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Classroom Teachers' Self-Efficacy Beliefs on Constructivist Approach

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ABSTRACT As result of recent rapid developments, societies have entered into a process of a rapid change that has provided education as the most fundamental factor of change. The educational system in Turkey has been exposed to reforms for meeting the needs of the new human model innovations. The educational programs in Turkey have been rearranged through an understanding based on a constructivist approach. This research aimed to reveal whether self-efficacy beliefs related to implementing the constructivist approach predicted attitudes toward the constructivist approach. The research was carried out on a relational screening model. The research sample included a total of 812 teachers working as classroom teachers in 58 elementary schools in central districts of Mersin province. The self-efficacy beliefs of classroom teachers were measured using the "Self-Efficacy Scale Related to Implementing the Constructivist Approach" and their attitudes towards the constructivist approach were measured using "Constructivist Approach Attitude Scale." In the research, simple linear regression analysis was used. The study showed that self-efficacy beliefs of classroom teachers related to implementing the constructivist approach predicted their attitudes towards the constructivist approach significantly.

INTRODUCTION

As a result of the developments in areas of technology and communication in the first years of the 21st century, societies have entered into a process of rapid change, and this has established education as the most fundamental actor of the change. For that reason, the educational system in Turkey has undergone reforms for meeting the needs of a new type of citizen for global competition. Since 2005, educational programs have been reorganized according to a student-centered educational understanding; after a pilot implementation for a year, it is being implemented all around the world. In this sense, Turkey has adapted a curriculum based upon the constructivist approach through a radical change. This curriculum is being actualized in programs at the elementary education level. It has been emphasized that this new curriculum, prepared depending upon the constructivist approach, will bring an end to the learn-by-rote educational system, consider the experiences of individuals and the value of knowledge, contribute to the active participation of individuals into life, and support individuals' overcoming problems. Because it stresses facilitating and developing these, the constructivist approach was selected as the baseline for the new curriculum.

The constructivist approach is not a teaching approach, but a knowledge and learning theory (Matthews 2002: 123; Aviram 2000: 467). According to Brooks and Brooks (1999), the constructivist approach is a cognition-based learning approach that actualizes as a result of individuals' intellectual structuring (p.19). According to constructivism, learning is a process individuals actualize using their own experiences and cognitive processes (Cha and Yager 2003: 347). Constructivism focuses on how knowledge is constructed by the learner. What the learners know, what they will need to know in the future, and how they will construct knowledge are the points on which constructivism focuses (Maharg 2000: 193). In constructivism, learning is accepted as a "process of constructing the meaning establishing relationship between new information and old information and experience" (Alesandrini and Larson 2002: 120). As expressed by Doolittle and Camp (1999), interaction of the individuals with the world around them provides a basis for information to be created, combining with their past experiences (p. 29). Information in constructivism is constructed by the learner and included in the essential structure of the individual. When current experiences and new ideas and viewpoints are combined, then the structuring of the information actualizes (Maypole and

Davies 2001: 61). In this sense, it is noticed that a versatile viewpoint and the consideration that a question can have more than one answer dominate in contrast to one-way and one-viewpoint learning theories in which one question has only one answer (Can 2004). For that reason, learning depends upon learners' ability to understand, interpret the information, and develop their own viewpoints, recognizing different viewpoints and defending the viewpoints they developed (Alkan et al. 1995: 47).

One of the implicit purposes of a curriculum created according to the constructivist approach is to increase students' self-efficacy. For individuals to produce information, be active during the learning process, and use their capacity and ability to solve problems is necessary, and the self-efficacy of individuals is an important factor for using and obtaining information (Çetin 2009: 136). Self-efficacy belief is one of the fundamental concepts of Bandura's Social Learning Theory. According to Bandura (1994), individuals' motivations, their responses to events, and their actions depend on what they believe rather than what is real. In this sense, comprehending the self-efficacy belief helps determining what individuals can do with the ability and knowledge they have (p.73). According to Bandura (1994), self-efficacy belief includes the beliefs about one's abilities to perform at a significant level for the events that will affect their life. Those beliefs determine how individuals feel, think, motivate themselves, and behave (p.73-74). Bandura (1997) emphasized that individuals can have different expectations for achieving or realizing a task. Self-efficacy beliefs include two different structures: self-efficacy expectation and result expectation. Self-efficacy expectation is the self-evaluation of an individual's ability on maturation at to do or achieve something (Boekaerts 2002: 19). Self-efficacy expectation includes judgments of individuals related to actualizing an assigned task, but result expectation concerns the predictions of individuals about the results of their behaviors. Those predictions include individuals' perceptions of what behaviors will cause what results (Bandura 1997). According to Butler (2002), positive qualifications related to the results of behaviors prove that a relationship is established between the results and efforts to actualize a task; and the negative qualifications prove that the learners' sense of self is low (p.86). Self-efficacy belief affects the performance determining task selection, strategy use, and insistence of learners on the relevant task (Bandura 1994: 76; Sewell and St George 2000: 61).

