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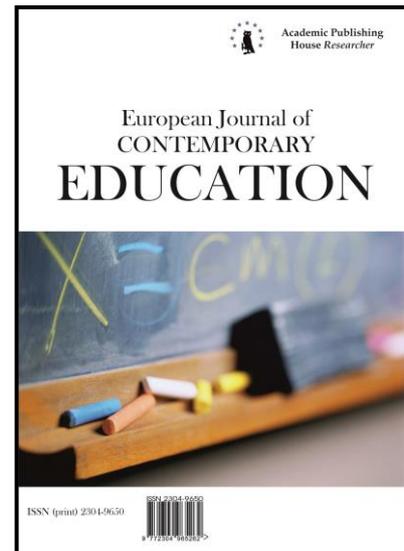
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Enhancing of Self-Efficacy in Teacher Education Students

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Abstract

In this study, the effectiveness of training module on enhancing self-efficacy in teacher education students was investigated. Sixty-eight (68) teacher education students (M age = 22.74; SD = .57) participated in this study, 36 of whom were assigned to an experimental group and the other 32 were assigned to a control group. The training module on enhancing self-efficacy composed of 26 one-hour sessions was applied on experimental group. A pretest-posttest control group design was used in order to assess the effectiveness of the training module as well as to collect data. A General Self-efficacy Scale, a Social Self-efficacy Scale, and a Teacher Self-Efficacy Scale were used. The findings showed that this training module on enhancing social self-efficacy was effective on the teacher education students' general self-efficacy, social self-efficacy, and teacher self-efficacy beliefs.

Keywords: general self-efficacy, social self-efficacy, teacher self-efficacy, teacher education students.

1. Introduction

Purposeful training module on enhancing self-efficacy among teacher education students assists in encouraging the aforementioned processes of individualisation and socialisation. Some authors (Klassen, Tze, 2014; Velthuis et al., 2014) consider teacher education students' professional competence as one of the most important factors in educators training. A recent review of the teachers' self-efficacy literature (Klassen, Tze, 2014) revealed numerous cross-sectional studies, but only a few studies investigating change in teacher education students' self-efficacy over time or and under the influence of training module for enhancing self-efficacy. Teacher characteristics such as self-efficacy, content of training modules may be related to teaching outcomes (Wayne, Youngs, 2003). In the process of training, a teacher becomes more a consultant,

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however retaining the leading role in an educational system. In such case the role of social psychological training (for instance, training on enhancing self-efficacy) increases even more. The purpose of social psychological (e.g., training on enhancing self-efficacy) in post-modern society is named as formation of human being who would be able to adapt in the surrounding as much as possible and to master social competence (Staut, 2002).

Self-efficacy is defined as one's belief in one's ability to effectively direct one's actions to achieve the set goals and succeed in completing a specific task. Self-efficacy refers to a person's perceived capability, as distinct from functional ability, to perform a particular action or course of action. According to Bandura (1993) self-efficacy beliefs have a major role in changing behaviors, as these beliefs determine the decision making in performing a behavior, the effort spent, and the problems that arise throughout the process. Bandura (1993) pointed out that people with high self-efficacy tend to have greater cognitive resourcefulness, strategic flexibility, and effectiveness in managing their environment, and set motivating goals for themselves.

Self-efficacy is commonly understood to be domain-specific (Schwarzer & Hallum, 2008). That is, one can have more or less firm self-beliefs in different domains or particular situations of functioning. But there is also a general sense of self-efficacy that refers to global confidence in one's coping ability across a wide range of demanding or novel situations (Schwarzer & Hallum, 2008). General self-efficacy aims at a broad and stable sense of personal competence to deal effectively with a variety of stressful situations (Schwarzer, 1992). Teachers with high general self-efficacy choose to perform more challenging tasks (Schmitz & Schwarzer, 2000; Schwarzer & Hallum, 2008).

One aspect of self-efficacy little explored is social self-efficacy (Zullig et al., 2011). Social self-efficacy includes such skills as social boldness, participation in a social group or activity, friendly behaviors, and getting and giving help (Connolly, 1989). Social self-efficacy relates to individuals' ability to overcome social-oriented challenges and barriers (Muris, 2001). In our opinion, it is particularly relevant to investigate this phenomenon in the context of teacher education students' training because teaching is known to have a major role in personality's development.

