The tone of teachers' melody and wellbeing in digital space

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Introduction: Educational technology has become an essential element for improving education. To achieve this goal, teachers are required to have the necessary skills for integrating technology in their educational activities which in turn can be stressful for them. So, this phenomenological study aimed to investigate the positive and negative impacts of technology on teachers' physical and social aspects of well-being.

Methods: The study was conducted with 12 teachers (seven females and five males) teaching in different high schools in Tabriz, Iran. Six had a BA, and six had a master's degree with at least 5 years of teaching experience. Semi-structured interviews and a narrative frame were used to gather data. MAXQDA version 2022 was used to analyze the collected data.

Results: The results revealed that implementing digital tools had positive and negative impacts on teachers' physical and social well-being. Positive effects on physical well-being were saving time and energy, and brain activation, but exhaustion, increased health risk, and reduced productivity were the negative ones. Besides, teachers experienced positive social well-being, enabling communication among people across the globe, and easier access and transfer of information. Negative social well-being included adverse effects on child-family relationships and reduced face-to-face interaction.

Discussion: To develop healthy habit of technology use, teachers should have information regarding the positive and negative impacts of technology on their physical and social well-being.

KEYWORDS

phenomenological study, physical well-being, social well-being, technology, EFL teachers

1 Introduction

Today, technology plays an increasingly prominent role in the educational system, a trend that has been significantly accelerated by the global spread of the COVID-19 pandemic. The pandemic compelled educational institutions worldwide to embrace technology as a means to sustain and facilitate continued learning. Consequently, both governmental bodies and private entities mobilized resources, offering online learning materials and professional development opportunities to support educators in their transition to virtual instruction.

Jones (2018) states that technology can affect language learning in four ways. First, it influences the kind of meanings that can be made with language, and as a result, "the kinds of meaning-making processes that learners are given the opportunity to practice" (p. 3). Second, it determines the ways we are able to record, preserve and transmit language, influencing the kind and quality of input that learners are exposed to as well as what they can do with that input, and their manner of reflecting on that input. Third, it influences the types of interaction learners can have with the language, the type of people they can interact with, as well as the roles they can have in these

interactions. Forth, it plays a role in learners' abilities "to develop autonomy in their learning, to determine their own learning trajectories, and to apply what they have learned to authentic situations" (p. 3).

New technologies have the potential to be transformative tools for educators. They empower teachers to access a vast reservoir of information on the internet and leverage open educational resources to enhance their teaching materials. Additionally, teachers can participate in massive open online courses and online communities, facilitating the exchange of experiences and insights. Data from the Teaching and Learning International Survey (TALIS, 2018) indicated that teachers who frequently employ information and communications technology (ICT) in their classrooms and encounter minimal challenges in leveraging technology for their students' benefit are more likely to engage in online seminars and courses as part of their professional development endeavors. Furthermore, information and communications technologies offer novel avenues for designing educational programs and lessons, assessing student progress, and streamlining administrative tasks with remarkable efficiency.

Meanwhile, educators occupy a pivotal role within any educational system. They constitute the frontline individuals responsible for fostering student engagement and advancing their learning. Empirical studies underscore the critical role of teachers in students' academic achievement, success, and satisfaction (Banerjee et al., 2017; Wartenberg et al., 2023). Consequently, educational systems place high expectations upon teachers. They are not simply tasked with transmitting information; rather, they bear the responsibility of ensuring that students acquire essential skills, knowledge, and perspectives necessary for success in their lives and the navigation of 21st-century challenges (Guerriero, 2017). In addition, teachers are expected to contribute to the development of students' social and emotional skills, collaborate with colleagues and parents to support holistic student development, and seamlessly integrate new information and communication technologies into their classrooms to meet the technological demands of the modern era (Schleicher, 2018).

An explosion of interest in FL teachers' and learners' emotions took place (Dewaele and Ergün, 2021; Dewaele, 2020; Dewaele et al., 2019a). The calls for a Positive Language Education which permits language learners to develop their well-being and their language skills with the assistance of teachers who feel positive about their students and themselves were positively answered by researchers (Dewaele and Ergün, 2021; Budzińska and Majchrzak, 2021; Gkonou et al., 2020; Mercer and Gregersen, 2020; Mercer et al., 2018).

However, it is worth noting that even prior to the COVID-19 pandemic, teachers were already contending with substantial stress and pressure. They often faced long hours and inadequate compensation, and grappled with role conflicts, precarious job conditions, and limited autonomy (MacIntyre et al., 2019). The demands on teachers intensified with the transition to online instruction, necessitating adaptation to digital platforms, the use of diverse communication tools to engage with students and parents, and the imperative to enhance technological proficiency for effective online teaching—all amid the backdrop of social distancing measures and health concerns (MacIntyre et al., 2020).

Well-being is a central construct within positive psychology, an emerging subfield of psychology dedicated to enhancing individuals'

overall life satisfaction. In the context of educators, positive psychology seeks to elucidate the factors that engender negative emotions and those that positively impact them, thereby contributing to their personal development and well-being (Pourbahram and Sadeghi, 2022). According to Jin et al. (2021), well-being is perceived as bolstered by social resources, such as support from peers and colleagues, and personal attributes, including self-esteem, resilience, and self-efficacy. In essence, well-being manifests when individuals possess the psychological, social, and physical resources requisite for surmounting specific psychological, social, and/or physical challenges. Conversely, when individuals face a surplus of challenges compared to available resources, the equilibrium tips, leading to a decline in their well-being, and vice versa (Dodge et al., 2012, p. 230). This equilibrium is depicted as a balance point between an individual's resources and challenges.