According to Schunk (1990), self-efficacy belief is the most important predictor of human behaviors (p.78). If individuals believe that they have the necessary ability and supervision power inside themselves to perform a task, then, they become more willing to choose this task, reflect their decisiveness, and present required behaviors (Eaton and Dembo 1997: 435; Sharp 2002: 32). According to the learners in doubt with their own learning ability and capacity, the learners who have higher self-efficacy belief on learning a subject or on acquiring a skill adapt to the group more easily, study harder, and present more endurance and success when they encounter difficulties (Schunk 1990; Pajares 2002). Wigfield and Ecless (2000) suggested that the beliefs of learners about how skilled they are at an activity and the value they perceive for each activity can affect their performance and insistence on actualizing an activity and their individual choices (p.74). Self-efficacy belief affects people's way of thinking and emotional reactions. When individuals with a high level of self-efficacy encounter tasks of high difficulty level, they can be more relaxed and productive. People with lower levels of self-efficacy believe that the works they will carry out are much more difficult than they actually are. Such thinking increases anxiety and stress and narrows the viewpoint necessary for overcoming a problem. For that reason, self-efficacy belief strongly affects the success of individuals (Pajares 2002).

In constructivist learning approach, the most important task for establishing a learning environment is providing opportunity to students to create their own meanings, which is the responsibility of teachers. While the teacher has a role relaying information during the traditional learning process, the teacher interacts with students in the constructivist learning environment (Tanriseven Uredi and Uredi 2009: 1174). Teachers' attitudes towards implementing the constructivist approach are essential. According to Ekici (2002), attitude is accepted as an important explication of behavior through all cognitive, affective, and behavioral dimensions (p.63). According to Tavsancil (2002), attitude directs the behaviors of individuals and occurs as result of a learning process. Attitude expresses individuals' reactions to anything around them, direct-

ing their behaviors and causing bias during the decision-making process. If an attitude develops about an object or event is positive, then it is more possible to have a positive decision related to this. Attitude determines how qualified will be our decision about future (Ülgen 1995; Tavsancil 2002). For that reason, attitude is accepted as one of the factors affecting the motivation and behaviors of teachers positively or negatively.

In general, attitude is grouped with concepts such as emotional-content ideas, beliefs, tendencies, prejudices, evaluations, and readiness (Kadhiravan and Balasubramanian 1999). According to Maxwell (2002), one's attitude in the beginning of a work affects the result of that work more than all other factors. Measuring the attitudes during the educational process provides benefits such as predicting the future behaviors of learners by determining their attitudes within a specific time period, determining their attitudes related to the conditions they have, and learning their current preferences to create new attitudes or change their attitudes. Therefore, trying to describe behaviors of individuals scientifically provides opportunity to improve behaviors through prediction (Baysal and Tekarslan 1998). These three studies mentioned just above proved that attitudes of students are one of the most important factors playing into their academic success. The students who have positive attitude towards school have more success than students with negative attitudes, and they provide more opportunity for educational programs (McCoach 2002). Today, it has been proven through the studies reviewed above so far that attitude affects learning and steers people's lives. For that reason, measuring and evaluating attitude during the educational process has become important. Classroom teachers' developing a positive attitude towards the constructivist approach depends upon their self-efficacy beliefs about implementing the constructivist approach.

Importance of the Research

Schools in Turkey began implementing curriculums based upon the constructivist approach in the 2005-2006 academic year, which means many of the problems have already been worked out. The biggest of the remaining problems is teachers' self-efficacy beliefs about the constructivist approach. In Turkey, overcoming these problems necessitates research to be carried out on teacher's attitudes.

