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Digital Dilemma in Teacher Training: Digital Well-Being and Internet Addiction

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Abstract

This study examines the relationship between teacher candidates' perceptions of digital well-being and internet addiction. With the widespread use of digital technologies, their negative effects on mental health are becoming increasingly significant. The study involved 146 teacher candidates from a state university in Turkey's Eastern Anatolia Region. Data were collected using the Digital Well-being Scale and the Internet Addiction Scale. Results show that teacher candidates generally have a medium-high level of digital well-being. Perceptions of digital well-being do not vary significantly based on factors like gender, place of residence, or where they access the internet. However, they are related to factors such as extracurricular activities and the frequency of online shopping. Internet addiction levels notably increase with internet use for entertainment, though no significant relationship was found between daily internet use and digital well-being. The study highlights the importance of developing digital literacy and self-control skills to protect digital well-being and prevent internet addiction. Educational institutions should implement strategies to support prospective teachers' digital well-being and raise awareness on this issue. Future research is recommended to explore the relationship between digital literacy and internet addiction further.

Introduction

Europe’s Industry 4.0 and Japan’s Society 5.0 initiatives’ vision of overcoming traditional boundaries and creating a smart society has been the source of the use of digital technologies in every field today as both a form of organization and a destabilizing force. Considering that the paperless office is the pinnacle of digitalization, as Marc Andreessen puts it, “software that enables digitalization is not just eating the world, it is completely recreating it” (Gobble, 2018). In this context, digitalization provides new values in new ways by enabling the use of digital technology and digitized information to obtain targeted products or by adding new challenging and limiting elements to the pre-digital social order, leaving new effects that change and transform. The strategic and innovative behaviors required by the new social order create the need for the individual to re-evolve their skills in using strategies to rapidly adapt to digital change and transformation (Muzannhamo & Rankhumise, 2023), their level of knowledge, and even their personality. The need to have the qualifications required by digitalization expected from the individual and to cope with the stress this will bring; will undoubtedly affect life satisfaction,

quality of life, positive emotions and well-being. In other words, seeing how the changes brought about by digitalization and the living conditions it offers affect the well-being of the individual will provide clues on how to achieve self-control in the digital environment and how to stay away from the limiting effects of addictions.

Digital well-being is related to the subjective well-being of individuals in the social environment wherever digital media is present. Individuals' digital practices depend on their social environment and the opportunities and restrictions provided by technological developments. Different manifestations of the digital applications used often lead to simultaneous tangible harms and benefits, and the balance between tangible harms and benefits and their accumulation affect the individual's digital well-being (Büchi, 2024). In this context, the digital applications that individuals tend to use more affect their behaviors, communications and feelings. They need new skills such as avoiding intense exposure to digital stimuli that increase day by day and directing these stimuli towards their personal goals and individual benefits. The abundance of options in digital stimuli, easy switching from one focus to another, exploitation of attention, the convergence of multiple different activities on the same device, and the continuation of these conditions throughout the day are the negative aspects of digital environments reflected on young people (Gui, Fasoli, & Carradore, 2017), and when the speed of changing and transforming digital technologies is considered in coping with these aspects, the quality of the individual's digital well-being skills is gaining importance day by day. In this context, digital well-being has the potential to become a practically important concept in research on digital media use. Although the choice of a specific device, application, or application settings is usually made with individual motivation, such choices can have a lasting effect on digital well-being experiences. For example, the choice of a “non-smart phone” can enable individuals to protect themselves against the fearful effects of excessive connectivity (Morrison & Gomez, 2014). Moreover, the commodification of attention, habitual control behaviors, blocking behaviors, addiction, digital stress, online alertness, cognitive overload, social approval anxiety, media enjoyment, screen guilt/shame, impulsivity, trait anxiety, self-control, fear of missing out, momentary emotional and cognitive states, exhaustion, workplace boredom, long or short-term deprivation, smartphone resistance, the mere presence of the device can be listed as other factors affecting digital well-being (Abeele, 2021).

On the one hand, when young people use social media, which has a moderately challenging, fun and controllable nature in the digital environment, they can share their lives by writing, posting photos and short videos, and also interact with others through likes, comments and private messages. These activities create an immersive experience by bringing positive feedback to users, thus making young people feel happy and comfortable in the digital environment. On the other hand, young people's happiness in this way in the digital environment can lead to internet addiction and further negatively affect their normal lives and health (Pelet, Ettis & Cowart, 2017; Wu, Liu & Tian, 2023). Internet addiction manifests itself in young people and university students as the inability to control access desire, spending increasing amounts of time outside of their goals despite deterioration in various levels of functionality, not being able to limit the duration of use, feeling anxious when not accessible, feeling depressed, and disrupting daily work (Ferrara et al., 2017). Park (2009) also emphasizes that the more intensively a person uses the internet, the higher the probability of being exposed to unexpected negative content (such as violence, sexual content, slander). In this context, in order for an individual to stay away from addiction, they will need to maintain their digital well-being against the negative effects of all exposure situations. However, different

studies (Çardak, 2013; Tariq & Dangwal, 2024; Wu, Liu & Tian, 2023) emphasize the suppressive role of internet addiction on well-being, while also stating that this pressure is relieved when more qualified digital skills are involved or that digital well-being varies according to the purpose of using the internet (social media, shopping, gaming, gambling, e-commerce, following current news, chatting, etc.). In other words, the concept of digital well-being also reflects the idea that individuals can ignore the pressures arising from social environments in order to perform well in digital environments (Gui, Fasoli & Carradore, 2017). Because sometimes excessive consumption can be caused by such pressures rather than the individual's lack of certain skills, and the internet and social media addictions brought about by these pressures can have many negative effects. Tariq and Dangwal (2024) point out that individuals struggling with internet addiction often compromise their psychological well-being because their mental health deteriorates due to reasons such as disrupted sleep patterns, decreased face-to-face interactions, and increased anxiety about online activities. In this context, when it comes to internet addiction, it is meaningful to address the nature of digital well-being, determine the ideal daily internet usage time, and determine functional digital well-being strategies for individuals with internet addiction.

When digital well-being is considered as the happiness of an individual who uses digital media in a targeted and functional way, and who uses digital media without postponing his/her life by keeping social and personal factors in balance (Myers, Sweeney, & Witmer, 2000); many studies have associated internet addiction with mental health problems, depression, anxiety, poor academic performance, deterioration in peer relationships, insomnia, and daily internet usage duration variables that may negatively affect digital well-being (Correa Rangel, Falcão Raposo, & Sampaio Rocha-Filho, 2022; Fareeq Saber et al., 2024; Foreughi, 2022; Xie, Cheng, & Chen, 2023; Shen et al., 2020; Sun & Wilkinson, 2020; Zhao et al., 2023). Yang and Tung (2007) also found that students with psychological disorders such as depression, low self-esteem, addiction, and excessive shyness have a high tendency to become internet addicts. In addition, both Young (1998) and Morahan-Martin (2005) suggested that those who abuse the internet by using it excessively, purposelessly and inappropriately use it to regulate their negative moods. Wang et al. (2013) also stated in their research that young people with internet addiction are significantly different from non-addicted users in terms of well-being variables such as self-esteem, depression and life satisfaction; and that those who are addicted to the internet have lower well-being levels compared to those who are not. This situation indicates that as young people develop their digital well-being skills, their chances of becoming addicted to the internet may decrease. However, to date, there is not enough evidence on the effects of digital well-being on internet addiction, digital dependency or social media addiction, suggesting that how, when and why the concept works in such addiction situations has not been sufficiently clarified. In the context of these results, it is necessary to understand the relationship between digital well-being and internet addiction through more comprehensive research in order to develop digital well-being skills so that young people and university students do not fall into internet addiction.

Digital media users, educators, students, health practitioners, digital designers and developers, as well as policy makers, need information about people’s struggles with ubiquitous Internet connectivity and what can be done to help people develop healthier Internet use habits, whether or not digital well-being interventions are used. In Tsai and Lin’s (2003) study, none of the youth who declared that they were addicted to the Internet could clearly state what to do about such an addiction. This suggests that educators and psychologists should pay more attention to

developing digital well-being skills in order to prevent and overcome Internet addiction, and then offer possible solutions for young people.

