

Inequity in English Teacher Education during the Transition to Online Learning: Amplifying the Need for Socially Just Programs

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ABSTRACT

The present study investigated the challenges English student teachers encountered compared to non-English student teachers at Farhangian University in an online-learning environment. The data from focus groups, reflections, and interviews were analyzed using content analysis. The identified challenges were: (1) the primary challenges pertaining to attending online learning conditions, and (2) secondary challenges including the adaptation and adjustments that had to be made to have a more effective online learning experience. Group comparisons revealed different learning pathways for the two groups. It was found that the female student teachers suffered from gender inequity, especially the ones imposed by social or traditional values and their familial roles. Furthermore, the findings also revealed that these two social groups faced distinct challenges resulting from different sources. That is, while attaining rudimentary conditions was the major source of challenges for the student teachers of non-English majors, overcoming the barriers preventing their effective learning and academic achievement was the main challenge for the students majoring in English. It was concluded that the two social groups go through two distinct pathways. Possible ways to safeguard social justice in terms of gender and social group equity in online teacher education based on the concept of “digital divide” are put forward.

ARTICLE TYPE:

Research Article

ARTICLE HISTORY:

Received 16 December 2025
Received in revised form 13 May 2026
Accepted 28 May 2026
Published Online 31 June 2026

KEYWORDS:

Digital divide;
Educational inequity,
English student
teachers, Non-English
student teachers,
Transition to online
learning

CITE THIS ARTICLE: Maghsoudi, M., & Khodamoradi, A. (2026). Gendered Power Dynamics in Academic Transgressions: In Search of a New Role for Higher Education Leaders. *Issues in Language Teaching*, 15(1), 29–55.
<https://doi.org/10.22054/ilt.2026.79039.847>



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Publisher: Allameh Tabataba'i University Press

Introduction

The rapid and forced transition to online learning has fundamentally altered the landscape of English teacher education. Multiple strategies such as shutting down face-to-face classes and shifting to online classes were the most widespread ones (Moorhouse, 2020). This pushed learners in different educational centers, including higher education students, to adapt themselves to these changes which, in some cases, were unwanted and, in many cases, abrupt and unplanned. Several studies conducted during and after this period revealed that these shifts could, to diverse extents, influence students in teacher education centers, as emphasized by Allen et al. (2020) and Carrillo and Flores (2020).

Several innovative approaches to pedagogy have recently proliferated as a result of the rapid, large-scale shift toward digital learning environments. This transition, which accelerated the adoption of online instruction, has fundamentally reshaped the landscape of English teacher education, necessitating a critical interrogation of the emerging inequalities inherent in these new educational modalities (Scull et al., 2020; Yu et al., 2021). Teacher-as-prosumer was also an innovative sustainable educational framework which encouraged pre-service teachers to be not just consumers of media but creators of their own educational resources (Triviño-Cabrera et al., 2021). Overall, in practice, novel blended or hybrid learning models combining specific digital platforms became a key innovation (Emiliasari et al., 2022; Wirawati et al., 2022).

The recent rapid transition to online learning triggered a re-evaluation of (student) teacher preparation for digital environments, and drew attention to emerging needs in teacher professional development. In Iran, particularly, a shift towards prioritizing technological pedagogical and content knowledge (TPACK) in teacher programs has become more visible (Maghsoudi, 2023; Tafazoli & Meihami, 2023). The pandemic encouraged teachers to engage in expansive learning, characterized by actively seeking design knowledge for online education, despite the fact that they were often at a preliminary stage of data-driven and knowledge-creating design practices (Badrkhani, 2023).

The findings of the previous research amplified the concern that disadvantaged and underprivileged students, especially those who hardly accessed technology, suffered more, and might have experienced educational inequities more severely (Ebadi & Najafi, 2025; Van Deursen & Van Dijk, 2019). It has to be noted that students' cultural background and their origins could have been influential when they underwent exclusive distant online learning. In many instances in Iran, learners were deprived of accessing

external, especially on-campus, sources like university library or scientific databases. Considering these issues altogether underscores the significance of social justice in teacher education, specifically inequity and inclusion, as emphasized by Heemskerk et al. (2011). Inclusion, as opposed to inequity, is incorporating technology in educational process, to guarantee representations of diverse populations, values and preferences (inclusive content), provide visual and auditory content (inclusive interface), and offer tools for minorities and student input (inclusive instructional structure).

General challenges such as connectivity, mental health, and resource access have been the primary focus of research on online teacher education following the shift to remote instruction. However, how these challenges may differ across academic disciplines has attracted little attention. Particularly, a comparison and contrast of what the student teachers majoring in English and the ones in other subjects have not been conducted. Moreover, while the digital divide has been studied in terms of access (first-level) and usage (second-level), its intersection with field of study and sociocultural background remains underexplored from a local or ecological perspective. This study was an attempt to consider these gaps, and pave the way for providing a more inclusive teacher education program for student teachers majoring in English.

Literature Review

Online Teacher Education

Online teacher education provides teacher educators with diverse teaching opportunities through which they interact with their students remotely (Carrillo & Flores, 2020). This approach to teacher education is becoming more widespread as it allows more innovative teaching-learning process as emphasized by Avidov-Ungar et al. (2020), due to its adjustability, efficiency, and learner-centeredness (Heemskerk et al., 2011). However, this digital evolution also necessitates a rigorous examination of the inequities that can emerge within these virtual spaces, underscoring the urgent need to design and implement programs that prioritize social justice for all pre-service teachers.

