SINGLE-SEX MATHEMATICS CLASSROOMS IN PUBLIC SCHOOLS: A CRITICAL ANALYSIS OF DISCURSIVE ACTIONS

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This poster will present the results of a critical discourse analysis of classroom lesson sessions from middle grades public mathematics classes. The teacher of interest for this particular poster session is responsible for coeducational, all girls, and all boys classes. The data for analysis derive from 10 instructional sessions for each of these class types, giving a total of 30 lesson session transcripts for analysis. The authors employ a critical theoretical frame, from a feminist perspective, to the discourse analysis. Findings indicate that, at a macro-level, the academic rigor of the learning environment is consistent across the three class types. However, momentary utterances by teacher and students indicate more nuanced differences in the socio-cultural classroom environment.

POSTER CONTENT

Study Context

The participating school of focus for this presentation is a public middle school with approximately 700 students in the southeastern U.S. More than half of the students at this middle school receive subsidies for meals, indicating a lower-than-median socio-economic status. In 2011, this school received ratings of Average on the Annual Report card; in 2012, however, the school was given a grade of A (the district as a whole received a grade of B). Thus, there are mixed indications about the academic 'quality' of this school. Single-sex classes in mathematics (among other academic subjects) have been an option at this school for several years. There are some 8th grade students at this school who have had single-sex classes in at least one academic subject for four years. This presentation focuses on one 6th grade mathematics teacher (male) who teaches coeducational, all girls, and all boys mathematics classes. The research focus for this study—a critical analysis of the discourses in this teacher's classes—is part of a larger, federally funded project investigating classroom environments in single-sex mathematics and science public school settings.

Methodology

We are using critical discourse analysis, which "highlights the ways power relations work implicitly through language, demonstrating how language practices serve to reproduce and perpetuate power hierarchies and how language practices may be used for intervention and control" (Curran, 2008, p. 82). Within this critical classroom discourse analysis, we incorporate a thematic analysis (Lemke, 1990) as well as an analysis of discourse moves (Chapin, O'Connor, & Anderson, 2003; Krussel et al.,

2004). The thematic analysis reveals semantic relationships in classroom discourse, while an analysis of discourse moves focuses on actions teachers and students take to participate in or influence discourse.

Findings

This case study of one educator who teaches three different class types is part of a large research project involving several other teachers, students, and classes. The data were collected during the spring of the 2011-2012 academic year and thus are under analysis. We have collected more than 100 lesson sessions in addition to data related to student academic performance, student academic self-concept, and classroom academic rigor. The 30 lesson sessions from the teacher in this study are the first to undergo discourse analysis at the utterance level; we focus on this teacher because he is one of two mathematics teachers participating in this study who taught all three different classroom types. Though are analyses are ongoing, preliminary indications point to the importance of this level of fine-grained analysis because of the ephemeral nature of momentary utterances; their transitory nature, however, masks the potential impact of such utterances on students' constructions of social norms (including gendered norms and academic norms). Discourse analysis is a way of capturing those fleeting moments in time that have potential for impact disproportionate to the quantity of time it takes to utter the statement.

POSTER STRUCTURE AND ORGANIZATION

The poster will be organized into three columns; transcript excerpts illustrating the emergent discursive themes will occupy the middle column. Illuminating excerpts will be included from all three class types (coeducational, all girls, and all boys). The first column of the poster will house the research statement, relevant scholarship, and methodology sections. Articulation of the discursive themes, a summary of the findings, and a discussion section will occupy the third column.

REFERENCES

Chapin, S., O'Connor, C., & Anderson, N. (2003). *Classroom discussions: Using math talk to help students learn: Grades 1-6.* Sausalito, CA: Math Solutions Publications.

Curran, M.E. (2008). Narratives of relevance: Seizing (or not) critical moments. In K.M. Cole & J. Zuengler (Eds.), *The research process in classroom discourse analysis*. New York: Lawrence Erlbaum Associates.

Krussel, L., Edwards, B. and Springer, G. (2004), The teacher's discourse moves: A framework for analyzing discourse in mathematics classrooms. *School Science and Mathematics, 104*, 307–312.

Lemke, J.L. (1990). *Talking science: Language, learning, and values*. Norwood, NJ: Ablex