In a teaching environment, one of the fundamental factors of success is self-efficacy belief. Self-efficacy belief of a teacher affects the quality of teaching, preferred methods and techniques, and students' participation and understanding in learning; this determines the success of students (Klausmeier and Allen 1978). For that reason, the classroom teachers who improve themselves are expected to have high self-efficacy belief more than anything else. Self-efficacy belief affects people's way of thinking and emotional reactions (Pajares 2002; Bikmaz 2004). The measurements of teachers' self-efficacy beliefs towards the constructivist approach provide an opportunity to better understand their behaviors. Moreover, the data that will be obtained from studies on the self-efficacy beliefs of teachers will also provide important information about the precautions that should be taken during the educational process in order to increase teacher success even with unoptimistic attitudes towards the constructivist approach. When the studies upon this were analyzed, it was noticed that classroom teachers' self-efficacy beliefs related to implementing the constructivist approach (Evrekli et al. 2010; Demir et al. 2012) and their attitudes towards the constructivist approach (Evrekli et al. 2009; Inel et al. 2010; Uredi 2013; Kaya 2013; Koc 2013; Cayak 2014) were independent from each other. However, the absence of studies analyzing both the attitude towards the constructivist approach and self-efficacy belief related to implementing the constructivist approach is remarkable. For that reason, it was considered that analyzing the classroom teachers' attitudes toward the constructivist approach and their self-efficacy belief related to implementing the constructivist approach together and determining the relationship between them could be significant.

Aim of Study

In this paper, the researchers aimed to reveal whether classroom teachers' self-efficacy beliefs on implementing the constructivist approach predicted their attitudes towards the constructivist approach.

Additional Goals

1. What are classroom teachers' attitudes towards the constructivist approach?
2. To what extent do classroom teachers have self-efficacy belief about implementing the constructivist approach?
3. Do classroom teachers' self-efficacy beliefs on implementing the constructivist approach predict their attitudes towards the constructivist approach?
4. Does the scale of classroom teachers' self-efficacy beliefs on implementing the constructivist approach predict the sub-dimensions of:
   a. Self-efficacy beliefs related to planning lessons based upon the constructivist approach?
   b. Self-efficacy beliefs related to learning-teaching process based upon the constructivist approach?
   c. Self-efficacy beliefs related to establishing a learning environment based upon the constructivist approach?
   d. Self-efficacy beliefs related to measurement-evaluation process based upon the constructivist approach?

METHODOLOGY

Research Model

In the research, a relational screening model was used. Relational screening is performed in order to determine the relationship between two or more variables and to obtain clues about cause and result (Buyukozturk et al. 2008).

Sample and Population

The study population included classroom teachers carrying on their duties in all official elementary education schools in central districts (Mezitli, Yenisehir, Akdeniz, Toroslar) of the Mersin province in the 2013-2014 academic year. The study sample included in total 812 teachers carrying on their duties as classroom teachers in 58 elementary schools in the Akdeniz, Yenisehir, Toroslar, and Mezitlicentral districts of the Mersin province. In accordance with the purpose of the research, 58 elementary schools representing low, medium, and high socio-economic levels were selected using a stratified cluster sampling method; in total 812 classroom teachers were selected, 461 female and 351 male, who carry out their duties in these schools. It was determined that 26.0 percent of the teachers included in the sample worked at a school in a location with a low socio-economic level, 41.15 percent worked at a location with a medium socio-economic level, and 32.9 percent worked at a location with a high socio-economic level. In terms of gender, 56.8 percent of the sample included females and 43.25 percent were male. According to age, 3.95 percent of the teachers were 21-25 years old; 12.9 percent were 26-30 years old; 16.6 percent were 31-35 years old; 15.5 percent were 36-40 years old; 22.8 percent were 41-45 years old; and 28.2 percent were 46 and over. According to professional seniority, 8.3 percent had seniority for 1-5 years, 16.4 percent had seniority for 6-10 years, 17.7 percent had seniority for 11-15 years, 16.55 had seniority for 16-20 years, 19.1 percent had seniority for 21-25 years, and 22.0 percent had seniority for 26 years and over. According to the type of school at which they taught, 87.1 percent of teachers worked at state schools and 12.9 percent worked at private schools. According to the type of school from which they finally graduated, 12.75 percent of teachers graduated from an educational institute, 4.3 percent from teachers' training school, 10.8 percent from a two-year degree, 4.4 percent from a master's degree program, 48.0 percent from faculty of education programs, and 19.75 percent from the other faculties (Faculty of Arts and Science, Faculty of Agriculture, Faculty of Economy, and Administrative Sciences).