The growing trend of adopting online learning environments predates the COVID-19 pandemic (Martinovic & Zhang, 2012), with its inherent challenges and pedagogical processes having been established in earlier research (Kleinsasser & Hong, 2016; Alt, 2018; Dorner & Kumar, 2016). However, the outbreak of the pandemic served as a major catalyst,

significantly amplifying the significance of online teacher education. This unprecedented shift prompted more rigorous investigation into the affordances of digital environments, leading to a surge in scholarly interest regarding the effectiveness of teaching, assessment processes, teacher knowledge, and professional engagement both during and after the crisis (Badrkhani, 2023; Carrillo & Flores, 2020; Tafazoli & Meihami, 2023).

The research findings pertaining to challenges of online teacher education and the strategies which could be implemented to enhance its effectiveness needed to be reconsidered in terms of their theoretical value and contribution to teacher education during the pandemic so that online teacher education programs could adapt themselves to the “new normal”. Accordingly, a number of innovative theoretical contributions were made to online teacher education in terms of reforming curricular practice and teacher education program implementation.

Teacher design knowledge, as elaborated by Badrkhani (2023) and Kim (2019), provided a crucial theoretical taxonomy and teacher design taxonomy for analyzing how teachers develop knowledge for creating online learning environments. This framework introduces a number of developmental stages of teacher transition from conventional education (as existed before the pandemic) to online education (which had to be adopted during the pandemic). The stages are documentation (collecting, reviewing, and organizing existing digital resources, lesson plans, platforms, and tools created by others), visualization (mapping out course structures, learning pathways, or assignment sequences), and knowledge-creating practices (developing new principles, epistemic agency, formative assessment for knowledge creation, and reflection).

Some studies (e.g., Mahlo & Waghid, 2025; Masry-Herzallah, 2025; Tafazoli & Meihami, 2023) indicated that a number of online teacher education programs reconsidered their conventional practice and theoretical underpinning like TPACK to call for a reformed teacher preparation program during the pandemic. Accordingly, they made efforts to prioritize technological pedagogical knowledge (TPK) component of the model (Mishra & Koehler, 2006), and from a practical lens, they effectively integrated and calibrated the current available resources to fill the noted gaps of the curriculum and program during the pandemic.

Taking the emotional and affective aspects of academic learning into account, informal learning and efficacy models blossomed during the pandemic. As its satisfactory and promising offshoots, a can-do motivating model by Yu et al. (2021) linked online informal learning to innovative teaching through enhanced efficacy. Investing in (teacher) efficacy (Bandura,

1997) and workplace informal learning as its theoretical ground Yu et al. (2021) devised a theoretical model which could contribute to professional growth and innovation in online settings via informal, social, and autonomous learning activities, when it was integrated to an online education program, as emphasized by Loia and de Gennaro (2023).

Difficulties teacher educators and student teachers faced when adjusting themselves to the new condition were the most-cited challenges in online learning environments. The top issues enumerated in previous studies were connectivity, mental health-related issues, uncondusive environments, and insufficient teaching-learning resources (Ghanavatizadeh et al., 2024; Ghoorchian, 2024; Mseleku, 2020).

In spite of the plethora of research on online learning, it seems that the learning equity has hardly received attention during and after the pandemic (e.g., Dewi & Muhid, 2021; Shahzad et al., 2021). Moreover, they mostly dealt with participants' perceptions, rather than the challenges they encountered during this period. The few studied focused on these challenges showed that the pandemic threatened and lessened the student teacher's productivity mainly due to their familial responsibilities (Gabster et al., 2020). Accordingly, female academics underwent a more severe pressure due to their increased domestic labor like caregiving responsibilities. Female academic disproportionate traditional roles such as childcare and homeschooling during the pandemic were additional burdens; women spent more time than men on childcare and home schooling. These burdens were exponentially heavier for single-parent families (primary female households), as emphasized by Gabster et al. (2020). These burdens competed with the time needed for research, writing, and other academic work. Other studies, as reviewed by Dhawan (2020), underscored the significance of socially just and equal distribution of information and communication technology infrastructure, also referred to as lessening "the digital divide." Within Iranian context, for example, Ghourchian's (2024) analysis of interviews and surveys within grounded theory approach indicated access to technology, student engagement, teacher preparedness, and the imposition of socioeconomic factors widening digital divide in online education programs.

The Digital Divide and Online Learning

Moving beyond a simplistic "have vs. have not" model, from a theoretical perspective, the Corona pandemic raised the issues of connectivity quality, digital literacy, and institutional support under the digital-divide umbrella in the literature related to online learning. In theory, digital divide was framed

across multiple levels like access, usage, and outcomes (Van Dijk, 2019). This aligns with challenges noted regarding limited bandwidth (Ghanavatizadeh et al., 2024), lack of student access to devices (Emiliasari et al., 2022), and teachers' need for digital literacy development (Tafazoli & Meihami, 2023). Social justice was also discussed in the light of critical digital pedagogy to account for the inequalities that were exacerbated during the pandemic. Older theoretical debates on social justice in education and critical digital pedagogy provided a foundation for discussing the ethical issues pertaining to the digital divide during the pandemic. This was connected to findings showing that teacher students' limited affordances (Emiliasari et al., 2022), and the influence of socioeconomic factors (Ghourchian, 2024) was highlighted as central concerns, which in turn aroused interest in developing solutions that were more inclusive and equitable.

