Enhancement of Educational Internet Use Self-Efficacy Perceptions of Coaching and Recreation Students

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ABSTRACT

Study aimed to investigate the efficiency of the education program that aimed to improve the educational internet use self-efficacy perceptions of coaching and recreation students who were attending formation education at Sakarya University, Faculty of Education. Therefore, a training program designed to develop educational internet use self-efficacy perceptions of students was developed and applied. The study was carried out with 33 students and a total of six weeks of education was given as part of the curriculum prepared for the students. The significant difference between the pre-test and post-test scores of the students was examined by t test, and the effect size was calculated. According to the findings, there was a significant difference between the educational internet use self-efficacy perceptions of the students between the pre-test and post-test scores in favor of post-test scores. In addition, the opinions of the prospective teachers about the education were taken. It is recommended that similar curriculums should be developed and implemented for Coaching and Recreation student programs.

Keywords: Educational internet use self-efficacy perceptions, educational internet use, self-efficacy perceptions, university student, self-efficacy enhancement.

INTRODUCTION

Instruction of effective use of information and communication technologies is one of the important fields of research for educators today. Rapid developments in technology force similar advances in our approaches to employment, communication, sustaining our lives, education and our needs (WEB1). One of the most significant responsible parties in using information and communication technologies in order to cope with this dynamic structure in our times is the educators. It was observed that certain institutions and organizations around the world have set standards to determine adequate teacher competencies and to develop adequate education programs.

Educational technology standards (WEB2), which include qualifications and skills for students, educators and administrators and developed by the International Society of Technology in Education (ISTE), states that generally students and educators should be individuals who access and question knowledge and actively use technologies in these processes and outside these processes. The horizon report, developed by the New Media Consortium (NMC), focused on drawing up a roadmap for educators and educational politicians by evaluating the future problems and requirements due to

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1 This study is an extended and improved version of the paper presented at the International Conference on Creative and Innovative Approaches in Education, Science, Arts (ICCIA 2017) congress with the same name.

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Technological advances (WEB3). The digital competencies framework report developed by the European Union for citizens of the European Union stated that contemporary individuals should have information and data literacy, digital age communication and collaboration, digital content production, digital age security and problem-solving skills as a citizenship duty (Carretero, Vuorikari, & Punie, 2017). One of the important variables for acquisition these skills and competencies is the self-efficacy perceptions of the individuals. Self-efficacy perceptions should be considered in various areas, as well as in the field of information technologies (Akgün, 2008). The development of computer and internet self-efficacy perceptions is directly proportional to the experiences of the individuals (Brinkerhoff, 2006; Compeau & Higgins, 1995a). Furthermore, studies on internet and computer use indicated that high self-efficacy perceptions affect internet and computer use positively (Durndell & Haag, 2002).

Self-efficacy perceptions are independent of the individual's ability to conduct a behavior, job or learning task and related to how sufficient the individual considers himself/herself before the action (Bandura, 1997). Therefore, it affects both whether the individual acts or not, the individual's performance during the act, and the outcome of the act (Pajares, 2006). Self-efficacy perceptions have a variable structure and could be increased through various educational processes (Torkzadeh, Pflughoft & Hall, 1999). According to Bandura (1986), self-efficacy perceptions develop and increase over time. However, this development is dependent on the increasing maturity of individuals in time and may occur throughout a long period. On the other hand, individuals' low self-efficacy perceptions about a particular case or task may increase with their achievements and positive experiences in the related task (Hill, Smith, & Mann, 1987; Delcourt & Kinzie, 1993; Bandura, 1997). The development of self-efficacy perceptions is mainly affected by performance-based activities; in other words, it could be achieved through active direct experiences (Bandura, 1997).

Studies in the literature demonstrated that self-efficacy perceptions could be improved. Schunk (1983) investigated whether awarding the performances and achievements of pre-service teachers had an impact on learning mathematical division skills and improvement of division self-efficacy perceptions. Study findings demonstrated that the students who received performance awards maximized their division skills self-efficacy perceptions in mathematics and these students solved the problems the fastest. In a study conducted by Compeau and Higgins (1995b), they assessed behavior modeling method and conventional instruction method in social cognitive theory based on computer skills and computer self-efficacy perceptions acquired with these two methods. According to the study findings, word processor training instructed with behavior modeling method had no effect on computer self-efficacy perceptions when compared to the conventional method, however the instruction with behavior modeling method in Lotus software training further improved the computer self-efficacy perceptions when compared to the conventional method. Furthermore, self-efficacy perception had a significant impact on computer use performance (Compeau & Higgins, 1995a, 1995b). In their study, Torkzadeh and Van Dyke (2002) aimed to measure the self-efficacy perceptions of college students on internet use and to improve these self-efficacy perceptions using internet use training. The study demonstrated that the training increased the internet use self-efficacy perceptions of the individuals. Furthermore, individuals with high computer self-efficacy perceptions stated that they were more willing and eager to achieve during the training when compared to other individuals. A study conducted by Salanova, Grau, Cifre, and Llorens (2000) investigated the role of computer self-efficacy in computer use frequency, the level of emotional burnout and computer education. Study findings demonstrated that computer
training provided for employees who utilize computers in their jobs increased their computer self-efficacy perceptions. Furthermore, the frequency of computer use was found to be directly proportional to computer self-efficacy perceptions.