Teacher self-efficacy is defined as 'the teacher's belief in his or her capability to organise and execute courses of action required to successfully accomplish a specific teaching task in a particular context' (Tschannen-Moran et al., 1998: 233). Teachers with a high level of self-efficacy believe that they can teach difficult students effectively (Baleghizadeh & Shakouri, 2017). Teacher self-efficacy is context specific and this should be considered while judging teachers' self-efficacy (Tschannen-Moran et al., 1998; Tschannen-Moran & Woolfolk-Hoy, 2001).

The number of studies focusing on self-efficacy of students and teachers as well as the aspects of enhancing self-efficacy has been increasing in the last years. The development of research in the said field was mostly influenced by the appearance of studies on the importance of general self-efficacy (Luszczynska et al., 2005), social self-efficacy (Erozkan, 2013), teacher self-efficacy (Schwarzer & Hallum, 2008; Yoon, 2002). Therefore, we consider that research is lacking the analysis of positive results of training module on enhancing self-efficacy even though we succeeded in finding several works of similar type (Moseley et al., 2002; Prieto & Meyers, 1999).

Study hypothesis – teacher education students will have more enhanced self-efficacy after training module than before it.

The aim of this study was to investigate the effectiveness of training module on enhancing self-efficacy in teacher education students. The following research question guided this study: what are the changes in self-efficacy between students after training module on enhancing self-efficacy?

The significance of research. This study is original because the majority of previous studies have focused on general or teacher self-efficacy among teachers, however there is still a lack of publications that would analyze general, social, and teacher self-efficacy in its entirety. Other studies in this topic concentrated only on changes of self-efficacy among teachers or teaching assistants when applying educational program for enhancing social self-efficacy (Moseley et al., 2002; Prieto & Meyers, 1999) but in this study changes of general, social, and teacher self-efficacy when applying training module on enhancing social self-efficacy in teacher education students were analyzed. Therefore, this study provides new knowledge of the enhancing self-efficacy in the field of research.

2. Research methods

Instruments. The Generalized Self-Efficacy Scale (GSE, Schwarzer & Jerusalem, 1995) is comprised of ten statements. Each of the statements may be graded on a scale from 1 to 4 points. The respondent chooses one of the statements which seems most suitable to him/her (always – 4, sometimes – 3, very rarely – 2, never – 1). The respondent may receive the minimum of 10 points. The maximum possible amount of points equals 40. The general self-efficacy level is considered to be low when the collected points range from 10 to 20, medium in case of 21–30 collected points, and high if the respondent got between 31 and 40 points. High level of self-efficacy is related to a superior mental and physical health, better luck and improved social integration. The scale has positive correlation with self-respect and optimistic attitude and a negative one with personal and situational anxiety, timidity and pessimistic outlook. The internal consistency of the questionnaire was assessed based on the Cronbach's alpha. The high validity and reliability of the scale has been demonstrated in many studies across various research contexts and various populations (Luszczynska et al., 2005). The value of the Cronbach's alpha coefficient for this sample was 0.74.

Social Self-efficacy Subscale (SSES). We measured social self-efficacy using six-items from the scale developed by Sherer et al. (1982), to evaluate the belief of individuals in their own social competence. The SSES items are rated on a 5-point Likert type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A high score for the subscale indicates strong social self-efficacy. In Sherer et al. (1982), SSES' coefficient alpha was .71. The Lithuanian version of the SSES shows internal consistency value .82 and a test-retest reliability coefficient of .84 for the present sample (Malinauskas, Brusokas, 2013). The value of the Cronbach's alpha coefficient for this sample was 0.77.

Teacher Self-Efficacy. For measuring the beliefs that students have on the control of their own teaching skills, the Teacher Self-Efficacy Questionnaire (TSEQ, Schwarzer, Schmitz & Daytner, 1999). The scale is comprised of 10 items that evaluate one's perceived major teaching skills on four dimensions: accomplishing professional tasks, developing skills on the job, social interaction with students, parents and colleagues and the stress versus coping mechanisms associated with teaching. The items are personal, using the word "I" and the concept I "be able to." good fit to teacher education students. The authors of the scale focused on difficult tasks, reasoning along with Bandura's theory that to ask about easy tasks would not be getting at self-efficacy. The answers are scored on a 4-point Likert scale (1 – not at all true, 2 – barely true, 3 – moderately true, 4 - exactly true), the TSEQ having a .76 test-retest fidelity and a Cronbach's alpha ranging from .76 to .82 (Schwarzer et al., 1999). The value of the Cronbach's alpha coefficient for this sample was 0.73.