The digital divide, or sometimes referred to as the first-level digital divide, is simply defined as the gap between those who can access to the Internet, and those cannot, keeping the latter group away from the benefits of online learning (Norris, 2001). The second-level digital divide includes inequality in material access (Van Deursen & Van Dijk, 2019), and internet skills and usage (DiMaggio et al., 2004; Van Deursen & Van Dijk, 2014). Recent research has shown a widening gap by the consequences of second level digital divide in terms of the Internet use and its palpable benefits (e.g., Van Deursen & Van Dijk, 2019; Van Deursen & Helsper, 2015).

Gender (Saha & Zaman, 2017; Van Deursen & Van Dijk 2019), region (Graham et al., 2012), and sociocultural status (Van Dijk, 2005; Zillien & Hargittai, 2009) were identified as the factors contributing to various levels of digital divide. Additionally, coming from a minority group was found to be a reason for students' deprivation from online education (Saha et al., 2021). They were less likely to have access to essential digital devices and reliable, high-speed internet. They also lacked a conducive learning environment (e.g., a private space). They had lower levels of digital literacy, too, so that they had more problem using learning management systems. Moreover, these students experienced higher levels of anxiety and stress, more intense depression and feeling of isolation, and lower self-esteem. These factors could have played a different role independently or in combination with other unknown variables during the lockdown. This would be an impetus to research the potential negative impacts of learners' cultural background, origins, domestic roles, limited resources, and values have on effective online learning.

Research on the digital divide affecting teacher education and pre-service English teachers is very scarce worldwide. More specifically, the challenges

pertaining to the digital divide encountered by English student teachers during the transition to online learning have received little-to-no attention. Student teachers of English, unlike the ones majoring in non-English subjects rely on different types of content delivery, interaction, and assessment, are often involved in interactive, communicative, and collaborative pedagogies that may be disrupted in online environments. This study examined if this difference led to divergent learning pathways and inequitable experiences during the pandemic. Furthermore, taking traditional gender roles and sociocultural values into account, the present study made an attempt to further discover how gender may play role in intensifying or alleviating the technical and cultural constraints imposed by online learning condition. This paucity enticed the present researchers to explore the issue among the population of pre-service English teachers at Farhangian University, Arak, Iran. Therefore, the following research questions were addressed in this research:

1. How do the pre-service English teachers at Farhangian University describe the learning challenges pertaining to the use of online learning during the transition to online learning?
2. In what ways do the challenges encountered by the pre-service English teachers differ from those experienced by the pre-service non-English teachers at Farhangian University?

Method

The researchers utilized a phenomenological perspective in this study, which involves exploring the essence of a phenomenon from the participants' viewpoint. This approach aligns with grounded theory principles by Corbin and Strauss (2008) and focuses on understanding the challenges faced by student teachers in the online learning environment during the transition to online learning. The sudden shift to exclusive online learning for both English and non-English pre-service teachers was the primary focus. Adhering to Holstein (1994) and Schwandt (1994), this method was suitable for developing an insight toward the problem based on the participants' experiences rather than relying on predefined theories. The study aimed to capture the perceived experiences of online-learning challenges faced by student teachers during the transition to online learning.

Participants

The participants were 154 pre-service teachers studying at Farhangian University, including 61 English student teachers and 93 non-English student

teachers from the Faculty of Humanities. All participants were native speakers of Persian (Farsi) and were in their third or fourth year of study, having completed several teacher education courses as well as mandatory practicum components. In terms of gender, 42 English student teachers and 66 non-English student teachers were female, while 19 English and 27 non-English student teachers were male. Regarding marital status, the majority of participants were single ($n = 142$), and only a small proportion were married (six English majors and six non-English majors). The English majors generally demonstrated intermediate to upper-intermediate levels of English proficiency due to their academic training, whereas the non-English majors typically showed pre-intermediate proficiency.

Table 1.
Participants' Profiles

Background		English student teachers	Non-English student teachers
Total		$N = 61$	$N = 93$
Age	21–22	51	78
	23–24	10	15
Gender	Female	42	66
	Male	19	27
Marital Status	Single	55	87
	Married	6	6

Most participants possessed limited but relevant teaching experience obtained through school-based practicum programs required by the university. Participants' ages were between 21 and 24 years. More details about the participants are shown in [Table 1](#).

Data Collection

Data collection was completed in eight weeks, using different instruments. This made it possible to triangulate results and to appreciate the phenomenon. Focus groups ($N = 2$), semi-structured interviews ($N = 154$), and written reflections ($N = 134$) (see [Table 2](#)) were the instruments of data collection. Employing both written reflections and semi-structured interviews for data collection instruments was guided by the exploratory nature of the research and the need to collect data about both the breadth and depth of student teachers' experiences of online learning during the COVID-19 pandemic.

To develop the semi-structured interview protocol for this study, an initial item pool consisting of 12 open-ended questions was designed to align with the study's research questions and previous studies (e.g., Hassani, [2021](#);

Khatoony & Nezhadmehr, 2020; Mutton, 2020). With regard to the purpose of the study, the interview questions were organized into three thematic sections based on input from five experts in Teaching English as a Foreign Language (TEFL), Educational Technology, and Educational Research reviewed and validated these items, which were subsequently organized into three thematic sections. First, participants' background and prior experience with online teaching and learning were probed. Second, specific strategies, tools, and innovations participants employed or observed during their online teacher education program were discussed by asking three questions. Finally, their perceived challenges, supports, and recommendations for improving online teacher education were investigated via four questions.