Although there are several studies in the literature that aimed to determine the level of information technologies self-efficacy perceptions (Akkoyunlu & Kurbanoğlu, 2003; Akkoyunlu & Orhan, 2003; Aşkar & Umay, 2001; Bas, 2011; Çetin, 2008; Eastin & LaRose, 2000; Ergölu, Unlu, Ergölu, & Yılmaz, 2011; Gürol & Akti, 2010; Koçak Usluel & Seferoğlu, 2004; Liang & Tsai, 2008; Tsai & Tsai, 2003; Tsai & Tsai, 2005; Tuncer & Tanaş, 2011; Yenilmez, Türğut, Anapa, & Ersoy, 2011), there are quite a few empirical studies that aimed to improve information technologies self-efficacy perceptions (Compeau & Higgins, 1995b; Margolis & McCabe, 2004; Salanova, Grau, Cifre, & Llorens, 2000; Torkzadeh & Van Dyke, 2002). Thus, the present study aimed to investigate the efficiency of the education program that aimed to improve the educational internet use self-efficacy perceptions of coaching and recreation students who were attending formation education at Sakarya University, Faculty of Education.

METHOD

Research Design

In order to analyze the development of students' self-efficacy perceptions, single group pretest-posttest model, a quantitative model, was preferred in the study. Study was carried out in the weak experimental design, pretest-posttest single group design. In this design, a single group is studied, and the effect of pretest and posttest, in other words, the dependent variable, was investigated using the same measurement instrument (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2012). Furthermore, the themes and codes for the data collected by obtaining the views of the students before and after the application were identified and the frequencies of these themes and codes are presented.

Study Group

In the study, purposive sampling method was preferred. Thirty-three students attending Sakarya University, Faculty of Education, Coaching and Recreation Education Department, formation training during the 2016-2017 academic year spring semester participated in the study.

Data Collection Instrument

“Educational Internet Use Self-Efficacy Beliefs Scale for High School Teachers,” developed by Akgün, Topal and Duman (2017) was used as the data collection instrument in the study. The scale is 5-point Likert type scale. The Cronbach alpha internal consistency coefficient calculated by Akgün, Topal and Duman (2017) for the scale was .97. For scale validity, exploratory factor analysis and criterion validity studies were conducted (Akgün, Topal, & Duman, 2017). The minimum scale score is 26 and the maximum score is 130 points. The scale was applied as pretest and posttest to the students who participated in the training.

Before the application of the pretest, detailed information on the application was provided for the students and they were asked to write down their expectations. After the completion of the training, students were asked to write down their views on the application. These qualitative data were collected with semi-structured forms.
Implementation of Educational Internet Use Program

To enhance the educational internet use self-efficacy perceptions of the students, an education that would allow the students to directly develop the related skills was planned, similar the studies by Torkzadeh Van Dyke (2002) and Compeau and Higgins (1995b) that aimed to develop computer self-efficacy perceptions and by Kurbanoğlu and Akkoyunlu (2002) that aimed to develop information literacy self-efficacy perceptions and as reported by Bandura (1997). The program titled “Educational Internet Use,” developed by Topal and Akgün (2015) was used after the expectations of the students attending formation training at coaching and recreation department from the course to ensure the suitability of the course for these students and the curriculum target achievements and activities were adapted based on these expectations and the program they were attending. The expectations of the students from the course and the themes and codes obtained from these views are presented in Table 1.

<table>
<thead>
<tr>
<th>Findings on the Instruction of the Course</th>
<th>Codes</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>The fact that the course was an applied course</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Learning and comprehension during the instruction</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Learning how to instruct a fun, active and productive course</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>How to find material suitable for the instruction of psychomotor skills</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>How to develop material suitable for the instruction of psychomotor skills</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>How to find material suitable for the instruction of sensory skills</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>How to develop suitable for the instruction of sensory skills</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>How to develop a simple and comprehensible physical education course especially for children</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Student views demonstrated that they expected the course to be more applied and wanted to learn how they could obtain and develop material for the courses they would instruct as teachers or instructors in the future and how to conduct education more effectively. Based on these findings and the programs that the students have attended, an attempt was made to develop a curriculum that would include instructional activities such as face-to-face instruction, finding material on the internet, and access to information/videos on adequate instruction techniques and material for their fields.
The education program was planned to be conducted in four sessions based on achievements (targets), activities, measurement and evaluation activities, achievement criteria, and location and time. The curriculum was finalized by obtaining the expert views from 1 faculty member with a PhD in program development and two faculty members with a PhD in education technologies. The course was instructed for six weeks. The program was introduced to the students before the courses. Approximately two weeks after the end of the program, the views of pre-service teachers on the educational program were obtained and the Educational Internet Use Self-Efficacy Beliefs Scale for High School Teachers” was re-applied.