Extant research indicates that teachers' well-being is subject to the influence of their personal and professional lives, encompassing factors of a personal nature (e.g., motivation, self-esteem, identity) and contextual elements (e.g., interpersonal relationships, workload) (Mairitsch et al., 2021). Regarding platforms as contextual elements, it can be said that "platforms are not simply sites where information is transmitted or exchanged between teachers and students" (Nemorin, 2017, p. 11). Instead, they have become main elements in shaping teachers' dispositions, values, beliefs, and behaviors. Well-being, however, is a multifaceted construct, demanding consideration of a myriad of interconnected factors that intersect with economics, emotions, the external world, and human experiences. It is, in essence, a context-specific and intricate phenomenon shaped by multiple determinants.

Furthermore, Mercer and Gregersen (2020) (cited in Pourbahram and Sadeghi, 2022) underscore the importance of investigating teacher well-being in the Asia-Pacific region, given the unique education development dynamics in this area, which differ from the Western and Eastern educational paradigms. This geographical context warrants increased research attention due to its relative underrepresentation in the existing body of literature.

Moreover, while the significance of technology in education and the importance of teacher well-being have been acknowledged, there is a notable gap in the existing research literature. Specifically, there is a dearth of comprehensive studies that investigate the intricate interplay between the widespread adoption of digital technologies in education and its impact on teachers' physical and social well-being, especially in the context of the Asia-Pacific region. Addressing these twin concerns—teacher well-being and the utilization of digital technologies for teaching and learning—necessitates a concerted effort to gather empirical evidence regarding educators' perspectives on the effects of digital technologies on their physical and social well-being.

2 Literature review

The concept of well-being has garnered significant attention since the early 2000s. Its importance was further emphasized with the launch of the "Beyond Gross Domestic Product initiative" in 2007. A primary objective of this initiative was the development of indices that capture the social and environmental dimensions of progress. For example, Gross Domestic Product (GDP), as an economic indicator, primarily quantifies the production of goods and services within a country during a specific timeframe. However, it falls short in addressing critical 21st-century global challenges, such as resource

depletion, inequality, climate change, and health. Furthermore, it neglects considerations of values such as the quality of the educational system, social cohesion, and the subjective aspects of people's lives. GDP also overlooks non-economic activities like parental care and volunteering, which are fundamental indices of people's quality of life in the 21st century (Fioramonti, 2015; OECD, 2015). As a result, academic studies have extensively explored the concepts of well-being and life quality (McCallum and Price, 2017; Selwyn and Wood, 2015).

Various definitions of the term "well-being" exist in the literature (Dodge et al., 2012; McCallum and Price, 2017). A comprehensive definition of well-being was presented by McCallum and Price, who argue that well-being "encompasses intertwined individual, collective, and environmental elements, which continually interact across the lifespan. Well-being is something we all strive for, underpinned by positive notions, yet it is unique to each of us and provides us with a sense of identity, which needs to be respected" (McCallum and Price, 2010, p. 20). All definitions of the term underscore the multidimensionality of well-being and the importance of considering multiple components (Keyes and Ryff, 1995; McCallum and Price, 2017). For instance, Keyes and Ryff (1995) identified six components that constitute well-being: autonomy (the ability to resist social pressures and act autonomously), self-acceptance (a positive self-evaluation and acceptance of one's past life), positive relations with others (expressing concern for others' welfare), environmental mastery (the capacity to manage one's life and the surrounding community), personal growth (a sense of ongoing development and openness to new experiences), and purpose in life (belief in having a life purpose and meaning). Similarly, McCallum and Price (2017) defined well-being as a concept comprising five dimensions: cognitive, social, physical, emotional, and spiritual.

Teacher well-being is a multifaceted and intricate concept, and its definition in educational literature varies significantly (McLeod and Wright, 2016). Notable distinctions in the conceptualization of this term are observed within the field of education.

According to Roffey (2015), some definitions of teacher well-being are rather simplistic, focusing on aspects related to burnout, stress, workload, and low retention rates. These definitions tend to concentrate on the absence of negative factors, as exemplified by McLellan and Steward (2015), who framed teacher well-being in terms of depression or stress-related conditions. However, these deficit-based definitions acknowledge that well-being is an integral part of an individual's self-realization process, situated within a complex web of interacting factors rather than solely contingent upon quantified emotional states (Brady and Elaine, 2021, p. 46).

In contrast, Acton and Glasgow (2015) provided a comprehensive definition of teacher well-being that incorporates both professional and personal dimensions, as well as the interpersonal dynamics inherent to the teaching profession. They describe teacher well-being as "an individual sense of personal professional fulfillment, satisfaction, purposefulness, and happiness, constructed in a collaborative process with colleagues and students" (p. 102). This definition underscores the holistic nature of teacher well-being, encompassing not only teachers' own perceptions of well-being but also the well-being of their colleagues and students.

The self-determination theory, introduced by Ryan and Deci (2000), has played a pivotal role in shaping a broader understanding of teacher well-being. They identified three fundamental needs—autonomy, competence, and relatedness—as essential for facilitating

optimal functioning, personal well-being, and constructive social development. They argue that the relationship between teacher well-being and digital technologies can be understood through these needs. Specifically, digital literacy, digital well-being, and the effective implementation of digital technologies for learning and teaching are intertwined with these needs. The relationships among these areas, however, are complex and interwoven.

Dodge et al. (2012) approached the definition of well-being from a different perspective, proposing that well-being represents an equilibrium point between an individual's resource pool and the challenges they face. These resources and challenges can stem from physical, psychological, and social factors. They assert that these origins are also pertinent to teacher well-being, the effective implementation of digital technologies for learning and teaching, digital well-being, and digital literacy. This insight has contributed to the development of data collection instruments for measuring well-being. Longo et al. (2017) identified 14 constructs that encompass well-being, including optimism, happiness, calmness, involvement, self-acceptance, vitality, self-awareness, competence, self-worth, purpose, congruence, development, significance, and connection.

