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How engaged are pre-service teachers in the United States?☆,☆☆

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HIGHLIGHTS

- Pre-service teacher engagement is an underexplored area of research.
- Multilevel models explore student and institutional factors that predict engagement.
- Female, white pre-service teachers less engaged than male, minority counterparts.
- ACT not associated with engagement scores.
- Institution type, sector, size associated with engagement scores.

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ABSTRACT

Using the National Survey of Student Engagement (NSSE), findings are reported from the largest ever longitudinal study of engagement among pre-service teachers. Levels of engagement are investigated in 2013 (N = 1609) and 2016 (N = 1413) across 256 U.S. institutions. Using multilevel models, findings indicated that female, white pre-service teachers were less engaged than their male, minority counterparts with small to moderate effect sizes that differed by year. Institutional type, sector, and size were also significantly associated with pre-service teacher engagement. ACT prior achievement scores, however, were not associated with pre-service teacher engagement in either year. Implications for teacher preparation are discussed.

Teachers are often considered the most important in-school contributors to student learning (Cochran-Smith & Zeichner, 2009; Strong, 2011). Undergraduate pre-service teacher education programs remain the dominant pathway through which teachers are prepared (American Association of Colleges for Teacher Education, 2013; Cochran-Smith & Zeichner, 2009) despite the development of alternative certification and graduate education programs. Ensuring that pre-service teachers have effective educational experiences during their training has important implications for both teachers and students. Evidence-based teacher preparation programs are likely to lead to more effective teachers, and ultimately improved student learning (Corcoran & Tormey, 2012a, 2012b; Nye, Konstantopoulos, & Hedges, 2004; Rivkin, Hanushek, & Kain, 2005; Sanders & Rivers, 1996; Verspoor, 1991).

Research suggests that the quality of training provided through teacher education programs affects teachers' practice, effectiveness, and career commitment (Eren & Tezel, 2010; Liang, Ebenezer, & Yost, 2010; Roness & Smith, 2010). Much evidence points to the fact that teacher education programs matter and can be effective in bolstering pre-service effectiveness in the field (Darling-Hammond, 2000; Worrell et al., 2014; Zeichner & Conklin, 2005). For instance, in a review of 57 published articles on teacher education and learning outcomes, Wilson, Floden, and Ferrini-Mundy (2001) found that teachers with strong subject matter and pedagogical preparation were linked to higher student achievement and higher teacher performance on evaluations. Other research affirms that quality pre-service teacher education programs—those that are rated highly by graduates or have more extensive pedagogical and methodological preparation, for example—are linked to teachers who are more likely to remain in teaching (DeAngelis, Wall, & Che, 2013; Ingersoll, Merrill, & May, 2014), feel more efficacious (Darling-Hammond, 2006), and are more highly rated by

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administrators (Patterson & Bastian, 2014).

In 2012–13, 499,800 individuals were enrolled in teacher preparation programs, and 89% of these pre-service teachers were enrolled in traditional four-year undergraduate programs (U.S. Department of Education, 2016a). However, these programs vary widely in quality and effectiveness. Only half of higher education teacher education institutions have professional accreditation, and approximately 80% of the programs were deemed by the National Council of Teacher Quality as weak or failing (Greenberg, Walsh, & McKee, 2015). Given the importance of effective teacher preparation for teaching and student learning, improving teacher education is clearly a priority.

1. Approaches to improving teacher education programs

Most approaches to improving teacher education programs involve examining inputs and outputs (Feuer, Floden, Chudowsky, & Ahn, 2013). Inputs denote selectivity of candidates or qualifications of faculty and often entail raising minimum college grades or entrance exams scores (Carini & Kuh, 2003). Outputs often focus on raising teacher certification test scores and evaluating teacher value-added scores for student achievement (American Psychological Association, 2014), which have been increasing in prominence because of the strong ethos of accountability and emphasis on children's academic achievement in recent years (Cochran-Smith, 2005).

While such approaches are valuable, a focus on the *process* of undergraduate pre-service education is also warranted. A focus on processes is merited because studies show that what individuals do with their time and how they use the institution's educational resources relate more to their learning and growth during college rather than the test scores they bring to college or the resources a school has (Carini & Kuh, 2003; Davis & Murrell, 1993; Pascarella, 1991). It is unclear how pre-service teachers are using their time and interacting with resources during undergraduate training that help them emerge as successful graduates of the program.