To ensure the content validity of the interview protocol, the interview questions were evaluated in terms of their clarity and comprehensibility, alignment with research objectives, and relevance to the target population. Based on the experts' feedback, three questions were rephrased for greater clarity, four questions were merged into two to avoid redundancy, and three questions were removed resulting in a final protocol of seven questions.

After the expert validation stage was accomplished, the interview questions were piloted with six student teachers (three from each group) who did not participate in the main study but had similar characteristics to the target population. The approximate duration of the interviews and the ambiguous or difficult items were identified. Minor revisions were made in the interview questions, and the final interview form was prepared.

Table 2.

Data Collection and Analysis

Types of Data	Number	Descriptions	Sample Questions	Analysis	Coding System
Participants' written reflections	<i>N</i> = 46 English and 88 Non-English student teachers	Participants were required to freely write about the challenges they experienced when they shifted to online learning. They were encouraged to write about the issues such as the lessons they learned, their	"Please write about your experience of the shift you made to online learning after COVID-19 broke out. You may describe your challenges, your opinion, your feelings, etc."	The collected data were analyzed via content analysis.	Participants' reflections were coded separately and sequentially for English and non-English majors, and overall, respectively.

Types of Data	Number	Descriptions	Sample Questions	Analysis	Coding System
		feelings and comments.			
Semi-structured interviews	<i>N</i> = 154: 61 with English student teachers and 93 non-English ones	It focused on their experiences of online learning during COVID-19 pandemic, emphasizing the challenges they had and probing their perceptions of what could have made the experience more effective.	"As far as you are concerned, what could have made online learning more effective during the pandemic?"	After the data from reflections and focus groups were analyzed, volunteer participants were invited to the semi-structured interviews. The sessions lasted fewer than 20 minutes. The data were analyzed via content analysis.	The data were coded separately and sequentially for English and non-English majors, and overall, respectively. Thematic inductive coding approach was used to derive codes from the data rather than classify them into pre-defined categories.

Having analyzed the data from focus groups and reflections, the researchers interviewed the student teachers. The interviews lasted about 20 minutes. Eventually, 93 semi-structured interviews were held with pre-service English teachers and 61 with pre-service non-English teachers.

Data Analysis

After coding the data, thematic qualitative-constructivist approach to content analysis, based on grounded theory, was used to unpack the phenomenon (i.e., the challenges faced by student teachers in online learning during the pandemic). The stages were: (1) a primary analysis to find out repeated themes, each of which was labeled as a topical unit of meaning, (2) the mapping analysis to identify units of meaning, and (3) focused analysis in which more pertinent categories to the goals of this research were selected. Eventually, to have a comparative perspective on English versus non-English student teachers' challenges, the frequencies of the themes and subthemes were reported for each group.

Triangulation of data collected via a variety of instruments reinforced trustworthiness of the analysis (Nowell et al., 2017). Using two coders also served to enhance trustworthiness of the analysis (Korstjens & Moser, 2018). Prior to independent coding, the coders held a session to review 13 written

reflections, during which the codebook was developed, and decision rules were established. Then, the same procedure was followed in the second session to review 15 interview transcripts. Afterwards, the two coders independently analyzed the rest of written reflections and interview transcripts on *Atlas.ti* 9. To ensure intercoder reliability, 20% of the coded data by the two coders was selected as the random sample for reliability analysis. The observed Cohen's kappa coefficient of 0.84 indicated that the analysis had a high level of intercoder reliability.

Results

Addressing the First Research Question

How do the pre-service English teachers at Farhangian University describe the learning challenges pertaining to the use of online learning during the transition to online learning?

Both English and non-English student teachers referred to a preliminary phase, during which they were worried about attending online learning conditions, and the secondary phase, during which they made adaptation and adjustments to make their online learning experience more effective (henceforward, they are labeled as preliminary and secondary phases). Four main themes emerged in these two stages: (a) the online learning devices, (b) cultural constraints for the preliminary phase, (c) fine-tuning to online-learning, and (d) developing necessary skills for the secondary phase. Although both groups mentioned these themes for both phases, the frequencies of their mentions were different.

1. The Preliminary Phase

(a) The Online Learning Devices. The technical constraints and conditions, including the struggle for attending classes given the lack of high-speed broadband connection available to them was dominant in the data set. Some of them emphasized that they had to manage online learning on their smartphones made the learning process challenging. Occasionally, possessing a single Personal Computer (PC) or laptop per family was the source of such difficulties.

I lived together with my roommate and I did not have a computer of my own. I sometimes had to borrow that of my roommate who had her own online classes. That's why I could not always attend my class in the first months. Later, when I returned home, the

situation was a little better but I still had to catch up on my classes on my smartphone since my siblings often needed my PC to attend their own classes (Neda, English, 21 years old).

Lack of technical prerequisites constituted a major barrier in online-learning environments, as instruction could not begin without these basic conditions being fulfilled. Owing to insufficient access to technological resources, some student teachers were unable to attend their classes consistently. Additionally, relying on mobile devices for online learning was perceived as particularly challenging.

Learning on a tablet sometimes makes it even impossible to learn. Although I have been doing many things through my tablet or smartphone, but when it came to online classes it was very problematic. For one thing, the screen is small, notifications kept popping up, and it was difficult to participate in class (Nader, non-English, 22 years old).