On the other hand, Passey (2021) developed a conceptual framework and research tool to consider various factors and characteristics in examining whether and how new technologies may impact teacher well-being. Drawing on the self-determination theory presented by Ryan and Deci (2000), Passey (2021) proposed competence, autonomy, and relatedness as the primary aspects of his framework. He suggested that five features of teacher well-being affected by digital technologies are activities and outcomes, digital well-being, digital agency, digital literacy, and effects on psychological, physical, and social well-being. Passey's (2021) framework was used as the main conceptual framework for the present study.

Well-being has been studied in various contexts and among different individuals. When it comes to teachers, well-being has been explored alongside psychological variables related to teaching, including motivation, self-esteem, and burnout. For example, McKay and Barton (2018) examined burnout and teacher well-being in three cases. In their study, teachers' contextual and personal resources that support their resilience and well-being were assessed through art-based reflective tasks. These tasks aimed to help teachers improve the depth and quality of their thinking, ultimately contributing to supporting their resilience and well-being, which, in turn, can assist those teachers who might consider leaving the profession to continue in it. Harding et al. (2019) conducted a study in England and Wales to investigate the relationship between psychological stress, teacher well-being, and student well-being. Their findings indicated that lower levels of students' psychological distress and higher levels of student well-being were associated with higher teacher well-being.

Dewaele and Ergün (2021) studied the relation among well-being, resilience, and foreign language teaching enjoyment of Italian teachers. The descriptive statistics revealed that teachers who participated in the study were happy in general, and reported a high level of foreign language teaching enjoyment and resilience. It was also found that well-being and resilience are significant predictors of foreign language teaching enjoyment. These findings support the idea that it is essential for teachers to be positive in their classes, to display self-confidence and to emanate enthusiasm about the probability for students to improve and progress (Buda and Kovács, 2024; Dewaele et al., 2019b; Moskowitz and Dewaele, 2021; Oxford, 2020).

Jin et al. (2021) examined the well-being of Mandarin Chinese language teachers in the UK. The analysis of semi-structured interviews revealed that language teachers' well-being could be influenced by four main ecologies, including life and work ecology, societal ecology of teaching, school ecology, and educational system ecology. Teachers employed contextual, psychological, and social resources to cope with challenges and maintain a positive outlook.

Several factors affecting negative or positive well-being outcomes have been identified based on studies related to teacher well-being. These factors encompass aspects related to lifestyle, mental health, psychological issues, and physical well-being. For example, Savill-Smith (2019) conducted a study involving 3,019 school teachers and found that 72% described themselves as stressed, 74% attributed negative life/work balance to their inability to relax, 78% believed that their work contributed to psychological, behavioral, or physical symptoms, and 51% considered student behavioral issues as a cause of work-related symptoms. She identified four main contextual groups of features related to teachers' use of digital technologies, which included life/work balance, symptoms experienced, work issues, and mental health issues.

Similarly, Garland et al. (2020) collected data from 684 school staff and 2,400 school staff and found that the primary causes of stress were workload and work-life balance (62%), accountability related to performance, test scores, and inspections (49%), administrative tasks (42%), pastoral concerns linked to mental health and safeguarding (39%), relationships with colleagues (25%), relationships with the senior leadership team (23%), and relationships with parents (17).

Khalif et al. (2022) examined the reasons for technostress found technology features such as the complexity, benefits of a particular technology, and privacy concerns were the main causes of stress when using ICT in the classroom.

Similarly, Atkan and Toraman (2022) studied the impacts of technostress on job satisfaction among 525 teachers working at different echelons of education. Their results indicated that since teachers were exposed to intensive use of technology in distance education, this negatively influenced their life and performance, and their workload increased. It was found that the teachers' job satisfaction levels were high in general, and the female teachers' job satisfaction levels were higher than those of male teachers. The job satisfaction levels of private school teachers were lower than those of public-school teachers.

Çoklar et al. (2016) investigated the levels of technostress among 370 teachers from different levels of education and found that teachers had a medium level of technostress overall, with varying levels in different sub-scales. Moreover, Winchester (2019) emphasized the negative effects of technology, such as cyberbullying of teachers by students and parents. Additionally, studies have examined the effects of technology use on teachers' anxiety (Awofala et al., 2019; Al-Ansari and Alshare, 2019).

The literature review demonstrates that previous studies on teacher well-being primarily concentrated on establishing correlations between teachers' well-being and various teacher-related factors. These studies typically employed statistical analyses and questionnaires to gather quantitative data. However, there has been a noticeable shortage of qualitative research that delves into language teachers' perceptions of the impact of technology on their social and physical health, particularly in a context like Iran where teachers may encounter challenges in adapting to online education due to limited technological resources and infrastructure. As a result, the present study aimed to address this existing gap and sought to provide insights into the following research questions:

1   How does the use of technology affect EFL teachers' physical well-being?
2   How does the use of technology affect EFL teachers' social well-being?

3 Research methodology

3.1 Design of the study

During the qualitative phase of this study, we employed the interpretative phenomenological analysis (IPA) method to explore the perspectives of English language teachers on the effects of technology on their physical and social well-being. The choice of IPA was made to ensure that we could collect rich, in-depth, and first-person accounts from our participants. IPA is a well-suited method for this purpose. As noted by Smith et al. (2019), IPA is commonly utilized to develop models that significantly enhance our comprehension of the meaning individuals ascribe to their experiences. In this study, we sought to delve deeply into the subjective experiences of English language teachers and gain insights that contribute to a more nuanced understanding of how technology impacts their well-being. IPA allows us to explore the intricate nuances of these experiences, providing a valuable framework for analysis and interpretation.

