ABSTRACT. In this study, we investigated the impact of teaming school-based instructional coaches with science or mathematics middle school teachers to build a community of practice around inquiry instruction. This professional development model began with a 2-week summer institute and continued with four follow-up sessions during the academic school year for the teacher and instructional coach participants. The teachers’ participation in this professional development program with (1) content instruction through inquiry lessons, (2) practice teaching to middle school students, and (3) coach-led reflection improved their understanding of inquiry-based practices and the quality of their classroom inquiry implementation. Professional development experiences that prepare teachers and coaches simultaneously in inquiry and content may help build a shared language for reform and accelerate inquiry instructional changes.

KEY WORDS: coaching, communities of practice, inquiry, middle school, professional development

With the publication of *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* and the *Common Core State Standards for Mathematics*, there has been a reemphasis on the importance of students engaging in the practices of scientists and mathematicians (CCSSI, 2010; NRC, 2011). Although reform documents call for inquiry instruction in K-12 classrooms, teachers are still not widely implementing these strategies (Marshall, Horton, Igo & Switzer, 2009; Savasci & Berlin, 2012; Weiss, Pasley, Smith, Banilower & Heck, 2003). Given this reform background, our study set out to investigate the impact of teaming a content-specific school-based instructional coach with a science or mathematics teacher to experience high-quality professional development (PD). Where other coaching studies have teachers and coaches interacting during the academic year through observations and coaching conversations (McGatha, 2008), our research is different in that coaches and teachers experienced the same inquiry
pedagogy and content instruction during the summer to build trust, content knowledge, and a common goal for reform before returning to the classroom. We specifically investigated how the PD would improve teachers’ and coaches’ learning through the development of a community of practice. Wenger (1998) described that, for learning in practice to occur, communities must be involved in the following three processes: “evolving forms of mutual engagement,” “understanding and tuning their enterprise,” and “developing their repertoire, styles, and discourses” (p. 95). Our program allowed coaches and teachers to experience mutual engagement in content and inquiry instruction. The teachers engaged in practice-teaching during which they negotiated the skills of inquiry teaching with the help of coach-led reflection sessions. This mutual engagement in inquiry teaching and reflection helped the teachers build a shared repertoire around inquiry.

**LITERATURE REVIEW**

*Theoretical Framework: Communities of Practice*

Wenger (1998) describes three dimensions that characterize communities of practice: mutual engagement, joint enterprise, and a shared repertoire. According to Wenger, mutual engagement involves a diverse group of people working together to negotiate meaning. Central to this negotiation of meaning is the members’ work towards a joint enterprise which involves members developing mutual accountability, shared goals, and rhythms. Eventually, this mutual engagement and work towards a joint enterprise creates a shared repertoire of meaning and resources that help to support and sustain the community of practice (Wenger, 1998).

Communities of practice are dynamic learning communities in which individuals’ identities are shaped through their engagement with others both inside and outside the community, the alignment and negotiation of their views and competencies, and their imagination (Wenger, 1998). Teachers’ participation in various communities of practice can influence their use of new instructional strategies or their understanding of concepts. For example, Hepburn & Gaskell (1998) described how two high school teachers’ different communities of practice (technology versus physics) and relationships within these communities influenced how the teachers taught an applied physics curriculum. Friedrichsen, Munford & Orgill (2006) presented a case study of a preservice teacher who had to serve as a “broker” between his university community that stressed inquiry instruction and his traditional mentor teacher’s classroom.