An exploratory study of pre-service teachers' features related to their online behaviors and Problematic Internet Use in the United States

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ABSTRACT

This quantitative survey study was designed to investigate the features related to pre-service teachers' online behavior and their Problematic Internet Use (PIU). One hundred and fifty-five undergraduate pre-service teachers were recruited to participate in the study at a midwestern public university in the United States in 2013–2014. Data were collected from one self-developed questionnaire and the Online Cognition Scale (OCS). The OCS was used to assess an individual's PIU in four categories: social comfort, loneliness/depression, impulsivity, and distraction. It was found out that overall pre-service teachers' online behaviors and PIU do not seem to be a major concern at the moment. But it is predicted that those online features may become significant concerns in a few years. International implications for college students, pre-service teacher training, and pre-employment screening result from this study.

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1. Introduction to the problem

1.1. Statement of the problem

The Internet has become an essential part of our daily life and most people are using it on a daily basis. Of course, the Internet has brought us many benefits and conveniences in our daily life and work. However, Internet addiction or Problematic Internet Use (PIU) has been the source of many problems for some special populations such as in adolescents or college students. These PIU problems include, but are not limited to, unethical, excessive, and problematic use of the Internet (Ceyhan, 2008). Among college students, pre-service teachers are a special population because they will be future teachers in K-12 classrooms. In addition, Davis, Flett, and Besser (2002) suggested that the measurement of PIU can be very useful for pre-employment screening. Lehmann and Konstam (2011) also pointed out that PIU has a significant impact on an individual's career indecision. Therefore, the features of American pre-service teachers' online behaviors and PIU are the major topics to be investigated in the present study.

1.2. Review of the literature

In recent years, PIU among college students has attracted many international researchers' attention including researchers in China,

France, Spain, and Turkey. The psychological and social impacts of PIU have significant direct and indirect implications for different types of users including adolescents (Gámez-Guadix, Villa-George, & Calvete, 2012) and adults (Lehmann & Konstam, 2011). Of those users, college students are a special group which has been studied in relation to PIU in recent years (Acier & Kern, 2011; Caplan, 2010; Ceyhan, 2011; Ceyhan, Ceyhan, & Gurcan, 2007; Huang et al., 2009; Li, Wang, & Wang, 2009; Odaci, 2011; Odaci & Kalkan, 2010; Schoenfeld, 2011; Schoenfeld & Yan, 2012).

Kandell (1998) emphasized that Internet addiction is a bigger problem among college students than among those in other age groups. Common reasons for increased risk for addiction for this group include, but are not limited to, being away from home, using spare time unwisely, and using the Internet for non-educational reasons. This issue has become even worse recently. According to Koç (2011), college students face such problems as procrastination, adaptation difficulties, and underlying psychological problems, which further cause their PIU. Kittinger, Correia, and Irons (2012) studied the relationship between Facebook use and PIU among 281 college undergraduate students. Kittinger, Correia, and Irons found out that some students reported occasional or frequent life problems due to their use of the Internet. These findings further suggest that students with PIU disorders tend to more likely have problems related to the use of Facebook, with concerns related to time management cited as the most frequent problem.

Kesici and Şahin (2009) studied Internet use among 384 college students with and without Internet addiction. They found out that students identified with Internet addiction tend to use Internet

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more for social, leisure, and virtual emotional functions than those without Internet addiction. Jelenchick, Becker, and Moreno (2012) assessed the psychometric properties of the Internet Addition Test among 215 US college students. They suggest that Internet addiction symptoms may be classified into two separate components: dependent and excessive use. Leo and Wulfert (2013) studied 498 college students' PIU behaviors in New York and found out that PIU was associated with several major internalizing behavioral problems including depression and social interaction anxiety.