When the literature is examined, it is seen that there is limited quantitative research on digital well-being and its relationship with internet addiction. Generally, such studies explain the causal mechanisms regarding the effects of communication on digital well-being by referring to the possibilities of information and communication technologies and touch on digital inequality. These issues are also important, but what is missing in these studies is the analysis of the different consequences of internet use and using the internet in an excessively undisciplined and dependent manner. Recognizing that the consequences of internet use and addiction can be subjective or mental in nature, adding digital well-being measurements as an outcome is a step towards evaluating the social impact of the internet (Büchi, Festic & Latzer, 2019). By combining theoretical arguments from both research areas holistically. Instead of seeing the internet and digital media use, whose potential effects increase as they are intertwined with daily activities, as a scapegoat affecting digital well-being, it should be taken into account that these elements increasingly surround and shape human communication for digital well-being and that their effects have not been sufficiently determined. Roffarello et al. (2023) also emphasizes that the relationships between the complex and overlapping use or non-use of digital devices and people's digital well-being need to be better understood in a way that includes individual and contextual differences as well as social factors. In this context, studies that integrate different variables are needed to determine the effects on digital well-being and to reach generalized information. For the reasons stated, analyzing the relationship between internet addiction and digital well-being in the context of different variables will make significant contributions to the very limited results reached on this subject in the literature. It is a necessity to research the subject and draw attention to the subject in order to take adequate precautions for university students or to create strategies to alleviate the problems. For these reasons, this study aims to reach conclusions about the relationship between university students' digital well-being and internet addiction.

Literature Review

Digital Well-Being

Today, individuals are exposed to excessive information flow in the digital environment and the density of communication options that can be established through social networks. Individuals need new skills to manage intense digital stimuli in a way that suits their personal goals and individual benefits, and to avoid their harms. Many negativities such as the abundance of possible options, easy switching from one focus to another, economic exploitation of human attention, the convergence of different activities on the same device and the continuation of these conditions throughout the day reveal the importance of the individual's digital well-being skills in coping with intense digital stimuli in a way that preserves their quality of life (Önal, 2021). As Helen (2016) stated, digital well-being is; (1) establishing personal health, safety, relationships and work-life balance, (2) acting safely and responsibly, (3) preventing digital stress, workload and distraction, (4) using digital media to participate in political and social actions, (5) using personal digital data for individual digital well-being, (6) being sensitive to human and natural environment in the use of digital tools, (7) taking care to keep digital and real world interaction in balance in relationships (Önal, 2021). The concept of ‘digital well-being’ is basically related to the extent to

which people can exercise self-control in how they use their digital devices and, in particular, whether they can align the use of digital technology with their personal long-term goals (Lyngs, 2019). In other words, digital well-being refers to the subjective well-being of an individual in a social environment where digital media is everywhere (Büchi, 2024).

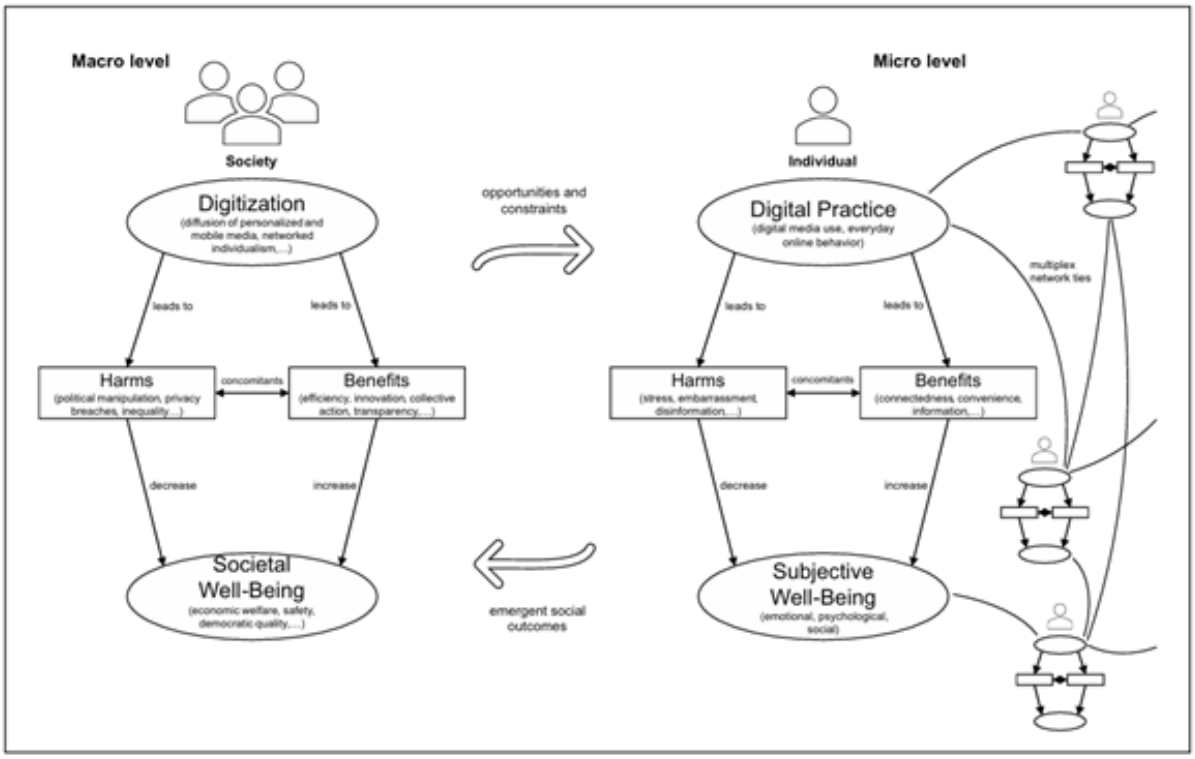

Figure 1. Dijital Wellbeing Framework (Büchi, 2024)

As seen in Figure 1 within the framework of digital well-being, an individual's digital practices frequently cause obvious harms and benefits that affect the individual's digital well-being. These steps can be moderated by additional variables such as personality or situation. Individuals are embedded in social networks and societies whose structural tendencies and technologies constrain and enable individual action, and are also complex emergent products of micro-level processes (Büchi, 2024). While the opportunities and restrictions offered by digitalization affect individual digital practices and therefore individual digital well-being, the social consequences of the benefits and harms brought about by digital practices that affect individual subjective well-being affect social well-being. The benefits brought about by digitalization increase social well-being, while the harms reduce it. The benefits brought about by individual digital practices increase subjective well-being, while the harms reduce it.

Digital well-being research in educational contexts falls under two main themes. The first is digital monitoring and surveillance of students; the second is concerns about digital addiction and excessive use, how users can maintain self-control, and strategies to address these. The second theme addresses issues such as the time spent on digital devices, technology addiction, antisocial behavior, and depression (Burr, Taddeo & Floridi, 2020; Lyngs, 2019). The feeling of spending too much time online and the fact that internet use pushes aside important issues in the context of one's ideals evokes undisciplined excessive use of the Internet (Ofcom, 2016; Hall, Johnson

& Ross, 2019). Different researchers (Abeele, 2021; Büchi, Festic & Latzer, 2019; Docherty, 2021; Montag & Walla, 2016) have focused on concerns that the excessive or undisciplined use of online technologies has a negative impact on digital well-being. Saindon (2021) argues that digital well-being; It refers to the role of digital technologies such as smartphones, computers and other screen media and smart objects, where online technologies are frequently used, in the production of holistic user health. When looking at the news about the excessive use of the Internet, it is often written that social media or smartphones often have negative effects on the mental health of individuals (Booth, 2019; Cornish, 2017).

