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THE DEVELOPMENT AND EVALUATION OF A PEER-TRAINING PROGRAM FOR ELEMENTARY SCHOOL STUDENTS TEACHING SECURE INTERNET USE

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The aim of this study is to design and evaluate a peer-training program about changing students' internet use habits. This study was conducted with students from two different elementary schools in Mersin, Turkey, who were enrolled in 7th or 8th grade in the 2009-2010 academic year. A total of 24 students participated in the program, 12 of whom were in the experimental group and the other 12 in the control group. To determine the experimental and control groups, students were given a pre-test. Then, the experimental group was given 10 sessions of 90-minute peer-training program. Immediately after the training, both the control and experimental group were given a post-test, which was followed by observation tests two months later. Besides, in order to observe the effectiveness of peer-training, 387 peer-trainers who took the peer-training program gave two informative sessions of 40 minutes about the secure use of internet in the analysis of the data, Wilcoxon Signed Rank Test and Mann-Whitney U Tests were used.

The results suggest that peer-trainers communication skills increased and their peer understanding and peer relations improved. Positive changes in the use of internet have been observed. Students who took training about secure internet use became knowledgeable about secure internet use.

Keywords: Secure Internet Use, Peer training, Teenagers, Communication skills

Peer-based training applications are being implemented at various institutions, including educational programs, from primary to university education, in hospitals and other institutions. Peer-based support and training services are commonly being used in education and are proving successful for psychological counseling and guidance, especially during the puberty years. During puberty, when teenagers lose close contact with their parents, peers start to serve as a source of effect, support and action (Dacey & Travers 1996; Helsen, Vollebergh & Meeus, 2000). Peer-based training aimed at utilizing the positive effects of peers was first used in the US in the 1960s. Since then, peer-based intervention and prevention programs developed and implemented with this goal have increased (Tobias & Myrick,1999).

Peer-based support and training applications in the literature are often named after the program's goal. Peer-based support programs are known by many names, including peer counseling (Carter, 2008), peer education (Turner, 1996), peer training (Darrell,

2007), peer leaders (Tuna, 2002) and peer mediation (Cremin, 2007). In this study, the term "peer-training" is used in this study because the aim of our program is for peers to inform each other about internet use via presentations.

In peer-based training support applications, selected students are offered training in "support and communication skills" so that they can help their peers more effectively. Such programs can be developed and designed for various age groups for various purposes. The following topics are usually covered in education programs: listening and understanding; friends and support; help in decision-making; teaching and academic support; career and health knowledge; being a role model (for younger students); conflict and helping with problem-solving; and applying to experts (http://www.mentars.ca ,2009).

Studies show that peer-based support increases students' self confidence (Moore, 1994), decreases alcohol use (Turner, 1996), helps students maintain healthy sexual behaviors (Study, 1997), reduces students' personal problems (Pitts, 1996), increases students' success in adapting to school, dealing with stress and academic achievements (Beardsley, 1997; Aladağ, 2005), reduces text anxiety (Pehlivan, 2004), increases students' sense of responsibility (Taylı, 2006), helps students be less inhibited in peer-based training talks on violence at school and promotes interpersonal communication among school peers (DeBates & Bell, 2006). The success of peer-training on health is also evident in the literature. Peer-training is thought to be effective especially in training individuals to conduct self-checks for breast cancer (Tuna,2002), and for increasing students' knowledge about diseases such as HIV-AIDS which spread with sexual intercourse (Ergene, Tümer & Ünal, 2005; Dickinson, 2006; Norton & Mutonyi,2007).

There are many studies in the literature on peer-training, but studies on internet use and peer-training are scarce. Internet is a communication system in which computers all over the world are connected to each. With the effective use of the internet, individuals can access or spread information or products worldwide, irrespective of time and place. "Secure internet use" means using the internet at a convenient time to reach an aim without feeling any intellectual or behavioural disturbance. The behavioural patterns of individuals' internet use that result in problems, or cause individuals to deviate drastically from normal behaviour, have been defined as "pathological" or "problematic".

Studies show that excessive internet use may causes loneliness (Nalwa & Anand, 2003; Engelberg & Sjöberg, 2004), anti-social values, low emotional intelligence (Engelberg & Sjöberg, 2004) and tendency towards depression (Young & Rodgers, 1998). They further show that family relationships, especially with the mother, and friendships deteriorate (Sanders, Field, Diego & Kaplan 2000). Some studies also indicate that the increase in time spent playing games, doing research and shopping on the internet leads to more symptoms of depression (Morgan & Cotten, 2003), causes personal problems for the internet users' (Simkova & Cincera, 2004), and negatively affects social, verbal and academic functions (Beard, 2002). Young (1997) states that depressive people who fear social isolation and are in desperate need of social approval use the internet to overcome the problems they face with real people.