Data Collection Tools

The "Constructivist Approach Attitude Scale (CAAS)," developed by Evrekli et al. (2009), was used in order to determine the attitudes of classroom teachers towards the constructivist approach. The scale measured whether the attitudes of classroom teachers towards the constructivist approach were positive or not. The scale is based upon two factors and included 19 items; and Cronbach Alpha value for the first factor was .90 and Cronbach Alpha value for the second factor was .87. The Cronbach Alpha reliability coefficient for the entire scale was determined to be .93 (Evrekli et al. 2009). The scale is a 5-point Likert type measurement instrument. The ranks, determined from one to five, include ex-

pressions between "I totally agree" and "I totally disagree." In this study, Cronbach Alpha reliability coefficient for the entire scale was calculated as .90.

Moreover, the "Self-Efficacy Scale Related to Implementing the Constructivist Approach (SESRICA)," developed by Evrekli et al. (2010) on 5-point Likert type scale, was used to determine the self-efficacy beliefs of classroom teachers related to the constructivist approach. The scale includes 41 items based on four factors, and its Cronbach Alpha reliability coefficient was determined to be .96 (Evrekli et al. 2010). In this study, the Cronbach Alpha reliability coefficient for the entire scale was determined to be .97. The reliability coefficients calculated for all dimensions of the scale are presented in Table 1. Moreover, a personal information form was also added to the questionnaire, including information about the participants.

Data Analysis

The data obtained from the research was analyzed using SPSS for Windows 18.0. The percentage (%) distributions of classroom teachers were determined according to their gender, age, professional seniority, the socio-economic level of the school's location, and the school from which they graduated. In the research, average and standard deviation values of classroom teachers' attitudes towards the constructivist approach and their self-efficacy beliefs related to implementing the constructivist approach were calculated. The attitudes of classroom teachers towards the constructivist approach, however, were calculated from the total score and analyzed in two categories as positive and negative; their self-efficacy beliefs related to implementing the constructivist approach were analyzed into three categories as low, medium, and high. The proportion of the scores obtained from teachers' answers to the "Self-Efficacy Scale Related to Implementing the Constructivist Approach" was tested. In a normal distribution curve, the distribution of the data was observed as near-normal. Whether classroom teachers' self-efficacy beliefs about implementing the constructivist approach predicted their attitude towards the constructivist approach was determined using a simple linear regression analysis. In all statistical analyses, a p-value of 0.05 was accepted as the criteria for statistical significance.

Average weight values were calculated in order to evaluate the numerical averages of the scales used in the research and make them easily comparable (5-1=4; 4:5=0.8). Depending on this obtained interval value, the values from 5.00-4.21 were interpreted as "I totally agree," the values from 4.20-3.41 were interpreted as "I agree," the values from 3.40-2.61 were interpreted as "Neither agree nor disagree," values from 2.60-1.81 were accepted as "I disagree," and the values from 1.80-1.00 were interpreted as "I totally disagree."

FINDINGS

Attitudes of Classroom Teachers about the Constructivist Approach

In accordance with the first additional goal of the paper, researchers determined the classroom teachers' attitudes about the constructivist approach. In order to turn attitude levels of classroom teachers towards the constructivist approach into oral expression, the average of total score was calculated. Classroom teachers were seen to agree with the items of the attitude scale towards the constructivist approach (X=3.72,

Table 1: Cronbach alpha reliability coefficients related to Self-efficacy scale for implementing the constructivist approach

Factors		*Evrekli et al. (2010)*	*Within the scope of research*	*Number of items*
1.	Sub-Factor: Self-Efficacy Scale Related to Planning Lesson Based upon the Constructivist Approach	.84	.90	8
2.	Sub-Factor: Self-Efficacy Scale Related to Learning-Teaching Process Based upon the Constructivist Approach	.88	.93	10
3.	Sub-Factor: Self-Efficacy Scale Related to Creating a Learning Environment Based upon the Constructivist Approach	.89	.94	11
4.	Sub-Factor: Self-Efficacy Scale Related to Measurement-Evaluation Process Based upon the Constructivist Approach	.91	.87	12
	Scale Total	*.96*	*.97*	*41*

SS=.61). In other words, the teachers' attitudes towards the constructivist approach were high. Arithmetic average and standard deviation values were calculated for the teachers' attitudes towards the constructivist approach were presented in Table 2.