Research Design and Procedure. In the research, pretest-posttest control group quasi-experimental design was used. Such design was chosen because true experimental design can encumber educational activities due to the random selection into groups. Quasi-experimental designs in which random selection is not required are frequently used designs in educational researches and guidance and psychological counseling studies (Sağkal et al., 2012). Since in this study, the assignment of students who have chosen free chosen module for enhancing self-efficacy to new groups is not possible, a quasi-experimental design was used. Training module for enhancing social self-efficacy composed of sixty four 26-one-hour sessions (two sessions per week) was applied on experimental group. On the other hand, control group has not been provided any treatment.

Statistical Analysis. Research data were statistically processed using SPSS 22.0 (*Statistical Package for Social Sciences*). Descriptive statistics, namely means, standard deviations, were calculated. Skewness (the symmetry of a distribution) and kurtosis (the homogeneity of a distribution) coefficients were calculated to assess univariate normality because Student *t* test requires normally distributed data. Skewness and kurtosis coefficients between +1 and -1 indicated that data were normally distributed. We calculated the reliability of each dimension given by the index of Cronbach's alpha internal consistence. A preliminary analysis used the Student *t* test for independent samples, comparing the experimental group with the control group with the aim of checking whether the two groups were homogeneous. Then, the Student *t* test for dependent samples, comparing the experimental group before experiment and after it and the control group before experiment and after it, was used in order to analyse the effects of the training module. Considering the recommendation of Arnau and Bond (2008), repeated measures (RM) multivariate analysis of variance (2×2 (Group \times Time) MANOVA) was used in order to analyse the

effects of the educational program. Wilks's lambda was used to evaluate all multivariate effects; the significance level was set at .05. Effect sizes for *F*-statistics were expressed as partial eta-squared (η_p^2). According to Tabachnick and Fidell (2007) effect size based on $\eta_p^2 = .01$ corresponds to a small effect, $\eta_p^2 = .09$ corresponds to a medium effect, and $\eta_p^2 = .25$ represents a large effect.

Sample and Procedure. Participants were 68 teacher education students (*M* age = 22.74; *SD* = .57) participated in this study, 36 of whom were assigned to an experimental group (they have chosen module on enhancing and the other 32 were assigned to a control group). There were no significant differences between the experimental and the control groups by age ($p > .05$) and gender ($p > .05$). Both tested groups consisted of students attending Lithuanian Sports University. Table 1 shows the training module on enhancing social self-efficacy in teacher education students.

Table 1. Content of training module on enhancing self-efficacy for teacher education students

No.	Enhanced self-efficacy dimensions	Training sessions	Descriptions of training sessions
1.	General self-efficacy	Emotional Communication	Students are encouraged to use relationship-building communication skills (e.g., active listening); helping to other students identify and appropriately express emotions
2.	Social self-efficacy	Promoting Social Skills	Group members will attempt to share and cooperate, use good manners, and get along with peers
3.	Teacher self-efficacy	Discipline and Behavior Management	Students are encouraged to give clear and developmentally-appropriate directions; setting limits and rules; stating behavioral expectations and consequences

The followed stages of training were used on enhancing self-efficacy for teacher education students: 1) *presentation of a skill*; 2) *practice*; 3) *feedback*; 4) *reinforcement of a skill*.

Presentation of a skill – during this stage of training educator provides examples of educated social skills.

Practice – once students acquire a new skill, they need to be able to use the skill proficiently or fluently. The educator provides multiple opportunities for them to practice and master this skill, as well as prompt students to use their new skills in new situations.

Feedback – it is providing information about how successful a student was applying a new skill in a simulated situation, emphasizing how much his/her behaviour coincided with the model's behaviour. In this stage of training it is particularly important to provide positive social incentive – evaluation, praise.

Reinforcement of a skill – when students apply their new skills to new situations, people, activities, and settings they demonstrate generalized use of these skills. For instance, student might train a new skill during training session and then generalize that skill by using it at different setting.

Several methods have been used to enhance teacher education students' self-efficacy: *demonstration, social role performance, case analysis of the situation, small groups, and group discussions.*

3. Results

Student's *t* test for independent samples showed that the experimental and the control group before the training module did not differ significantly in general self-efficacy ($t(66) = -1.38; p = .17$), social self-efficacy ($t(66) = -1.89; p = .06$), and teacher self-efficacy ($t(66) = -1.88; p = .07$).

Overall RM MANOVA results showed significant effect of the training module on enhancing self-efficacy in teacher education students, i.e. the influence of group by time interaction was significant (Wilks Lambda = .85; $F(3,64) = 3.76; p = .015; \eta_p^2 = .15$).