FINDINGS

Initially, Shapiro-Wilk coefficient is calculated to determine normal distribution of the data, since the sample size was lower than 50 (Can, 2014) in separate groups. Since the Shapiro-Wilk significance values (.196 and .200) for both total pre-test and post-test scale scores were bigger than .05, it was concluded that the data showed normal distribution. Thus, paired-sample t-test was used to determine whether there was a significant difference between pre-test and post-test scores. The results are presented in Table 2.

Table 2.

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>X</th>
<th>ss</th>
<th>df</th>
<th>t</th>
<th>Sig</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>33</td>
<td>95.21</td>
<td>13.16</td>
<td>64</td>
<td>-2.623</td>
<td>.011</td>
<td>.009</td>
</tr>
<tr>
<td>Post-test</td>
<td>33</td>
<td>104.69</td>
<td>16.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Analysis of the findings presented in Table 2 demonstrated that there was a significant increase in students’ educational internet use self-efficacy belief scores as a result of the education ($t(64) = -2.263, p <.05$). The mean pretest score of the students was $X=95.21$, and it increased to $X=104.69$ after the training. Furthermore, it was found that the calculated effect size was $\eta^2 = .009$. Since this value was smaller than .06 it can be suggested that the effect size was low (Green and Salkind, 2008). Based on these findings, it was determined that the training significantly increased educational internet use self-efficacy beliefs of the students and was effective; that is, it can be suggested that the developed curriculum was successful.

The themes and codes obtained with the analysis of student views on the conducted training are presented in Table 3.
Table 3.

<table>
<thead>
<tr>
<th>Codes</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>The training was useful.</td>
<td>14</td>
</tr>
<tr>
<td>The acquired knowledge could be directly used in professional life.</td>
<td>9</td>
</tr>
<tr>
<td>This training was more useful when compared to the previously attended computer courses.</td>
<td>5</td>
</tr>
<tr>
<td>Such a program could be included in coaching/recreation program curriculum</td>
<td>15</td>
</tr>
<tr>
<td>I believe that a longer and more comprehensive program would be more beneficial.</td>
<td>8</td>
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Analysis of student views on the training demonstrated that 14 students considered the training useful ($f = 14$). Nine pre-service teachers stated that they could use the knowledge they acquired in the training directly in their profession. Five students stated that the training was more beneficial when compared to the computer courses they had previously taken in college. The views of the students on the education they attended demonstrated that 15 students preferred the inclusion of such a course in the Coaching and/or Recreation program curriculum, while 8 students stated that the benefits of the program would increase with an increase in the scope and length of the training.

DISCUSSION and CONCLUSION

The study findings demonstrated that educational internet use self-efficacy perceptions of the students increased statistically at the end of the training program. This finding supported the hypothesis that educational internet use self-efficacy perceptions could be improved by direct experiences (Bandura, 1977; 1997; Compeau & Higgins, 1995a, 1995b; Pajares, 2006; Salanova, Grau, Cifre, & Llorens, 2000; Schunk, 1987; Topal & Akgun, 2015; Torkzadeh, Pflughoef, & Hall, 1999; Zimmerman, 1995). Furthermore, the views of the participating students participating on Educational Internet Use Training purposes generally indicated that the education was beneficial. Furthermore, the views of pre-service teachers demonstrated that such a training was beneficial for the vocational and academic lives of coaching and recreation students and they required this type of education. Margolis and McCabe (2004) reported that in order to increase the self-efficacy perceptions of students with low self-efficacy perceptions and resistance to learning, initially, it would be beneficial to support the students to make sufficient efforts, to insist on fulfilling a task, to work hard to cope with the difficulties. Although the duration and scope of the educational Internet Use training conducted in the present study was limited,
the effectiveness of the training demonstrated that education could improve the educational internet use self-efficacy perceptions of the students. This education program improved the self-efficacy perceptions of students, who were assumed to have low self-efficacy due to the fact that they have never experienced or have never used the activities included in the present study. Thus, the present study findings demonstrated that socio-psychological variables such as self-efficacy perceptions should be considered in the development of information and communication technologies competencies.

REFERENCES


WEB2, International Society for Technology in Education (ISTE), https://www.iste.org/standarts