PIU among pre-service teachers has recently attracted many researchers' attention internationally. The number of studies about PIU among pre-service teachers in Turkey has been increasing in recent years (Cuhadar, 2012; Ozturk & Kaymak Ozmen, 2011; Senol-Durak & Durak, 2011; Tutgun, Deniz, & Moon, 2011). Most of those studies have found similar results about PIU in spite of some minor differences. It has been consistently found that early identification and timely intervention is extremely beneficial in reducing pre-service teachers' PIU. Ozturk and Kaymak Ozmen (2011) studied 453 pre-service teachers' PIU disorder in Turkey. They found that (1) pre-service teachers in a variety of undergraduate programs who played online games, chatted online, and downloaded online games were more liable to PIU disorder; (2) some specific personality types such as lying, neuroticism, and shyness were significant predictors of PIU and excessive use; and (3) gender, department, location of Internet access, and Internet use duration have significant influences on PIU disorder among pre-service teachers.

In addition, Cuhadar (2012) investigated the relationship between 1235 pre-service Turkish teachers' PIU and their social interaction anxiety. Cuhadar found that (1) pre-service teachers had a moderate level of PIU and the males' PIU was more serious than the females'; (2) the time increase on pre-service teachers' use of the Internet increased their PIU level; (3) pre-service teachers among different departments exhibited significant PIU levels; and (4) social interaction anxiety was found to be one of the significant predictors of pre-service teachers' PIU.

However, based on the recent literature, there are not any studies about PIU among pre-service teachers in the United States. The author has planned several studies to fill the void in this area.

1.3. Problem statement and research questions

The purpose of this study was designed to investigate the features of pre-service teachers' online behaviors and their PIU in the United States. Other studies about how to predict pre-service teachers' online behaviors and PIU in the United States based on their personality and other factors will be reported in other separate articles elsewhere later.

The two major research questions in this study were:

1. What were the features of the pre-service teachers' online behaviors and PIU in the US?
2. Were there any mean differences in the pre-service teachers' PIU between males and females, various age groups, and various academic programs?

2. Method

2.1. Participants

One hundred and fifty-five participants were solicited and selected from pre-service teachers who were enrolled in an undergraduate educational psychology class at a midwestern public university in the United States in the summer/fall of 2013 and spring/summer 2014. This course was then required for a variety of undergraduate pre-service teacher programs at the author's

institution. All participants completed the research instruments with a few missing values in some items. Overall, most participants were female (75.5%), Caucasian (86.5%), juniors (51.6%), under 22 years old (75.5%), and elementary education (31.6%) and secondary education (39.4%) majors. Most participants owned a home computer (98.7%), had home Internet access (96.8%), and had intermediate computer skills (68.4%) and intermediate Internet skills (56.1%). The result of a detailed analysis of participants' demographic information and other related characteristics is presented in Table 1.

2.2. Research design

This study used a quantitative cross-sectional survey design to collect data and to study the participants' features related to their online behaviors and PIU described previously in pre-service teachers. According to Gay, Mills, and Airasian (2012), the cross-sectional survey design can not only provide a snapshot of the current features and behaviors of a target group, but also

Table 1
Participants' demographic information and other related characteristics ($N = 155$).

Demographic variables	Frequency	Percent
1. Gender		
a. Male	37	23.9
b. Female	117	75.5
c. Missing cases	1	.6
2. Academic status		
a. Freshman	1	.6
b. Sophomore	14	9.0
c. Junior	80	51.6
d. Senior	59	38.1
e. Missing cases	1	.6
3. Major		
a. Early childhood education	21	13.5
b. Elementary education	49	31.6
c. Secondary education	61	39.4
d. Exercise science	3	1.9
e. Special education	19	12.3
f. Missing cases	2	1.3
4. Age		
a. 22 and below	117	75.5
b. 23–30	29	18.7
c. 31–40	4	2.6
d. 41–50	3	1.9
e. 51 and above	2	1.3
5. Ethnicity		
a. Caucasian	134	86.5
b. Native American	1	.6
c. African American	13	8.4
d. Hispanic	3	1.9
e. Asian	2	1.3
f. Other	1	.6
g. Missing cases	1	.6
6. Owning a home computer		
a. Owning a home computer	153	98.7
b. No owning a home computer	2	1.3
7. Having home Internet access		
a. Having home Internet access	150	96.8
b. No having home Internet access	4	2.6
c. Missing cases	1	.6
8. Computer skills		
a. Beginning	9	5.8
b. Intermediate	106	68.4
c. Advanced	40	25.8
9. Internet skills		
a. Beginning	9	5.8
b. Intermediate	87	56.1
c. Advanced	59	38.1