According to the household information technologies usage survey report (2023), the most used messaging and social media applications by individuals in Turkiye are WhatsApp (84.9%), YouTube (69.0%) and Instagram (61.4%), while the rate of those using e-government services is 73.9%. Many people spend a significant amount of time on popular social media applications and websites such as messaging, Instagram and Facebook on the internet every day (Bhattacharya et al., 2023). Excessive social media use, which is stated as one of the reasons leading to internet addiction; negatively affects subjective well-being, self-esteem, anxiety and depression levels (Kross et al., 2013; Blomfield Neira & Barber, 2014; Feinstein et al., 2013), which can also be explained by the fact that social media interactions and messaging, which are more frequently accessed via smartphones, are not sufficient to meet the needs of our old emotional systems (such as hugs) (Docherty, 2021; Montag & Walla, 2016). One reason for this is that platforms on the internet and social media environment constantly attract the user's attention with manipulative technical processes, persuasive designs, predictive algorithms and tactilely captivating interfaces. In this context, Facebook argues that how users interact with social media on the internet is a determining factor in their well-being, and that negative well-being outcomes arise from users' passive and excessive interaction with the platforms (Burke & Kraut, 2016; Docherty, 2020). In this context, the concepts of FOMO, JOMO, Netlessphobia and Digital well-being have emerged in the life order brought by the digital age, and the need for research on these concepts, which have started to come to the fore more frequently, has begun to be felt. ‘FOMO’, expressed as the ‘fear of missing out’, causes depressive and anxious feelings in individuals with the connotations of missing out on social media posts about others having fun and not being able to do what they do. This situation leads to anxiety disorder, which creates a source for negative situations such as ‘Nomophobia’ (fear of being deprived of virtual communication tools such as tablets, mobile phones, computers) and ‘Netlessphobia’ (fear of being without the internet) (Önal, 2021). In addition, it has been reported that anxiety causes individuals to overuse the Internet and digital technologies in order to meet their needs and often leads to internet addiction, and conversely, anxiety increases with the increase in addiction, thus causing ‘social phobia’ and ‘anxiety’ (anxiety disorder) (Shepherd and Edelmann, 2005); Moreover, it is pointed out that individuals are exposed to ‘technostress’ (Riedl, 2012) in case of disconnection or device failure (Montag & Walla, 2016). In contrast to these negative feelings, ‘JOMO’, which is expressed as following the requirements of real life, being able to manage one’s time and taking breaks by saying no to technology use when necessary, is one of the important steps to maintain well-being in order to find happiness. The digital technologies and applications that individuals use every day affect their behaviors, feelings and communication styles (Önal, 2021). In this context, spending excessive time on the screen and the context of the digital technologies and applications used affect well-being (Singh, 2022). In order to protect digital well-being and mental health, keeping the time spent in front of the digital screen at a moderate level, in other words, not overdoing it and using digital media at a level that is

light enough to meet the requirements, has been determined as the most advantageous level (Przybylski & Weinstein, 2017).

Interacting online with close ties, communicating one-on-one, posting regular updates, and completely taking a break from screen time are positive actions that affect the user's well-being, while passively scrolling through feeds, hiding in friends' profiles, poor personal time management, and general inactivity on platforms (Ginsberg & Burke, 2017) are stated as negative actions. In this context, both opponents and designers of excessive social media use, which is one of the important causes of internet addiction, although seemingly on different sides of the debate, suggest two paths leading to digital well-being in order to protect from internet addiction due to social media: Conscious use and individual self-control as announced at the launch of the Samsung Galaxy S9, a number of features are being reflected in smartphones that give users the chance to keep their digital habits under control, including activity trackers and dashboards showing the time spent on the device. In this context, creating conscious usage habits and ensuring digital well-being are key to regaining control within the potentially overwhelming digitalization of contemporary life (as cited in Docherty, 2021).

'Digital well-being' emphasizes the impact of digital technologies on what it means to live a good life for an individual in an information society. The rapid spread of digital technologies and their adoption by society have differentiated the relationships of individuals with themselves, each other and their environment. Individual and social well-being is closely linked to the state of the individual's information environment and the digital technologies that mediate their interaction with it. Abeele (2021) considers digital well-being as an element of a dynamic system that relates the device, context, personal factors and digital media use. Considering that systematic studies in this sense are quite scarce; many subtle factors, contexts, situational conditions, temporal effects and interactions regarding the impact of digital technologies, excessive internet use and, moreover, internet addiction on digital well-being should be examined and immediate results should be presented in a multidimensional manner and solution suggestions should be presented (Burr, Taddeo, & Floridi, 2020; Floridi 2014).

Internet Addiction

Addiction is defined as an irresistible desire to take a substance or repeat an action despite its negative effects on physical, psychological and social health (Griffiths, 2000). Considering that addiction is considered in two separate categories as substance and behavioral addiction, internet addiction is considered within the scope of behavioral addiction, which has similar characteristics to those of substance addiction. The concept of internet addiction was first defined by Goldberg (1996) as "excessive use of the Internet to the point of disrupting daily activities" (as cited in Varma, Cheaskul & Poonpol, 2018). The concept is debated by academics and clinicians for various reasons, such as lack of evidence, level of consistency and medical decision criteria (Fu et al., 2010).

Young (1998) describes internet addiction as a type of addiction that, like alcoholism, drug addiction, or compulsive gambling addiction, has devastating effects on the lives of addicts and their families, such as divorce, job loss, decreased productivity at work, failure at school, and criminal behavior. Considering that 67.1% of the

world's population, or 5.55 billion people, are internet users as of April 2024, as stated in Statista, Young defines those users who exhibit three or four of the following symptoms as internet addicts: (1) feel occupied with the internet or online services and think about them when offline, (2) feel the need to spend more and more time on the internet to achieve satisfaction, (3) cannot control their online use, (4) feel restless or irritable when trying to reduce or stop their online use, (5) go online to escape from problems or relieve feelings such as helplessness, guilt, anxiety or depression, (6) lie to family members or friends to hide how often and for how long they spend online, (7) risk losing an important relationship, job, education or career opportunity due to their online use, (8) continue to use after spending a lot of money on online fees, (9) experience withdrawal states such as increased depression, pessimism or irritability when offline, (10) staying online longer than originally planned. Supporting Young and Goldberg's basic criteria for Internet addiction, different psychologists differentiate the symptoms of Internet addiction by listing them as (1) radical changes in lifestyle to spend more time on the Internet, (2) general decrease in physical activity, (3) neglect of one's health as a result of Internet activity, (4) avoiding important life activities to spend time on the Internet, (5) sleep deprivation or changes in sleep patterns to spend time on the Internet, (6) decreased socialization, resulting in loss of friends, (7) neglecting family and friends, (8) refusing to spend long periods of time outside the Internet, (9) desire to spend more time on the computer, and (10) neglecting work and personal obligations (Suler, 1996). The consequences of Internet addiction extend beyond online time, with individuals showing insensitivity to the social environment including important events, loneliness and isolation, decreased academic achievement, unhappy, miserable, hopeless appearance, depressive and abnormal behaviors (Chak & Leung, 2004; Huang & Alessi, 1997; Kim et al., 2006; Tsai & Lin, 2003).

Internet addiction manifests itself as addiction to gambling, gaming, shopping, research, pornography, and similar things (Young, 1998). Chou et al. (2015) state that individuals experiencing depression and stress use the internet more than their previous usage. Another reason for the increase in internet usage may be the decreasing cost of accessing the internet, its easy accessibility and unlimited nature, or the hidden advertising of internet use as a lifestyle on social media (Lin & Tsai, 2002; Young, 2004). For similar reasons, internet addiction is seen in all age groups, but it is most common in adolescents and university students. Iqbal, Noor, and Mian (2014) state that internet addiction is more common in young people between the ages of 15-20; 21.4% of those between the ages of 15-20, 13.3% of those between the ages of 21-25, and 17.5% of those between the ages of 26-29 are addicted. Leung (2004) emphasizes that 38% of the 16-24 age group has internet addiction. Relatively similar internet addiction rates are seen in South Korea (20%), China (16.4%), the Philippines (21%) and Vietnam (21.2%) (Li et al., 2021). Again, it is stated that almost one in ten people in Europe, especially among young people, is addicted to the internet (Lozano-Blasco, 2022). Different researchers (Mamun et al., 2019; Iqbal, Noor, & Mian, 2014; Samaha & Hawi, 2016) have revealed that university students waste their time chatting on the internet and visiting unnecessary sites, and that they also have interpersonal, academic and health problems and lack knowledge about using the internet correctly. The Covid-19 pandemic, which started in 2020, has accelerated the increase in internet addiction among young people (Dubey et al., 2020). The socio-economic effects of the pandemic may have increased young people's interest in and addiction to the internet, as it limits their physical activities and social interaction areas (Şan et al., 2024). In general, studies have shown that male students are more addicted to the internet than female students for reasons such as online gambling, betting, and gaming (Diaz et al., 2020; Iqbal, Noor, & Mian, 2014); male university students who spend more than eight hours on the internet have higher levels

of internet addiction and their academic performance is affected by this situation (Çakır Balta & Horzum, 2008). Sarıalioğlu, Atay, and Arıkan (2022) also state that young people who use the internet for 6 hours or more have higher average internet addiction levels. From public discussions about the negative effects of 'screen time' to the relevant initiatives of some technology giants, the concept of 'digital well-being' attracts great attention today. However, it is also a topic on which debates continue. The relationship between the time spent in front of the screen on the Internet and health measures is not clear enough (Lyngs, 2019). In this context, it is a necessity to educate university students on safe, valuable and healthy practices of Internet use, to determine their digital well-being levels and to raise awareness on this issue (Mengistu et al., 2021).