3.2 Participants and setting

For the current study, a convenience sampling approach was utilized to select a total of 12 English language teachers from various high schools in Tabriz, Iran, as participants. This diverse sample consisted of seven females and five males, with ages ranging from 22 to 30 years, all possessing a minimum of 5 years of teaching experience. It is important to note that qualitative research often employs small sample sizes to capture the richness and depth of participants' experiences (Cresswell and Clark, 2011).

Prior to initiating the study, ethical considerations were rigorously addressed. Participants were provided with comprehensive information about the study, including their right to withdraw their participation at any stage, thereby ensuring adherence to ethical and confidentiality standards in research (Ary et al., 2014). Furthermore, participants were assured that their responses would be handled with the utmost confidentiality. The research objectives and methodology were thoroughly explained to the participants to ensure their full understanding of the study's purpose and process. For reference, Table 1 presents the demographic information of the participants.

3.3 Instruments

In this qualitative research study, data collection was facilitated through the use of semi-structured interviews and a framed narrative approach. These instruments were chosen to enable an in-depth exploration of English language teachers' perspectives on the impact of technology on their physical and social well-being. Following the

TABLE 1 Demographic information of the participants.

		Number (percent)
Education	B.A	6 (50%)
	Masters of Arts	6 (50%)
Gender	Male	5 (60.4%)
	Female	7 (39.6%)
Experience	3–7 years	4 (36.4%)
	7–10 years	5 (24.6%)
	Above 10	3 (36.6%)

guidance of Seidman (2006), the researcher conducted interviews to elicit the participants' subjective experiences and perceptions regarding the influence of technology on their physical and social well-being. Interviews provided a platform for participants to share detailed accounts of their experiences, offering valuable insights into the research inquiry.

The interview questions employed in this study were deliberately open-ended and nondirective in nature. This approach aligns with the recommendations of Sarantakos (2005) and was chosen for its suitability in exploring sensitive topics. Questions were formulated on the basis of a comprehensive review of related literature through an inductive approach. Open-ended questions encourage participants to provide rich and unrestricted responses, ensuring that their voices and perspectives are thoroughly captured and examined.

3.4 Procedure

The data collection process for this study commenced in February 2023 and concluded in June 2023. Participants were selected from various high schools in Tabriz, Iran. To establish contact with the participants, the researcher utilized communication platforms such as WhatsApp and Google Meet. Several participants accepted the invitation to participate in interviews.

Upon securing participants' consent, arrangements were made for interview scheduling. Participants were given the autonomy to choose a suitable date, time, and location for the interviews. The interviews were conducted at the teachers' respective schools to create a comfortable and familiar environment for them. During the interviews, the researcher provided clarifications whenever requested by the participants. The researcher adopted an attentive and permissive approach, allowing participants to elaborate on their responses without providing any leading cues on the topic.

Given the participants' proficiency in English, the interviews were conducted in the English language. Following each interview session, the researcher promptly transcribed the content. Each interview had an approximate duration of 50 min, with the overall discussions ranging from 50 to 90 min. The interview questions were developed by the researcher after a thorough review of relevant literature (see Appendix A).

Subsequent to transcription, the data were subjected to interpretative phenomenological analysis (IPA). This analysis involved several key stages: the researcher's immersion in the text to become familiar with the content, the identification of themes, the clustering of themes and exploration of their potential interrelationships, and the

summarization of identified themes with supporting examples (Smith et al., 2019). MAXQDA 2022 software was employed to facilitate the creation of codes, categories, and themes during the data analysis process.

4 Data analysis

To collect the data, both framed narrative and semi-structured interviews were utilized. Once the data were gathered in English, they underwent transcription and were subsequently input into MAXQDA (version 2022) for analysis. The data collection instruments are available in Appendices A and B.

For the analysis of the data, a thematic approach was employed, characterized by an inductive process. This involved the complete extraction of codes, categories, and themes directly from the data. The following stages were followed in the data analysis:

1 Code Generation: Initially, the data were thoroughly read multiple times, leading to the creation of codes.
2 Organization of Codes: Subsequently, related codes were organized into six higher-order categories, encompassing both positive and negative effects.
3 Theme Development: General themes were then assigned to these categories, resulting in the formation of two overarching themes that corresponded to the physical and social aspects of well-being.

Throughout the research, a total of 120 codes were generated. To ensure the reliability of the coding process, an external coder with expertise in thematic analysis independently coded 20% of the codes ($N = 24$). There were two instances of disagreement between the two coders, resulting in an inter-coder agreement coefficient of 94%. To address these disagreements and achieve consensus, both coders collaborated. The final results of the data analysis are presented in the subsequent section.

4.1 Qualitative findings and discussions

4.1.1 Positive and negative effects of technology on physical wellbeing

The first research question asked about the effects of technology on physical wellbeing of EFL teachers. Within this theme, two categories of positive and negative effects were emerged. As depicted

in Table 2 and Figure 1, the negative effects were Exhaustion ($F = 4$), Increased health risk ($F = 2$), Sleep disturbance ($F = 2$), Vision problems ($F = 1$), Gaining weight ($F = 1$), Reduced physical activity ($F = 1$), Reduced productivity ($F = 1$), and High blood pressure ($F = 1$). On the other hand, the positive effects on physical wellbeing included Saving time & energy ($F = 8$), Less need for physical presence

TABLE 2 Positive and negative effects of technology on physical wellbeing.

