Developing teaching self-efficacy in research institutions: A study of award-winning professors

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ABSTRACT

The purpose of this study was to assess the sources of award-wining research professors' (six women; six men) teaching self-efficacy through the framework of Bandura's (1986) social cognitive theory. Semi-structured interviews revealed that mastery experiences and social persuasions were particularly influential sources of self-efficacy and that these sources tended to be closely related. Professors reported that their self-efficacy had generally stabilized within their first few years of assuming a tenure-track position. Participants framed negative events in adaptive ways that had little cost to their teaching self-efficacy.

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1. Introduction

Many elementary and secondary education programs offer multiple opportunities for preservice teachers to learn and practice pedagogical skills, but institutions of higher learning in the United States tend to underemphasize the instructional training of university teachers and professors (Bess, 1997; Wulff, Austin, Nyquist, & Sprague, 2004). In the absence of state or national mandates for the pedagogical preparation of university instructors, institutions of higher education have been inconsistent in how they train their teachers, if they do so at all (Prieto & Meyers, 1999; Tanner & Allen, 2006). Scholars such as Biggs (1999) and Kreber (2001) have provided suggestions for professional development in higher education, but implementation of such initiatives has been inconsistent. To an extent, this oversight reflects the additional role of the university professor as not only a teacher but a researcher. In most cases, the amount of time allotted to prepare graduate students for their role as researchers is disproportionately greater than the time spent preparing them to instruct college-level classes (Gaff & Pruitt-Logan, 1998). And once employed, professors at research institutions typically find that tenure, promotion, salary, and external funding are more often tied to their research than to their teaching (Fairweather, 1996; Hearn, 1999; Sutz, 1997). The demand for research at these schools may lead professors to feel that the teaching role is undervalued and to concentrate less on their instructional duties (Olson & Einwohner, 2001; Serow, 2000).

Despite the burden of these pressures and their limited pedagogical preparation, many professors at research universities manage to become outstanding teachers. In this study, we examined the psychological journey of such professors by asking them to describe the evolution of their beliefs about their teaching capabilities as they have moved through the professoriate. Self-efficacy, defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3), is especially central to the exercise of human agency. Unless people believe they can accomplish desired tasks, they have little incentive to act. Such beliefs have been found to predict the effort people put forth, how well they persevere when faced by obstacles, how effectively they monitor and motivate themselves, what they achieve, and the choices they make in life (Bandura, 1977, 1986, 1997).

Teachers' self-efficacy, which refers to teachers' beliefs about what they can do in terms of a particular teaching task or instructional context, has likewise been shown to influence motivational and behavioral processes (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Self-efficacious instructors typically plan and organize more effectively, are more likely to employ and seek out engaging instructional strategies, put forth greater effort in motivating their students, and are more resilient when faced by obstacles than are teachers with lower self-efficacy (Ashton & Webb, 1986; Midgley, Feldlaufer, & Eccles, 1988; Tschannen-Moran et al., 1998; Woolfolk Hoy & Davis, 2006). Moreover, students of teachers with higher self-efficacy tend to have higher expectations of themselves and perform better on standardized tests (Allinder, 1995; Ross, Hoga-boam-Gray, & Hannay, 2001).

Although a growing body of research attests to the benefits associated with teaching self-efficacy, less is known about how

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teaching self-efficacy is cultivated. What makes a teacher believe that he or she can be successful in the complex task of teaching? We next provide a theoretical background of the hypothesized sources of self-efficacy and review findings from a small body of research on these sources as they operate within the field of teaching.

2. Sources of teaching self-efficacy

According to Bandura's (1986, 1997) social cognitive theory, individuals develop their self-efficacy by attending to four sources of capability-related information. First, individuals interpret the results of their own actions. Successes are often interpreted as *mastery experiences* that can boost self-efficacy, whereas perceived failure typically lowers it. *Vicarious experiences* provide individuals with an opportunity to witness the successes and failures of others and may thereby alter self-efficacy. The third source of efficacy-relevant information comes from the *social persuasions* individuals receive from others. Evaluative feedback can be particularly useful when a task is ill defined or lacks objective criteria. Finally, *physiological and affective states*, including stress, fatigue, anxiety, and mood can also influence perceived capability.

Little is known about the manner in which university professors might draw on these four informational sources as they develop confidence in their instructional skills and practices (Burton, Bamberry, & Harris-Boundy, 2005; Tschannen-Moran & Woolfolk Hoy, 2007). Nevertheless, research on the sources of teaching self-efficacy in the context of primary and secondary education may offer some indication of how college instructors' efficacy beliefs develop. We therefore summarize what is known about how the four sources of self-efficacy operate within this former context.

