INTERNET ADDICTION LEVELS AND PROBLEM-SOLVING SKILLS IN THE TEACHING PROFESSION: AN INVESTIGATION

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Abstract. In this research, the relationship between Internet addiction levels among teaching candidates and their problem-solving aptitude and self-efficacy perceptions towards the teaching profession was investigated. In addition, the effects of gender, department, Internet use and sporting habits on the Internet addiction, problem-solving skills and self-efficacy perceptions among teaching candidates were examined. The sample in this study comprised final-grade teaching candidates who were in the graduation phase. Statistical analysis of the data was conducted with the SPSS 22.0 computer program. According to the results, there was a moderate negative relationship between the Internet addiction level among the teaching candidates and weak self-efficacy perceptions and problem-solving skills, while there was a positively higher correlation between self-efficacy perceptions and problem-solving skills in the sample. Male subjects' Internet addiction levels were significantly higher than those of their female counterparts. However, no gender influence was observed on the problem-solving skills of prospective teachers and their proficiency regarding professional competence. The use of the Internet for entertainment purposes influenced problem-solving skills among teaching candidates to a negative extent, resulting in Internet dependency. Teaching candidates who used the Internet for research purposes, however, showed a higher level of proficiency and problem-solving skills appropriate to their profession and lower Internet addiction levels. Engaging in regular sporting activities was found to reduce teaching candidates' Internet addiction levels and positively affect problem-solving skills.

Keywords: Internet addiction, problem-solving skills, teacher self-efficacy perception, teaching candidates

1 Introduction

Environmental harmony and communication are preconditions for living a happy and peaceful life, which can help individuals to increase their quality of life and overcome many psychological or physical problems that may arise (Kurç, 1990). They offer dominance and control, enabling individuals who are middle-aged or older to confront their problems in a healthy way (Altınordu, 2005). Individuals who have not succeeded in establishing harmonious relations with each other, are inseparable and have difficulty in making friendships do not feel empowered to overcome their problems. They are also unable to recognize environmental opportunities and have difficulties in carrying out their routine tasks (Ryff & Keyes, 1995).

Problem-solving skills are among the most important skills in the education system at every level from elementary school to the university. In particular, role model teachers' approaches to problems will be an important factor in providing students with the critical-thinking and problem-solving skills they will need in future (Bayrak, 2015). Therefore, teachers need to identify the problem, develop alternate solutions, evaluate, make decisions and take action. However, when teachers deal with a problem, self-cognition, self-efficacy perceptions and probing intensification are very important (Heppner, Baumgardner & Jakson, 1985). Teachers' professional self-efficacy beliefs are based on their courage, desire, stress, anxiety, patience, perseverance, interest, motivation and willingness to succeed, which are directly proportional to their professional skills (Baykul, 1995). Besides, it is necessary for teachers to analyse and solve problems with a rational approach (Yalçın, Tetik & Açıkgöz, 2010).

In recent years, the uncontrolled access to the Internet has presented society with many challenges. In

particular, the increasingly widespread, unrestrained and unhealthy use of the Internet has caused difficulties in the home, workplace and school life due to the negative impact on the psychological, social and physical development of the individual. However, the individual is unaware of the discomfort and functional impairment that indicate unhealthy Internet use, such as obsessive thoughts about the Internet, tolerance, diminishing impulse control, being unable to cease using the Internet and deprivation statements (Davis, 2001). According to Shapira et al. (2000), problematic Internet use involves the occurrence of anxious, hypomanic or manic symptoms, which are time-consuming and uncontrollable for the individual and cause social, academic and financial problems. Research shows that psychological, social and physical disorders, such as anger, communication disorders, and neck and back pain caused by problematic Internet use will have an impact on their problem-solving skills and professional self-efficacy (Aydemir & Kubanç, 2014; Whang, Lee & Chang, 2003; Hwang & Choi, 2008; Flisher, 2010; Odacı & Kalkan, 2010; Korkmaz & Esen, 2016). Therefore, in this study, the effects of problematic Internet use on the problem-solving skills and professional self-efficacy perceptions of prospective teachers are investigated. In addition, the effects of gender, department, Internet use and sporting habits on the Internet addiction, problem-solving skills and self-efficacy perceptions among teaching candidates are examined.