Code system	Frequency
Negative effects	13
Exhaustion	4
Increased health risk	2
Sleep disturbance	2
Vision problems	1
Gaining weight	1
Reduced physical activity	1
Reduced productivity	1
High blood pressure	1
Positive effects	18
Saving time & energy	8
Less need for physical presence in class	3
Improving efficiency & productivity	2
Presence of more facilities at schools	2
Brain activation	1
Better life quality	1
Less holiday working	1

in class ($F = 3$), Improving efficiency & productivity ($F = 2$), Presence of more facilities at schools ($F = 2$), Brain activation ($F = 1$), Better life quality ($F = 1$), and Less holiday working ($F = 1$). To exemplify the extracted themes, the quotations from teachers are given:

Teacher 1 voiced concerns about the toll technology can take, saying, "Excessive exhaustion for me as an English Language teacher." This sentiment highlights the demanding nature of incorporating technology into teaching. The constant adaptation and integration of digital tools can be physically and mentally draining for educators. It's essential to recognize that while technology offers many benefits, it also comes with challenges that can lead to teacher burnout.
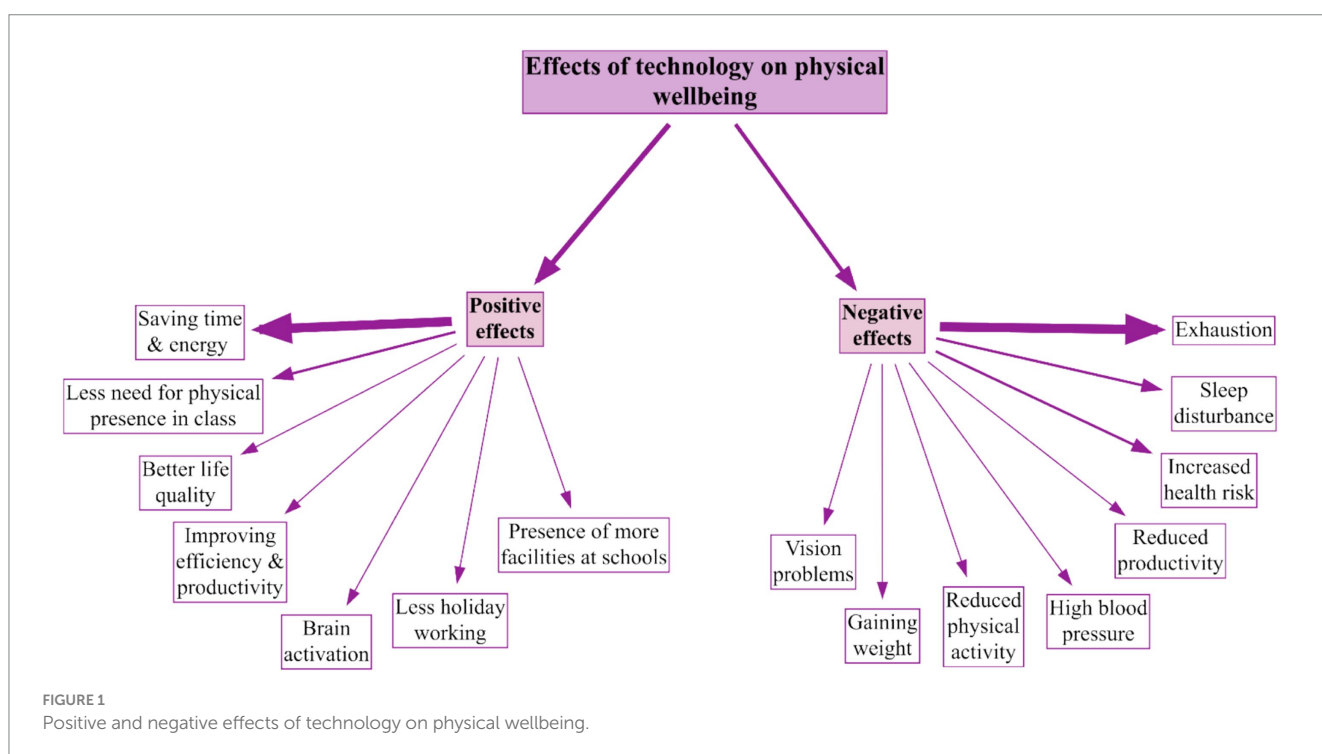
Teacher 2 raised the issue of productivity, noting, "They can reduce our productivity." While technology is intended to enhance efficiency, it can sometimes have the opposite effect. Constant notifications, digital distractions, and the need to troubleshoot technical issues can hinder a teacher's ability to stay focused and productive. Balancing technology's advantages with potential productivity pitfalls is an ongoing challenge in the digital age of teaching.

The impact on sleep patterns was a concern expressed by teacher three, who stated, "Sometimes they will lead to sleep disturbance." The use of technology, especially before bedtime, can disrupt sleep patterns due to the exposure to screens and the potential for engaging in late-night work or communication. This highlights the need for teachers to establish boundaries for technology use to ensure their well-being, including getting sufficient rest.

It was also pointed out by teacher four that smartphones and other devices can have a negative effect on physical activity. The teacher emphasized, "Smartphones and other devices can reduce our physical activity." This is a valid concern, as the sedentary nature of technology use can lead to a more inactive lifestyle. It's essential for educators to be mindful of balancing screen time with physical activity to maintain their physical well-being.

FIGURE 1
Positive and negative effects of technology on physical wellbeing.

Similarly, teacher five stated, I think technology sharpens my brain. When you use the technology, you use the novelties, the new thing. Your brain is more activated: On a positive note, one teacher highlighted the cognitive benefits of technology, stating, "I think technology sharpens my brain. When you use the technology, you use the novelties, the new thing. Your brain is more activated." This perspective emphasizes that technology can stimulate intellectual engagement and problem-solving skills. It underscores the potential for technology to enhance the cognitive aspects of well-being.

Teacher seven identified a positive aspect, mentioning, "I think that it reduces holiday working." Technology can indeed offer tools and resources that streamline teaching tasks, potentially reducing the need for extensive work during holidays. This observation highlights how technology can contribute to a better work-life balance for teachers.