Classroom Teachers' Self-Efficacy Beliefs on Implementing the Constructivist Approach

In the second additional goal of the paper, researchers determined the teachers' self-efficacy belief about implementing the constructivist approach. In order to turn these belief levels into oral expressions, total average score was calculated. Classroom teachers tended to agree with the items of the self-efficacy scale related to implementing the constructivist approach (*X*=3.98, *SS*=.61). In other words, it can be said that the teachers' beliefs were at a high level. Presented in Table 2 are the arithmetic average and standard deviation values calculated for classroom teachers' self-efficacy related to planning lessons based upon the constructivist approach, their self-efficacy related to the learning-teaching process based upon the constructivist approach, their self-efficacy related to creating a learning environment based on the constructivist approach, and their self-efficacy related to a measurement-evaluation process based upon the constructivist approach.

When the average and standard deviation values presented in Table 2 were analyzed, the teachers' self-efficacy beliefs about the teaching-learning process based upon the constructivist approach (*X*=4.03, *SD*=.64), about the measurement-evaluation process based upon the constructivist approach (*X*=4.00, *SD*=.73), about creating a learning environment based upon the constructivist approach (*X*=3.99, *SD*=.68), and about planning lessons based upon the constructivist approach (*X*=3.90, *SD*=.60) were all high. Teachers' self-efficacy beliefs of classroom teachers about the teaching-learning process based upon the constructivist approach was at the highest level (*X*=4.03, *SD*=.64) and their self-efficacy belief about planning lessons based on the constructivist approach was at the lowest level (*X*=3.90, *SD*=.65).

The Power for Classroom Teachers' Self-efficacy Belief Related to Implementing the Constructivist Approach to Predict their Attitudes towards the Constructivist Approach

In the third additional goal of the research, the power of classroom teachers' self-efficacy belief about implementing the constructivist approach to predict their attitudes towards the constructivist approach was determined. Bivariate regression analysis was performed to determine to what extent classroom teachers' levels of self-efficacy related to implementing the constructivist approach predicted their attitudes towards the constructivist approach; the results were presented in Table 3.

Before bivariate regression analysis, assumptions, such as normality of error values, covariance and freedom of error values, linearity and absence of multiple covariance, and terminal values, were controlled. The normality assumption of error values was provided with a histogram proving that error values were distributed in a normal curve and a P-P graphic proved that error values were at a 45° angle. Because no pattern was observed between the predicted value and error value's scatter plot diagram, the assumption of covariance was proven. The assumption related to the freedom of error values was also proven true because the *d* value, which should

Table 2: SESRICA sub-dimensions and average and standard deviation values calculated for CAAS

N= 812	*X*	*SD*
Self-efficacy towards Implementing the Constructivist Approach	*3.98*	*.61*
Self-efficacy scale related to planning lesson based upon the constructivist approach	3.90	.65
Self-efficacy scale related to learning-teaching process based upon the constructivist approach	4.03	.64
Self-efficacy scale related to creating a learning environment based upon the constructivist approach	3.99	.68
Self-efficacy scale related to measurement-evaluation process based upon the constructivist approach	4.00	.73
Attitude towards the Constructivist Approach	*3.72*	*.61*

Table 3: Bivariate regression analysis results for determining to what extent classroom teachers' self-efficacy beliefs related to implementing the constructivist approach determined their attitudes towards the constructivist approach

Variable	*B*	*Standard error$_B$*	*Standardized β*	*t*	*p*
Constant	41.018	2.490	-	16.472	.000**
Self-Eff. tow Imp. Cons. App.	.182	.015	.391	12.082	.000**

R= .391 R^2= .153
$F_{(1, 810)}$= 145.975 p= .000
N= 812 *p<.05 p<.01

be between 1.5 and 2.5, was 1.95. The assumption of linearity was provided control with the scatter plot diagram. Because there was only one predictor variable (self-efficacy beliefs related to implementing the constructivist approach), multiple covariance was not present. Mahalonobis distance with significance set at p<.001 was controlled, and no significant terminal value was noticed.

