Transitioning from Cultural Diversity to Intercultural Competence in Mathematics Instruction
Preliminary Research Report

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Abstract
We report on our work to build an applied theory for intercultural competence development for mathematics teaching and learning in secondary and tertiary settings. Based on social anthropology and communications research, we investigate the nature of intercultural competence development for mathematics instruction among in-service secondary mathematics teachers and college faculty participating in a university-based mathematics teacher professional development program. We present results from quantitative and qualitative inquiry into the intercultural orientations of individuals and subgroups (teachers, teacher-leaders, university faculty and graduate students) and offer details on the development of case stories for use in the professional development of mathematics university teacher educators, in-service teacher leaders, and secondary school teachers.

Keywords: secondary teacher preparation, cultural competence, intercultural development, cultural diversity

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I wanted to explain why some people seem to get a lot better at communicating across cultural boundaries while other people didn't improve at all, and I thought that if I were able to explain why this happened, educators could to a better job of preparing people for cross-cultural encounters.
(Bennett, 2004, p. 62).

Relation of the Work to the Research Literature

While the significance of diversity as a factor in the education of children has been widely discussed for many years, the nature of "diversity" continues to evolve in U.S. classrooms (Aud, Fox, & KewalRamani, 2010). And, though a similar evolution in diversity is evident in school staffing among paraprofessionals, the teacher and principal populations continue to be more homogeneous than varied in terms of government-surveyed categories such as race, education, and socialization (Strizek, Pittsonberger, Riordan, Lyter, & Orlofsky, 2006). Since "culture" can include professional and classroom environments as well as personal or home experience, responding to it is a multi-faceted challenge (Greer, Nelson-Barber, Powell, & Mukhopadhyay, 2009). As Stigler and Hiebert (1999) noted after an

> *Short definition of culture*: A dynamic social system of values, beliefs, behaviors, and norms for a specific group, organization, or other collectivity; the shared values, beliefs, behaviors, and norms are learned, internalized, and changeable by members of the society (Hammer, 2009).

international study of instruction, "teaching is a cultural activity…[and] recognizing the cultural nature of teaching gives us new insights into what we need to do if we wish to improve it" (p. 12). From anti-racism training to culturally responsive pedagogies, teacher education efforts have emerged largely from the same arena as teacher education itself: psychology. Yet, there is another area of the academy from which educators can draw great insight: anthropology (Ladson-Billings, 2001). That is, while psychology tackles the issue through a developmental approach to changing classroom *disposition* based on *behavior*, social anthropology provides a developmental continuum of *orientation* from a focus on *communication*. Several frameworks currently exist for professional contexts that involve understanding, interacting, and communicating with people from various cultures (e.g., from healthcare professions and international relations by governments; Bennett, 1993, 2004; Hammer, 2005, 2009; Kramsch, 1998; Leininger, 2002; Wolfel, 2008).

Conceptual Framework

Our work to build an applied theory for intercultural competence development for mathematics teaching and learning in secondary and tertiary settings is based on the *Developmental Model of Intercultural Sensitivity* (Bennett & Bennett, 2004). As a developmental model, it includes lower and upper anchor orientations, intermediate orientations, and descriptions of the transitions among the orientations. Additionally, we attend to discourse with the framing of communication dimensions for intercultural conflict resolution (Hammer, 2005). The continuum begins with a monocultural view based on the premise "Everybody is like me." This "denial" orientation (see Figure 1) may recognize observable cultural differences (e.g., distinctions in food or dress) but not notice complex difference (e.g., in values, beliefs, or communication norms) and will avoid or express disinterest in cultural difference. The transition to the next orientation comes with the