Aims of the Research

This study seeks to answer the following questions:

1. What are the levels of digital well-being perceptions of teacher candidates?
2. Do teacher candidates' digital well-being perceptions differ according to
    - gender,
    - place of residence,
    - where they connect to the internet,
    - how often they use internet activities (communication/chat, entertainment, extracurricular, following current news, shopping) ?
3. Is there a relationship between teacher candidates' digital well-being perceptions and their average daily internet use?
4. What are the levels of teacher candidates' internet addiction perceptions?
5. Do teacher candidates' internet addiction perceptions differ according to
    - gender,
    - place of residence,
    - where they connect to the internet,
    - how often they use internet activities (communication/chat, entertainment, extracurricular, following current news, shopping) ?
6. Is there a relationship between teacher candidates’ perceptions of internet addiction and their average daily internet use?
7. Is there a relationship between teacher candidates’ perceptions of digital well-being and their perceptions of internet addiction?

Method

Research Model

The study used a correlational design. According to Fraenkel et al. (2012), the correlational design aims to investigate the relationship between two or more variables. In this design, the changes of variables together are examined without seeking a cause and effect between the relationships examined (Büyüköztürk et al., 2018). Therefore, the study aimed to examine the changes of the relationship between teacher candidates' digital well-

being perceptions, internet addiction perceptions and daily internet use without seeking a cause and effect. In addition, the differentiation of teacher candidates' digital well-being perceptions and internet addiction perceptions according to various variables was examined.

Participants

The participant group of the study consisted of 146 teacher candidates studying in different departments of a state university located in the Eastern Anatolia Region in Türkiye during the spring semester of the 2023-2024 academic year. While creating the participant group, factors such as the accessibility, accessibility and time saving of the institution where the data was collected for the researchers were taken into consideration.

Table 1. Demographic Characteristics of Participants

		Category	f	%
Gender		Female	101	69.2
		Male	45	30.8
Place of residence		Family	64	43.8
		State dormitory	64	43.8
		Other	18	12.3
Internet connection location		Home	72	49.3
		Dormitory	47	32.2
		Other	27	18.5
Frequency of internet activities	Communication	Low	23	15.8
		Medium	63	43.2
		High	60	41.1
	Entertainment	Low	35	24
		Medium	63	43.2
		High	48	32.9
	Extracurricular	Low	25	17.1
		Medium	93	63.7
		High	28	19.2
	Following current news	Low	45	30.8
		Medium	63	43.2
		High	38	26
	Shopping	Low	56	38.4
		Medium	63	43.2
		High	27	18.5
		Total	146	100.0

In the study, 101 (69.2%) of the teacher candidates in the participant group were female, while 45 (30.8%) were male. The place of residence of the teacher candidates was mostly family (43.8%) and state dormitory (43.8%)

with 64 people each. When the place of connection to the internet was examined, it was seen that the majority of the teacher candidates connected from home (49.3%) with 72 people, followed by dormitory (32.2%) with 47 people. When the frequency of the teacher candidates' internet activities was examined according to their density in categories, it was seen that in the communication category, it was medium frequency (43.2%) with 63 people; in the entertainment category, it was medium frequency (43.2%) with 63 people; in the extracurricular category, it was medium frequency (63.7%) with 93 people; in following current news, it was medium frequency (43.2%) and in the shopping category, it was medium frequency (43.2%) with 63 people.

Data Collection Process

The data of the study was collected via Google Form. In this context, the Voluntary Participation Form was presented to the prospective teachers; the prospective teachers who approved the form filled out the scales and sent them to the researchers.

Data Collection Tools

Personal Information Form

This form consists of five questions: gender, place of residence, place of connection to the internet, daily internet use and frequency of internet activities (communication, entertainment, extracurricular, following current news, shopping). This data collection tool was used to create the participant group of the research and to find answers to the research questions.

Digital Well-being Scale

The Digital Well-Being Scale developed by Öztürk (2018) was used to collect data on the digital well-being variable. The scale consists of 10 items and two sub-dimensions. The sub-dimensions are "ability to manage digital platforms" and "sharing personal information for official purposes". There are no reverse-scored items in the scale.

In order to provide evidence for the validity of the scale developed by Öztürk (2018), content validity and construct validity studies were conducted. In this context, first of all, the item pool was examined by two experts, one in the field of Psychological Counseling and Guidance (PDR) and the other in the field of educational technology, to ensure the content validity of the scale. EFA was also conducted for construct validity. As a result of EFA, the scale consisted of 10 items and two sub-dimensions, namely the “skills to manage digital platforms” sub-dimension consisting of eight items with a variance of 37.92% and the “sharing of personal information for official purposes” sub-dimension consisting of two items with a variance of 16.19%. Cronbach’s Alpha internal consistency coefficients, which were conducted to determine the reliability of the scale, were .80 for the entire scale and .75 and .80 for the sub-dimensions, respectively. The item-total score correlations of the items were found to vary between .43 and .71 for all items except item 4 (.22) and the t values were found to be significant ($p<.001$).

Since Confirmatory Factor Analysis (CFA) of the Digital Well-being Scale was not conducted, CFA was conducted to provide evidence regarding the validity of the scale with the data in the study. In this context, the fit index values calculated in order to verify the model reached after EFA are as follows: X2/sd=2.69, GFI=.92, AGFI=.87, CFI=.93, NFI=.90, RMSEA=.08, SRMR=.06. When the findings are compared with the fit index values stated in the studies of Hu and Bentler (1999) and Schermelleh-Engel et al. (2003), a X2/sd value greater than 2; GFI, CFI, and NFI values greater than .90; and RMSEA and SRMR values less than .08 indicate that the model-data fit is at an acceptable level.

Internet Addiction Scale

In order to collect data on the Internet addiction variable, the Internet Addiction Scale adapted to Turkish by Şahin and Korkmaz (2011) was used. The original version of the scale was developed by Hahn and Jerusalem (2001) and consists of 20 items and five sub-dimensions. After the Exploratory Factor Analysis (EFA) conducted by Şahin and Korkmaz (2011) during the scale adaptation process, an item with an item loading below .30 was removed and a scale consisting of 19 items and three sub-dimensions was obtained. The sub-dimension names are "loss of control", "desire to stay online more" and "negativity in social relationships". There are no reverse-scored items in the scale. In order to provide evidence for the validity of the scale, language adaptation and construct validity studies were conducted by Şahin and Korkmaz (2011). In this context, first of all, for the language adaptation study, the items in the original scale were translated into Turkish and then into German by two experts, one who knows Turkish and German, PCG and one who is an expert in educational technology, and language equivalence was achieved. CFA was first conducted for construct validity. Since the model-data fit of the scale could not be met as a result of CFA, EFA was applied. As a result of EFA, one item with an item load below .30 was removed and the scale consisted of 19 items and three sub-dimensions, namely the "loss of control" sub-dimension consisting of seven items with a variance of 23.69%, the "desire to stay online more" sub-dimension consisting of four items with a variance of 16.73%, and the "negativity in social relationships" sub-dimension consisting of eight items with a variance of 27.67%. The fit index values calculated to verify the model reached after CFA are as follows: X2 (d=149, N=468)= 580.17, p<.01, GFI=.90, AGFI= .85, CFI= .97, NNFI= .96, IFI= .95, RMSEA= .07, SRMR= .04. The fit index values obtained indicate that the model provides an acceptable level of fit. Cronbach's Alpha internal consistency coefficient values made to determine the reliability of the scale are .85 for the entire scale, .90, .88 and .92 for the sub-dimensions, respectively. Sperman Brown reliability coefficient values are .76 for the entire scale, .86, .86 and .89 for the sub-dimensions, respectively. Guttmann Split-Half reliability coefficient values are .76 for the entire scale, .84, .86 and .89 for the sub-dimensions, respectively. Item-total score correlations of the items vary between .72 and .83 in the first sub-dimension; between .82 and .90 in the second sub-dimension; and between 72 and .80 in the third sub-dimension.

Data Analysis of the Study

The study started with data from 243 prospective teachers. After the analyses, due to the inconsistent responses of the participants regarding both variables, the data was cleaned by performing a detailed standardization study and the analyses were continued with 146 data. However, since the sub-dimension of "sharing personal

information for official purposes" in the scale used for the digital well-being variable did not meet the purpose of the study on its own, instead of conducting separate analyses for both sub-dimensions in the scale, digital well-being perceptions were considered as a single variable. The other variable of the study, the internet addiction variable, was analyzed according to the sub-dimensions.

