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Predictive Power of the Sources of Primary School Students' Self-Efficacy Beliefs on Their Self-Efficacy Beliefs for Learning and Performance

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Abstract

The purpose of this study is to reveal the extent to which the sources of 6th- 8th grade students' self-efficacy beliefs predict their self-efficacy beliefs for learning and performance. The study is correlational and was conducted on a total of 1049 students during the fall term of the educational year 2010-2011. The data of the study were collected through "The Scale of Determining the Sources of Self-Efficacy" and "The Scale of Self-Efficacy for Learning and Performance". The data were analyzed on the basis of the arithmetic mean, standard deviation, Pearson product-moment correlation coefficient and stepwise regression. The students stated that their self-efficacy beliefs were developed mostly by verbal persuasion and performance accomplishments. They also noted that psychological states and vicarious experiences develop their self-efficacy beliefs at a lower level. It is the factor "performance accomplishments" that is correlated with the students' self-efficacy beliefs and predicts them in the strongest way. Apart from performance accomplishments, the factors "vicarious experiences" and "verbal persuasion" predict the students' self-efficacy beliefs for learning and performance.

Key Words

Primary School, Self-Efficacy Beliefs, The Sources Of Self-Efficacy Beliefs.

Self-efficacy beliefs are made up of mechanisms for efficacy expectations and outcome expectations that underlie all behaviors. Efficacy expectations can be defined as one's belief in being able to manage a behavior required for attaining certain results in a successful manner whereas outcome expectations are defined as predicting that a particular behavior will result in certain consequences (Bandura, 1977).

Self-efficacy beliefs have an influence on students' motivation to learn. Students with a weak self-efficacy belief are less willing to learn, cannot concentrate on instructional tasks properly, do not want to confront difficulties or do not make efforts to overcome these difficulties (Bandura, 1993).

a Ali ARSLAN, PhD., is an assistant professor in the field of curriculum and instruction. Correspondence: Bülent Ecevit University, Ereğli School of Education, Educational Sciences Department, Zonguldak, TURKEY. e-mail: arslan54tr@yahoo. com Phone Number: +90 372 323 3870. Students' self-efficacy beliefs for learning could be improved as long as one has a clear idea about the sources of their self-efficacy beliefs and to what extent these sources influence their self-efficacy beliefs. Primary school students are at the very beginning of the process of education. Therefore, as long as they are provided with the opportunity and training to have high self-efficacy beliefs, they can be enabled to grow up to be self-efficient individuals that can overcome the problems they face in a successful way at the other educational stages or in their future life.

Bandura (1997) argued that students' self-efficacy beliefs are formed in accordance with the information they obtain from four sources, namely performance accomplishments (enactive mastery experiences), vicarious experiences, verbal (social) persuasion and psychological states. *Performan*ce accomplishments refer to the consequences of students' performances in learning environments. Their successful experiences enable them to have positive self-efficacy beliefs while their unsuccessful experiences, not surprisingly, cause them to have negative self-efficacy beliefs. Vicarious experiences refer to the information students obtain by comparing their performances with those of their friends. When a student observes that his/her performance is better than those of his/her friends, his/her self-efficacy beliefs will get improved. He/ she could have a negative self-efficacy belief if he/ she notices that his/her performance is lower than those of his/her friends. Verbal persuasion is the state in which students are convinced of success by the people in their social environments. When their teachers, parents and classmates tell them that they have the capability to carry out a task, they will be encouraged to make efforts to perform it. Psychological state refers to students' mental state and the effects of classroom environment on their selfefficacy. Encouraging and threatening classroom environments have their own influences on their self-efficacy beliefs, too. Students are enabled to develop positive self-efficacy beliefs in encouraging, motivating, moderately challenging classroom environments in which they fell comfortable and free to express themselves in an easy way. On the other hand, they tend to have negative self-efficacy beliefs in threatening and humiliating classroom environments in which they do not feel comfortable or express themselves freely. Bandura (1994) argued that the strongest source of self-efficacy beliefs is performance accomplishments.

In order to improve students' self-efficacy beliefs, Margolis and McCabe (2006) recommended that they should be provided with moderately challenging tasks with a consideration into their interests and preferences, that they should be taught how to use learning strategies so as to cope with these tasks, that peer models should be used, and that they should be encouraged to try new things.

A review of literature suggests that there are quantitative (Britner & Pajares, 2006; Hampton, 1998, Hampton & Mason, 2003; Hodges & Murphy, 2009; Lopez & Lent, 1992; Özyürek, 2005; Pajares, Johnson, & Usher, 2007; Ruble, Usher & McGrew, 2011; Stevens, Olivarez, & Hamman, 2006; Usher & Pajares, 2006, 2009; Warner, Schüz, Knittle, Ziegelmann, & Wurm, 2011; White, 2009) and qualitative studies (Palmer, 2006; Usher, 2009) on the issue. Quantitative studies have made an attempt to reveal the correlation between self-efficacy beliefs and the factors in these beliefs, and to determine the extent

to which the latter predicts the former. On the other hand, qualitative studies have tried to reveal the sources of self-efficacy beliefs through interviews with the individuals concerned.