Even those who possessed adequate devices, other problems, prominently lack of uninterrupted internet connection made information transfer disrupting and uneasy. It seems that such a situation led to frustration and created a feeling of educational inequity among the student teachers.

Taking online classes was maddening. I had to struggle with joining and following the lesson. Where I live, good-quality internet is not available. So, when it was disconnected, I mostly abandoned the class (Farima, English, 23 years old).

(b) Cultural Constraints. This theme was especially pertinent to female participants' social roles. In traditional societies, women, especially the married female student teachers' familial role should be their top priority. For example, the following excerpt shows the conflict they experienced being sandwiched between doing their marital roles and meeting online class demands while being locked down in their homes during the pandemic.

It was difficult because I was a mother and a student teacher. As a mother who is seen as a homemaker, too, I managed my familial responsibilities, while doing my studies well. It was very difficult to ignore my family (Fatemeh, English, 23 years old)

Thus, it can be argued that being a mother and a spouse, and its convergence with the demands of online courses was a source of inequality in teacher education for female student teachers. Additionally, married female participants seem to have prioritized their children's needs.

Another cultural constraint emerging from home-study contradiction was female student teachers' roles as daughters and/or sisters. These roles were traditionally imposed, as mirrored in what a female participant stated below.

I am the eldest sister, with two younger brothers going to school. I was overwhelmed. I had to give a hand to my mom. They [my parents] expected me to monitor and track the classes my younger brothers taking online, as well. When could I attend my online class?! (Nazanin, non-English, 21 years old)

Familial responsibilities and expectations hindered the student teachers' engagement in online courses for both married and single pre-service teachers who came from a traditional society. In a nutshell, it seems that cultural constraints deprive some female students of engaging in online learning.

2. The Secondary Phase

(c) Fine-tuning to Online Learning. Three key challenges were extracted in this regard. The first one involved sitting submissively during an online class:

I found it hard to get accustomed to sitting in my chair for hours – it was more exhausting than a face-to-face class. (Behrooz, non-English, 22 years old)

As appears, attending an online class submissively has a threatening effect on student teachers' concentration. The asynchronous learning method common to online classes was the second challenge. This method, unlike the synchronous one featuring real-time lectures, led to the accumulation of assignments, PowerPoint presentations among other sort of duties to be fulfilled (Peachey, 2017) which added to the student teachers' feeling of unease.

They [the educators] sent us a pile of separated scattered files and we had to study them for presentation, mid-terms tests and final tests, as well. I felt we had a superficial learning in this period. (Pouria, English, 22 years old)

This might be attributed to the educators' lack of skills of how to put the asynchronous learning into practice effectively. This might have been so because they did not have a prior experience on how to hold an online course exclusively. However, the asynchronous teaching method was not totally criticized since some student teachers commented that it assisted them to catch up on their non-academic chores by trading time. A third challenge was

inadequate collaborative learning, as the student teachers experienced within face-to-face classes, especially in crowded classes. Unlike their conventional classes where collaboration for a variety of educational purposes was easily feasible in and out of classes, online learning during the pandemic provided fewer opportunities for (synchronous) group discussions and collaboration.

I missed the face-to-face classes during the pandemic ... There was little or no discussions ... my questions were frequently disregarded ... It was not easy to ask my classmates about them ... I mean, texting and sending voice messages or even talking on the phone could not replace face-to-face talking and explaining [the problems] (Yalda, English, 21 years old).

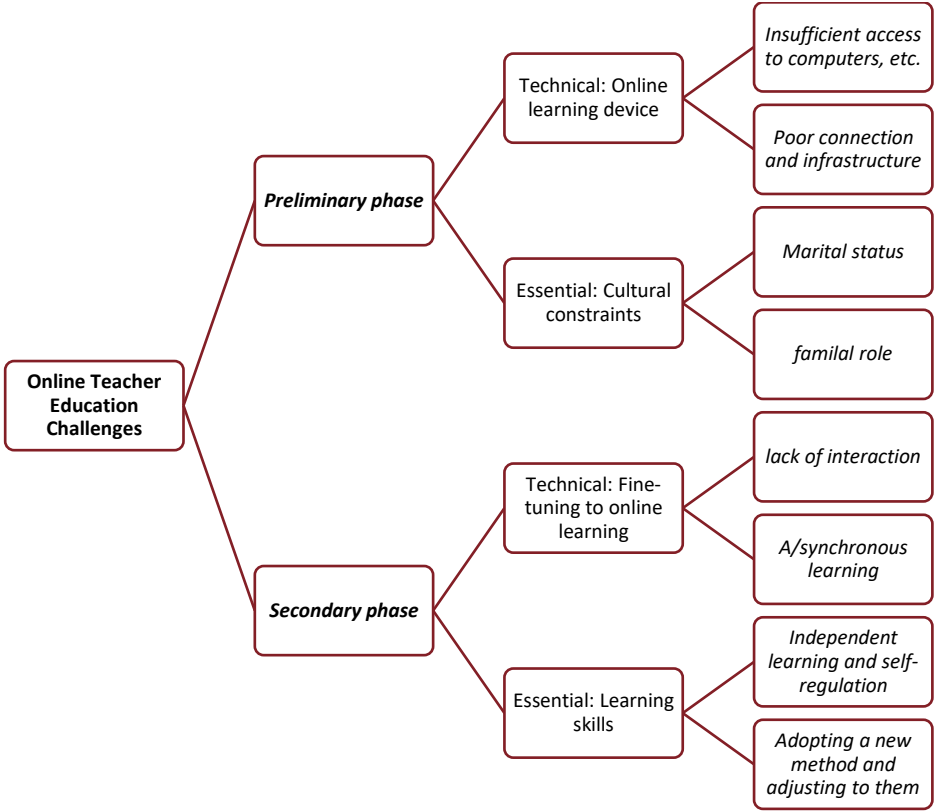
(d) *Developing Necessary Skills for Online Learning.* Many student teachers described the challenge of adapting themselves to the new study context and format. They also felt uncertain and unconfident facing the novel experience, i.e., online learning. Primarily, they had to learn particular study skills, in the absence of guidance and supervision, especially in a fluid learning situation, in which the teaching formats were changing constantly.

