Abstract Title Page

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Title: Ability Grouping, Classroom Instruction, and Students' Mathematics Gains in Charter and Traditional Public Schools

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Abstract Body

Limit 5 pages single spaced.

Background / Context:

Description of prior research and its intellectual context.

"Tracking"—assigning students to different curricular programs purportedly based on their interest and academic achievement—remains controversial in educational policy. Even though it has given way to subject-by-subject ability grouping, tracking remains widespread in the US and in many other countries (Gamoran, 2010; Lucas, 1994).

According to its proponents, tracking is an effective response to students' diverse academic needs, allowing teachers to adapt their instructional approaches accordingly. Critics, however, argue that tracking has harmful consequences. For instance, separating students according to social and economic characteristics contradicts many important social goals of schools (Oakes, 2005; Oakes et al., 1992). In addition, it may cause students in non-academic tracks to receive inferior educational resources and low-quality instruction (Gamoran et al. 1995; Oakes 2005). In his recent review of international research on tracking, Gamoran (2010: 15) summarizes, "Ultimately, how students are arranged matters less than the instruction they encounter, so bringing together research on tracking with research on teaching offers the most useful way to continue to shed light on this topic of continuing interest."

One organizational attribute of schools that may further innovation in uses of ability grouping and the instruction among different groups is whether or not the school is a charter or traditional public school. The argument for charter schools is that they will foster more innovative instructional practices (e.g., Chubb & Moe, 1983; Walberg & Bast, 2003). This it is advantageous to examine ability grouping and instructional differences among school types that are theoretically argued differ to further our understanding of instructional stratification within and between schools.

Purpose / Objective / Research Question / Focus of Study:

Description of the focus of the research.

In this paper, we examine differences between school types in the uses of ability grouping, instructional differences, and relationship of ability grouping to student mathematics achievement. Specifically, we address the following questions with teacher reports of students' mathematics placement in middle school:

- Does the use of ability grouping differ between charter and traditional public schools?
- What is the relationship between ability group placement and students' mathematics achievement gains?

- Are there differences in instructional quality among students in different ability groups and by school type?

Setting:
Description of the research location.

The data come from surveys of teachers in charter and traditional public schools, located in urban, suburban, and rural contexts across 24 states. The schools all participate in the Northwest Evaluation Association (NWEA) assessment program and student achievement data in mathematics come from NWEA assessments. The data come from the What Makes Schools Work project to examine organization and instructional conditions in different types of schools.

Population / Participants / Subjects:
Description of the participants in the study: who, how many, key features or characteristics.

In spring 2009, we invited teachers in 146 participating charter and traditional public schools to complete online the Surveys of the Enacted Curriculum (SEC) (Porter, 2002). Traditional public schools were matched to charter schools based upon grade range, racial-ethnic and socioeconomic composition, initial achievement scores, and proximity. Our response rate for the SEC was 63 percent. Because participating mathematics teachers selected the students they teach in a target class, we could link teachers to the students' NWEA mathematics gains. Our sample includes 16,501 students nested in 1,071 mathematics teachers' classrooms nested in 146 schools. Student achievement in mathematics is based on the spring 2008, fall 2008, and spring 2009 vertically equated scores to examine gains and growth among students in different classrooms and school types (Kingsbury, 2003; Northwest Evaluation Association, 2002, 2003).

Intervention / Program / Practice:
Description of the intervention, program or practice, including details of administration and duration.

The intervention focuses on differences in charter and traditional public schools; the student ability grouping based on teacher designation of the student's mathematics class; content of mathematics instruction, cognitive complexity of tasks when covering the instruction, and pedagogical practices measured by Survey of Enacted Curriculum administered to teachers (Porter, 2002); student achievement from NWEA assessments

Research Design:
Description of research design (e.g., qualitative case study, quasi-experimental design, secondary analysis, analytic essay, randomized field trial).

Statistical Survey, Quasi-experimental, Statistical Modeling

Data Collection and Analysis:
Description of the methods for collecting and analyzing data.

Our analytic approach uses descriptive analyses to describe ability grouping in mathematics and the instructional differences among groups (high, middle, low, and mixed) in charter and traditional public schools. We rely on multi-level models that take advantage of the nested structure of the data with students nested in classrooms nested in schools. Student demographic measures, prior achievement, and achievement growth are measured at the student level. Ability grouping, instructional measures from the SEC, and other classroom characteristics are measured at the classroom level. School type and school demographic variables are measured at the school level.

Findings / Results:
Description of the main findings with specific details.

Our findings reveal significant differences in the use of ability grouping in charter (CPS) and traditional public schools (TPS). For example, a greater percentage of CPS students are placed in both high ability groups (17% compared with 12% TPS students) and lower ability groups (20% compared with 13% TPS). Fewer CPS students are in mixed ability groups (20% compared with 51% TPS). Moreover, CPS student gains in each group were larger than those of TPS students in similar groups, and the gains of students in the high ability group were greater than those in the low ability group, contributing to increasing inequality over the school year. Few instructional differences among groups and between CPS and TPS teachers were significantly different, although further analyses are necessary.

Conclusions:
Description of conclusions, recommendations, and limitations based on findings.

Understanding the various forms of grouping students for instruction is important for addressing issues of inequality that has been observed by researchers. Although instruction did not mediate the effects of ability grouping on achievement, the differences observed between CPS and TPS schools in uses of grouping require further research.

Appendices

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Appendix A. References

References are to be in APA version 6 format.

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