116. http://doi.10.2991/assehr.k.211224.017

Ninkovic, S., Olić Ninković, S., Lazarević, T., & Adamov, J. (2021). Serbian teachers' perceptions of online assessment during COVID-19 school closure: The role of teachers' self-efficacy. *Educational Studies, 34*(3), 1-13. https://doi.org/10.1080/03055698.2021.1960151

Nouraey, P., Bavali, M., & Behjat, F. (2023). A systematic review of e-learning in the context of Iran: Where does English language teaching stand?. *Journal of Studies in Learning and Teaching English*, *12*(3), 31-44. https://sanad.iau.ir/journal/jslte/Article/707395?jid=707395

Oktoma, E., Nugroho, M. A. B., & Suryana, Y. (2023). E-learning as a platform in studying English among EFL learners: Benefits and barriers. *English Review: Journal of English Education*, *11*(2), 405-412. https://doi.org/10.25134/erjee.v11i2.7566

Omidinia, S., Masrom, M., & Selamat, H. (2011). Review of e-learning and ICT infrastructure in developing countries (Case study of Iran). *American Journal of Economics and Business Administration, 3*(1), 120-125. https://doi.org/10.3844/ajebasp.2011.120.125

Ortega, C. P. C., de la Torre, A. J. V., Novillo, A. C. M., & López, E. R. R. (2023). Blended learning in English language teaching. *Journal of Namibian Studies: History, Politics, Culture*, *33*, 2610-2624. https://doi.org/10.59670/jns.v33i.892

Osadcha, K. P., Osadchyi, V. V., Symonenko, S. V., & Medynska, S. I. (2023). Analysis of the state of the art of modern e-learning in higher education in Germany. In *Journal of Physics: Conference Series* (Vol. 2611, No. 1, p. 012021). IOP Publishing. 10.1088/1742-6596/2611/1/012021

Panahandeh, M., & Chalak, A. (2022). Role of gamification in doing homework by Iranian EFL learners. *Journal of Studies in Learning and Teaching English*, *11*(2), 227-243. https://sanad.iau.ir/journal/jslte/Article/707216?jid=707216

Putro, H. P. N., Hadi, S., Rajiani, I., & Abbas, E. W. (2023). Adoption of e-learning in Indonesian higher education: Innovation or irritation?. In E. W. Abbas (Ed.), *Membelajarkan Diri Menulis Membukukan Tulisan* (pp. 177-194). Penerbit NEM.

Rafiee, M., & Abbasian-Naghneh, S. (2021). E-learning: Development of a model to assess the acceptance and readiness of technology among language learners. *Computer Assisted Language Learning*, *34*(5-6), 730-750. https://doi.org/10.1080/09588221.2019.1640255

Riwayatiningsih, R., & Sulistyani, S. (2020). The implementation of synchronous and asynchronous e-language learning in EFL setting: A case study. *BASIS: Jurnal Bahasa dan Sastra Inggris*, *7*(2), 309-318. https://doi.org/10.33884/basisupb.v7i2.2484

Sáez-López, J. M., Cózar-Gutiérrez, R., González-Calero, J. A., & Gómez Carrasco, C. J. (2020). Augmented reality in higher education: An evaluation program in initial teacher training. *Education Sciences*, *10*(2), 26. https://doi.org/10.3390/educsci10020026

Sagafe, A., & Wendebon, T. (2023). An inconvenient truth? The (un-) importance of e-learning as a tool for sustainable education in Germany. *Teacher Education*, *111*, 134-156. https://B2n.ir/h20015

Salahshouri, A., Eslami, K., Boostani, H., Zahiri, M., Jahani, S., Arjmand, R. & Dehaghi, B. F. (2022). The university students' viewpoints on e-learning system during COVID-19 pandemic: The case of Iran. *Heliyon*, *8*(2). 1-7. https://doi.org/ 10.1016/j.heliyon.2022.e08984

Schüll, A., & Brocksieper, L. (2023). Distance digital learning for adult learners: Self-paced e-learning on business information systems. In J. Filipe, M. Śmiałek, A. Brodsky, & S. Hammoudi (Eds.), *International Conference on Enterprise Information Systems* (pp. 313-337). Springer. https://doi.org/10.1007/978-3-031-39386-0_15

Shahmoradi, L., Changizi, V., Mehraeen, E., Bashiri, A., Jannat, B., & Hosseini, M. (2018). The challenges of E-learning system: Higher educational institutions perspective. *Journal of Education and Health Promotion*, *14*(7), 116-132. http://doi.10.4103/jehp.jehp_39_18.PMID:30271801;PMCID:PMC6149121