2 Conceptual Framework

2.1 Problem-solving Ability

The word 'problem' is used to describe a situation that causes an individual to be disturbed (Ferah, 2000). In other words, 'problem' refers to an undesirable, distressing or complicated situation that occurs in life (Yalçın, Tetik & Açıkgöz, 2010). Dewey describes as problem as a situation that causes the mind to be confused or conflicted (Gelbal, 1991). Morgan (1999) defined obstacles and conflicts that confront an individual in the course of reaching their goal. In daily life, these problems can be economic or emotional, as well as physical. Some problems take a long time to resolve themselves, while others are much shorter in duration.

Individuals need to carry out a range of activities involving trial-and-error, internal or causal approaches in order to find effective solutions to the problems they face, whether in their personal life or in their professional life (Heppner, Baumgardner & Jakson, 1985). According to D'Zurilla, Nezu and Maydeu-Oliveras (2004), the goal of any problem-solving process is to achieve more positive results by reducing the negative effects of distressing and complicated situations that the individual does not want to face. However, the solution to certain problems that highlight the difference between the desired situation and the existing situation may be simple, while others may require the application of a complicated process with cognitive, emotional and behavioural steps (Choi & Hannafin, 1995). According to D'Zurilla and Goldfried (1971), problem-solving is defined as increasing the likelihood that an individual is likely to choose an effective solution from among possible or alternative solutions. For this reason, it is necessary for the individual to make logical decisions and carry out activities in accordance with the goals and objectives determined in the problem-solving process. From a behavioural perspective, problem-solving skills depend on the individual's experience of past experiences. This is because the individual evaluates and defines the problem depending on past experiences, meaning that the solutions will change accordingly (Schultz, 1981).

2.2   Concept of Teacher Self-sufficiency

The teacher self-efficacy concept was introduced by Schriver and Czerniak (1999) and refers to teachers' beliefs about their own knowledge, skills and attitudes in relation to the goals and achievements that students want to gain. In this respect, teachers with a high level of self-efficacy at a professional level apply different and effective teaching principles and methods in the course of classroom activities. Thus, they implement appropriate classroom management and propose effective solutions for the problems being encountered. However, teachers with low self-sufficiency tend to adopt teacher-centred teaching principles and methods, instead of using different teaching materials; put another way, as they are content with only using a text book, they cannot offer effective solutions to overcome problems (Chan, 2003). When confronted with problems, anxiety and stress levels are high among teachers with low-level self-efficacy beliefs about their professional or classroom behaviours. Teachers with high self-sufficiency make more calm decisions and respond positively to

problematic situations (Vaezi & Fallah, 2011). Rather than run away from the problems they are struggling with, they seek out a solution with patience and a determination to complete their actions successfully (Ekici, 2006). This is because the effort, burnout or motivation that teachers will experience in the context of educational and instructional goals are related to self-efficacy perceptions (Tschannen-Moran & Hoy, 2001). In addition, there are differences in the communication skills between teachers with high and low self-efficacy (Schwarzer & Hallum, 2008). These differences in turn affect their academic and other duties. According to Yılmaz (2010), teachers' communication skills in the classroom affect their personal abilities and academic performances. For this reason, teachers need to have high self-efficacy levels (Üredi, 2006).

2.3   Relationship between Teachers' Problem-solving Skills and Self-efficacy Perceptions

Teachers will encounter different problems in their daily life, as well as during their educational and training activities. According to Skaalvik (2016), teachers may encounter different problems in the course of education and training, such as negative student behaviours, disciplinary problems, time and workload pressures, low student motivation, different student populations, conflicts with colleagues, a lack of administrative support, and value conflicts. The successes will continue as long as teachers can cope with the problems they encounter or come up with appropriate solutions. For this reason, teachers need to find effective and quick solutions to the problems they encounter with the use of new methods and strategies (Pajares, 2002). As the problem-solving skills of teachers develop, the reasons for the problems they encounter will become easier to understand and the solution process will be shortened (Banks, 2014).