When bivariate regression analysis results were evaluated, a significant relationship was observed between teachers' self-efficacy beliefs and their attitudes towards the constructivist approach (R= .391, R^2= .153). It was noticed that classroom teachers' self-efficacy related to implementing the constructivist approach was a significant predictor of their attitudes towards the constructivist approach ($F_{(1, 810)}$= 145.975, p<.01). Self-efficacy belief related to implementing the constructivist approach expressed 15 percent of the change in attitude score towards the constructivist approach. A significance test of the predictor variable coefficient (B=0.182) to the regression equation proved that self-efficacy belief related to implementing the constructivist approach was a significant predictor (p<.01), as well. According to the regression analysis results, the regression equation predicting the attitude towards the constructivist approach was as below:

(0.182 x Self-Efficacy Scale Score Related to Implementing the Constructivist Approach) + 41.018

The Power for Classroom Teachers' Self-Efficacy Belief Related to Implementing the Constructivist Approach to Predict Their Attitudes towards the Constructivist Approach

In the fourth sub-problem of the research, the predicting power of the scale sub-dimensions was determined. A simple linear regression analysis was performed on the predicting power of each independent variable, as the sub-dimension of self-efficacy scale related to implementing the constructivist approach on the attitudes towards the constructivist approach. The results were presented in Table 4.

When Table 4 was analyzed, simple linear regression analysis results for the self-efficacy related to implementing the constructivist approach ($F_{\text{lesson planning}}$= 89.531, $F_{\text{teach-learn process}}$= 162.703, $F_{\text{cre. learn. env}}$= 134.164, $F_{\text{meas.-asses. proc}}$= 85.965) were noticed to be significant at the p<.01 level. Significance of the variance analysis results

Table 4: Simple linear regression analysis results related to predicting power of classroom teachers' self-efficacy level related to implementing the constructivist approach upon their attitudes towards the constructivist approach

	Variables (Sub-dimensions)	*B*	*Standard Error$_B$*	*R*	*R^2*	*Standardized β*	*t*	*F*
Self-Eff. Rel. to Imp. The Const. App. Sca.	a. Lesson Plan.	.703	.074	.315	.100	.315	9.462**	89.531**
	b. Teac-Lear. Proc.	.750	.059	.409	.167	.409	12.756**	162.703**
	c. Crea.Lear.	.586	.051	.377	.142	.377	11.583**	134.164**
	d. Ass.Eva. Proc	.415	.045	.310	.096	.310	9.272**	85.965**

N= 812 *p<.05 ** p<.01

proved the relationship between the dependent and independent variables to be linear. It was noticed in the table that each independent variable, including self-efficacy related to planning lessons with the constructivist approach, teaching-learning process with the constructivist approach, creating a learning environment with the constructivist approach, and measurement-evaluation process with the constructivist approach, predicted the attitude towards the constructivist approach significantly ($p<.01$). Moreover, all these independent variables significantly, positively predicted the attitude towards the constructivist approach. When the independent variables were analyzed one by one, 10 percent of the attitude toward the constructivist approach was predicted by constructivist lesson planning; 16.7 percent was predicted by a constructivist teaching-learning process; 14.2 percent was predicted by creating a constructivist learning environment; and 9.6 percent was predicted by the constructivist measurement-evaluation process. When the standardized regression coefficients of the predictive variables were analyzed, the variable of self-efficacy related to a constructivist teaching-learning process had the highest regression coefficient (0.409) and self-efficacy belief related to a constructivist measurement-evaluation had the lowest regression coefficient (0.310).