A review of the studies on self-efficacy beliefs in our country suggests that they are generally conducted on prospective teachers, that they make an attempt to determine prospective teachers' self-efficacy beliefs in the profession of teaching, and that they are concerned with discovering whether their selfefficacy beliefs differ depending on their gender, grade, academic achievements, type of high-school, and department (Akbaş & Çelikkaleli, 2006; Akbulut, 2006; Akkoyunlu & Orhan, 2003; Arslan, 2008; Aylar & Aksin, 2011; Azar, 2010; Baki, Kutluca, & Birgin, 2008; Çalışkan, Selçuk, & Özcan, 2010; Çapri & Çelikkaleli, 2008; Çetin, 2008a, 2008b; Demirtaş, Cömert, & Özer, 2011; Durdukoca, 2010; Gürol, Altınbaş, & Karaaslan, 2010; İpek & Acuner, 2011; Kiremit & Gökler, 2010; Kutluca & Ekici, 2010; Morgil, Seçken, & Yücel, 2004; Özdemir, 2008; Terzi & Mirasyedioğlu, 2009; Yaman, Koray, & Altunçekiç, 2004; Yılmaz & Çimen, 2008; Vural & Hamurcu, 2008). There are also studies on teachers' self efficacy beliefs (Coşkun, 2010; Ekici, 2006; Gençtürk & Memiş, 2010; Maden, 2010; Özerkan, 2007; Yılmaz, Yılmaz, & Türk, 2010). Even so, there is only one single study on primary school students' self-efficacy beliefs (Çetin, 2009). Of the researchers in our country, only Özyürek (2005) studied the extent to which the sources of primary school students' self efficacy beliefs predict their self-efficacy beliefs about math.

It has been observed that no study has been conducted so far in our country on determining the extent to which the factors in the sources of primary school students' self-efficacy beliefs predict their self-efficacy beliefs for learning and performance. Hopefully, the present study will test Bandura's (1977, 1997) views regarding the notion "self-efficacy" on primary school students in Turkey.

Purpose

The purpose of this study is to reveal the extent to which the sources of 6th- 8th grade students' self-efficacy beliefs predict their self-efficacy beliefs for learning and performance.

Method

Research Design

The present paper is based on a correlational study. Such studies make an attempt to determine the le-

vel of correlation between the two variables tested. Correlations help us to predict a variable on the basis of the other variable (Jackson, 2006).

Population and Sample

The population of the study was comprised of 6th- 8th grade students from central primary schools located in Ereğli, Zonguldak. The sample of the study consisted of a total of 1049 6th- 8th grade students. These schools were selected through cluster sampling. The purpose of this method is to select randomly groups from population (Gay & Airasian, 2000) .

Instruments

The Scale of Determining the Sources of Self-efficacy Beliefs: The scale was developed by the researcher with the aim of determining the sources of self-efficacy beliefs. The items were designed through an analysis of the compositions written by 26, 8th grade students. The pilot study was carried out on 467 primary 6th- 8th grade students. The KMO value of the data was 0.81 whereas the value of Barlett's sphericity test was 1273.959. Seeing that the KMO value was higher than 0.60 and Barlett's sphericity test yielded a significant result, it was concluded that it would be appropriate to conduct a principal components factor analysis (Büyüköztürk, 2003).

The factor analysis yielded that the scale had a structure with four factors, each of which contained 3 items. Furthermore, each had an eigenvalue that was higher than 1. The factor "performance accomplishments" accounted for 31.471% of the total variance and had a reliability coefficient of 0.70. The factor "vicarious experiences" accounted for 11.273% of the total variance and had a reliability coefficient of 0.68. The factor "verbal persuasion" accounted for 10.685% of the total variance and had a reliability coefficient of 0.68. The factor "psychological states" accounted for 8.970% of the total variance and had a reliability coefficient of 0.69.

The Scale of Self-Efficacy Beliefs for Learning and Performance: The study employed "The Scale of Self-Efficacy Beliefs for Learning and Performance", a sub-scale of the "Motivated Strategies for Learning Questionnaire", which was developed by Pintrich, Smith, Garcia and McKeachie in 1991 and was adapted to Turkish by Büyüköztürk, Akgün, Özkahveci and Demirel in 2004. Containing 8 items in total, the questionnaire had a reliability value of 0.85 in this study.

Data Analysis and Interpretation

The arithmetic mean and standard deviation were taken into consideration in order to analyze the students' opinions as to each of the items. Pearson product-moment correlation coefficient was used in order to calculate the correlation between the students' self-efficacy beliefs and their opinions regarding the factors that increase their self-efficacy beliefs. The stepwise regression analysis was conducted so as to reveal the extent to which these factors predict their self-efficacy beliefs. For data analysis, the level of significance was accepted as 0.01 and 0.001.