Descriptive statistics were calculated to find answers to the first and fourth research questions of the study. In order to examine whether digital well-being and internet addiction differ according to demographic variables in the second and fifth research questions, the assumptions of normal distribution and variance homogeneity were examined according to the sub-dimensions. Kolmogorov Simirnov test was performed for normal distribution; Levene test was performed for homogeneity of variances. As a result of these tests, Independent Groups T-test was used for pairwise comparisons in the variables that met the assumptions; One-Way Anova was performed for triple comparisons. For variables where assumptions were not met, Mann Whitney U-test was performed for pairwise comparisons; Kruskal Wallis H-test was performed for triple comparisons. Eta squared (η2) coefficient was calculated to determine the effect of the independent variable on the dependent variable. In case of a significant difference between variables, Bonferroni Test was performed as a multiple comparison test to determine the direction of the difference when assumptions were met; Mann Whitney U-test was performed when assumptions were not met. Since the data were not normally distributed for the third, sixth and seventh research questions of the study, Spearman Rank Differences Correlation Test was performed. In the interpretation of the correlation values, the correlation levels specified by Cohen (1988), .1-.3 = low correlation, .3-.5 = medium level correlation, .5 and above = high level correlation ranges were taken into consideration.

Findings

Findings Related to the First Research Question

Descriptive statistics findings are presented below to answer the first research question of the study.

Table 2. Descriptive Statistics Related to the Perception of Digital Well-Being of Prospective Teachers

	Items	**$\bar{X}$**	**ss**
	M1	4.49	.81
	M2	4.22	.90
	M3	4.24	.86
Digital Well-Being	M4	4.46	.86
$\bar{x}$= 3.97	M5	4.25	.87
ss= .66	M6	4.30	.92
	M7	4.01	.91
	M8	3.82	1.06
	M9	3.57	1.17
	M10	2.42	1.42

N=146

When the scores of prospective teachers (N=146) regarding their perception of digital well-being were examined, it was seen that the highest average belonged to item 1 and the lowest average belonged to item 10.

Findings Related to the Second Research Question

In order to find an answer to the second research question of the study, the Mann Whitney U-test was used for pairwise comparisons and the Kruskal Wallis H-test was used for triple comparisons, and the findings are presented below.

Table 3. Mann-Whitney U Test Values Regarding the Differences in Digital Well-Being Perceptions of Prospective Teachers According to Gender

Sub-dimension	Gender	n	Mean of Rank	Sum of rank	U	p
Digital Well-Being	Female	101	76.07	7863.00	2013.00	.27
	Male	45	67.73	3048.00		

There is no significant difference between female and male teacher candidates' perceptions of digital well-being in terms of gender (U= 2013.00, p> .05). When the mean ranks are taken into account, females have a higher perception of digital well-being than males.

Table 4. Kruskal Wallis H-Test Values Regarding the Differences in Digital Well-Being Perceptions of Prospective Teachers According to Place of Residence

Sub-dimension	Place of residence	n	Mean of rank	Df	X^2	p
Digital well-being	Family	64	74.23	2	.22	.89
	Sate dormitory	64	74.00			
	Other	18	69.11			

There is no significant difference in teacher candidates' perceptions of digital well-being according to their place of residence ($X^2_{(2)}$=.22, p>.05).

Table 5. Kruskal Wallis H-Test Values Regarding the Differences in Digital Well-Being Perceptions of Prospective Teachers According to the Place of Internet Connection

Sub-scale	Internet connection location	n	Mean of Rank	Df	X^2	p
Digital well-being	Home	72	72.90	2	.17	.91
	Dormitory	47	72.69			
	Other	47	76.52			

There is no significant difference in teacher candidates' perceptions of digital well-being depending on where they connect to the internet ($X^2_{(2)}$=.17, p>.05). There is no significant difference in the communication/chat category ($X^2_{(2)}$=2.78, p>.05); entertainment category ($X^2_{(2)}$=3.81, p>.05) and in the current news follow-up category ($X^2_{(2)}$=4.26, p>.05) according to the perceptions of digital well-being of teacher candidates.

Table 6. Kruskal Wallis H-Test Values of Prospective Teachers' Digital Well-Being Perceptions Regarding the Frequency of Using Internet Activities

	Sub-scale	Frequencies of Internet Activities	n	Mean Square	Df	X^2	p	η^2	Difference
Communication / chat	Digital well-being	Low	23	76.67	2	2.78	.24		
		Medium	63	66.88					
		High	60	79.23					
Entertainment	Digital well-being	Low	35	79.57	2	3.81	.14		
		Medium	63	65.67					
		High	48	79.34					
Extracurricular	Digital well-being	Low	25	75.12	2	6.04	.04*	.01	Medium- High
		Medium	93	68.01					
		High	28	90.29					
Following current news	Digital well-being	Low	45	68.49	2	4.26	.11		
		Medium	63	69.77					
		High	38	85.62					
Shopping	Digital well-being	Low	56	78.63	2	6.86	.03*	.03	Low - Medium
		Medium	63	63.47					Medium - High
		High	27	86.26					

*p< .05

There is a significant difference in the out-of-class category according to the digital well-being perceptions of teacher candidates ($X^2_{(2)}$=6.04, p<.05). When the effect size of the mentioned difference is examined, it is determined that the eta squared value is η2=.01. According to this value, it can be stated that the out-of-class category explains 1% of the digital well-being perceptions. As a result of multiple comparisons made with the Mann-Whitney U test, it was seen that this difference was between the Medium and High groups.

There is a significant difference in the shopping category according to the digital well-being perceptions of teacher candidates ($X^2_{(2)}$=6.86, p<.05). When the effect size of the mentioned difference was examined, it was determined that the eta squared value was η2=.03. According to this value, it can be stated that 3% of the digital well-being perceptions were explained by the extracurricular category. As a result of multiple comparisons made with the Mann-Whitney U test, it was seen that this difference was between the Low and Medium and Medium and High groups.

Findings Related to the Third Research Question

In order to answer the third research question of the study, the Spearman Rank Difference Correlation test was calculated and it was found that there is no significant relationship between perceptions of digital well-being and average daily internet use (r=.01, p>.05).

Findings Related to the Fourth Research Question

In order to answer the fourth research question of the study, descriptive statistical findings of teacher candidates' perceptions of internet addiction are presented below.

Table 8. Descriptive Statistics on Prospective Teachers' Perceptions of Internet Addiction

	Items	x̄	Sd
Loss of control	M1	2.49	1.03
x̄= 2.30	M2	2.29	.97
ss= .75	M3	2.03	1.09
	M4	2.89	1.13
	M5	2.83	1.14
	M6	2.21	1.05
	M7	1.92	1.01
Desire to stay online more	M8	2.53	1.18
x̄= 2.55	M9	2.49	1.16
ss= 1.01	M10	2.62	1.18
	M11	2.56	1.09
Negativity in social relations	M12	1.60	.95
x̄= 1.74	M13	1.73	.97
ss= .81	M14	1.97	1.10
	M15	1.68	.92
	M16	1.84	1.02
	M17	1.59	.96
	M18	1.80	.98
	M19	1.72	.98

N=146

When the scores of the pre-service teachers (N=146) on the loss of control sub-dimension were examined, it was seen that the highest mean was item 4 and the lowest mean was item 7; in the desire to stay online more sub-dimension, the highest mean was item 10 and the lowest mean was item 9; in the negativity in social relations sub-dimension, the highest mean was item 14 and the lowest mean was item 17.

Findings Related to the Fifth Research Question

In order to find an answer to the fifth research question of the study, Independent Groups t-test was performed for pairwise comparisons with assumptions provided according to the sub-dimensions of the scales, and One-Way ANOVA was performed for triple comparisons; Mann Whitney U-test was performed for pairwise comparisons with assumptions not provided; and Kruskal Wallis H-test was performed for triple comparisons, and the findings are presented below.

Table 9. Independent Groups t-Test Values Regarding the Differences in Internet Addiction Perceptions of Prospective Teachers According to Gender

Sub-dimension	Gender	n	x̄	Sd	Df	t	p
Internet addiction perceptions	Female	101	2.55	1.00	144	.09	.92
	Male	45	2.53	1.03			

There is no significant difference in the sub-dimension of teacher candidates' internet addiction perceptions in terms of gender, in terms of wanting to stay online more between women and men ($t_{(144)}$=.09, p> .05).

Table 10. Mann-Whitney U Test Values Regarding the Differences in Internet Addiction Perceptions of Prospective Teachers According to Gender

Sub-dimension	Gender	n	Mean of Rank	Sum of rank	U	p
Loss of control	Female	101	75.00	7575.50	2120.50	.51
	Male	45	70.12	3155.50		
Negativity in social relations	Female	101	68.96	6964.50	1813.50	.05
	Male	45	83.70	3766.50		

There is no significant difference in the perception of internet addiction among teacher candidates in terms of gender in the sub-dimensions of loss of control and negativity in social relationships between women and men. (U= 2120.50, p>.05; U= 1813.50, p>.05).