Shahnama, M., Yazdanmehr, E., & Elahi Shirvan, M. (2021). Challenges of online language teaching during the COVID-19 pandemic: A process-tracing approach. *Teaching English as a Second Language*, *40*(3), 159-195. https://doi.org/ 10.22099/jtls.2021.40964.3015

Siemens, G. (2005). Connectivism: Learning as network-creation. *ASTD Learning News*, *10*(1), 1-28. https://masters.donntu.ru/2010/fknt/lozovoi/library/article4.htm

Stolz, K. (2023). The impact of digitalisation on higher education teaching in Germany. In L. Leišytė, J. R. Dee, & B. J. van der Meulen (Eds.), *Research Handbook on the Transformation of Higher Education* (pp. 281-294). Edward Elgar Publishing. https://doi.org/10.4337/9781800378216.00028

Taghizadeh, M., & Hajhosseini, F. (2021). Investigating a blended learning environment: Contribution of attitude, interaction, and quality of teaching to the satisfaction of graduate students of TEFL. *The Asia-Pacific Education Researcher*, *30*, 459-469. https://doi.org/10.1007/s40299-020-00531-z

Torabi, S., & Safdari, M. (2020). The effects of electronic portfolio assessment and dynamic assessment on writing performance. *Computer-Assisted Language Learning Electronic Journal*, *21*(2), 51-69. https://B2n.ir/k12141

Ufuophu-Biri, E., & Ijeh, N. P. (2021). The place of digital nativity and digital immigration on internet accessibility and usage by students and lecturers of tertiary institutions of

learning in Delta State, Nigeria. *Academic Journal of Interdisciplinary Studies, 10*(1), 214-227. https://doi.org/10.36941/ajis-2021-0019

Vahdani Asadi, M. R., Eskandari, H., & Khodabandelou, R. (2023). Barriers to the integration of e-learning in an Iranian education system. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, *14*(1). https://doi.org/10.30476/IJVLMS.2023.94775.1144

Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478. https://doi.org/10.2307/30036540

Wheeler, S. (2012). E-learning and digital learning. In N. M. Seel (Ed.), *Encyclopedia of the sciences of learning* (pp. 1109-1111). Springer. https://doi.org/10.1007/978-1-4419-1428-6_431

White, M. A. (1983). Synthesis of research on electronic learning. *Educational Leadership, 40*(8), 13-15. https://www.learntechlib.org/p/134860/

Zakarneh, B. M. (2018). Effectiveness of E-learning mode for teaching English language in Arab Universities. *International Journal of Applied Linguistics and English Literature*, *7*(7), 171-181. https://doi.org/10.7575/aiac.ijalel.v.7n.7p.171

Zawacki-Richter, O. (2021). The current state and impact of COVID-19 on digital higher education in Germany. *Human Behavior and Emerging Technologies*, *3*(1), 218-226. https://doi.org/10.1002/hbe2.238

Žmuk, B., Hussain Qureshi, F., & Khawaja, S. (2023). Inequality in e-learning in European Union countries: Role of gender, education and urban development. *Interdisciplinary Description of Complex Systems, 21*(5), 441-457. https://doi.org/10.7906/ indecs.21.5.2

Appendix A

German vs. Iranian Teachers' Perspectives on Opportunities of E-learning Integration

No	Questions	G Vs. I	Strongly agree		Agree		Neither agree/nor disagree		Disagree		Strongly disagree	
			F	P	F	P	F	P	F	P	F	P
1	Online teaching makes it possible to teach from anywhere/any time.	G	20	76.9	4	15.4	2	7.7	0	0	0	0
		I	64	69.5	14	15.2	6	6.5	4	4.3	4	4.3
2	It provides teachers with ease of access to online materials/resources.	G	8	30.8	2	7.7	16	61.5	0	0	0	0
		I	50	54.3	26	28.3	8	8.7	4	4.3	4	4.3
3	At the time of pandemics, it creates less mental/physical stress	G	6	23.1	10	38.5	6	23.1	4	15.4	0	0
		I	52	56.5	18	19.6	12	13	6	6.5	4	4.3
4	It provides the possibility of discussion on online forums and sending immediate reactions.	G	8	30.8	8	30.8	6	23.1	4	15.4	0	0
		I	30	32.6	44	47.8	8	8.7	4	4.3	6	6.5
5	Online teaching could boost students' motivation & positive attitudes.	G	2	7.7	6	23.1	6	23.1	8	30.8	4	15.4
		I	8	8.7	26	28.3	32	34.8	20	21.7	6	6.5
6	Alternative online evaluative practices are available for teachers.	G	8	30.8	6	23.1	8	30.8	4	15.4	0	0
		I	14	15.2	42	45.7	18	19.6	14	15.2	4	4.3
7	Online teaching could encourage students to practice continuous self-learning & increase autonomy.	G	6	23.1	8	30.8	8	30.8	4	15.4	0	0
		I	22	23.9	42	45.7	14	15.2	12	13	2	2.2
8	Online teaching creates a collaborative learning environment & increases interaction.	G	2	7.7	0	0	2	7.7	12	46.2	10	38.5
		I	10	10.9	30	32.6	14	15.2	32	34.8	6	6.5