An increasing number of studies have found the following about uncontrolled and excessive internet use: that it has some negative effects on children and teenagers; that it leads to psychological, social and physical problems; that it affects developmental tasks negatively; and that it can cause addiction in students (Whang, Lee & Chang, 2003).

Because there is a need for a peer-training program on secure internet use, this study

designed a peer-training program aimed at raising awareness about secure internet use.

The aim of this study is to design and evaluate a peer-training program about changing students' internet use habits. Within this framework, the following questions were asked;

1. Is there a significant difference between peer trainers who took the training and ones who did not regarding communication skills before the training, at the end of the training and after a two-month period?
2. Is there a significant difference between peer trainers who took the training and ones who did not regarding internet use before the training, at the end of the training and after a two-month period?
3. What are the views of peer trainers and students who took the peer-training about the peer-training program?

Methods

Subjects

This study was conducted with students from two different elementary schools in Mersin, Turkey, who were enrolled in 7th or 8th grade in the 2009-2010 academic year. A total of 24 students participated in the program, 12 (8 female, 4 male, ages 14-15) of whom were in the experimental group and the other 12 (7 female, 5 male, ages 14-15) in the control group. The experimental and control groups were randomly formed based on the following National Peer Helpers Association (NPHA) criteria: students' age, gender, socio-economic status, academic success, and pre-test scores on the Communication Skills Evaluation (CSES) and Internet Use Habit Scale. Also according to NPHA criteria, characteristics such as students' being helpful, reliable, interested in others, listening actively and being good role models are taken into account (NPHA, 2002).

In order to observe the effectiveness of peer-training, peer trainers who participated in the peer-training program subsequently informed 387 other students (187 female, 200 male) about secure internet use.

Instruments

Communication Skills Evaluation Scale (CSES)

The CSES was developed by Korkut (1996) to assess the extent to which high school students possess the qualities necessary for enriching communication. The results of the reliability study conducted with 126 students in a 3-week interval show that the correlation coefficient for reliability was .76. The internal validity coefficient (Cronbach's Alpha) is .80. Factor analysis shows that the scale has only one dimension. In a reliability study conducted by Deniz (2003) with 150 8th grade students, the internal validity coefficient (Cronbach's Alpha) was found to be .86. The scale was conducted again after 3 weeks, and the test-retest reliability was found to be .76.

Internet Use Habit Scale

To elicit students' internet use habits, a 5-point Likert-type scale developed by Yılmazhan-Gültutan (2007) was used. The lowest score possible on this scale is 19 and the highest possible score is 95; higher scores indicate stronger internet use habits. Factor analysis in this study confirmed that the scale has only one dimension.

The reliability coefficient (Cronbach's alpha) was found to be .92; split-half test reliability was found to be .90. Item-total correlations for all items on the scale range between .487 and .706. The internal validity reliability coefficients (Cronbach's Alpha) of the participants split randomly are .94 and .92, respectively (Yılmazhan- Gültutan, 2007). In this study, the Cronbach's Alpha coefficient was .91.

Peer-training Evaluation Questionnaire

In addition to the above scales that assess the aims of peer-based applications, the

researchers developed evaluation questionnaires offering peer-training for individuals who benefit from peer-training. These questionnaires were evaluated by five instructors from the area.29-14-16 and revised according to their feedback. As a result, the Peer-training Evaluation Questionnaire was used to assess the experience and gains of student peer-trainers. The questionnaire consists of 33 items, which includes 2 open-ended items. The questionnaire for the students who participated in the peer-training consists of 18 items, 2 of which are open-ended.

Research Design

A semi-experimental design was used in this study. Both the experimental and control group were given a pre-test. Later, the experimental group participated in the peer-training program. Both the experimental and control groups were given a post-test immediately after the training and a follow-up test at the end of two months.