Univariate tests of RM MANOVA confirmed effects of the training module on enhancing self-efficacy. After the end of the training module experimental group students demonstrated statistically significant improvement of general self-efficacy ($F(1,66) = 6.49; p < .05; \eta_p^2 = .09$), of social self-efficacy ($F(1,66) = 6.74; p < .05; \eta_p^2 = .09$), and teacher self-efficacy ($F(1,66) = 9.25; p < .01; \eta_p^2 = .12$). All of these significant changes demonstrate the impact of the training module on enhancing self-efficacy in teacher education students. The results are summarised in Table 2.

Table 2. Self-efficacy dimensions among teacher education students ($M \pm SD$)

Self-efficacy	Experimental group		Control group		Univariate tests of RM MANOVA		
	Before experiment	After experiment	Before experiment	After experiment	Group \times Time		
					F	p	η_p^2
General self-efficacy	3.35 \pm 0.21	3.56 \pm 0.15	3.45 \pm 0.36	3.39 \pm 0.25	6.49	.013	.09
Social self-efficacy	3.31 \pm 0.27	3.55 \pm 0.19	3.46 \pm 0.38	3.40 \pm 0.30	6.74	.012	.09
Teacher self-efficacy	3.33 \pm 0.25	3.56 \pm 0.21	3.46 \pm 0.35	3.36 \pm 0.33	9.25	.003	.12

Notes. ($M \pm SD$) – mean and standard deviation; η_p^2 – effect size.

Analysis of the results of experimental and control groups after the experiment showed statistically significant improvement of general self-efficacy ($(t(66) = 3.48, p < .01, \text{Cohen's } d = .82)$), social self-efficacy ($(t(66) = 2.59, p < .05, \text{Cohen's } d = .60)$), and teacher self-efficacy ($(t(66) = 3.14, p < .01, \text{Cohen's } d = .72)$) in the experimental group.

4. Discussion

The purpose of the present study was to investigate the effectiveness of training module on enhancing self-efficacy in teacher education students. The main factor determining the validity of the present research was that during an initial research conducted before the experiment, the experimental group and the control group were not statistically different according to the self-efficacy indicators. The present study supported the effectiveness of training module on enhancing self-efficacy.

Analyses indicated that the training module was effective in changing self-efficacy dimensions (general self-efficacy, social self-efficacy, and teacher self-efficacy) of the experimental group of participants. The effect sizes for most observed differences due to treatment were in the medium range from $\eta_p^2 = .09$ to $\eta_p^2 = .12$. It was established that all self-efficacy indicators in the experimental group after the enhancement of self-efficacy were higher in comparison with those of the experimental group before the educational experiment.

The hypothesis, that teacher education students' self-efficacy is significantly higher after training module than before it, was supported by the results of this study. This finding also was consistent with previous research that identified that educational programs have positive effect on improvement of self-efficacy (Chao et al., 2016; Mishal, 2016), where also a medium effect size was recorded. The present research data may be explained by the self-efficacy theory (Bandura, 1993), which emphasises that methods for enhancing (building, maintaining, regaining) social self-efficacy based on the information from the four major self-efficacy sources (i.e., mastery experiences, vicarious learning, verbal persuasion, and psychological arousal). The results of the present study add to the argument of Pinar and Sucuoglu (2013), those who indicated that the most effective teaching techniques are modeling, rehearsing, and rewarding, and among these techniques, modeling is the most important. It can be explained by the argument that with modeling, teaching education students not only observe the correct/appropriate skills, but that

they also have the opportunity to implement the desired behavior without fear of being excluded and making mistakes.

In conclusion, our finding that teaching education students of the experimental group after training module had improved self-efficacy more than the same students before experiment might be explained by Thompson and Schlehofer (2011). They stated that people have a sense of perceived controllability when they believe that, in general, personal action controls outcomes and they personally have the skills to enact those actions (self-efficacy).

Our results limited to teaching education students. This analysis did not cover students of other study programs, and as a result, the conclusions cover only the changes in self-efficacy before training module on enhancing social self-efficacy and after it in teaching education students. The present study indicates that further researches are necessary to reveal how long after the training module teaching education students have to preserve self-efficacy beliefs improved during the training module.

5. Conclusion

Statistical analyses revealed that training module on enhancing social self-efficacy was effective on the teacher education students' general self-efficacy, social self-efficacy, and teacher self-efficacy beliefs.

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