

**Department of Mathematical Sciences
Colloquium**

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(joint work with Matthew Winsor, Asst. Professor)

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**RESEARCH ON ENGLISH LANGUAGE LEARNERS
IN INTRODUCTORY STATISTICS: LESSONS LEARNED FROM
AN EXPLORATORY CASE STUDY OF PRE-SERVICE TEACHERS**

An increasing number of tertiary students are English language learners (ELLs) that can readily use English in everyday social settings, but not necessarily in more specialized academic discourse. Statistics has a very specific, specialized academic language associated with its ideas that (1) may be similar to, different from, or have no counterpart to words from everyday language, and (2) may differ in usage or context from past classes in mathematics. Because there had been empirical research on ELLs in mathematics/science education (e.g., Brown & Ryoo, 2008) but not specifically in statistics education, an interdisciplinary research team was formed to explore this intersection and attempt to identify how issues might play out differently, what resources might be helpful, and articulate recommendations for teaching and future research.

At a mid-sized university near the US-México border, exploratory qualitative case study research was conducted on pre-service teachers whose first language is Spanish. During the 2007-08 school year, semi-structured interviews were conducted using a protocol that was independently translated and reverse translated. Interview transcripts were independently transcribed, coded, peer debriefed, and member checked and the codes that emerged aggregated into two main themes: movement between registers and the role of context.

In addition to identifying directions for future research, the analysis of this data informed major curriculum writing I did (COMAP, 2009) as well as the teaching of a fall 2008 section of introductory statistics for pre-service middle school and elementary school teachers. The course included an intentional focus on introducing new ideas with everyday language before making connections to more formal academic language (which parallels the role of algebraic notation in Utts (2005)), use of multiple representations, an intentional incorporation of the communication modalities (listening, speaking, reading, writing) described in the newly-passed (Dec. 2007) English Language Proficiency Standards (ELPS) that teachers need to be able to implement, writing reflection assignments, and exposure to tools such as word squares (e.g., Winsor, 2007).

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Friday, April 24, 2009 at 3pm in Bell Hall 143

The University of Texas at El Paso

Refreshments will be served in front of the colloquium room,

15 minutes before the start of the colloquium.