The attitudes of teachers to the problems they face will in turn model the problem-solving processes of the students they teach. Teachers will always be role models in the eyes of their students. For this reason, teachers should ensure that these students are supported in developing their own problem-solving skills (Bayrak, 2015). As such, it is very important for teaching candidates and teachers to be trained as individuals, developing their critical-thinking and problem-solving skills so that they can pass these onto their students. Above all, teachers need to be aware of the problem-solving skills they already have (Bayrak, 2015). If teachers see themselves as competent enough to handle the problem-solving process, the self-confidence they possess will be positively reflected in their interpersonal relationships and academic achievements, as well as the development of their own identity. Otherwise, the self-efficacy perception will lead to a decrease in the motivation of less able teachers in the classroom, along with an increase in ineffective classroom management (Şahin, Şahin & Heppner, 1993).

There are also individual differences among teachers in terms of how they approach and solve problems. As these differences emerge, teachers' personal characteristics, self-sufficiency, environment, self-modelling, attitudes and vocational qualifications are very important for problem-solving skills. To succeed at the end of the problem-solving process, it is necessary to have focus, confidence, time, energy and basic communication skills (Watson & Glaser, 1964). However, differences between individuals' thoughts, beliefs, values or needs can affect their interpersonal problem-solving skills, and thus their social and emotional ability to adapt to everyday life (Pellegrini and Urbain, 1986; Terzi, 2003). For example, when teachers try to find solutions using anti-democratic methods in the problem-solving process, they will foster different feelings (e.g., violent, sad and introverted) in their students. These emotions will make it difficult for teachers to achieve a desirable outcome at the end of the problem-solving process. For this, it is necessary for the teacher to find a solution using appropriate democratic and constructive methods, resulting in the experience of emotions such as relief, self-confidence and happiness at the end of this process (Cornillius & Caspi, 1987; Şahin, 2004).

2.4   Relationship between Internet Addiction and Problem-solving and Self-efficacy Perceptions among Teachers

Some common points in terms of Internet dependency, pathological Internet usage, excessive Internet usage and problematic Internet use have been reported in terms of characterizing the problematic use of the Internet (Esen, 2010). Researchers (Weinstein & Lejoyeux, 2010; Alaçam, 2012), meanwhile, have indicated that these terms are used interchangeably. Studies on Internet addiction have explored

the phenomenon in relation to variables such as age, gender, personality characteristics and the amount of Internet usage (Yüksel & Yılmaz, 2016). In this section, the relationship between the psychological, social and physical problems that arise from Internet addiction and the problem-solving skills and self-efficacy perceptions among teaching candidates is discussed.

The problem-solving skills of individuals refer to the ability to sustain relationships that are compatible with others in social and emotional terms (Pellegrini & Urbain, 1986). Individuals with competence in this area are those who are able to actively take part in society and do not hesitate to take up new positions (Koberg & Bagnall, 1981). Koberg and Bagnall (1981), however, found that an increase in aggressive behaviours (Flisher, 2010) is associated with Internet addiction, the occurrence of depressive tendencies in individual users (Demetrovics, Szeredi & Rozsa, 2008), the development of sensitivity to rejection (Davis et al., 2003), and nervous, uncomfortable, unhappy and anxious states when they are not connected to the Internet (Laramie, 2007; Modayil, 2001; Kelleci, 2008; Huang, 2006). It has also been reported that excessive Internet use has a negative effect on the ability of individuals to sustain coherent relationships with others in social and emotional terms (Flett and Besser, 2002), develop the skills, talent and patience needed to problem-solve (Kelleci, 2008) and cultivate feelings of shyness (Yuen & Lavin, 2004), which negatively affects social relations and well-being (Gross, 2004; Engelberg & Sjoberg, 2004; Caplan, 2002; Whang, Lee & Chang, 2003). Studies on the effects of problematic Internet use on the social life of individuals frequently show that children and young people are increasingly lonely and unproductively socialized as a result (Ceyhan & Ceyhan, 2008). According to Young (1999), individuals who use the Internet in a problematic way prefer to spend time alone on the Internet, meaning that they are spending less time in real life. In addition, individuals with social barriers frequently use the Internets to establish and maintain social relationships via online, rather than face-to-face, communication (Kubey, Lavin & Barrows, 2001). As a result, individuals become more and more disconnected from real life, lonelier over time and encounter more social problems more frequently (Inderbiten, Walters & Bukowski, 1997). Using the Internet, therefore, turns into a vicious cycle for the individual (Batıgün & Hasta, 2010).