Peer-Training Program

The peer-training program was implemented in the 2009-2010 academic year. The researchers developed a training program covering the topics of peer-training, communication skills and secure internet use. Individuals who successfully completed the training program were entitled to be peer-trainers. The peer-training program consisted of ten 90-minute sessions according to the following curriculum:

First Session: Preparing the peer-trainer candidates for the group process and getting to know each other

Second Session: Teaching about studies related to peer-trainers' duties and responsibilities and highlighting the importance of the program

Third Session: Sharing information about psychological support and the characteristics of puberty

Fourth, Fifth and Sixth Sessions: Students' learning about themselves and learning and applying the basics of effective communication skills

Seventh Session: Getting to know the classroom environment and developing communication and presentation skills

Eighth and Ninth Sessions: Giving information about secure internet use and sharing this information with others

Tenth Session: A general evaluation of the program and studies on how to use the skills acquired in the peer-training program

The peer-trainer group who underwent the training informed their peers in two 40-minute sessions about the following issues: what is the internet; what can be done on the internet; what are the harms of excessive internet use; what is internet addiction, its symptoms and solutions; what issues should be considered when using the internet; and how can security programs be used. Peer-trainers were supported by supervision sessions. Later, all applications in the training program were evaluated by both the peer-trainers and the training program participants via questionnaires.

Data Analysis

Because the data collected did not show a normal distribution, difference analyses were conducted using non-parametric tests. Wilcoxon Signed Rank tests were used to analyze the differences between the pre- and post-test average scores and the average scores received from follow-up tests for the CSES and the Internet Use Habit Scale for each individual in the experimental and control groups. Mann-Whitney U tests were used to compare the average scores for the experimental group participants for the pre-tests, post-tests, and follow-up tests. In addition, frequencies and percentages related to the views of the peer-trainers and the peer-training participants were calculated in order to evaluate the peer-training program.

Table 1. Wilcoxon Signed Rank Test Results for Experimental and Control Groups' Pre-test, Post-test and Follow-up Test Score Averages on the Communication Skills Evaluation Scale

Experimental group					
Post-test-Pre-test	**N**	**Mean Rank**	**Sum of Ranks**	**Z**	**p**
Negative ranks	2	5,00	10,00	-2,054*	.040**
Positive ranks	9	6,22	56,00		
Ties	1	-	-		
Follow up test-Pre-test					
Negative ranks	3	4,33	13,00	-2,047*	.041**
Positive ranks	9	7,22	65,00		
Ties	-	-	-		
Follow up test-Post-test					
Negative ranks	1	3,50	3,50	-2,124*	.034**
Positive ranks	7	4,64	32,50		
Ties	4	-			
Control Group					
Post-test-Pre-test	**N**	**Mean Rank**	**Sum of Ranks**	**Z**	**p**
Negative ranks	8	6,44	51,50	-,982*	.326
Positive ranks	4	6,63	26,50		
Ties	-	-	-		
Follow up test-Pre-test					
Negative ranks	11	6,64	73,00	-2,668*	.008**
Positive ranks	1	5,00	5,00		
Ties	-				
Follow up test-Post-test					
Negative ranks	10	7,25	72,50	-2,629*	.009**
Positive ranks	2	2,75	5,50		
Ties		-	-	-	

* Based on negative ranks **P< 0.05

Results

Differences between the CSES pre-test, post-test and follow-up tests score averages of the peer-trainers who participated in the peer-training and the ones who did not were analyzed using the Wilcoxon Signed Rank test. The results are shown in Table 1.

There is a statistically significant difference between the experimental group's pre- and post-test scores (Z=-2.054 - p<.05). When the rank averages and total scores are taken into consideration, there is a positive difference in the post-test scores. There is also a significant difference between the pre-test and follow-up test scores (Z=-2.047 - p<.05). This can be seen in Table 1 (Z=-2.124 - p<.05).

The difference between the average scores of the control group's pre and post-tests was

Table 2. Mann Whitney U Test Results for Experimental and Control Groups' Pre-test, Post-test and Follow-up Test Score Averages on the Communication Skills Evaluation Scale

Groups	N	Mean Rank	Sum of Ranks	U	P
Pre- test					
Experimental group	12	13,96	167,50	54,500	,311
Control Group	12	11,04	132,50		
Post- test					
Experimental group	12	14,92	179,00	43	,93
Control Group	12	10,08	121,00		
Follow up- test					
Experimental group	12	18,17	218,00	4	.00*
Control Group	12	6,83	82,00		

*P< 0.05

not statistically significant (Z=-.982 - p>.05). However, a statistically significant difference was observed between the pre-test and follow-up test score averages on negative rank (Z=-2,668 - p<.05). A statistically significant difference also was observed when comparing the post-test and follow-up test score averages (Z=-2.629 - p<.05).

