

# Turkish preservice science teachers' efficacy beliefs regarding science teaching and their beliefs about classroom management

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Received 9 September 2005; accepted 28 September 2005

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## Abstract

The purpose of this study was to explore Turkish preservice science teachers' science teaching efficacy and classroom management beliefs. Data in this study were collected from a total number of 584 preservice science teachers utilizing the Science Teaching Efficacy Belief Instrument and the attitudes and beliefs on classroom control (ABCC) inventory. Data analysis indicated that preservice science teachers generally expressed positive efficacy beliefs regarding science teaching. In addition, results revealed that participants were interventionist on the instructional management dimension, whereas they favored non-interventionist style on the people management dimension of the ABCC inventory.

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**Keywords:** Preservice science teachers; Self-efficacy beliefs; Classroom management beliefs

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## 1. Introduction

Teacher efficacy has emerged as one of the few teacher characteristics that consistently relates to teaching and learning over the past 25 years. Tschannen-Moran and Woolfolk Hoy (2001) defined teacher efficacy as “a teacher's judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated” (p. 783).

Researchers have shown that teacher efficacy has been linked to a variety of teaching behaviors and

student outcomes such as achievement (Ashton & Webb, 1986; Gibson & Dembo, 1984; Ross, 1992) and motivation (Midgley, Feldlaufer, & Eccles, 1989; Woolfolk, Rosoff, & Hoy, 1990). Teachers' efficacy judgments are highly correlated with persistence at a task and exhibiting a greater academic focus (Gibson & Dembo, 1984), teachers' enjoyment of teaching (Watters & Ginns, 1995), and greater degrees of risk taking (Ashton & Webb, 1986). Further, extensive research on efficacy of teachers suggests that teachers with a high sense of efficacy are more willing to implement instructional innovations and competent teaching methods to be effective teacher (Czerniak & Lumpe, 1996; Guskey, 1988; Stein & Wang, 1988), devote more time to teach science and are most capable of activity-based science teaching with regard to teachers with a low sense of efficacy (Enochs & Riggs, 1990; Riggs & Enoch, 1990).

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Teacher efficacy would also be related with teacher's classroom management approaches (Henson, 2001; Woolfolk & Hoy, 1990). Doyle (1986) suggested that one of the major tasks of teaching is to establish and maintain order in the classroom. Within the difficulty of this task, establishing classroom discipline and motivating students were perceived as the greatest concern of preservice teachers (Evans & Tribble, 1986) and beginning teachers (Veenman, 1984). For example, Ingersoll (2001) studied approximately 6700 teachers in the US and states that approximately 30% of the teachers or so who chose to leave the profession identify student discipline as one of the reasons that caused them to give up teaching. Since that task is more problematic for beginning and preservice teachers, Henson postulated that the relationships between teachers' classroom management and self-efficacy beliefs may provide ways in which an individual's expectation for success impacts classroom management behavior. Conversely, Woolfolk and Hoy suggested that beliefs about how to manage and motivate students as well as initial success in acting on these beliefs may be related to the development of a sense of efficacy for beginning teachers. Teachers' with a higher sense of efficacy tended to favor more humanistic and less controlling classroom management orientations in how they handle their students' behaviors (Enochs, Scharmann, & Riggs, 1995; Henson, 2001; Woolfolk & Hoy, 1990; Woolfolk et al., 1990), used more positive behavior management strategies (Emmer & Hickman, 1991; Saklofske, Michayluk, & Randhawa, 1988) and had more preventative, rather than restorative beliefs with regard to behavior problems (Jordan, Kircaali-Iftar, & Diamond, 1993). In general, teachers who believe they can successfully instruct students who have learning or behavioral problems are more likely to include such students in their classroom than are teachers who doubt their ability to instruct or motivate these students (Ashton & Webb, 1986).

Some researchers argue that beliefs about teaching and learning are well established by the time prospective teachers enter teacher preparation programs (Kagan, 1992; Pajares, 1992; Richardson, 1996). Over a decade ago, Pintrich (1990) suggested that beliefs will ultimately prove to be the most valuable psychological construct to teacher education. The development of teacher efficacy beliefs, e.g., among prospective teachers has generated a great deal of research interest because once efficacy

beliefs are established they appear to be somewhat resistant to change.

In an effort to improve science teaching in Turkish schools, it would be useful to better understand preservice science teachers' beliefs regarding science teaching and classroom management. The purpose of this study was to examine Turkish preservice science teachers' efficacy and classroom management beliefs. Specifically, the study explored the interrelationships between teacher efficacy beliefs and classroom management beliefs of preservice science teachers. In addition, gender and years in university differences in the perception of efficacy and classroom management beliefs also were questioned.

## 2. Theoretical framework

### 2.1. *The construct and measurement of teacher efficacy*

The conceptualization of teacher efficacy has been based on Bandura's (1977, 1997) social cognitive theory and his construct of self-efficacy. Bandura described perceived self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). He postulated that efficacy beliefs were powerful predictors of behavior because they were ultimately self-referent in nature and directed toward perceived abilities given specific task. Such beliefs influence the courses of action people choose to pursue, how much effort they will expended in given endeavors, how long they will persist in the face of obstacles and failures. In his theory, Bandura theorized that behavior is based on two sources: outcome expectations and self-efficacy expectations. He defined outcome expectancy as a person's estimate that a given behavior will lead to certain outcomes whereas an efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes.

Many researchers have applied Bandura's (1977) social cognitive theory and his construct of self-efficacy to teachers. Based on Bandura's construct, Ashton and Webb (1986) were among the first researchers to develop a multi-dimensional model of teacher efficacy for assessing two dimensions of teacher efficacy. Following Ashton and Webb's work, in attempt to further development of teacher efficacy belief instrument, Gibson and Dembo

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