Academic sensibilities feature significantly in teachers' perceptions of professional self-efficacy with problem-solving skills. However, teachers who do not have sufficient personality traits and motivation can negatively affect their students from an emotional and academic point of view. They cannot be resolute in the face of problems, have high burnout levels and are unable to use their superior cognitive skills effectively (Aydemir & Kubanç, 2014). According to Dow and Mayer (2004), problem-solving skills are those that produce effective solutions, involve high levels of self-confidence, reflect the capacity to make independent decisions and use creativity to overcome uncertainties. Individuals with low problem-solving skills tend to have low self-esteem, feel uncomfortable with their relationships and problems, possess insufficient self-confidence and encounter emotional problems (Heppner, Baumgardner & Jackson, 1985). For this reason, these individuals find life stressful because asocial people are less able to implement effective processes to solve problems. Individuals with high levels of anxiety are also unable to find effective solutions because of a lack of attentiveness, focus and time management skills required for problem-solving (Jerah, Hasija and Malhotra, 1993; Armstrong, Phillips & Saling, 2000; Van der Aa et al., 2009). The development of an introverted personality structure (Koch & Pratarelli, 2004) and negative psychological states (Cao & Su, 2007) in teachers inhibits their capacity to solve problems, as the perception of occupational self-efficacy is affected by the occurrence of personal dysfunction (Young, 1996), the deterioration of mental functions due to low dopamine secretion in the brain (Kelleci, 2008). In addition, as the amount of time spent on the Internet increases, so do the problems in time management (Shapira et al., 2000) and dealing with fatigue resulting from insomnia (Nalwa & Anand, 2003).

Problematic use of the Internet causes physical discomfort to varying degrees in individuals. In the studies carried out in this area, it has been found that individuals who use the Internet in a general sense experience physical health problems involving the head, eyes, shoulder, neck, elbows, arms, wrist, forearms, hands and fingers, back and waist region, hips, feet and ankles). One study found that physical competences of users increased in one year when their Internet usage time was reduced (Larwin & Larwin, 2008). Psychosomatic symptoms, such as a lack of physical energy, physiological

dysfunction and weak immunity (Cao, et al., 2011), caused by computer use for long hours, result from using the Internet for a long period of time in an inappropriate sitting position (Shields & Behrman, 2000), the formation of carpet tunnel syndrome in muscle groups (Shields & Behrman, 2000), the formation of health problems in the eyes, such as eye fatigue and eye irritation due to staring at a monitor for protracted periods (Subrahmanyam et al., 2000; Healy, et al., 2010), and increases in migraine pain (Suhail & Bargees, 2006) also negatively affect the individual in psychological and social terms, resulting in low self-esteem and the occurrence of occupational and personal disorders.

As seen in the above studies, negative psychological, social and physical influences caused by problematic Internet usage impact on an individual's perceptions of self-efficacy towards problem-solving and the teaching profession in general. Therefore, in this study, the effects of problematic Internet use on problem-solving skills and professional self-efficacy perceptions among prospective teachers are investigated. The second aim of this research is to look at the relation between gender, department, Internet use, sporting habits, Internet addiction, problem-solving skills and teachers' self-efficacy perceptions. Within this scope, answers to the following questions are sought:

1. What is the nature of teaching candidates' Internet addictions?
2. What is the nature of teaching candidates' problem-solving tendencies?
3. What is the nature of teaching candidates' self-efficacy perceptions regarding their profession?
4. Is there a relationship between problem-solving tendencies and self-efficacy perceptions among prospective teachers?
5. Is there a relationship between teaching candidates' problem-solving tendencies and Internet addiction levels?
6. Is there a relationship between teaching candidates' self-efficacy perceptions and Internet addictions?
7. Do gender, department, Internet use and sporting habits affect teachers' Internet addiction, problem-solving skills and professional self-efficacy perceptions?

3. Materials and Research Methods

Samples

A total of 268 teaching candidates (210 females, 58 males) was chosen. All the participants were prospective teaching candidates studying in one of seven different departments of the Faculty of Education and are due to graduate soon. The number of participants by department is as follows:

- Psychological Counselling and Guidance Department (n = 70)
- Classroom Teacher Training (n = 25)
- Social Studies Teacher Training (n = 27)
- English Teacher Training (n = 39)
- Science Teacher Training (n= 40)
- Final-grade students studying Elementary Mathematics Teaching (n = 36).

