Breaking the Time Barrier:
Algebra Instruction in an Alternate-Day Block Schedule

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(ABSTRACT)

Over half of the high schools in Virginia utilized a block schedule in 1996-97. With an extended block of time, teachers have the opportunity to vary instruction to incorporate a range of strategies to enhance student engagement and increase student achievement. The purpose of this study is to provide a detailed description of algebra instruction in an extended alternate-day block schedule. Using case study methodology, data were gathered from six algebra teachers' classrooms. Data sources included multiple classroom observations, teacher interviews, surveys, and a review of students' final algebra grades. A case record was developed for each teacher and cross-case matrices were used to analyze the degree of teacher satisfaction with the block, teacher readiness to teach algebra in the block, the types of instructional strategies utilized in algebra lessons, the level of student engagement and achievement, and advice to others.

Findings indicate that teachers viewed the planning process prior to implementation of the block schedule as inadequate. Teachers have utilized strategies including cooperative learning, student projects, and problem-solving with applications. They advise other algebra teachers confronting a block schedule for the first time to engage in activities prior to implementation, including researching alternative teaching strategies, designing and planning projects for students, finding applications, redesigning homework assignments, and purchasing hands-on materials and software. Teachers are concerned about student learning, especially for ninth graders, students who are math-anxious, or students who are frequently absent.

It was concluded that, although the teachers had not actively participated in the decision to change to a block schedule, they have adjusted to the new schedule. Some now enjoy the block and others continue to be dissatisfied. Although the block offers time to incorporate a range of activities, the algebra teachers typically use a familiar three-part model of instruction (including a prompt focus, explanation with modeling, and time for practice and summarization.) Homework remains an essential feature of algebra lessons and teachers routinely allow students to use graphing calculators. Students' grades in algebra have not improved; the percentage of students failing algebra has increased slightly in the alternate-day block schedule.