These findings suggest that the peer-training program improved peer-trainers' communication skills and that this positive change continued after the training. The communication skills of the control group appeared to decrease over time.

Mann-Whitney U tests were run to determine whether there is a statistically significant difference between the CSES pre-test score averages of the peer-trainers who participated in the peer-training and those who did not. The results are shown in Table 2.

No statistically significant differences were observed between the control and experimental groups' CSES pre- and post-test average scores (pre-test: U=54.5 - p>.05; post-test: U=43.0 - p>.05). However, there was a statistically significant difference in the CSES follow-up score averages for the experimental and control groups; the experimental group had higher follow-up score averages (U=4 - p>.05). The results suggest that there is no meaningful difference in communication skills between the control and experimental groups immediately after the training; however, there is a positive change in the peer-trainers' communication skills when long-term results are considered. This is probably due to the fact that the peer-trainers had the chance to practice their communication skills during the peer-training program, which demonstrates the sustainability of the training over a long period of time.

Wilcoxon Signed Rank tests were used to determine whether there is a statistically significant difference between the Internet Use Habit Scale pre-test, post-test and follow-up test score averages of the peer-trainers who participated in the peer-training and those who did not. The results are shown in Table 3.

There is a statistically significant difference in the pre- and post-test score averages of the experimental group on the Internet Use Habit Scale in terms of negative ranks (Z=-2.003 - p<.05). A statistically significant difference was also observed between the experimental group's

Table 3. Wilcoxon Signed Rank Test Results for Experimental and Control Groups' Pre-test, Post-test and Follow-up Test Score Averages on the Internet use Habit Scale

Experimental group					
Post-test, pre- test	**N**	**Mean Rank**	**Sum of Ranks**	**Z**	**P**
Negative ranks	2	5,25	10,50	-2,003*	0,045**
Positive ranks	9	6,17	55,50		
Ties	1	-	-		
* Based on negative ranks	**P< 0.05				
Follow up- test -Pre-test					
Negative ranks	12	6,50	78,00	-3,062*	.002**
Positive ranks	0	.00	.00		
Ties	0	-	-		
Follow up- test -Post-test					
Negative ranks	12	6,50	78,00	-3,062*	.002**
Positive ranks	0	.00	.00		
Ties	0	-	-		
* Based on positive ranks	**P< 0.05				
Control Group					
Post-test, pre-test	N	Mean Rank	Sum of Ranks	Z	P
Negative ranks	3	4,00	12,00	-1,214*	.225
Positive ranks	2	1,50	3,00		
Ties	7	-	-		
Follow up- test -Pre-test					
Negative ranks	7	6,64	46,50	-1,938*	.053
Positive ranks	3	2,83	8,50		
Ties	2	-	-		
Follow up- test -Post-test					
Negative ranks	9	6,83	61,50	-1,766*	.077
Positive ranks	3	5,50	16,50		
Ties	0	-	-		
* Based on negative ranks	**P< 0.05				

pre-test and follow-up test scores (Z=-3.062 - p<.05) and between their post-test and follow-up test score averages; this difference was found in terms of positive ranks (Z= -3.062 - p<.05). The peer-trainers who took part in the training program showed an increase in their internet use habits in accordance with the training. This is likely the result of the fact that peer-trainers spent more time on the internet due to the tasks assigned to them in the training sessions. The internet use habits of the experimental group dropped after the training, which shows that the positive effect of the peer-training continues after the training as well. Thus, it can be said that peer-training caused peer-trainers to develop positive internet use habits.

Table 4. Mann Whitney U Test Results for Experimental and Control Groups' Pre-test, Post-test and Follow-up Test Score Averages on the Internet Use Habit Scale

Groups	N	Mean Rank	Sum of Ranks	U	P
Pre-test					
Experimental group	12	12,21	146,50	68,5	0,840
Control Group	12	12,79	153,50		
Post-test					
Experimental group	12	14,33	172,00	50	0,203
Control Group	12	10,67	128,00		
Follow up- test					
Experimental group	12	8,29	99,50	21,5	.004*
Control Group	12	16,71	200,50		

*P< 0.05

Table 3 shows that there is no statistically significant difference between the average scores on the Internet Use Habit Scale of the control group for pre-test versus post-tests (Z=-1.214 - p>.05) or for pre-test versus follow-up tests (Z=-1.938 - p>.05). There is also no statistically significant difference between the control group's post-test and follow-up test score averages (Z=-1.766 - p>.05). As expected, no change was observed in the control group's internet use habits.