Data Collection Tools

The Internet Dependency Scale, developed by Young (1998) and adapted to Turkish by Bayraktar (2001), was used to determine the pathological Internet use among teaching candidates. The Problem Solving Inventory, developed by Heppner and Petersen in 1982 and adapted to Turkish by Şahin and Heppner in 1993, was used to measure problem-solving tendency levels. The Teacher Self-Efficacy Scale, developed by Tschannen-Moran and Hoy (2001) and adapted to Turkish by Çapa, Çakıroğlu and Sarıkaya (2005), was used to determine the self-efficacy perceptions regarding the teaching profession.

Internet Addiction Scale

The Internet Addiction Scale is a measure of 20 items developed by Young (1996) and adapted to Turkish by Bayraktar (2001). In Bayraktar's (2001) study, the Cronbach alpha coefficient was found

to be 0.90 for the whole scale, whereas, in this study, the Cronbach alpha coefficient of the scale was 0.926. These results suggest that the validity of this scale was acceptable. Participants responses were made in relation to a five-point Likert scale, ranging from "Never" to "Always", concerning how often they experienced the situations depicted in the survey. As a result of the obtained data, those with below 50 points on average were "not dependent", those with between 50 and 80 points were "probably dependent", and those with over 80 points were considered to be an "Internet addict".

Problem Solving Inventory

The Problem Solving Inventory, developed by Heppner and Petersen in 1982 and adapted to Turkish by Şahin and Heppner in 1993, was used to measure problem-solving tendencies. The scale consists of a total of 35 items, developed with the aim of determining the level of elitism concerning problem-solving tendencies among adults. The internal consistency (Cronbach alpha) coefficient for the total score of the inventory, when applied to the 268 students, was found to be .85. The Problem Solving Inventory scale, which is a five-point Likert-type scale (6: Always, 5: Mostly, 4: Frequently, 3: Sometimes, 2: Rarely and 1: Never), was used to determine how often an individual performed the measured behaviour. The Cronbach alpha coefficient of the scale indicated that the internal consistency of the scale was acceptable.

Teaching Profession Self-Efficacy Perception Scale

The original Teacher Self-Efficacy Scale was developed by Tschannen-Moran and Hoy (2001) and adapted to Turkish by Çapa, Çakıroğlu and Sarıkaya (2005). The researchers found that the reliability coefficient of the study of the 268 prospective teachers was .93. In this study, the reliability coefficient was calculated as .914. The Cronbach alpha coefficient of the scale indicated that the internal consistency of the scale was acceptable. The Likert-type scale covered the range from "Inadequate" to "Very good". The lowest score taken from the scale was 24 and the highest score was 216. The low score on the scale indicated low self-efficacy belief, while the high score indicated high self-efficacy belief.

4 Findings

4.1 Findings on Internet Addiction Levels among Teaching Candidates

The results of the chi-square test to determine whether Internet addiction levels are dependent on the gender variable are presented in Table 1.

Table 1 Distribution of Internet dependency levels among students by sex

	No symptom	Limited symptoms	Pathological Internet user	Total	X^2	sd	p
Female	110	76	24	210			
Male	20	32	6	58	7.11	2	0.029
Total	130	108	30	368			

No symptom = Internet attention score <50; limited symptoms = Internet attention score 50-79, pathological Internet user >79 (Bayraktar, 2001)

According to Table 1, of the 210 female teaching candidates, 52.4% (n = 110) had no Internet addiction symptoms, while 36.2% (n = 76) had limited symptom ratings. Only 11.4% (n = 24) were pathological Internet users. There were no Internet addition symptoms for 34.5% (n = 20) of the male teaching candidates, while 55% (n = 32) had limited symptoms and 10.3% (n = 6) were pathological Internet users. The dependency between variables was found to be statistically significant ($X^2 = 7.11$; p <.05) as a result of the chi-square test to determine whether Internet addiction levels were dependent on the gender variable. In addition, Internet users who showed no symptoms spent 2.9 h per day using the Internet, those with limited symptoms spent 3.7 h and pathological Internet users spent 5 h.