Finally, teacher eight emphasized the role of technology in efficiency, stating, "The most important role of technology is to save time and effort." This perspective underscores a key benefit of technology in education: its capacity to automate routine tasks, provide quick access to information, and facilitate communication. By saving time and effort, technology can positively influence the overall well-being of teachers by allowing them to focus on more meaningful aspects of their profession.

4.1.2 Positive and negative effects of technology on social wellbeing

The third research question asked about the effects of technology on social wellbeing of EFL teachers. Within this theme, two categories of positive and negative effects were found. More specifically, as depicted in Table 3 and Figure 2, the negative effects included Bad effects on child-family relationships ($F = 3$), Less interaction with colleagues ($F = 2$), Less time with family and friends ($F = 2$), Reducing face-to-face interactions ($F = 2$), Lower quality of social life ($F = 2$), and Lack of effective teacher-student communication ($F = 1$). On the other hand, the positive effects were Enabling communication among people across the globe ($F = 14$), Easier access/transfer of information/ knowledge ($F = 11$), Making more effective relationships & communication ($F = 9$), Incorporating the real world into class ($F = 2$), Spending more time with family and friends ($F = 2$), Less isolation ($F = 1$), Exposure to different cultures ($F = 1$), Better organizational skills ($F = 1$), Transformative impact on students and the wider community ($F = 1$), Promoting inclusive & collaborative learning environments ($F = 1$), Engaging in online mentorship & coaching ($F = 1$), Making a work-life balance ($F = 1$), Peaceful office environment ($F = 1$), Teachers' passion for meeting the needs of all students ($F = 1$), Less bullying or interfering from colleagues ($F = 1$), Conversation with people whose goals are the same as oneself ($F = 1$), Creating online networks of support ($F = 1$), and Enhanced participation in class ($F = 1$). For instance, regarding such negative and positive effects on social wellbeing, some teachers brought the following explanations:
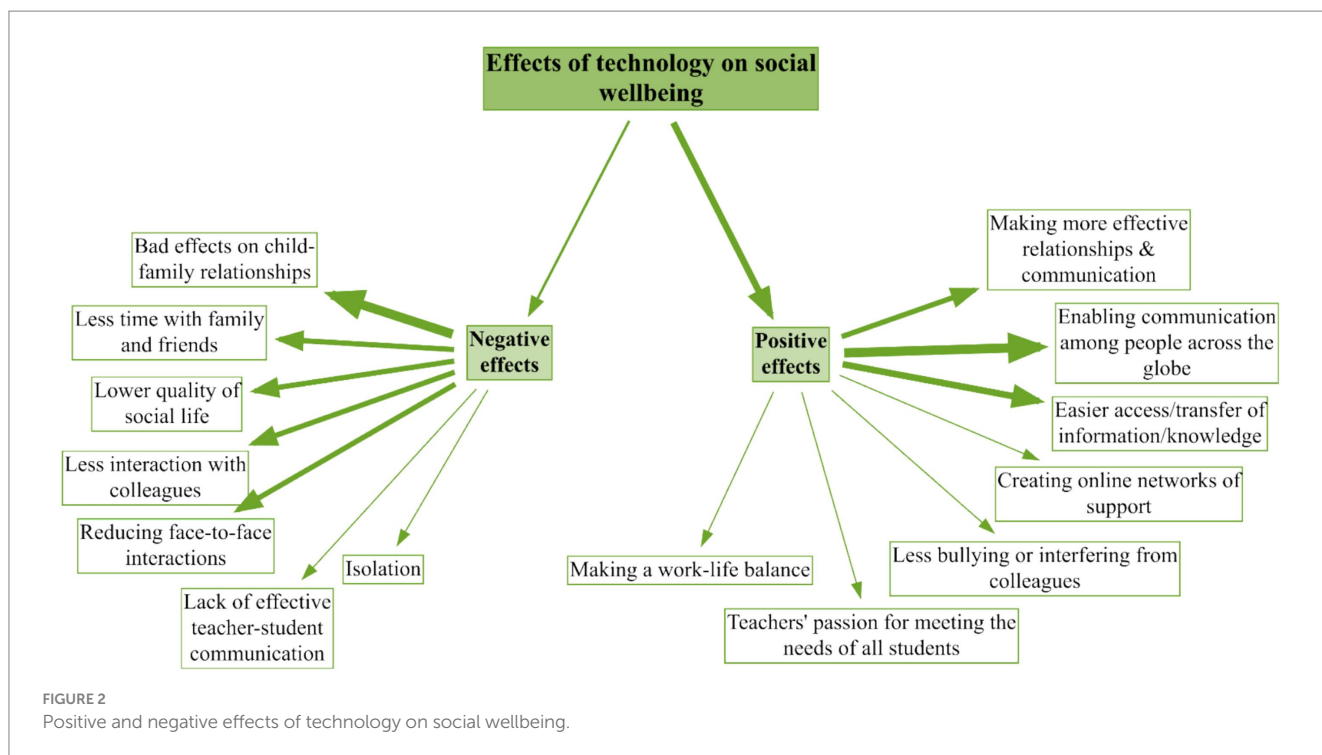
The following two quotations from teachers 4 and 6 exemplify the extracted themes.

> "In general, I do think that new technologies actually reduce the quality of our social life. Technology, unfortunately, reduces social relations to some extent. I think that it has some bad effects on the relationships between the families and the children. In some other

ways, it can lead to isolation. But, on the positive side, connecting the classroom with the real world and empowering myself to incorporate the larger real world into the classroom can also be valuable. Social networking services enable various forms of verbal or visual communication over Internet-based networks. Technology can affect our social wellbeing by reducing problems with parents. Technology has made building relationships easier" (Teacher 4).

TABLE 3 Positive and negative effects of technology on social wellbeing.