No	Questions	G Vs. I	Strongly agree		Agree		Neither agree/nor disagree		Disagree		Strongly disagree	
			F	P	F	P	F	P	F	P	F	P
9	It gives opportunities for recording and storing lectures, for teachers' reflections and students' review.	G	14	53.8	10	38.5	2	7.7	0	0	0	0
		I	48	52.2	34	37	4	4.3	2	2.2	4	4.3
10	Teachers can organise a library of sources/materials into folders to share with different groups/students.	G	22	84.6	4	15.4	0	0	0	0	0	0
		I	44	47.8	40	43.5	2	2.2	4	4.3	2	2.2
11	It has the advantage of viewing/using many free and non-free applications.	G	10	38.5	2	7.7	12	46.2	2	7.7	0	0
		I	44	47.8	30	32.6	10	10.9	6	6.5	2	2.2
12	Online teaching help to make up for school flaws, inadequate facilities or absentee teachers.	G	6	23.1	6	23.1	4	15.4	4	15.4	6	23.1
		I	32	34.8	42	45.7	4	4.3	12	13	2	2.2
13	Offering technical online skills improves teachers' efficiency.	G	16	61.5	4	15.4	4	15.4	2	7.7	0	0
		I	32	34.8	34	37	18	19.6	8	8.7	0	0
14	It ensures equitable access, support, and learning for more students.	G	2	7.7	10	38.5	8	30.8	6	23.1	0	0
		I	24	26.1	40	43.5	16	17.4	10	10.9	2	2.2
15	It increases teachers' and learners' innovation and creativity.	G	4	15.4	4	15.4	10	38.5	6	23.1	2	7.7
		I	22	23.9	34	37	26	28.3	10	10.9	0	0
16	Online teaching makes administration prepared for other disruptions like pandemics or disasters.	G	12	46.2	6	23.1	6	23.1	2	7.7	0	0
		I	50	54.3	32	34.8	4	4.3	2	2.2	4	4.3
17	Facilitates online connections, video-conferencing, meetings with students and colleagues	G	20	76.9	6	23.1	0	0	0	0	0	0
		I	48	52.8	36	39.1	0	0	4	4.3	4	4.3

No	Questions	G Vs. I	Strongly agree		Agree		Neither agree/nor disagree		Disagree		Strongly disagree	
			F	P	F	P	F	P	F	P	F	P
	worldwide.											
18	It helps teachers familiarise with cybersecurity and code of conduct.	G	2	7.7	8	30.8	8	30.8	4	15.4	4	15.4
		I	28	3.4	36	29.1	20	21.7	6	6.5	2	2.2
19	It provides partnerships/ opportunities with universities & organisations	G	12	46.2	6	23.1	8	30.8	0	0	0	0
		I	42	45.7	38	41.3	4	4.3	6	6.5	2	2.2
20	It helps administrative train a new generation of technologically skilled & self-empowered students/teachers.	G	6	23.1	10	38.5	8	30.8	2	7.7	0	0
		I	32	34.8	50	54.3	2	2.2	8	8.7	0	0

(Note: F → Frequency, P → Parentage, G→ German, I → Iranian)

Appendix B

German vs. Iranian Teachers' Perspectives on Challenges of E-learning Integration