4.2.   Findings on Teaching Candidates' Self-Efficacy Perception Levels and Problem-solving Skills

The results of the arithmetic mean and independent samples t-test are presented in Table 2, which shows that the teaching candidates' gender played a role in the proficiency evaluation of the teaching profession and problem-solving skills.

Table 2 Summary of the results of the t-test about the proficiency evaluation by the teaching candidates regarding the teaching profession and problem-solving skills by sex

	Averages ($\bar{X}$)		t	p
	Female (N = 210)	Male (N = 58)		
Teacher's perception of self-efficacy	91.55	90.74	.495	.62
Problem-solving ability	135.2	130.20	1.63	.10

According to the results in Table 2, the mean self-esteem scores regarding the teaching profession among the female teaching candidates were [t (268) = - 495, $\bar{X}_{female}$: 210 = 91.55, $\bar{X}_{Male}$: 58 = 90.74, p <0.05). Although these differences were statistically insignificant, the mean self-esteem scores for problem-solving skills were higher than for prospective male teachers [t (268) = 1.63, $\bar{X}$: 210 = 135.2, $\bar{X}_{male}$: 58 = 130.2, p <0.05)

4.3 Findings on Teachers' Professional Self-Efficacy Perceptions, Problem-solving Skills and Internet Addiction Levels among Teaching Candidates

A difference was observed between the average of the scores relating to teaching candidates' self-efficacy perceptions about their profession, problem-solving skills and Internet dependency when comparing them in reference to the department in which they were studying. The significance of the differences was examined using a one-way ANOVA. According to the results, teachers' self-efficacy perceptions (F = 1.51, p >0.05), responses about problem-solving skills (F = 1.67, p >0.05) and Internet dependence (F = 0.82, p >0.05) do not differ in terms of the department in which respondents were studying.

The Pearson correlation coefficient was used to determine whether there was a relationship between the levels of teachers' self-efficacy perceptions, problem-solving skills, self-esteem and Internet addiction levels among the teaching candidates. The results are given in Table 3.

Table 3 Relationship between perceptions of teachers' profession self-sufficiency and Internet dependency (Pearson r)

	Internet addiction	Perception of self-sufficiency	Problem-solving
Internet addiction	1		
Perception of self-sufficiency	-.207**	1	
Problem-solving	-.335**	. 514**	1

** 0.01 significance level

According to the results in Table 3, there is a negative correlation between teachers' profession self-efficacy perceptions and Internet addiction levels (r = -.207, p <0.01). Similarly, there is a negative correlation between Internet addiction levels and problem-solving skills (r = -.335, p <0.01). There was a positive correlation between self-sufficiency perceptions within the teaching profession and

problem-solving abilities (r = 514, p <0.01).

4.4 Findings on the Effect of Teaching Candidates' Internet Use Intentions on Internet Addiction Levels, Teachers' Professional Self-Efficacy Perceptions and Problem-solving Skills

The dependency between the variables on gaming was statistically significant (X^2 = 49.71; p <.01), according to the results of the chi-square test to determine whether Internet usage intentions were dependent on the gender variable. In terms of news surveillance and research, the dependency between variables was statistically significant (X^2_{News} = 4.15, p <0.05, $X^2_{Research}$ = 4.18, p <0.05). The number of teaching candidates who do not use the Internet for gaming purposes was not statistically significant, even though the averages were higher [t (268) = -85, $\bar{X}_{Yes}$: 36 = 89.91, $\underline{\bar{X}}_{No}$: 232 = 91.60, p >0.05). However, the average scores regarding problem-solving skills and self-esteem among the teaching candidates were higher; the difference was statistically significant [t (268) = -2.67, $\underline{\bar{X}}_{Yes}$: 36 = 125.25, $\bar{X}_{No}$: 232 = 135.2, p <0.01)]. Similarly, the level of Internet dependency among teaching candidates who used the Internet for gaming purposes was higher than in the case of the general use of the Internet [t (268) = 2.97, $\bar{X}_{Yes}$: 36 = 60.36, $\bar{X}_{No}$: 232 = 50.95, p <0.01)].

