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Academic self-efficacy and academic procrastination as predictors of problematic internet use in university students☆

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ABSTRACT

Although computers and the internet, indispensable tools in people's lives today, facilitate life on the one hand, they have brought new risks with them on the other. Internet dependency, or problematic internet use, has emerged as a new concept of addiction. Parallel to this increasing in society in general, it is also on the rise among university students and is widely believed to have a negative impact on their lives. The aim of this study was to investigate whether academic self-efficacy and academic procrastination can act as predictors of problematic internet use among university students. The study group consisted of 398 students attending education, medicine, architecture and economics programs at the Karadeniz Technical University in Turkey. The Problematic Internet Use Scale, Academic Self-efficacy Scale, Academic Procrastination Scale and a Personal Data Form were used as scaling instruments. Pearson's correlation coefficient, multiple regression analysis, independent samples *t*-test and one-way ANOVA were used to analyze the data collected. The results show a significant negative correlation between academic self-efficacy and problematic internet use, while the relation between problematic internet use and academic procrastination was not statistically significant. Furthermore, academic self-efficacy was determined to be a significant predictor of problematic internet use. The results also show a significant difference in problematic internet use in terms of students' programs, though levels of problematic internet use did not differ in terms of sex or ownership of a computer. These findings are discussed in the light of the relevant literature and some new directions for further studies are suggested.

1. Introduction

The internet, widely used in educational environments, is an important teaching and learning resource when used in a manner appropriate to its aims. Thanks to the internet, students can easily access the materials they need for their work and obtain information by different routes (Chou & Tsai, 2002; Chuang & Tsai, 2005; Houle, 1996). However, as with all technologies, in addition to facilitating individuals' lives to a considerable extent the internet also brings problems with it; in particular, unhealthy or improper use of the internet may be described as a negativity that has begun affecting social life. "Healthy internet use" has been described as internet use in order to achieve a specific purpose, within an appropriate time frame, involving no emotional or behavioral disorder (Davis, 2001; Odacı & Kalkan, 2010). However, the number of "problematic internet users" to whom the concept of health provided in this definition does not apply is also too great to ignore. Researchers have at various time referred to this in the literature as "internet dependence" (Lin & Tsai, 2002), "internet addiction" (Douglas, Mills, Niang, Stepchenkova, Byun, Ruffini et al., 2008; Scherer, 1997), "pathological internet use" (Davis, 2001) and "problematic internet use" (Davis, Flett, & Besser, 2002; Odacı & Kalkan, 2010). The common point in these descriptions involves such indicators as spending excessive time on the internet, a state of distress and irritability in situations when internet use is not available and feeling the need to spend even more time on line (Young & Rodgers, 1998).

Internet use is highest in the 16–24 age groups (Kandell, 1998; Öztürk, Odabasıoglu, Eraslan, Genç, & Kalyoncu, 2007), and this suggests that university students, at a critical time in terms of their social and emotional development, are a potential risk group for

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internet dependence (Odacı & Kalkan, 2010). The fact that internet access is easier and faster in the university environment increases the likelihood of university students being affected by the negative consequences of the internet. Remaining on line for a long period of time, without being aware of the passage of time, in other words, problematic internet use, can soon lead to tasks the individual needs to complete being postponed in an unrealistic manner (Lay, 1988). There are major inconsistencies between the aims and behavior of individuals with postponement problems. Such people appear to approach the tasks to be performed with good intentions and determination, but they fail to make good their intentions over the long-term and even to embark on them on time (Schouwenburg, Lay, Pychyl, & Ferrari, 2004). Academic procrastination, one variant of general procrastination, is a problem in such areas as preparing for exams in school, doing homework and holding meetings with student counselors and completing projects (Lay, 1988; Milgram, Mey-Tal, & Levison, 1998).

Academic success is very important for students, whose aim in attending university is to obtain the diploma necessary to enter a profession. Students' belief in their academic self-efficacy and their ability to begin and continue their studies is also highly important. Academic self-efficacy is a belief regarding the student's ability to successfully complete an academic task (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993; Tsai & Tsai, 2010; Zimmerman, 1995). Academic self-efficacy is one important variable in the estimation of student success (Elias & Loomis, 2002; Wood & Locke, 1987). In the light of the above, we think that students need to use the internet in a healthy way, otherwise they will encounter difficulties in displaying a good academic performance and that their belief in their academic self-efficacy will be impaired and academic procrastination behavior may increase.