It was a completely different method and adjusting to it was not easy at all the system was unclear and nobody told us what they were doing... educators constantly changed their presentation format, especially in the first semester (Kowsar, English, 22 years old).

The novel method required unique skills which the participants found complicated to learn online since there was no training by the educators; they needed to schedule their learning and regulate it independently. In comparison to on-campus learning, they did not enjoy the preorganized schedule so that they needed to develop new skills to be more self-organized, self-disciplined, concentrated, and motivated.

Online classes require you to be self-disciplined; however, I was idle and sometimes I was demotivated. I had little drive... The load was heavy... difficult to study alone. (Jamal, non-English, 23 years old)

Figure 1.
The Emerged Model Including the Themes and Subthemes



Necessary study skills seem to be basic to online learning, and the ones for online learning are seemingly different from those usually encountered in regular classes. The lack of such skills may raise concerns, especially if they do not have enough time to prepare themselves. [Figure 1](#) depicts the main themes extracted from the data in this research and their cores (technical vs. essential).

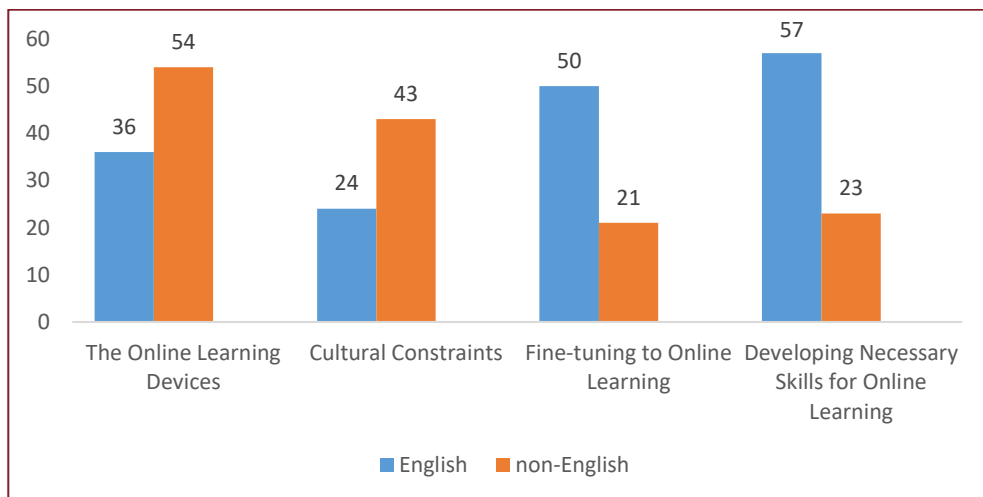
Addressing the Second Research Question

In what ways do the challenges encountered by the pre-service English teachers differ from those experienced by the pre-service non-English teachers at Farhangian University?

In this part, the perceived challenges of pre-service English and non-English teachers are compared. Accordingly, the frequency of each theme was mentioned. Figure 2 illustrates the findings according to each group.

Figure 2.

The Frequencies of Challenges for each Group of Student Teachers



As shown in Figure 2, the preliminary phase challenges were mostly mentioned by non-English student teachers, whereas challenges faced by English student teachers were in the context of the secondary phase. This pattern is likely to disturb the quantity and quality of learning the course material. As shown in Figure 2, 54 percent of the non-English student teachers pinpointed device-related or Internet-related problems, as compared to 36 percent among the pre-service English teachers.

The conflict, as shown in Figure 2, was more prevalent among the non-English student teachers than among the English ones (43 percent vs. 24 percent, respectively). To test if the observed difference reported in Figure 2 was statistically significant, a Chi-square test was run. The results shown in Table 3 statistically confirm the significant difference existed between the groups in terms of the challenges they faced while going through online instruction during the pandemic.

Table 3.

Chi-square Test for the Challenges Reported by Each Group of Student Teachers

	χ^2	df	p
Challenges reported by the students English and non-English majors	33.32	3	< .001

The challenges pertaining to the secondary phase were highlighted more frequently by the English student teachers than the non-English student teachers, if the differences between English and non-English students illustrated in Figure 2 are taken into consideration. The observed sharp contrasts between the two groups with regard to the type of challenges with which each group coped indicated that whereas most non-English student teachers struggled with preliminary device-related and cultural issues, most of the English student teachers focused on finding a way to increase the effectiveness of teaching-learning process. Accordingly, it was concluded that the focuses of the student teachers were different as far as their attempts to overcome the challenges were concerned. While the student teachers of non-English majors were struggling with attaining rudimentary conditions, the one majoring in English were making efforts to improve their learning and academic outcomes (Figure 3).

Figure 3.