No	Questions	G Vs I	Strongly agree		Agree		Neither agree/nor disagree		Disagree		Strongly disagree	
			F	P	F	P	F	P	F	P	F	P
1	Online teaching is time-consuming, difficult to develop appropriate e-learning content/exams/assignments.	G	6	23.1	2	7.7	8	30.8	4	15.4	6	23.1
		I	10	10.9	18	19.6	12	13	40	43.5	12	13
2	Online teaching limits the students and teaching staff direct interaction.	G	8	30.8	8	30.8	6	23.1	2	7.7	2	7.7
		I	26	28.3	44	47.8	12	13	10	109	0	0
3	There are not enough Tech/software support required for home access.	G	8	30.8	6	23.1	6	23.1	4	15.4	2	7.7
		I	8	8.7	24	26.1	14	15.2	36	39.1	10	10.9
4	There are not enough training courses or administrative support.	G	6	23.1	6	23.1	8	30.8	6	23.1	0	0
		I	24	26.1	44	47.8	12	13	12	13	0	0
5	There are problems with the Internet access.	G	10	38.5	8	30.8	6	23.1	2	7.7	0	0
		I	50	54.3	32	34.8	2	2.2	6	6.5	2	2.2
6	Online teaching changes the faculty's roles and responsibilities.	G	6	23.1	8	30.8	6	23.1	6	23.1	0	0
		I	14	15.2	34	37	20	21.7	20	21.7	4	4.3
7	Inadequate ICT skills of the teachers or students are challenging.	G	8	30.8	6	23.1	6	23.1	6	23.1	0	0
		I	32	34.8	40	43.5	18	19.6	2	2.2	0	0
8	Teachers' need to purchase equipment (a computer, laptop, smartphone, headphone, microphone) is an issue.	G	6	23.1	6	23.1	8	30.8	2	7.7	4	15.4
		I	36	39.1	34	37	4	4.3	18	19.6	0	0
9	Students' lack of enthusiasm or motivation to interact, answer questions, or learn new technology is a challenge for teachers.	G	8	30.8	6	23.1	6	23.1	6	23.1	0	0
		I	44	47.8	24	26.1	16	17.4	6	6.5	2	2.2
10	Online teaching is not suitable for teaching practical subjects.	G	2	7.7	10	38.5	2	7.7	10	38.5	2	7.7
		I	24	26.1	40	43.5	12	13	16	17.4	0	0
11	There are always cyber threats and decreased privacy (risk of being recorded/photographed/screenshotted).	G	8	30.8	4	15.4	4	15.4	6	23.1	4	15.4
		I	32	34.8	44	47.8	6	6.5	10	10.9	0	0

No	Questions	G Vs I	Strongly agree		Agree		Neither agree/nor disagree		Disagree		Strongly disagree	
			F	P	F	P	F	P	F	P	F	P
12	There are difficulties with verifying students' knowledge/skills reliably (e.g., cheating during tests).	G	2	7.7	8	30.8	8	30.8	6	23.1	2	7.7
		I	48	52.2	38	41.3	2	2.2	2	2.2	2	2.2
13	There are always technical problems on the part of the teachers or students.	G	4	15.4	10	38.5	2	7.7	6	23.1	4	15.4
		I	24	26.1	50	54.3	14	15.2	4	4.3	0	0
14	The amount of time spent in front of a computer, smartphone, or other devices is too much.	G	10	38.5	4	15.4	6	23.1	4	15.4	2	7.7
		I	34	37	40	43.5	8	8.7	8	8.7	2	2.2
15	The cost of electricity and the Internet is high.	G	2	7.7	4	15.4	12	46.2	4	15.4	4	15.4
		I	24	26.1	34	37	10	10.9	18	19.6	6	6.5
16	Teachers' excessive use of their own equipment for teaching is an issue.	G	8	30.8	2	7.7	8	30.8	2	7.7	6	23.1
		I	40	43.5	26	28.3	12	13	10	10.9	4	4.3
17	The online environment at home might not be suitable (because of the presence of children or family).	G	16	61.5	6	23.1	2	7.7	2	7.7	0	0
		I	30	32.6	44	47.8	12	13	4	4.3	2	2.2
18	Some staff resist and have negative attitudes towards e-learning.	G	12	46.2	8	30.8	6	23.1	0	0	0	0
		I	40	43.5	36	39.1	10	10.9	6	6.5	0	0
19	The lack of body language in virtual communication makes it difficult to understand a student accurately.	G	10	38.5	10	38.5	0	0	8	30.8	0	0
		I	28	30.4	42	45.7	16	17.4	4	4.3	2	2.2
20	There is a mismatch of the existing content or curriculum with the mode of online delivery.	G	4	15.4	6	23.1	10	38.5	6	23.1	0	0
		I	24	26.1	36	39.1	12	13	18	19.6	2	2.2

(Note: F → Frequency, P → Parentage, G → German, I → Iranian)

Appendix C

Teachers' Interview Questions

No	Interview Questions
1.	Have you ever experienced online teaching? When? How was your experience?
2.	How did you structure your online classes (e.g., pre-recorded podcasts/videos, online meeting platforms, PowerPoints, YouTube, etc.)?
3.	Did you face any challenges in your online courses? Mention some of the major ones.
4.	What could be done to improve the online teaching delivery and overcome challenges? Which online tools worked particularly better, and why?
5.	Do you prefer to stay with an e-learning model? Which one do you prefer, face-to-face, online, or hybrid? (Present your attitude)
6.	What is the future of E-learning in higher education?