Before bivariate regression analysis, assumptions such as normality of error values, covariance and freedom of error values, linearity and absence of multiple covariance, and terminal values were controlled. The normality assumption of error values was provided with a histogram, which proved that error values were distributed in a way that created a normal curve and a P-P graphic that proved error values at a 45° angle. Because no pattern was observed between the predicted value and error value's scattering diagram, the assumption of covariance was provided. The assumption related to the freedom of error values was also provided because the *d* value, which should be between 1.5 and 2.5, was 1.99 for constructivist lesson planning, 2.04 for constructivist teaching-learning process, 1.97 for creating a constructivist learning environment, and 1.95 for a constructivist measurement-evaluation process. The assumption of linearity was provided control with a scattering diagram. Because only one predictor variable (self-efficacy beliefs related to implementing the constructivist approach) was analyzed at every turn, multiple covariance was not present. Mahalonobis distance at a $p<.001$ level of significance was controlled, and no significant terminal value was noticed.

a. When simple linear regression analysis results were analyzed, a significant relationship was observed between the self-efficacy belief related to planning lessons based upon the constructivist approach, represented by one of the sub-dimensions of the scale for classroom teachers' self-efficacy belief related to implementing the constructivist approach, and their attitudes towards the constructivist approach ($R= .315$, $R^2= .100$). Self-efficacy beliefs of the classroom teachers related to constructivist lesson planning was noticed to be a predictor of their attitudes towards the constructivist approach ($F_{(1, 810)}= 89.531$, $p<.01$). Self-efficacy belief related to constructivist lesson planning explained 10% of the change in attitude score towards the constructivist approach. The test for significance of the regression equation to the predictive covariant coefficient (B=0.703) also proved that self-efficacy belief related to planning lesson based upon the constructivist approach was a significant predictor ($p<.01$). According to the regression analysis result, the regression equation predicting the attitude towards the constructivist approach was as below:

Scale Score of Attitude towards the Constructivist Approach

(0.703xSelf-Efficacy Scale Score Related to Planning Lesson Based upon the Constructivist Approach)+48.794.

b. When the results of the simple linear regression were analyzed, a significant relationship was observed between the self-efficacy belief related to a constructivist teaching-learning process (as one of the sub-dimensions of the scale for classroom teachers' self-efficacy belief related to implementing the constructivist approach) and their attitudes towards the constructivist approach ($R= .409$, $R^2= .167$). The self-efficacy beliefs of the classroom teachers related to a constructivist teaching-learning process was noticed to be a significant predictor of their attitudes towards the constructivist approach ($F_{(1, 810)}= 162.703$, $p<.01$). Self-efficacy belief related to a constructivist teaching-learning process explained 16 percent of the change in atti-

tude scores towards the constructivist approach. The test for the significance of the regression equation to the predictive covariant coefficient (B=0.750) also proved that self-efficacy belief related to a constructivist teaching-learning process was a significant predictor (p.01). According to the regression analysis result, the regression equation predicting the attitude towards the constructivist approach was as below:

Scale Score of Attitude towards the Constructivist Approach

(0.750xSelf-Efficacy Scale Score Related to Teaching-Learning Process Based upon the Constructivist Approach)+40.567.

c. When simple linear regression results were analyzed, a significant relationship was observed between the self-efficacy belief related to creating a constructivist learning environment (as one of the sub-dimensions of the scale for classroom teachers' self-efficacy belief related to implementing the constructivist approach) and their attitudes towards the constructivist approach (R= .377, R^2= .142). The teachers' self-efficacy belief about creating a constructivist learning environment was noticed to be a significant predictor of their attitudes towards the constructivist approach ($F_{(1, 810)}$= 134.164, p<.01). Self-efficacy belief on creating a constructivist learning environment explained the 14 percent change in attitude score towards the constructivist approach. The test for significance of the regression equation to the predictive covariant coefficient (B=0.586) also proved that self-efficacy belief on creating a constructivist learning environment was a significant predictor (p.01). According to the regression analysis result, the regression equation predicting the attitude towards the constructivist approach was as below:

Scale Score of Attitude towards the Constructivist Approach

(0.586xSelf-Efficacy Scale Score Related to Creating a Learning Environment Based upon the Constructivist Approach)+45.068.

d. When simple linear regression analysis results were analyzed, a significant relationship was observed between teachers' self-efficacy belief related to a constructivist measurement-evaluation process (which was one of the sub-dimensions of the scale for classroom teachers' self-efficacy belief related to implementing the constructivist approach) and their attitudes towards the constructivist approach (R= .310, R^2= .096). Teachers' self-efficacy beliefs about the constructivist measurement-evaluation process was noticed to be a significant predictor of their attitudes towards the constructivist approach ($F_{(1, 810)}$= 85.965, p<.01). Self-efficacy belief related to a constructivist measurement-evaluation process explained 9 percent of the change in attitude score towards the constructivist approach. The test for significance of the regression equation to the predictive covariant coefficient (B=0.415) also proved that self-efficacy belief related to a constructivist measurement-evaluation process was a significant predictor (p<.01). According to the regression analysis result, the regression equation predicting the attitude towards the constructivist approach was as below:

Scale Score of Attitude towards the Constructivist Approach

(0.415x Self-Efficacy Scale Score Related to Measurement-Evaluation Process Based upon the Constructivist Approach)+50.868.

