University of Virginia
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Research Brief

Predicting Adolescent Achievement with the CLASS™-S Observation Tool

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This study found evidence that classrooms characterized by a positive emotional climate with sensitivity to adolescent needs and perspectives, use of diverse and engaging instructional learning formats, and focus on higher order thinking skills were all linked to higher levels of student achievement. These classroom characteristics could all be predicted based on teacher behaviors observed and coded using a version of the Classroom Assessment Scoring System™ modified for secondary classrooms.

Background

Adolescents in middle school and high school characterize their interactions with teachers as frequently unsatisfying and unmotivating. They report that their experiences in the classroom lack meaningful challenges, supportive relationships, and competence- and motivation-building experiences. Yet, engagement and intrinsic motivation are pivotal in adolescence, as these students have the means to not only withdraw energy from educational pursuits but to drop out altogether. Engagement in school begins to decline early in adolescence, and by entry into high school this decline is so pronounced that half of high school students report that they do not take their school or their studies seriously.

Studies of large-scale testing programs indicate that teachers are the greatest source of variation in what students learn in school. These studies do not, however, address the source or nature of the teacher effect. Many large-scale studies have found no evidence that advanced degrees or years of experience have any relation to student achievement gains. If indeed teachers are so important, we need more evidence on why and how they matter in secondary classrooms.

The Research

Researchers working through the University of Virginia Center for Advanced Study of Teaching and Learning (CASTL) examined the influence of high-quality classroom interactions on the learning gains of 643 secondary students from 37 classrooms across 11 schools. These classrooms had been randomly assigned as the control groups in a larger study of an intervention to improve classroom interaction.

Courses taught in these classrooms varied and included science, mathematics, history, social studies, and English.

At the beginning of the school year teachers were videotaped during a 40-minute segment of a single classroom session. Trained observers assessed teacher-student interactions included on these video segments using the CLASS™-Secondary version observation tool. The CLASS-S tool is based on the Classroom Assessment Scoring System™, one of the most current and widely used standardized assessments of social and instructional interactions in pre-K and elementary classrooms.

Student academic achievement was assessed used the Virginia Standards of Learning (SOL) tests. The researchers obtained each students' SOL score from a similar course the prior year and each students' end-of-year SOL score for the relevant course just completed.

Findings

The study identified a number of specific aspects of teachers' classroom interactions that were directly linked to changes in student achievement over the course of an academic year,

An average student with a teacher whose interactions scored 1 standard deviation *below* the mean in Emotional Support would on average place in the 41st percentile in end-of-year tests. The same student with a teacher whose interactions scored 1 standard deviation *above* the mean in Emotional Support would on average place in the 59th percentile in end-of-year tests.

CLASS™-S

The CLASS™-Secondary version has been modified to capture aspects of classroom interactions hypothesized by the researchers to be critical resources for educational achievement in adolescence. It consists of a set of global 7-point rating scales organized into three overarching domains:

Emotional Support

Positive Climate, reflecting warmth and sense of connectedness in classroom

Negative Climate, reflecting expressed negativity in classroom

Teacher Sensitivity, reflecting responsiveness to student academic/emotional needs

Regard for Adolescent Perspectives, reflecting teacher's ability to recognize and capitalize on student needs for autonomy, active roles, and peer interaction in the classroom.

Classroom Organization

Behavior Management, reflecting teacher's ability to use effective method to encourage desirable behavior and prevent/redirect misbehavior

Productivity, reflecting teacher ability to manage the classroom so as to maximize instructional time

Instructional Learning Formats, reflecting teacher use of varied and interesting materials and teaching techniques in an organized fashion.

Instructional Support

Content Understanding, reflecting teacher presentation of content within a broader intellectual framework

Analysis and Problem Solving, reflecting emphasis upon engaging students in higher order thinking skills

Quality of Feedback, reflecting provision of contingent feedback designed to challenge students and expand their understanding of a concept.

even after accounting for prior levels of student achievement, demographic characteristics, and classroom size. In addition, good teaching practice was good regardless of content or grade level.

Teachers' ability to establish a positive emotional climate, their sensitivity to student needs, and their structuring of their classroom and lessons in ways that recognize adolescents' needs for a sense of autonomy and control, for an active role in their learning, and for opportunities for peer interaction were all associated with higher relative student gains in achievement.

Similarly, use of instructional learning formats that encouraged active participation by students and that provided variety in classroom approaches was also predictive of relative gains in student achievement, as were lessons that required high levels of analysis and problem-solving by students.

The researchers created a composite of the five teacher-student interaction dimensions that were significantly predictive of end-of-year test scores: positive climate, teacher sensitivity, regard for adolescent perspectives, instructional learning formats, and analysis and problem-solving.

They found that an average student who had a teacher whose interactions were 1 standard deviation below the mean on this composite reflective of overall quality would on average place in the 37th percentile on end-of-year tests. The same student with a teacher whose combined interactions were 1 standard deviation **above** the mean would on average place in the 63rd percentile on end-of-year tests.

Overall, the particular constellation of interactions that was most linked to future achievement seemed to cluster around an emphasis on tailoring a classroom experience to be most emotionally and intellectually engaging to the adolescent.

The good news is that additional research conducted at CASTL has provided evidence from experimental studies that teachers' behavior in all three of domains of interaction can be improved when professional development is aligned with and targeted to these interactions.

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