Table 11. One-Way ANOVA Values Regarding the Differences in Internet Addiction Perceptions of Prospective Teachers According to Place of Residence

Sub-dimension	Source of Variation	Sum of Squares	Df	Mean Squares	F	p
Loss of control	Within Groups	2.32	2	1.16	2.08	.12
	Between Groups	79.84	143	.55		
Desire to stay online more	Within Groups	1.92	2	.96	.93	.39
	Between Groups	146.44	143	1.02		

There is no significant difference in the sub-dimensions of loss of control and desire to stay online more among teacher candidates according to place of residence ($F_{(2-143)}$= 2.08, p>.05; $F_{(2-143)}$= .93, p>.05).

Table 12. Kruskal Wallis H-Test Values Regarding the Differences in Internet Addiction Perceptions of Prospective Teachers According to Place of Residence

Sub-dimension	Residency	n	Mean of Rank	Df	X^2	p	η^2	Difference
Negativity in social relations	Family	64	63.33	2	6.73	.03*	.02	Family-State Dormitory
	State dormitory	64	81.16					
	Other	18	82.42					

*p< .05

There is a significant difference in the sub-dimension of negativity in social relations among teacher candidates according to their place of residence. ($X^2_{(2)}$=6.73, p<.05). When the effect size of the mentioned difference was examined, it was determined that the eta squared value was η2=.02. According to this value, it can be stated that the place of residence explains 2% of the negativity in social relations. As a result of multiple comparisons made with the Mann-Whitney U test, it was seen that this difference was between Family and State Dormitory.

Table 13. One-Way ANOVA Values Regarding the Differences in Prospective Teachers' Perceptions of Internet Addiction According to Where They Connect to the Internet

Sub-dimension	**Source of Variation**	**Sum of Squares**	**Df**	**Mean Squares**	**F**	**p**
Loss of control	Within Groups	.64	2	.32	.56	.56
	Between Groups	81.53	143	.57		
	Total	82.17	145			

There is no significant difference in the loss of control sub-dimension of teacher candidates according to where they connect to the internet. ($F_{(2-143)}$= .56, p>.05).

Table 14. Kruskal Wallis H-Test Values Regarding the Differences in Prospective Teachers' Perceptions of Internet Addiction According to the Place of Connection to the Internet

Sub-dimension	Internet connection location	n	Mean of rank	Df	X^2	p
Desire to stay online more	Home	72	69.37	2	1.43	.48
	Dormitory	47	78.47			
	Other	27	75.87			
Negativity in social relations	Home	72	68.40	2	2.13	.34
	Dormitory	47	79.10			
	Other	27	77.35			

There is no significant difference in the sub-dimensions of teacher candidates' desire to stay online more and negativity in social relationships according to where they connect to the internet ($X^2_{(2)}$=1.43, p>.05; $X^2_{(2)}$=2.13, p>.05).

There is no significant difference in the communication/chat category according to the sub-dimensions of loss of control and negativity in social relations of teacher candidates ($X^2_{(2)}$=4.09, p>.05; $X^2_{(2)}$=1.81, p>.05).

There is a significant difference in the entertainment category according to the loss of control sub-dimension of teacher candidates ($X^2_{(2)}$=6.96, p<.05). When the effect size of the mentioned difference was examined, it was determined that the eta squared value was η2=.05. According to this value, it can be stated that 5% of the loss of control was explained by the entertainment category. As a result of multiple comparisons made with the Mann-Whitney U test, it was seen that this difference was between the Low and High groups. When the negativity sub-dimension in social relations was examined, there was no significant difference according to the entertainment category ($X^2_{(2)}$=1.00, p>.05).

Table 15. Kruskal Wallis H-Test Values of Prospective Teachers' Internet Addiction Perceptions Regarding How Frequently They Use Internet Activities.

	Sub-dimension	Internet Addiction	n	Mean of rank	Df	X^2	p	η^2	Difference
Communication/ chat	Loss of control	Low	23	63.00	2	4.09	.12		
		Medium	63	69.71					
		High	60	81.15					
	Negativity in social relations	Low	23	116.26	2	1.81	.40		
		Medium	63	122.21					
		High	60	123.76					
Entertainment	Loss of control	Low	35	58.41	2	6.96	.03*	.05	Low- High
		Medium	63	74.62					
		High	48	83.03					
	Negativity in social relations	Low	35	69.20	2	1.00	.60		
		Medium	63	77.37					
		High	48	71.56					
Extracurricular	Negativity in social relations	Low	25	77.08	2	.57	.75		
		Medium	93	74.01					
		High	28	68.63					
Following current news	Negativity in social relations	Low	45	67.86	2	1.38	.49		
		Medium	63	74.54					
		High	38	78.46					
Shopping	Negativity in social relations	Low	56	65.21	2	3.59	.16		
		Medium	63	79.25					
		High	27	77.26					

*p< .05

There is no significant difference in the out-of-class category ($X^2_{(2)}$=.57, p>.05); in the current news following category ($X^2_{(2)}$=1.38, p>.05) and in the shopping category ($X^2_{(2)}$=.16, p>.05) according to the sub-dimension of negativity in social relations of teacher candidates.

There is no significant difference in the sub-dimension of teacher candidates' desire to stay online more in the communication/chat category ($F_{(2\text{-}143)}$= 1.88, p>.05).

There is a significant difference in the sub-dimension of teacher candidates' desire to stay online more in the entertainment category ($F_{(2\text{-}143)}$= 4.70, p<.05). When the effect size of the mentioned difference was examined, it was determined that the eta squared value was η2=.06. According to this value, it can be stated that the entertainment category explains 6% of the desire to stay online more. As a result of multiple comparisons made with the Bonferroni test, it was seen that this difference was between the Less and More groups.

Table 16. One-Way ANOVA Values of Prospective Teachers' Internet Addiction Perceptions Regarding How Frequently They Use Internet Activities

	Sub-dimension	Source of Variation	Sum of Squares	Df	Mean Squares	F	p	η^2	Difference
Communication / Chat	Desire to stay online more	Within Groups	3.81	2	1.90	1.88	.15		
		Between Groups	144.55	143	1.01				
		Total	148.36	145					
Entertainment	Desire to stay online more	Within Groups	9.15	2	4.57	4.70	.01*	.06	Low-High
		Between Groups	139.20	143	.97				
		Total	148.36	145					
Extracurricular	Loss of control	Within Groups	.96	2	.48	.84	.43		
		Between Groups	81.21	143	.56				
		Total	82.17	145					
	Desire to stay online more	Within Groups	.13	2	.06	.06	.93		
		Between Groups	148.23	143	1.03				
		Total	148.36	145					
Following current news	Loss of control	Within Groups	.11	2	.05	.09	.90		
		Between Groups	82.06	143	.57				
		Total	82.17	145					
	Desire to stay online more	Within Groups	3.24	2	1.62	1.60	.20		
		Between Groups	145.11	143	1.01				
		Total	148.36	145					
Shopping	Loss of control	Within Groups	4.39	2	2.19	4.03	.02*	.05	Low-Medium
		Between Groups	77.78	143	.54				
		Total	82.17	145					
	Desire to stay online more	Within Groups	2.89	2	1.44	1.42	.24		
		Between Groups	145.47	143	1.07				
		Total	148.36	145					

*p< .05

There was no significant difference in the sub-dimensions of loss of control and desire to stay online more in the out-of-class category of teacher candidates ($F_{(2-143)}$= .84, p>.05; $F_{(2-143)}$= .06, p>.05). There is no significant difference in the sub-dimensions of loss of control and desire to stay online more among teacher candidates in the current news following category ($F_{(2-143)}$= .09, p>.05; $F_{(2-143)}$= 1.60, p>.05). There is a significant difference in the loss of control sub-dimension of teacher candidates in the shopping category ($F_{(2-143)}$= 4.03, p<.05). When the effect size of the mentioned difference was examined, it was determined that the eta squared value was η2=.05. According to this value, it can be stated that 5% of the loss of control was explained by the shopping category. As a result of multiple comparisons made with the Bonferroni test, it was seen that this difference was between the Low and Medium groups. There was no significant difference in the sub-dimension of teacher candidates' desire to stay online more ($F_{(2-143)}$= 1.43, p>.05).

Findings Related to the Sixth Research Question

In order to answer the sixth research question of the study, the Spearman Rank Difference Correlation test was calculated and the findings are presented below.