DISCUSSION

In previous research, it was shown that classroom teachers' attitudes towards the constructivist approach were positive (Balim et al. 2009; Üredi 2013) and classroom teachers' self-efficacy related to implementing the constructivist approach was high (Evrekli et al. 2010; Demir et al. 2012; Çayak 2014). In their research, Isikoglu et al. (2009) reported that elementary education teachers had positive belief towards student-centered education. In a study carried out by Sert (2008), it was concluded that teachers met the expectations of a constructivist curriculum at a high level.

Adapting the constructivist approach during the process of teacher training can be an important factor for teachers' positive attitudes towards the constructivist approach and their high self-efficacy related to implementing the constructivist approach. In a study carried out by Howard et al. (2000) upon pre-service teachers, implementations based upon the constructivist approach caused a change from objectivist epistemology to constructivist epistemology. In their research, Kim et al. (1998) concluded that an educational process based on the con-

structivist approach had a positive effect upon pre-service teachers' lesson planning strategies based on constructivism.

The result that classroom teachers' self-efficacy belief for implementing the constructivist approach was a significant predictor of their attitudes towards the constructivist approach was associated with the study of Glaith and Yaghi (1997), which concluded that teachers with high level of self-efficacy were open to innovations. In his research, similarly, Guskey (1988) determined that teachers with high levels of self-efficacy were open to implementing innovations in education. In their study, Yilmaz and Cimen (2008) revealed that teachers with high self-efficacy believe that each student can be successful and organize learning activities with consideration for students' individual differences. In their study, Tschannen-Moran et al. (1998) emphasized that the self-efficacy levels of teachers towards innovation depend on their noticing the innovation actualized.

It was among the obtained findings that classroom teachers' self-efficacy scale sub-dimensions concerning the implementation of the constructivist approach (constructivist lesson planning, teaching-learning process, creating a learning environment, measurement-evaluation process) significantly predicted their attitudes towards the constructivist approach. This result was associated with the research results found out by De Mesquita and Drake (1994), who found a positive relationship between elementary teachers' self-efficacy levels concerning educational reform actualized by the state and their attitudes. In another study, Charambous et al. (2004) concluded that teachers with high levels of self-efficacy have less anxiety related to educational reforms. Similarly, McCoach (2002) reported that students with positive attitudes toward school were more successful than students with negative attitudes and are therefore provided more opportunity from educational programs.

This research is limited by the predicting power of classroom teachers' self-efficacy beliefs concerning the implementation of the constructivist approach on their attitudes towards the constructivist approach. For that reason, further research should also be carried out with teachers from different branches in order to establish generalizability.

CONCLUSION

This paper determined that the attitudes of classroom teachers towards the constructivist approach was positive and their self-efficacy belief related to implementing the constructivist approach was high, and also that classroom teachers' self-efficacy belief related to implementing the constructivist approach was a significant predictor of their attitudes towards the constructivist approach. Furthermore, classroom teachers' self-efficacy scale sub-dimensions related to implementing the constructivist approach (lesson planning based upon the constructivist approach, teaching-learning process based upon the constructivist approach, creating a learning environment based upon the constructivist approach, measurement-evaluation process based upon the constructivist approach) significantly predicted their attitudes toward the constructivist approach.

RECOMMENDATIONS

It can be suggested classroom teachers organizing activities should develop a positive attitude towards the constructivist approach. This can be accomplished by providing practical inservice training related to increasing the self-efficacy levels concerning constructivist implementation and revealing self-efficacy beliefs about implementing the constructivist approach with a qualitative study. Furthermore, it can also be suggested that researchers carry out additional studies on the relationship between classroom teachers' self-efficacy beliefs concerning implementing the constructivist approach and their efficiency on the implementation of the constructivist approach.

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