The average of the qualification self-esteem scores among the teaching candidates who used the Internet more for research purposes relevant to the teaching profession was [t (268) = 3.04, $\bar{X}_{Yes}$: 165 = 92.98, $\bar{X}_{No}$: 103 = 88.80, p <0.01). Meanwhile, the problem-solving self-esteem scores were higher [t (268) = 2.44, $\bar{X}_{Yes}$ 165 = 136.3, $\bar{X}_{No}$: 103 = 130.2, p <0.01)]; this difference was statistically significant at the same time. Similarly, (T = (268) = -2.69, $\bar{X}_{Yes}$: 165 = 49.92, $\bar{X}_{No}$: 232 = 55.90, p <0.01), while the Internet addiction levels among the teaching candidates who used the Internet for research purposes were lower.

4.5 Relationship between Regular Sporting Habits and Internet Addiction Levels of Teaching Candidates, Levels of Self-Efficacy Perceptions in the Teaching Profession and Problem-solving Skills

The independent samples t-test was used to examine the effects of regular sporting habits on the levels of teachers' Internet addiction and teaching profession proficiency. According to the results, the Internet addiction levels among teaching candidates who engage in regular sporting activities were low and statistically significant [t (268) = -2.61, $\bar{X}_{SportYes}$: 49 = 46.24, $\bar{X}_{SportNo}$: 219 = 53.55, p <0.05). Likewise, problem-solving abilities among teaching candidates engaging in regular sporting activities were higher and statistically significant compared with those who do not regularly play sports [t (268) = -22, $\bar{X}_{SportYes}$: 49 = 133.40, $\bar{X}_{SportNo}$: 219 = 134.11, p <0.05). However, no effect was observed regarding regular sporting habits on the teaching profession's self-efficacy perceptions [t (268) = .32, $\bar{X}_{SportYes}$: 49 = 91.83, $\bar{X}_{SportNo}$: 219 = 91.27, p >0.05).

5. Discussion and Conclusion

In total, 35% of the teaching candidates participating in this research presented no Internet addiction symptoms, while the average Internet use time among these teaching candidates was 2.9 h. Meanwhile, 28% of respondents presented limited Internet addiction levels, reporting 3.7 h of Internet usage per day. These teaching candidates are in the risk group in the sense that they are pathological

Internet users. The average daily usage time of pathologic Internet users is 5 h; 8% of Internet users fall into this pathological dimension. Internet usage of more than 5 h a day has been observed in some related studies (Mythily, Qiu & Winslow, 2008; Yıldız, Odacı & Kalkan, 2010).

Teaching candidates' Internet addiction levels differ according to gender. It was noted that the addiction levels among males were significantly higher than among females. In particular, in terms of limited symptom indicators, the scale of the problem was higher for men (55%) than women (36%), meaning that the former represent a bigger risk group in terms of pathological Internet addiction. Similar to the results of this study, most of the studies have reported that Internet addiction is higher among males (Anderson, 2001; Balta & Horzum, 2008; Yılmaz et al., 2014; Tsai et al., 2009; Günüç, 2009; İnan 2010). However, this finding also contradicts other studies where problematic Internet use does not change according to gender (Ceyhan, 2010; Leung, 2004).

There is no gender effect on the problem-solving skills of teaching candidates and their diligence regarding professional competence (Serin, 2006; Aylar & Aksin, 2011). There are also studies indicating that women have better problem-solving skills than men (Pakaslahti et al., 2002; Corner, 2004). There is no impact on self-efficacy perceptions, problem-solving skills and Internet addiction levels within the teaching profession in terms of the department in which studying has taken place (Şahin, Aydın & Balay, 2016). The Department of Computer Education stated that Internet addiction levels among teaching candidates differed from students in other departments. However, computer section sampling was not included in this study. There is a weak negative relation between professional self-efficacy perceptions among teaching candidates and Internet addiction levels. Similarly, Caraparo et al. (2014) found a negative correlation between self-efficacy and Internet addiction. This may be due to low self-esteem (Armstrong, Phillips and Saling, 2000; Van der Aa et al., 2009), the adverse effects of psychological well-being (Young, 1996) and personal dysfunctions, among other factors. In addition, excessive Internet use diminishes individuals' skills, abilities and patience needed to overcome problems (Gross, 2004) and makes it difficult for users to effectively manage time and avoid delays, as well as increases levels of delirium (Shapira et al., 2000) and weakens concentration (Su, 2007), thereby negatively affecting perceptions about academic and professional self-efficacy. However, there are also studies indicating that there is no relationship between self-efficacy and Internet addiction (Alrekebat, 2016).