Code System	Frequency
Negative effects	13
Bad effects on child-family relationships	3
Less interaction with colleagues	2
Less time with family and friends	2
Reducing face-to-face interactions	2
Lower quality of social life	2
Lack of effective teacher-student communication	1
Isolation	1
Positive effects	51
Enabling communication among people across the globe	14
Easier access/transfer of information/ knowledge	11
Making more effective relationships & communication	9
Incorporating the real world into class	2
Spending more time with family and friends	2
Less isolation	1
Exposure to different cultures	1
Better organizational skills	1
Transformative impact on students and the wider community	1
Promoting inclusive & collaborative learning environments	1
Engaging in online mentorship & coaching	1
Making a work-life balance	1
Peaceful office environment	1
Teachers' passion for meeting the needs of all students	1
Less bullying or interfering from colleagues	1
Conversation with people whose goals are the same as oneself	1
Creating online networks of support	1
Enhanced participation in class	1

FIGURE 2
Positive and negative effects of technology on social wellbeing.

"Technology has made building relationships easier. In general, I do think that new technologies actually reduce the quality of our social life. Technology, unfortunately, reduces social relations to some extent. I think that it has some bad effects on the relationships between the families and the children. In some other ways, it can lead to isolation. But, on the positive side, connecting the classroom with the real world and empowering myself to incorporate the larger real world into the classroom can also be valuable. Social networking services enable various forms of verbal or visual communication over Internet-based networks. Technology can affect our social wellbeing by reducing problems with parents" (Teacher 6).

5 Discussion

Using Passey's (2021) framework for understanding the factors influencing teacher wellbeing when adopting technology, it was found that teachers believe technology to ease and enhance their professional activities. These are in line with the findings of Edwards (2019) and Smith et al. (2019) who have also found that technology can improve teachers' workload and job satisfaction. The results also revealed that effective use of technology in teaching is closely connected with the development of pedagogical skills and the alignment of technology use with learning goals. This finding is supported by the research conducted by Kirschner et al. (2016). However, factors influencing a teacher's physical, social, and psychological wellbeing were most commonly reported which is in contrast with Taggart et al. (2023) and Henderson et al. (2018) reported that teachers were reluctant to talk about the issue of their wellbeing because they may think that these issues are personal ones and are irrelevant to their professional roles.

Multiple opportunities and obstacles were brought by the implementation of technology for language teachers. According to

Jalilzadeh et al. (2024) teachers underwent positive emotions including increasing collaboration, using a lot of digital resources, increasing students' motivation, enhancing students' learning, creating a more enjoyable learning environment, and creating a more connected community in their classes. When developing teaching materials, teachers should take into account students' engagement because cognitive engagement is important for learning. Hampel and Pleines (2013) found that use of technology positively affects students' participation and engagement. Therefore, teachers should pay attention in selecting technology-based programs in order to increase students' participation. Unfortunately, educators face many technologies that they are required to learn but they find some technologies as a "time filler" and they are unfamiliar with. If teachers are not properly trained to use the digital tools, they will be unable to use them in a way to increase students' academic achievement. Hampel and Pleines (2013) concluded that there are a lot of online learning challenges for both teachers and students in terms of skills that they need to learn in order to handle the educational, social, cognitive, and emotional implications of online communication. First teachers need to learn how to use technology before teaching them to students. Negative feelings towards technology including anxiety and stress is created for teachers because they are not given enough opportunities to learn technology.

Yu (2022) also believes that using technology causes teachers to maintain life/work balance while working from home and maintain digital interaction which increases social connections. According to Johnston (2019), the implementation of digital resources contributes to the accessibility of a lot of activities and materials resulting in creating enjoyable learning atmosphere. This case increases students' motivation and amplifies their learning (Ryan and Deci, 2000). Reinhold et al. (2021) stated that teachers' emotions, motivation, and beliefs were changed positively by the implementation of technology in classes such as nervous experts' self-efficacy was increased, and

their anxiety was decreased. The implementation of digital tools in the classes helps teachers individualized teaching and introduce teaching materials in more adaptive ways. So technology is effective in differentiating curriculum and in improving academic performance and standards (Mohamed, 2018). Students were reported to have positive attitudes towards learning when teaching materials were enhanced by digital tools (Donmuş and Gürol, 2014). A good learning management system enables teachers to check all students' progress and provide meaningful and suitable education (Nepo, 2017; Loague et al., 2018). According to Liu (2013), more than 90% of teachers reported job satisfaction such as enjoying what they do at work and feeling pride. It was indicated that most of the teachers were of the opinion that technology improved their teaching, and their performance in collaborative learning, it increased their productivity, and provided better communication. The advantages of technology for students and the opportunities it provides for them to increase their productivity, socialize, learn, and expand their horizons were mentioned by some studies (e.g., Lowood, 2008; Byrne et al., 2016). Plowman et al. (2012) did not find any evidence from parents that digital tools negatively influenced their children in terms of health, behavior, and learning. The UK Millennium Cohort study reported the same findings on video games as there was no association between any emotional problems or symptoms with prosocial behavior and peer socialization (Parkes et al., 2013). In contrast, video gaming has been associated with positive outcomes including improved task-related cortical activity and working memory performance (Moisala et al., 2017), as well as improving emotional skills such as self-regulation practices (Gabbiadini and Greitemeyer, 2017). Nowadays, there are concerns about the effects of technology on peer relationship formation and healthy socioemotional developments of students. It is made clear that students interact more with their mobile phone than with their friends and the interesting point is that evidence shows that adolescents with higher mobile phone use are three times likely to feel socially isolated compared with their counterparts with lower use (Primack et al., 2017). It is also reported that the quality of friendship can be positively affected by online communication and digital technology. For instance, a study of Israeli young adults revealed that the adults with social anxiety disorders, struggle with face-to-face social interactions, may find support in online communities which permits them to practice their social skills which result in gaining more confidence (Ziv and Kiasi, 2016). Nevertheless, it is necessary to know that implementation of technology in the classes creates difficulties too. The current study identified some negative effects on physical and social aspects of well-being.