Table 17. Spearman Rank Difference Correlation (r) Values Between Prospective Teachers' Internet Addiction Perceptions and Their Daily Average Internet Usage

Variables	Loss of control	Desire to stay online more	Negativity in social relations
Daily average internet usage	.29**	.17*	.20*

N= 146, *p<.05, **p<.001

There is a low level positive significant relationship between loss of control and average daily internet use (r=.29, p<.001). There is a low level positive significant relationship between the desire to stay online more and the negativity in social relationships and the average daily internet use (r=.17, p<.05; r=.20, p<.05).

Findings Related to the Seventh Research Question

In order to find an answer to the seventh research question of the study, the Spearman Rank Difference Correlation test was calculated and the findings are presented below.

Table 18. Spearman Rank Differences Correlation (r) Values Between Prospective Teachers' Perceptions of Digital Well-Being and Internet Addiction

Variables	Digital well-being	Loss of control	Desire to stay online more
Digital well-being	1.00		
Loss of control	-.45**	1.00	
Desire to stay online more	-.51**	.66**	1.00
Negativity in social relations	-.55**	.51**	.53**

N= 146, *p<.05, **p<.001

There is a moderate negative significant relationship between digital well-being and loss of control (r= -.45, p<.001). There is a highly negative significant relationship between digital well-being and the desire to stay online more and negativity in social relationships (r= -.51, p<.001; r= -.55, p<.001). There is a highly positive and significant relationship between the desire to stay online more and loss of control and negative social relationships (r= .66, p<.001; r= .53, p<.001). There is a highly positive and significant relationship between negativity and loss of control in social relationships (r= .51, p<.001).

Discussion

The purpose of this study is to examine the relationships between teacher candidates' perceptions of digital well-being, internet addiction perceptions, and daily internet use. The findings were analyzed in terms of various

variables and how these variables affect digital well-being and internet addiction was evaluated. In the discussion section, the findings will be compared with the existing literature, the limitations of the study will be evaluated, the findings will be interpreted, and the implications for practice will be examined.

Digital Well-Being Perceptions and Associated Factors

The findings of the study show that there are no statistically significant differences in the perceptions of pre-service teachers' digital well-being according to variables such as gender, place of residence and place of connection to the internet. As Korlat et al. (2021) also stated, the effect of gender on digital learning competence is negligible. This finding is consistent with the perceptions of pre-service teachers' digital well-being. Similar results were observed in the studies conducted by Rodríguez-García et al. (2022) and Guerrero-Roldán et al. (2021). As Prati (2023) also stated, the effect of place of residence on subjective well-being is relatively limited and this effect is not a significant concern from a practical point of view. Wang & Wang (2015) support this result by stating that there is no significant difference between rural and urban settlements in terms of subjective well-being. As a result, the effect of place of residence on digital well-being is likely to be limited. Deursen and Helsper (2019) reached similar results with this study and stated that the place of internet connection is not an important factor in well-being. Their findings are consistent with the findings of this study.

In contrast, Vannucci et al. (2023) documented increased social media use among women, which was associated with higher rates of internet addiction and lower digital well-being. The discrepancy between the two studies may be attributed to the participants' social media usage patterns and degree of engagement with digital platforms. The study conducted by Vannucci et al. highlighted the detrimental effects of social media use on digital well-being. In contrast, the current study adopted a more comprehensive approach to digital well-being and avoided focusing solely on social media use. This may have led to the absence of gender-based differences. Furthermore, Vannucci et al. (2023) collected data from a cohort in the USA, the majority of whom did not complete high school (56.4%). In contrast, this study was conducted with education faculty students studying at a university in the Eastern Anatolia Region of Turkey. This suggests that factors such as demographic characteristics of the sample groups, level of education, and cultural context may explain these differences.

In another study, Andreassen et al. (2017) found that although men reported high levels of internet addiction, their digital well-being was comparable to that of women. The differences between the two studies could be attributed to specific variables, such as the age demographics of the participants, the reasons behind their internet use, and the prevalence of social media addiction. Andreassen et al. (2017) conducted a study focused on the general population, while the current study examined pre-service teachers specifically. The fact that pre-service teachers use the internet more frequently for educational purposes may contribute to the lower prevalence of internet addiction. Additionally, cultural factors and the way internet use is integrated into daily life may also contribute to these observed differences. When the results of the current study are compared to those of Deursen & Dijk (2014), Park (2017), and Helsper & Reisdorf (2017), significant differences emerge. Deursen and Dijk (2014) argue that digital inequalities go beyond internet access alone and encompass significant differences in both the duration and forms of internet use. Individuals residing in urban areas tend to use the internet more

comprehensively and for a wider range of purposes, which can increase their digital well-being. Park (2014) has elucidated the challenges faced by individuals residing in rural areas in terms of internet access and use. Park (2014) has addressed the challenges faced by individuals residing in rural areas in terms of internet access and use. He stated that individuals residing in urban areas have more opportunities to use the internet, which increases their digital well-being. Helsper and Reisdorf (2017) have suggested that the changing nature of digital inequalities and the prevalence of internet use in urban environments have a positive impact on digital well-being. Furthermore, De Zúñiga (2012) shows that individuals residing in urban areas tend to increase their social capital and digital well-being by making greater use of social media and the internet. Mossberger et al. (2003) argue that individuals residing in urban areas have easier access to digital technologies, which increases their digital well-being. In contrast, those residing in rural areas benefit less from digitalization due to the difficulties they face in accessing digital services. However, this study was conducted on a sample of pre-service teachers. Pre-service teachers are generally highly educated individuals who are aware of the importance of accessing and using information. Although this group resides in rural or urban settings, they may have superior digital technology skills compared to other demographic groups due to their educational background. Therefore, it can be assumed that there is no significant difference in digital well-being by place of residence. Other studies, such as those conducted by Deursen & Dijk (2014), Park (2017), and Helsper & Reisdorf (2017), have examined more general populations. In these studies, digital inequalities and differences in internet use may be more pronounced because the general population is more heterogeneous in terms of education and digital knowledge than pre-service teachers. This may lead to more pronounced digital inequalities between those residing in urban and rural areas.

The effects of internet and social media use on social capital and digital well-being have been examined by studies such as De Zúñiga (2012) and Mossberger et al. (2003). It can be assumed that urban residents may use social media and the internet more frequently for socializing and entertainment purposes, which may increase their digital well-being. In rural areas, such limited opportunities may have a detrimental effect on digital well-being. The state of digital infrastructure in the region where the study was conducted may also be a contributing factor. If digital infrastructure is developed to a similar standard in both rural and urban areas, there may be minimal differences in digital well-being depending on place of residence. As Park (2017) observes, the lack of digital infrastructure in rural areas poses a significant challenge. The greater and faster digital access in urban areas allows urban residents to benefit more from digital technologies. Such differences may lead to significant differences in digital well-being across the population depending on where they reside. Another possible reason for these findings may be related to the fact that the socio-economic status and cultural norms of pre-service teachers may affect their access to and use of digital technologies. While this group may have greater access to digital technologies and a more conscious approach to their use, regardless of their location, socio-economic and cultural differences in the general population may lead to greater inequalities in digital access and use. Those residing in rural areas may be more disadvantaged in terms of socio-economic aspects, which may have a detrimental effect on their digital well-being. In addition, the methodologies, data collection tools and evaluation criteria used in research studies may produce different results depending on the location variable. For example, the way digital well-being is assessed, the scales used and their levels of validity and reliability may differ. There are differences with some studies in the literature in terms of 'place of connection to the internet'. Livingstone et al. (2011) reported that children who access the internet from public places (e.g. internet cafes) have higher

internet addiction compared to those who access the internet from home, but there is no significant difference in digital well-being, while Leung (2014) suggested that individuals with internet access at home are generally at higher risk of both internet addiction and digital well-being. The current study is bound to differ from both Livingstone (2011) and Leung (2014) due to the assumption that 'high internet addiction and high digital well-being cannot be simultaneously possible in the same person'. During the data cleaning phase, participants with high values for both were removed from the data set due to the exclusion criteria of the study, and analyses were conducted with data collected from participants in the remaining data set.