Student engagement offers a useful process perspective and a first step to examining the educational experiences of pre-service teachers during their undergraduate training. The National Survey of Student Engagement (NSSE) offers arguably the most widely accepted view of student engagement in the higher education literature (Kahu, 2013). Acknowledging the intersection of student behaviors and institutional conditions in determining engagement, the NSSE describes engagement as "the time and effort students devote to activities that are empirically linked to desired outcomes of college *and* what institutions do to induce students to participate in these activities" (Kuh, 2009, p. 683).

The NSSE model of engagement has a number of distinct strengths that make it suitable for research in teacher education. First, it is grounded in theory based on decades of research on college student development. For instance, Astin's theory of student involvement (1985) supports the current theory of engagement and posits that involvement requires an investment of psychosocial and physical energy and explains environmental influences on student development (Astin, 1985). Such involvement can take multiple forms such as participation in extracurricular activities, spending time on academic work, and interaction with faculty. Importantly, Astin (1985) maintained that the amount of student learning and development associated with an educational program is directly related to the quality and quantity of student involvement, or engagement, in that program. The logic is simple: when students are engaged, they are usually learning—and vice versa (Carini, Kuh, & Klein, 2006; Kuh, 2003). Moreover, the NSSE engagement themes were heavily influenced by Chickering and Gamson's (1989) widely-disseminated report to the American Association for Higher Education that put forth seven principles for good practice in undergraduate education. The NSSE's theory of educationally purposeful activities were informed by these principles.

Secondly, empirical evidence supports the relationships between engagement and student outcomes. For example, a wealth of recent research using the NSSE has confirmed the positive relationship between engagement and academic achievement (Carini et al., 2006; Fuller, Wilson, & Tobin, 2011; Pike, Kuh, & Massa-McKinley, 2008), student retention (Gordon, Ludlum, & Hoey, 2008), holistic development (Kuh & Umbach, 2004; Lundberg, 2012; Pascarella, Seifert, & Blaich, 2010), and satisfaction (Chen, Ingram, & Davis, 2014; Rettig & Hu, 2016). Engagement is both theoretically and empirically recognized as a good indicator of undergraduates' learning and development, which are desirable goals for pre-service teachers.

Finally, the NSSE framework operationalizes engagement into four themes, or competencies, based on effective educational practices associated with higher levels of student learning and development: academic challenge, learning with peers, experiences with faculty, and campus environment. The categorization of engagement into these competencies allows for a better understanding of the specific areas in which pre-service teachers may be more or less engaged. This offers a more targeted view of engagement than a global scale of student engagement would.

There are good grounds for seeing higher levels of engagement in these areas as an important goal for future teachers because engagement is indicative of pre-service teachers' own development and learning during their undergraduate training. This study examines engagement among pre-service teachers, and discusses the implications of these findings for educational practice.

2. Conceptual framework

The four NSSE engagement competencies, or areas of engagement in effective educational practices, are linked to student development and success and thus are important to examine during pre-service teacher education. Each is discussed in detail next.

2.1. Academic challenge

As measured by the NSSE, academic challenge consists of higher order learning, reflective and integrative learning, learning strategies, and quantitative reasoning. Generally, the theme refers to challenging, intellectual, higher-order learning that requires more than mere memorization of facts, but involves analyzing ideas, evaluating a view point, and forming a new idea. This is akin to the higher categories in Bloom's taxonomy in the cognitive domain, which consists of creating, evaluating, and analyzing (Bloom, 1956). Some have made the comparison of academic challenge to deep learning as opposed to surface learning (Rocconi, Ribera, & Nelson Laird, 2015). Deep-level processing extracts personal meaning and integrating material to prior knowledge while surface level processing involves memorizing disconnected pieces of information (Marton & Säljö, 1976). Moreover, part of the NSSE's definition of academic challenge is reflective and integrative learning, or the ability to connect learning with the real world and to one's self and to integrate learning by combining ideas from different disciplines, evaluating strengths and weaknesses.

Not surprisingly, challenging students to engage in such practices that go beyond surface level learning has been linked to higher GPA (Carini et al., 2006; Fuller et al., 2011), to greater self-reported cognitive gains (Pike, Kuh, McCormick, Ethington, & Smart, 2011), and to effective reasoning and problem solving (Pascarella et al., 2010).