Dissimilar Pathways of Online Learning for the Pre-service Teachers

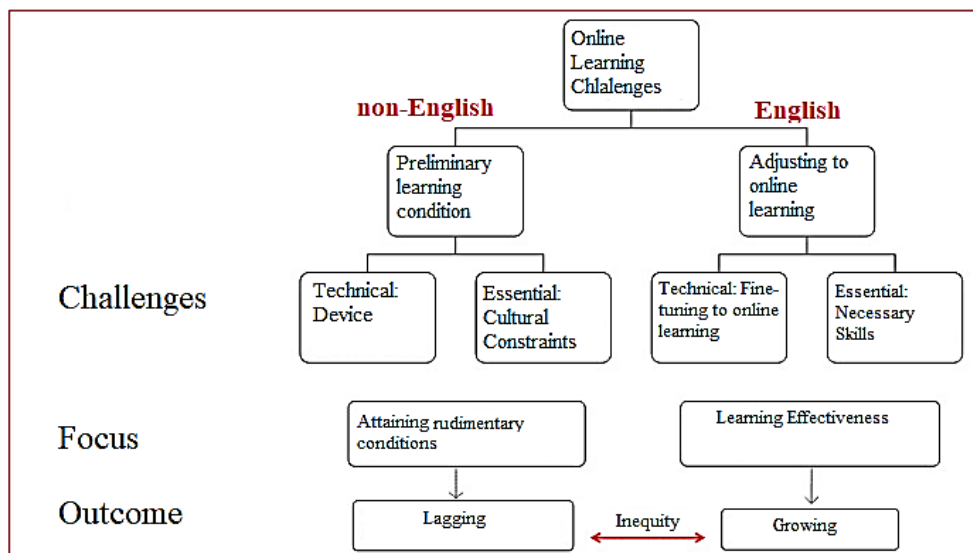


Figure 3 illustrates the discrepant learning pathways available to each group of student teachers, perceived as unlike sociocultural groups. It demonstrates that the learning pathway for non-English student teachers was different from that of the English student teachers. At their starting point, the English student teachers had more freedom to effectively manage their learning process, compared to the non-English student teachers, who from the beginning of the pandemic had to struggle to win the resources for preliminary learning

conditions. The gap finally led to different conditions in which the English student teachers grew (in terms of their online learning skills) while the non-English student teachers were perpetually trying to overcome the complexities of online learning.

Discussion

This study aimed to compare the online-learning challenges faced by English and non-English student teachers during the transition to online learning, which led to an exclusive shift to online teacher education. The findings support the concept of the digital divide as a significant source of inequity in online education. The research has several contributions to the existing literature on online teacher education, shedding light on the experiences and challenges of both groups in this unique learning environment. First, it highlights the division on three crucial levels: technology access, developing necessary online learning skills, and outcomes; second, different pathways through which the pre-service teachers of different fields experienced online-learning challenges, a less-researched area of the digital divide (i.e., sociocultural values) seems to be emerging. Specifically, it was shown that English pre-service teachers were engaged with effectively managing their learning to achieve more considerable outcomes, the pre-service non-English teachers were busy with improving their learning conditions in terms of overcoming cultural constraints and technical inadequacies.

The study contributed to the digital divide literature by underscoring the role of sociocultural factors, especially values, in safeguarding digital equity in teacher education. Accordingly, female pre-service teachers seemed to be more vulnerable to prioritizing social order, roles, and values of their traditional society over pursuing their education, as previously emphasized by Kass and Miller (2011) and Yu et al. (2021). Although the effect of attitudes toward the first-level digital divide has been emphasized (e.g., Ghourchian, 2024; Helsper & Reisdorf, 2017; Triviño-Cabrera et al., 2021), the effect of sociocultural variables (e.g., values) widening the digital divide was seldom addressed. Likewise, the present study echoes the previous ones (e.g., Ghourchian, 2024; Van Deursen & Van Dijk, 2014; Van Deursen & Van Dijk, 2019) in that recent technological progress can bring about a new form of digital divide not between generations but between various social groups of the same generation. The present study partly manifested this form of digital divide in teacher education which existed among teacher students of two different fields of study coming from the same generation.

The study's findings highlight the importance of addressing values and cultural aspects, such as gender-related issues, in teacher education. Ensuring social inclusion, in both online and offline education settings, requires addressing these inequities (Carter Andrews et al., 2017; Hassani, 2021). Additionally, the research offers a comprehensive account of the challenges arising from the sudden shift to distant learning, emphasizing the key features needed to support such transitions. However, the study's implications are primarily relevant to pandemic conditions and the potential use of online learning in non-critical situations.

A crucial implication of this study is the emphasis on considering female student teachers' familial roles and values. This finding aligns with Hilbert's (2011) and Yu et al.'s (2021) works on the digital divide. The study also highlights the joint impact of gender and cultural values in shaping the digital divide, particularly in teacher education. Addressing the gender disparities in technology access and usage becomes vital, especially during crises such as epidemics, and school closures. This implies that the teacher education programs need to further invest in practical pathways to ensure equitable teacher education.