Preliminary findings suggest that digital well-being is not affected by gender, place of residence, or Internet connection variables. Instead, it is shaped by individual factors or Internet usage habits. For example, a study on the relationship between digital well-being and Internet activities revealed significant differences in perceptions of digital well-being across categories, including extracurricular activities and shopping. This suggests that digital well-being is more significantly affected in certain Internet usage areas, such as extracurricular activities and online shopping. In particular, the positive impact of extracurricular activities on digital well-being suggests that such activities enhance individuals' online experiences and contribute to their psychological well-being. Ellison et al. (2007) suggested that extracurricular activities on social media platforms enhance students' online experiences and have a beneficial effect on digital well-being. Valkenburg et al. (2006) concluded that participation in extracurricular social media activities has a positive effect on young people's social relationships and, consequently, their digital well-being. Huang (2010) found that participation in extracurricular Internet activities has a beneficial effect on individuals' digital experiences and contributes to their psychological well-being. In addition, it has been suggested that activities such as online shopping may also fall within the scope of this effect. Kim (2009) investigated the bidirectional relationship between internet use and loneliness and its impact on psychological well-being. The findings showed that extracurricular internet use, especially for social and recreational purposes, may have a positive impact on individuals' psychological well-being. These studies, which yielded similar results to the present study, show that the findings of the current study are consistent with other studies in the field. In contrast, Twenge et al. (2019) discovered that extracurricular activities and social media use may have a detrimental impact on young people's digital well-being. Similarly, Thorisdottir et al. (2019) found that activities such as social media and shopping may negatively affect digital well-being.

In addition, Montag & Walla (2016) addressed the negative effects of excessive internet use on individuals' psychological well-being. The results of these studies discuss how social media, shopping, and extracurricular activities affect individuals' digital well-being, and thus contradict the findings of the current study on the complex relationships between digital activities and digital well-being. Existing literature shows a strong correlation between digital well-being and individuals' internet usage purposes and content (Hernández-García & González-González, 2019). Vuorre and Przybylski (2020) suggested that individuals who use the internet tend to exhibit higher levels of well-being compared to non-users, and this may spill over into their digital well-being.

Internet Addiction Perceptions and Demographic Variables

The findings of the study reveal that the perceptions of pre-service teachers regarding internet addiction do not

show significant differences according to demographic variables such as gender, place of residence and place of connection to the internet. As seen in the studies conducted by Kayiş et al. (2016) and Ksiksou et al. (2023), the phenomenon of internet addiction depends on personal characteristics rather than demographic variables. The prevalence of addiction tendencies is higher among male students than female students at all levels of education from primary to higher education (Akdağ et al., 2014; Akhter, 2013; Berber-Çelik and Odacı, 2011; Ceyhan, 2008; Gnisci et al., 2011). (et al., 2011; Johansson & Götestam, 2004; Khan & Awan, 2017; Khan et al., 2017; Kıran-Esen & Gündoğdu, 2010; Ko et al., (Kuss & Griffiths, 2012; Scherer, 1997; Şan et al., 2024; Üneri & Tanıdır, 2011; Yılmaz, 2010; Young, 1998). In a study conducted by Çam and İşbulan (2012) and collecting data from teacher candidates, it was found that female teacher candidates showed more addiction to social networks.

In studies examining the effect of place of residence on internet addiction, Ayas & Horzum (2013), Ceyhan & Ceyhan (2008), Hawi (2012), Leung (2004) and Valkenburg & Peter (2009) found that people in rural areas were more likely to show signs of internet addiction compared to those in rural areas.

It can be said that the difference between the relevant studies is due to the fact that the data were collected from young people with less social responsibility in the studies other than Çam and İşbulan (2012). Although the genders of the participants were different, it is possible that their internet usage behaviors became similar due to their preparation for the task of raising students. Similarly, it is possible that this interpretation is also valid for the unobserved change in the variables of place of residence and place of connection to the internet. However, a significant difference was found in the extent of negativity in social relations depending on the place of residence variable. The fact that students living in state dormitories reported experiencing more negativity in their social relations compared to those living with their families underlines the effect of internet addiction on social relations. The conclusion that the level of negativity in social relations is affected by the place of residence is also supported by the findings of Herhandez-Hernandez & Sancho-Gil (2021) and Wei (2022). The results show that internet addiction is more common in the context of the dormitory environment, especially in the area of social relations. Increased Internet use in the context of a dormitory environment may contribute to increased social isolation, which may lead to the development of Internet addiction (Kuss & Griffiths, 2011).

Relationships Between Digital Well-Being and Internet Addiction

One of the most striking findings of the study is the relationship between digital well-being and internet addiction. The findings show that there is a significant negative correlation between digital well-being and all dimensions of internet addiction. This shows that internet addiction is more common among individuals with low digital well-being. The negative effects of excessive online activity, loss of control, and negative social interaction dimensions on digital well-being indicate that digital well-being may play a preventive role in internet addiction. In the existing literature, there are findings that ensuring digital well-being contributes to individuals' resistance to internet addiction (Valkenburg and Peter, 2011). The results of studies showing that individuals with high digital usage scores have a lower risk of mental well-being (Bellis et al., 2021) and that interventions such as Cognitive Behavioral Therapy have positive effects on internet addiction (Zhu et al., 2023) seem to be supported by the findings of this study. In the light of these findings, it can be said that increasing digital well-being is a very

important strategy to prevent internet addiction.

Daily Internet Use and Perceptions

This study aimed to analyze the relationships between daily internet use of pre-service teachers and their perceptions of digital well-being and internet addiction. The findings show that there is a low-level, positive and statistically significant relationship between daily internet use and internet addiction dimensions. However, no significant relationship was found between digital well-being and daily internet use. This suggests that the duration of internet use is not the primary determinant of digital well-being, but may have a more pronounced relationship with internet addiction. In addition, the literature emphasizes that internet use should be evaluated in terms of the purpose and content of use, not the duration (Young, 1998).

Limitations of the Study and Implications for Practice

While the findings of this study are important, they are not without their limitations. First, the limited number of participants and the fact that the study only included university students in a specific region may limit the extent to which the findings can be generalized. Additionally, the use of a self-report method to collect data may have affected the accuracy of the responses, potentially affecting the validity of the results.

The findings of the study indicate that there is a need to develop programs that aim to increase digital well-being in educational institutions. Providing guidance services that will support the digital well-being of university students in particular is of great importance in terms of developing and implementing strategies to prevent internet addiction. In addition, in the context of combating internet addiction, it is imperative to emphasize the importance of interventions aimed at regulating individuals' internet usage habits. Considering these issues, educators and policy makers need to adopt a holistic approach to support young people in developing healthy digital habits.

In conclusion, this study provides an important basis for shedding light on the relationship between digital well-being and internet addiction and informing future research in this area. It is suggested that interventions designed to increase digital well-being can be an effective tool in reducing internet addiction. Further research in this area can guide the development of educational policies.

Conclusion and Recommendations

Conclusion

The aim of this study is to analyze the relationships between teacher candidates' perceptions of digital well-being, perceptions of internet addiction, and daily internet use. The findings showed that there was a negatively significant relationship between digital well-being perceptions and internet addiction. However, no significant differences were observed in terms of demographic variables. In particular, internet activities such as participation in extracurricular activities and online shopping were found to have a significant effect on digital well-being. On the other hand, it was found that the dimension of negativity in social relations exhibited significant differences

depending on the place of residence. Students staying in state dormitories may have been more negatively affected in this regard.

While a low-level positive correlation was found between daily internet use time and internet addiction, no significant relationship was found between digital well-being and internet use time. These findings show that increasing digital well-being can be an important strategy to reduce internet addiction, while internet addiction can have negative effects especially in areas such as social relations and loss of control.

Recommendations

1. Educational Policies and Guidance Programs: It is recommended that educational institutions expand guidance and counseling services to increase students' digital well-being. Universities, in particular, should implement programs and activities that promote digital well-being among students and encourage them to use digital platforms in a healthy and balanced way.

2. Interventions to Prevent Internet Addiction: In light of the harmful effects of internet addiction, especially on social relationships, it is imperative to develop protective and preventive interventions in this area. Awareness programs and strategies to prevent addiction should be developed for students.

3. Studies on Demographic Variables: Larger studies should be conducted with participants from different regions and different demographic groups to further investigate the effects of demographic variables such as place of residence on digital well-being and internet addiction.

4. Digital Literacy Training: It is recommended that students be provided with digital literacy training to enable them to use the Internet more beneficially and effectively. Such training can help students make conscious decisions regarding their Internet use while also protecting them from potential risks associated with digital platforms.

5. Future Research: It is necessary to conduct studies with larger samples and use different research techniques to gain a deeper understanding of the interrelationships between digital well-being and internet addiction. Longitudinal studies in particular can be very valuable in examining the development of these relationships over time.

6. Awareness of Technology Use: It would be useful to conduct awareness campaigns to help students balance their use of technology and the internet. Such initiatives should provide students with information on appropriate use of the internet and maintaining digital well-being.

Implementing studies in line with the recommendations mentioned above will facilitate the development of healthier individuals in the digital sphere and increase resilience against the potential dangers of internet addiction. It is essential that educational institutions take on a more prominent role in this area and that measures are taken

to ensure the long-term sustainability of digital well-being initiatives.

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