2.1. Mastery experience

Research on the sources of teaching self-efficacy has focused primarily on teachers' mastery experience (e.g., Chacon, 2005; Palmer, 2006; Tschannen-Moran & Woolfolk Hoy, 2007; Woolfolk Hoy & Burke Spero, 2005). Such a focus seems merited, as masterful experiences are thought to be the strongest source of self-efficacy (Bandura, 1997) and have likewise emerged as a powerful predictor of instructors' confidence (Poulou, 2007; Tschannen-Moran & Woolfolk Hoy, 2007). The manner in which mastery experience has been assessed has varied considerably, however, which has made its relationship to teaching self-efficacy unclear. For example, scholars who have used previous teaching experiences (e.g., period of time spent as a student teacher) as a mastery experience have reported that actual experience can raise (Gurvitch & Metzler, 2009), lower (Capa Aydin & Woolfolk Hoy, 2005), or have no significant influence (Cantrell, Young, & Moore, 2003) on teachers' self-efficacy. Researchers have not solicited teachers' own appraisals of their student teaching experiences, however, which might explain these inconsistent findings. Without evaluating teachers' interpretations of their experiences, little can be known about whether the experiences were perceived as efficacy-raising or lowering events (Bandura, 1997).

Some researchers have examined mastery experience by exploring participants' interpretations of their past teaching experiences (e.g., Palmer, 2006; Poulou, 2007). Others have asked teachers to rate their level of satisfaction with their professional performance (Tschannen-Moran & Woolfolk Hoy, 2007; Weaver Shearn, 2008; Woolfolk Hoy & Burke Spero, 2005). Correlations between mastery experience measured in this manner and teaching self-efficacy have ranged from .36 to .50. Still other researchers have attempted to show a relationship between proxies for content knowledge (e.g., degree attainment, course completion, linguistic fluency) and self-efficacy (Chacon, 2005; Enochs, Scharmann, & Riggs, 1995; Milner & Woolfolk Hoy, 2003).

Experiences that lead to changes in teaching self-efficacy may be as diverse and complex as the tasks required for successful teaching and may depend on the context in which teaching takes place. The variation with which mastery experience has been conceptualized and measured in the teaching domain might also indicate that qualitative studies provide a better lens for viewing how interpretations of one's past experiences raise or lower self-efficacy.

2.2. Vicarious experience

Bandura (1997) has shown that individuals rely not only on their direct experiences as indicators of what they can do but on the vicarious experiences they undergo as they observe the actions of models. Although social models of teaching abound during one's own learning experiences and in the media, many teachers-in-training have relatively few opportunities to observe fellow teachers whose experiences they would be most likely to identify with and evaluate (Bandura, 1997; Mulholland & Wallace, 2001). Some scholars have evaluated the comparative appraisals teachers make in reference to their peers (e.g., Woolfolk Hoy & Burke Spero, 2005), but only in one study have researchers reported a relationship between these comparative judgments and self-efficacy (Poulou, 2007).

The vicarious influence of mentor teachers on preservice teachers' sense of efficacy is similarly elusive. Researchers who have measured vicarious experience in terms of teachers' perceptions of their teaching mentor's effectiveness as an instructor or as a mentor have found no relationship between this type of vicarious experience and teachers' self-efficacy (Capa Aydin & Woolfolk Hoy, 2005; Rots, Aelterman, Vlerick, & Vermeulen, 2007). However, students who perceived their mentors to be highly self-efficacious were themselves more confident after completing their student teaching (Knoblauch & Woolfolk Hoy, 2008).

Some researchers have suggested that vicarious experiences may be powerful but subtle, such as when a teacher hears a colleague express ability-related doubts in the workroom (Mulholland & Wallace, 2001). Still others contend that exposing new teachers to competent models during training offers one important means of enhancing their self-efficacy (Bruce & Ross, 2008). However, as Usher and Pajares (2008) pointed out in their review of the literature on the sources of students' self-efficacy, vicarious experiences have proven difficult to measure and their relative influence on self-efficacy is still unclear.

2.3. Social persuasions

Scholars who have investigated the relationship between social persuasions and teaching self-efficacy have typically found that the evaluative messages instructors receive from others affect their perceived capability. However, the measures used to assess this source have also differed markedly. Heppner (1994) reported that, for graduate teaching assistants engaged in a teaching practicum, social persuasions were the most commonly cited source of self-efficacy and were rated as highly influential. On the other hand, some teachers have identified their students' enthusiasm as a socially persuasive source of their efficacy beliefs (Mulholland & Wallace, 2001; Poulou, 2007). Perceived student enthusiasm provides a tenuous measure of social persuasions, however, and may be better categorized as a measure of perceived mastery than as the sort of persuasive influence that Bandura (1997) intended. Researchers who have assessed social persuasions in terms of perceived support from the community, administration, colleagues, and parents have reported a weak or moderate relationship between perceived