Mann-Whitney U tests were used to determine whether there is a statistically significant difference between the Internet Use Habit Scale pre-test score averages of the peer-trainers who participated in the peer-training and those who did not. The results are shown in Table 4.

No statistically significant difference was observed between the control and experimental groups' pre-test and post-test score averages (U=68.5 - p> .05) on the Internet Use Habit Scale. There is a statistically significant difference between the control and experimental groups' follow-up test score averages (U=50 - p< .05). Even though no statistically significant difference between the groups was observed before or immediately after the training, the internet use habits of the peer-trainers appeared to decrease over time. Lack of difference between the groups before the training was expected. The fact that there is also no difference immediately after the training can be attributed to the fact that peer-trainers did research on the internet during the training program. As expected in this study, peer-trainers' internet use habits decreased after a certain period following the training, which shows that their internet use habits were affected in a positive way.

Peer-trainers' Views on the Peer-training Program

Analyses of the peer-trainers' questionnaire responses indicated the following: that they understood their role as peer-trainers to be informing others of secure internet use; that there is a need for peer-trainers on other issues; that they felt happy to be peer-trainers and to have the ability to help others; that they understood what could potentially happen if the internet is used in an unsafe way; and that they understood the importance of secure internet use. The majority of peer-trainers (91.7%) indicated that they understood the importance of working in coordination with the school's

counselors, that they liked being at school more, that the training affected their friendship relations in a positive way, and that they would like to take part in similar peer-training again. 41% of the peer-trainers stated that during peer-training they felt afraid of failure, lacked self-confidence and were concerned about how students might react to them.

Views of the Students who participated in the Peer-training Program on the Training Program

Peer-trainers' questionnaire responses indicate that 82.9% believe that the training was useful both for them and the whole class, 74.9% think that peer-trainers were respectful towards them, and 70.5% think that there is a need for peer-training in different issues at school.

84.2% of the students who participated in the training stated that they learned the benefits and importance of secure internet use, that they were encouraged to use the internet safely, and that they had not been using the internet in a secure way. 71.3% indicated that they realized the risky conditions on the internet. 75.2% said that they started to be more careful on the internet after the training. Students made no comments about the deficiencies or inefficiencies of the peer-training program.

Discussion

In this study, peer-trainers improved their communication skills, understanding of their peers and their peer relations. Furthermore, their internet use habits were affected in a positive way after being informed about secure internet use. Analyses of follow-up tests indicated that these changes were long-lasting. The findings of this study support the results of many other studies conducted in the area of peer-training intervention. Previous studies show that the groups that benefit most from such studies are the peer-trainers (Moore, 1994), because they improve their communication skills (Beardsley, 1997), increase self-confidence and individual effectiveness (Tindall, 1995), become more realistic, empathetic and respectful (Garcia, Metha, Perfect & McWhirter, 1997), have higher self-reflection and evaluation skills (Martin, 2009), develop their support skills (Steinbauer, 1998), get more out of professional development and have a more positive attitude towards school atmosphere (Albert, 1999).

Students who participated in the peer-training about secure internet use via peer-trainers realized the risks involved in internet use and became more informed about secure internet use. A review of the literature shows similar results. Results for peer-training programs conducted about illnesses such as HIV/AIDS indicate that students who benefitted from the program increased their level of knowledge (Dickinson, 2006; Norton& Mutonyi, 2007); similarly peer-training was effective in encouraging responsibility in alcohol consumption and effective in reducing drinking habits (Turner, 1996; Swen, 2000) The results of this study also are consistent with studies that found that peer-training has a positive effect on reducing test anxiety and increasing individual responsibility.

Limitations

The most important limitation of this study is that it is semi-experimental. Semi-experimental research designs are often used in the social sciences when all confounding variables cannot be controlled. Thus, factors that might have an impact on peer-trainers' internet use habits during the training (e.g., family, school life, social relations) could not be controlled. An additional limitation is that the peer-training program was designed only for secure internet use. The fact that no pilot study was conducted due to time and economic reasons is another limitation of the study.

Human Subjects Approval Statement

This study was approved by Social Sciences Institute of Mersin University.

Author's Note

This study is based on a master's thesis advised by Asst. Prof. Dr. Binnaz KIRAN ESEN. Email: binkiran2009@gmail.com

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