According to Jalilzadeh et al. (2024), one of the primary difficulties that teachers face is "the significant demand placed upon them in terms of effectively managing their time" (p. 23). Their study also demonstrated that teachers underwent negative emotions, such as pressure regarding time management, inefficient technological infrastructures, students' lack of technological equipment, anxiety, and weak internet connection.

In addition, other research also revealed that negative impacts on students' learning may be created due to the time spent engaging in technology such as problems with paying attention in class and difficulties with imagination and visual memory (Swing et al., 2010). Other difficulties were mentioned too including increasing psychological tensions due to digital interaction and physical movement effects (Yu, 2022). There were agreements regarding

negative consequences of the 'socioeconomic digital divide' on students' behaviors and emotions but there were conflicting views regarding the influence of technology on self-esteem, social isolation, and socialization process (Ventouris et al., 2021). Moreover, according to James et al. (2000) teachers often experience more stress and challenges while attempting to learn and prepare "technologically advanced lessons" without any professional development helping them. They also believed that the rapid technology change influences both teachers and students. Teachers do not receive appropriate training about meaningful use of technology in the classes and students spend a lot of time in front of screen which affects their learning and their physical and mental well-being.

Saunders and Vallance (2017) are of the opinion that students' screen time has tripled in the past 4 years. They also mentioned that much exposure to blue light radiation negatively affects children's growing. Evidence shows that there is association between screen time and many health signs such as self-esteem, gaining weight, quality of life, anxiety, aerobic fitness, depression, academic achievement, and pro-social behavior. Storm (2021) argued that it is better for the teachers to have limited use of the digital tools in the classes so that to help enhancement of students' social skills and intrapersonal relationships and avoid their negative health impacts. The research evidence shows that students technology exposes students to violence such as violent video gaming and cyberbullying. McDougall and Vaillancourt (2015) stated that cyberbullying can have long and short influence on students' physical and mental health as well as on their academic achievement. Besides, Låftman et al.'s (2013) study of students in Stockholm confirmed the negative consequences of cyberbullying as suicide ideation and attempts, emotional distress, and externalizing difficulties like criminal behavior and substance abuse. Meanwhile, similar concerns were raised by being exposed to violent video game play such as increasing aggressive behaviors and hostility, and decreasing pro-social behavior and empathy (Williams, 2013). On the whole, it is believed by teachers that the use of digital technology causes students to be exposed to unsuitable content and interfere with their socialization processes since it results in isolation which consequently has negative influence on their emotional and social development. In sum, Fernández-Batanero et al. (2021) discussed that new technology use can create challenges for teachers because it implies some reforms in their teaching methods or pressure to learn digitally related skills. These challenges result in some social, psychological and physical problems. The present study emphasizes the importance of context-dependent nature of technology employment in classes and the necessity of promoting teacher wellbeing. The current study adds to the literature on the way technology can be utilized to support teachers' wellbeing in classes and raises important questions for future research on the topic.

6 Conclusion

The results of the present study revealed both positive and negative effects of technology on physical and social aspects of teachers' well-being. Teachers stated positive effects on their physical well-being like saving time and energy, brain activation, better life quality, less holiday working, less need for physical presence in class, presence of more facilities at schools. They also claimed negative effects on their physical well-being as exhaustion, increased health

risk, sleep disturbance, vision problems, gaining weight, reduced physical activity, reduced productivity, and high blood pressure. Meanwhile, some positive and negative effects of technology on teachers' social aspect of well-being were found as well. Enabling communication among people across globe, easier access and transfer of information knowledge, making more effective relationships and communication, incorporating the real world into class, spending more time with family and friends, less isolation, exposure to different cultures, better organizational skills, transformative impact on students and the wider community, and promoting inclusive and collaborative learning environment were some of positive effects. Bad effects on child-family relationships, less interaction with colleagues, less time with family and friends, reducing face-to-face interaction, lower quality of social life, lack of effective teacher-student communication, and isolation were found as negative ones.

Some suggestions may help teachers in implementing technology in their classes. Morris and Loran (2014) recommended that teachers to select those tools which enhance their teaching. Incorporating a tool for collaboration permits teachers and learners to share documents both during and after class (Storm, 2021). He believed that a tool for communication is "a great way for educators to inform their students with updates and keep the class structure organized" (p. 24). Teachers can create a more dynamic class by implementing special tools while decreasing the anxiety and stress of using new digital tools (Lai et al., 2013). These suggestions act as guidelines for teachers as to how they can physically and socially feel better about incorporating technology in their classes and even personal life. In addition, technology is spreading to every aspect of our lives. So being informed about positive and negative effects of digital tools on physical, social well-being, and students' learning is the cornerstone of developing the healthy habits of digital tool use. Moreover, school educators, school leaders, and policy makers to see technology use in beneficial ways and consequently to provide professional learning leadership for, as well as to examine the influence of technology on teacher wellbeing.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Institutional Review Board of the Islamic Azad University-Tabriz Branch. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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Appendix A. Interview questions

1. How does the use of technology affect your mental health?
2. How does the use of technology affect your physical well-being?
3. How does the use of technology affect your social well-being?

Appendix B. Framed narrative

One of my experiences as an English teacher in using technology and online tools in my classes was ………. This experience caused …………. emotions and well-being for me as an English Language teacher because ……………. The factor(s) creating such an experience was/ were ……………. therefore, this event made me as a n English teacher think (about myself, my relationships, etc.) …………….