Counter to the claim that accessing technology would improve women's participation in the virtual world, the findings demonstrated that cultural context may impose conditions in which women's social inclusion and equity are threatened. Thus, policy-makers ought to reconsider this issue. The link between the intercultural context of education and the pandemic has been emphasized in a number of previous studies (e.g., Dervin et al., 2020; Triviño-Cabrera, et al., 2021). The findings underscored that online teacher education is not only impaired by the lack of technical resources but also impaired by traditional gender-based values disrupting female student teachers' online learning. This sociocultural aspect needs to be included in the research agenda on the culturally responsive teaching digital divide and inclusive education (Triviño-Cabrera et al., 2021; Vass, 2017), to defend digital equity and social justice. Pedagogical adaptations have to be made to alleviate or diminish gender-based educational inequity (Ghourchian, 2024; Mutahi & Gazda, 2019), especially considering student teachers' familial constraints and sociocultural roles in traditional societies.

Female student teachers need to support their children or younger siblings in their families in traditional communities (Abu-Rabia-Queder, 2007; Gabster et al., 2020) while juggling their study demands. The female student teachers also reported to some extent faced this burden of supervision and doing house chores, while attending their own online learning, prioritizing their roles as mothers or homemakers. This becomes even more difficult when

technical constraints are included. Hence, if the digital divide and the sociocultural background of student teachers are taken into account, the challenges may encompass access difficulties which has not vanished despite global technological development (Van Deursen & Van Dijk, 2019), cultural constraints on use, and final outcomes.

Findings underscore the significance of devising different online-learning methods for English student teachers and pre-service non-English teachers, as well. For example, synchronous online-learning method, relying on real-time lessons posed difficulties (resulting from technical constraints only). Similarly, asynchronous learning method, relying on storage of prerecorded lectures and abundant assignments were bothering, as stated in previous research (e.g., Peachey, 2017; Scull et al., 2020). This can be justified with reference to the second-level digital divide which is pertaining to usage. Similar to the documented findings of Van Deursen and Van Dijk (2014), it was demonstrated that student teachers' tendency and perception of technology usage play a great role when planning teacher education programs and courses which have to be specific to English student teachers, in the case of this study. Making adaptations in online teaching methods mitigates the digital divide, as previously emphasized by Khatoony and Nezhadmehr (2020), Lagier (2003), and Wirawati et al. (2022). As far as lack of collaborative and discussion as one of the challenges found in this study is concerned synchronous learning should be devised in smaller groups to entice more collaborative learning interaction, and group discussions (Moorhouse, 2020).

Considering each department or student teachers in each field as an independent socio-cultural group, McLoughlin (2001) and Triviño-Cabrera et al.'s (2021) proposal for culturally inclusive education can be reconsidered in online teacher education. Accordingly, teaching in a cross-cultural context necessitates adapting the curriculum, teaching approaches, and assessment to meet cross-cultural learning needs. Online teacher education pedagogies need to be developed considering effective social context of teacher education (Sims et al., 2008).

With regard to the third level digital divide, the findings of this study implied that despite the fact that student teachers were familiar with technology, some of them were lost when they were involved in exclusive online teacher education. This corresponds to prior findings such as those of Lavonen et al. (2006) and Van Deursen and Van Dijk (2019), which emphasized ICT training for teacher educator which emphasized training in information and communication technology (ICT) for teacher educators. This was echoed in the student teachers' complaints about the lack of guidance and

supervision. Such supervision and guidance were found to be necessary to enhance student teachers' self-regulation (Cho & Shen, 2013; Yu et al., 2021), and handling digital environments (Hatlevik & Bjarnø, 2021). Skill training is needed to enable pre-service teachers to optimize their online-learning experience (Admiraal et al., 2017); in addition, gender digital divide has to be taken into account when familiarizing the pre-service teachers with information and communication technology use (Tezci, 2011; Wirawati, 2022; Yu et al., 2021).

Conclusion and Implications

This research strengthened the theoretical insight into online teacher education via focusing on the challenges that emerged during the pandemic. It was revealed that student teachers majoring in English and non-English fields experienced different learning pathways. Non-English pre-service teachers struggled primarily with meeting basic requirements such as device access, internet connectivity, and cultural constraints. By contrast, their counterparts majoring in English had largely secured these preliminary conditions, and focused on fine-tuning their online learning and developing skills to enhance academic outcomes. In terms of gender inequity, female student teachers tolerated more severe inequities hindering their online learning engagement and achievement due to their traditional gender roles and familial responsibilities.

Teacher educators should be equipped with differentiated instructional strategies to handle disparate conditions student teachers from different academic disciplines may face. These conditions are not limited to epidemics. Several similar conditions like closures due to extreme weather conditions, air pollution, lack of utilities, social unrest or war have been recurrently faced by student teachers in Iran during the shift to online learning. For student teachers in non-English disciplines, teacher educators may be required to provide explicit guidance on foundational digital literacy skills, offer flexible participation options that accommodate limited device access, and design low-bandwidth learning activities. For their counterparts majoring in English, priority should be given to advanced pedagogical applications of technology, such as facilitating synchronous discussions, collaborative online projects, and reflective. Furthermore, teacher educators themselves need to receive ongoing professional development in culturally responsive online pedagogy. Finally, gender-based inequities and sociocultural constraints affecting female student teachers need to be addressed.

The study has certain limitations that can be addressed in future research. First, the cross-sectional design prevented capturing changes that occurred during the pandemic. Conducting longitudinal studies may provide a deeper understanding of online learning challenges. Second, data collection took place after the pandemic, which might have resulted in an incomplete reflection of challenges. Including diverse sociocultural groups, such as pre-service teachers from different faiths and religious backgrounds, in future research aligns with previous studies' recommendations. Despite these limitations, this study has the potential to deepen our understanding of equity and culturally responsive teaching for student teachers.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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