Studies have examined the correlation between problematic internet use and depression (Ceyhan & Ceyhan, 2008; Fortson, Scotti, Chen, Malone, & Del Ben, 2007; Kim, Ryu, Chon, Yeun, Choi, Seo et al., 2006; Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000; Yen, Ko, Yen, Wu & Yang, 2007; Young & Rodgers, 1998), anxiety and psychomotor agitation (Ferraro, Caci, D'Amico, & Di Blasi, 2007), loneliness and social anxiety (Caplan, 2007; Kraut et al., 1998; Nalwa & Anand, 2003; Whang, Lee, & Chang, 2003), hostility (Yen et al., 2007), intolerance and obstinacy (Yang, Choe, Baity, Lee, & Cho, 2005), shyness (Yang & Tung, 2007; Yuen & Lavin, 2004), locus of control, antisocial trends and social adaptation (Ceyhan & Ceyhan, 2008), social self-efficacy and academic locus of control (İskender & Akin, 2010), dating anxiety (Odacı & Kalkan, 2010), academic performance (Kandell, 1998), psychiatric symptoms (Jang, Hwang, & Choi, 2008; Shapira et al., 2000; Whang et al., 2003; Yang et al., 2005; Yen et al., 2008), parent–adolescent conflict (Yen, Yen, Chen, Chen, & Ko, 2007), low family function (Armstrong, Phillips, & Saling, 2000), psychological well-being (Kraut et al., 1998), anger, strain and tiredness (Beard & Wolf, 2001) but we encountered no studies setting out the relationship between problematic internet use and academic self-efficacy and academic procrastination. Bearing in mind the negative impacts of problematic internet use on academic success (Young, 2004), we hypothesized it would also be correlated with academic self-efficacy and academic procrastination. The findings obtained will make a significant contribution to the determination of therapeutic measures directed toward young people. This study was intended to investigate, in the light of a number of problematic internet use variables, whether a belief in academic self-efficacy and academic procrastination are predictive of problematic internet use.

2. Methods

2.1. Study group

The study group consisted of 398 students studying at the Karadeniz Technical University, Turkey, Faculties of Medicine, Education, Architecture and Economic and Administrative Sciences. Two hundred sixteen (54.3%) were female and 182 (45.7%) male. Ages ranged between 18 and 28, with a mean of 20.34 (SD: 1.47).

2.2. Data collection

2.2.1. Problematic internet use scale (PIUS)

The PIUS was developed by Ceyhan, Ceyhan, and Gürcan (2007) to measure problematic internet use levels among university students, the PIUS was developed as a dimensional, quantitative scale based on individual self-assessment showing a spectrum of internet use from normal to pathological. The scale consists of 33 items. Possible scores range from 33 to 165, higher scores indicating that individuals' internet use is increasingly unhealthy, that is it has a negative impact on their lives and may give rise to a tendency to pathology, such as internet dependence. Scale factor analysis results revealed the three sub-factors of which it consists, "negative consequences of the internet," "social benefit/social comfort" and "excessive use." Together, these three factors constitute 48.96% of total variance. Scale internal consistency coefficient was (α) 0.94. The internal consistency coefficient of the scale regarding the data collected from our study group was (α) 0.93, while those of the three factors constituting the scale were 0.93, 0.84 and 0.73, respectively (Ceyhan et al., 2007).

2.2.2. Academic self-efficacy scale (ASS)

The ASS was developed by Jerusalem and Schwarzer (1981) (cited in ref. Yılmaz, Gürçay & Ekici, 2007) to measure university students' self-efficacy with regard to academic learning, the scale was adapted into Turkish by Yılmaz et al., (2007). The ASS is a one-dimensional Likert-type scale consisting of 7 items. Possible scores range from 7 to 28. High scores indicate that subjects have a high level of belief in their self-efficacy regarding learning. The original scale has a Cronbach Alpha reliability value of 0.87, while that adapted into Turkish has a value of 0.79.

2.2.3. Academic procrastination scale (APS)

The APS was developed by Çakıcı (2003) with the aim of determining students' academic procrastination behavior, the scale consists of 19 statements, 12 negative and 7 positive, involving tasks students have a responsibility to perform in their academic lives. The APS has a Cronbach Alpha reliability coefficient of 0.92. Cronbach Alpha coefficients calculated for the scale's first and second factors are 0.89 and 0.84, respectively.