There is a moderately negative relationship between Internet addiction levels and problem-solving skills. According to Yüksel and Yılmaz (2016), the reason why there is a negative correlation between Internet addiction levels and problem-solving skills is the fact that, when dependency increases, problem-solving skills are negatively affected in turn. It has also been claimed by Kelleci (2008) that Internet dependency negatively affects social relations and feelings (Engelberg and Sjoberg, 2004), along with various skills that require personal development and communication skills, such as self-expression (Suhail & Bargees, 2006). For teachers, the differences in communication skills have a negative impact on both academic and other tasks. According to Yılmaz (2010), teachers' communication skills in the classroom affect teachers' personal abilities and academic performance. Individuals who have high levels of anxiety are unable to find effective solutions because of a lack of attentiveness, focus and time with regard to problem-solving skills (Jerah, Hasija & Malhotra, 1993). In terms of the teaching profession, teachers without sufficient personality traits and motivation can negative impact their students emotional and academic outcomes. Such teachers cannot be resolute when it comes to facing problems; they have high burnout levels and cannot use their superior cognitive skills effectively (Aydemir & Kubanç, 2014).

There was a positive relationship between teacher self-efficacy perceptions and problem-solving skills. Teachers with high self-efficacy levels applied different and effective teaching principles and methods in the course of classroom activities. Thus, they implemented appropriate classroom management and offered effective solutions for the problems encountered. However, teachers with low self-sufficiency tended to adopt teacher-centred principles and methods; instead of using different teaching materials, they were content with only a text book, while being unable to offer effective solutions to problems (Chan, 2003). It has been reported that teachers with low self-efficacy beliefs present high levels of anxiety and stress when encounter problems while engaging in classroom or other academic duties. However, teachers with high self-efficacy levels make better decisions and respond to such situations

more effectively (Vaezi and Fallah, 2011). Attempts by teachers to deal with problems and related motivation or burnout levels are all related to self-efficacy perceptions (Tschannen-Moran & Hoy, 2001). In addition, differences in communication skills among teachers with high self-efficacy and low self-efficacy levels influence problem-solving skills (Schwarzer & Hallum, 2008).

The use of the Internet for entertainment purposes was not found to affect teaching candidates' proficiency with regard to the teaching profession. However, it was confirmed that teachers' problem-solving skills are negatively impacted in line with the level of Internet dependency. Teaching candidates who use the Internet for research purposes, however, demonstrated a higher level of proficiency in problem-solving skills relevant to the teaching profession, while Internet dependency levels were lower. Individuals reported that playing games disrupted their real-life duties, as they preferred to play games instead of participating in other activities (Horzum, 2011). This situation could also negatively affect the socialization and academic success of the children they teach. As long as the Internet is used for educational purposes, addiction is unlikely to occur (Şahin, Balay & Aydın, 2016).

Engaging in regular sporting activities was found to reduce the level of Internet addiction among the teaching candidates, as well as positively affect problem-solving skills. However, regular sporting habits had no effect on self-efficacy perception levels regarding the teaching profession. According to Park et al. (2016), sport and exercise can control Internet addiction. Moreover, it has been reported in different studies that regular exercise is useful for the individual in terms of self-control (Jonker et al., 2010; Mehroof & Griffiths, 2010).

The research data were limited to 268 students who studied in one of seven different departments. Further research should therefore be carried out on larger groups, including sampling from different departments, special universities and classrooms. According to the research results, Internet addiction levels negatively affect both professional self-efficacy perceptions and problem-solving skills among teaching candidates. For this reason, it is necessary to work with universities in order to decrease the level of Internet usage for gaming and entertainment purposes, as this can lead to addiction, while encouraging Internet usage for research purposes only. Since regular sporting activities help to reduce levels of Internet addiction, individuals should be directed away from leisure-based Internet usage towards participating in more sport. For future studies, it is recommended that the effects of other social activities (music, dance etc.) on addiction should be investigated.

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