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Examining Practices and Resources from Mathematics Classrooms

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NOTES FROM THE FIELD

Evaluating the SSATSEL Algebra I Lab Model: Objectives and Challenges

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At the socio-economically diverse suburban high school where I teach outside of New York City, there had been a significant overrepresentation of students of color placed in the remedial level of a Common Core Algebra I course. This led to an unintended “in-school segregation” (Oakes, 1995). For the 2020-2021 school year, courses were restructured so that all Algebra I students were enrolled in a detracked, 41-minute class, while those needing additional support were also placed in a daily 41-minute Algebra Lab class taught by their Algebra I teacher. The new structure served to address the unintended in-school segregation taking place, as well as to promote more equitable access to mathematics education.

It should be noted that Algebra Lab students are evenly distributed throughout all sections of Algebra I. Each teacher is in charge of two sections of Algebra I, and one section of Algebra Lab that consists of students from their Algebra I courses. This structure is critical as it allows Algebra Lab students to receive the additional support needed from the same teacher who has detailed knowledge of their progress in Algebra I. The Algebra Lab course, which I am currently teaching, consists of skills support (SS), authentic tasks (ATs), and social-emotional learning (SEL), hence I refer to this as the “SSATSEL” model (Longhitano, 2021).

When the SSATSEL model was first implemented at the start of the 2020-2021 school year, a hybrid learning model was in use due to the COVID-19 pandemic. Many students were fully remote for the duration of the school year and students were exempted from the Common Core Algebra I Regents exam in New York. Hence, I cannot fully assess the efficacy of the SSATSEL model based on the 2020-2021 school year. However, I will dis-

cuss its structure and my experiences in this model from the perspective of a researcher and practitioner.

A weekly schedule, shown in Table 1, is embedded in the SSATSEL model.

Table 1
Weekly Schedule for SSATSEL

Day of the Week	Targeted Activity
Monday	Vocabulary Development
Tuesday	Basic Skills Support (SS)
Wednesday	Mathematics-Related Games
Thursday	Regents Preparation
Friday	Authentic Task (AT)

The SS component includes, but is not limited to, mini lessons on middle school mathematics content (such as combining signed numbers, operations with fractions, etc.), organization and study skills, and pre-teaching of topics in the Algebra I course. In our Algebra Labs, teachers often employ the use of Delta Math, an online platform that contains a bank of problems teachers can use to create and monitor assessments. In Delta Math, the teacher can select a variety of mathematics topics and skills for students to practice and, using a built-in algorithm, require that students are prompted with new problems until they answer a specified number correctly. When students submit an answer the full solution is revealed so they can learn from their mistakes and immediately try a new problem. In my Algebra Lab classroom, while students work on Delta Math, I circulate the room, answer questions, provide additional feedback, and monitor their progress. I believe this has

helped my students tackle skill gaps and obtain greater fluency with the course content.

ATs require that students apply their knowledge and skills to a real-world problem with a real audience. For example, my Algebra Lab students applied their knowledge of writing and graphing linear equations and inequalities to develop a mathematical model for fundraising. The model prompted students to determine the number of donations they would need to reach a fundraising goal for a GoFundMe® page they had designed. The project required students to conduct research to determine the average donation amount, the cost of transaction fees, and how much money they would need to raise to support their cause. The task showed students the relevance of what they were learning and how they can leverage their mathematical knowledge to help others. ATs, like this one, are meant to spark students' interest in mathematics and inspire students to persist in their mathematics education.

Students participate in daily social-emotional learning (SEL) activities to promote their emotional health and growth. SEL has been shown to promote student achievement (Herrenkohl, 2020), which was the impetus of its inclusion in this model. Activities include analyzing a "quote of the week" on Mondays, giving themselves a "shout-out" on Tuesdays, participating in a guided "mindfulness meditation" on Wednesdays, choosing a word to describe their mood in a "mood meter" on Thursdays, and sharing their weekend plans on Fridays. These activities have served to build community in my Algebra Lab class and have helped me connect and build rapport with my students.

In my recent research (Longhitano, 2021), I focused on facilitating and studying teacher collaboration in the curriculum development process to create AT projects for the Algebra Lab course that align with the scope and sequence of Algebra I. The findings suggested that an overemphasis on the implementation of ATs in Algebra Lab may have negatively impacted student achievement and participation in the Algebra I class (Longhitano, 2021). This may have been due to the fact that the ATs did not directly attend to students' need to develop procedural fluency and conceptual understanding. While the teachers who participated in the study felt that the ATs were a valuable pillar of the course, they agreed that SS and SEL activities seemed to be most vital to the success of their students and, thus, should take priority. It was also noted that the COVID-19 pandemic made it difficult to reach students attending classes remotely.

Teachers in the study commented that they believed the SSATSEL model would have been much more effective if all students were physically present. In addition, due to the number of fully remote students, recruitment of students to participate in my study was difficult, which limited my ability to investigate students' perceptions of the SSATSEL model.

Currently, in the 2021-2022 school year, I have observed an enormous gap in my Algebra I students' mathematical skills. I believe that this is primarily due to a loss of learning when we were in remote and hybrid classrooms during the COVID-19 pandemic. The efficacy of the SSATSEL model has been difficult to discern because it is confounded by the disruption of students' mathematics education during their formative middle school years. Recently, my Algebra I colleagues and I decided to replace vocabulary development on Mondays with more intensive SS, pre-teaching, and additional use of Delta Math and other platforms to address the skills gaps. The students still participate in vocabulary development activities in the Algebra I class, thus they are able to develop their mathematical vocabulary. I believe a few years of in-person learning will need to take place before I can again assess the efficacy of the SSATSEL model and its three components.

References

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