Results

The arithmetic mean of the student's opinions that performance accomplishments increase their self-efficacy beliefs for learning and performance was 4.65. In addition, the arithmetic mean of the student's opinions that vicarious experiences increase their self-efficacy beliefs for learning and performance was 4.06. The study also found that the arithmetic mean of the student's opinions that verbal persuasion increases their self-efficacy beliefs for learning and performance was 4.67. Finally, it was observed that the arithmetic mean of the student's opinions that psychological states increase their self-efficacy beliefs for learning and performance was 4.49.

The strongest correlation was between the students' opinions regarding performance accomplishments and their self-efficacy beliefs for learning and performance (r=0.606, p<0.01). The second strongest correlation was between verbal persuasion and their self-efficacy beliefs for learning and performance (r=0.435, p<0.01). Their self-efficacy beliefs for learning and performance were least correlated with vicarious experiences (r=0.331; p<0.01) and psychological states (r=0.289; p<0.01).

Performance accomplishments, vicarious experiences and verbal persuasion accounted for 38.8% of the students' self-efficacy beliefs for learning and performance. The factor "performance accomplishments" was the strongest one that predicts the students' self-efficacy beliefs for learning and performance. Furthermore, it accounted for 36.7% of the change in the students' self-efficacy beliefs for learning and performance. Therefore, vicarious experiences and verbal persuasion accounted for only 2.1% of the total variance.

Discussion

The students stated that their self-efficacy beliefs are increased mostly by verbal persuasion and performance accomplishments. In addition, they noted that psychological states and vicarious experiences increase their self-efficacy beliefs at a lower level than the other factors. Similarly, Britner and Pajares (2006) found in their study that the factors with the highest arithmetic mean are performance accomplishments and verbal persuasion while the ones with the lowest arithmetic mean are vicarious experiences and psychological states. When the mean values in Hampton's (1998) study are converted into standard scores, it can be concluded that visual persuasion has the highest mean value (36.20/10=3.62) whereas the factor "vicarious experiences" has the lowest mean value (43.42/14=3.10).

It is the factor "performance accomplishments" that was correlated with the students' self-efficacy beliefs for learning and performance in the strongest way (r=0.606, p<0.01). A review of literature suggests that there is a similar correlation between students' self-efficacy beliefs and their performance accomplishments (x). The correlation coefficients between these two variables vary from 0.40 and 0.61 in the literature. It is the factor "performance accomplishments" that predicts students' self-efficacy beliefs in the strongest way. Similarly, Britner and Pajares (2006), Hampton (1998), Lopez and Lent (1992), Pajares et al. (2007), Stevens et al. (2006), Usher and Pajares (2006), and Usher and Pajares (2009) found that the strongest predictor of self-efficacy is performance accomplishments.

A positive and significant correlation was found between the students' opinions regarding verbal persuasion and their self-efficacy beliefs for learning and performance (r=0.435, p<0.01). Studies in the literature have yielded similar correlation values between self-efficacy and verbal persuasion (Britner & Pajares, 2006; Lopez & Lent, 1992; Pajares et al., 2007; Usher & Pajares, 2006). The correlation coefficients in these studies vary between 0.34 and 0.44. The second strongest predictor of students' self-efficacy beliefs for learning and performance is verbal persuasion. Similarly, Lopez, Lent, Brown, and Gore (2006), Pajares et al. (2007), Usher and Pajares (2006), and White (2009) found in their studies that verbal persuasion is a significant predictor of self-efficacy beliefs. On the other hand, Lopez and Lent (1992) found that verbal persuasion does not predict self-efficacy beliefs.

A positive and significant correlation was found between the students' opinions regarding vicarious experiences and their self-efficacy beliefs for learning and performance (r=0.331, p<0.01). The finding is supported by several studies in the literature. Britner and Pajares, (2006), Hampton (1998), Hampton and Mason (2003), Pajares et al. (2007), and Usher and Pajares (2006) found that there is an moderate, positive and significant correlation between vicarious experiences and self-efficacy beliefs. Nevertheless, Stevens et al. (2006) found a low but significant correlation between the two variables. The third and final significant predictor of students' self-efficacy beliefs for learning and performance is vicarious experiences. Similarly, Hodges and Murphy (2009), Hampton (1998), Stevens et al. (2006), and Warner et al. (2011) reported that vicarious experiences is a significant predictor of self-efficacy beliefs. On the other hand, Britner and Pajares (2006), Lopez and Lent (1992), and Usher and Pajares (2006) found that vicarious experiences do not predict self-efficacy beliefs.

It is the factor "psychological states" that was correlated with the students' self-efficacy beliefs in the weakest way (r=0.289, p<0.01). Other studies in the literature have found similar correlation coefficients. Ruble, Usher and McGrew (2011), Stevens et al. (2006) found a significant correlation between the two variables whereas Hampton (1998), and Hampton and Mason (2003) reported an insignificant correlation between the two. The present study found that the factor "psychological states" is not a significant predictor of self-efficacy beliefs for learning and performance. Similarly, Britner and Pajares (2006), and Özyürek (2005) reported that this factor is not a significant predictor of self-efficacy. On the other hand, Hodges and Murphy (2009), Pajares et al. (2007), and Usher and Pajares (2006) found that psychological states predict self-efficacy in a significant way.

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