

Examples of School-Wide Research Themes

Highlands School developed a research theme that focused on two initiatives taking place at the school.

Research Theme: How can we improve the use of effective Integrated Thematic Instruction (ITI) and differentiation strategies to help all students, and in particular SED students, access their full potential and improve their performance relative to grade level standards?

Komae School developed their research theme by considering the qualities they hoped to nurture in all graduates.

Research Theme: For students to value friendship, develop their own perspectives and way of thinking and enjoy learning.

Theory of Action: If students are eager to learn and take initiative in their learning, they will be able to deepen their own perspectives and ways of thinking. Student will develop considerate hearts if they work together in ways that enable them to recognize one another's ideas as they engage in observations, experiments and activities.

Prieto Math & Science Academy has focused on mathematics in their research theme, which was revised over 5 years based on the findings from their lesson study work.

Research Theme: Teach scholars to construct viable arguments and critique the reasoning of others through note taking, board work, and student discourse. Teach scholars to make sense of problems and persevere in solving them by teaching mathematics through problem solving.

Theory of Action: Through recording their reasoning in their notebooks, students will be able to use their notebooks as a tool to explain their thinking to others. If they also record the reasoning of other scholars in their notebooks, this will lead them to think critically about their fellow scholars' ideas. The careful use of the board by the teacher is instrumental in teaching through problem solving and can support scholars in many ways. The teacher models in their board writing what students should be writing in their notebook. The board also allows the teacher to present multiple solutions simultaneously. This allows students to compare and contrast solutions and facilitate discussion about them. In order to have a substantive discussion, they must have something substantive to discuss. Teaching mathematics through problem solving means presenting students problems that they do not already know how to solve, but have the necessary background understanding to make sense of this new kind of problem. These problems invite different strategies, since there is not yet a consensus on how to solve these types of problems, and these different students derived strategies and ideas provide rich material for students to discuss. Teaching through problem solving encourages perseverance in students. They become accustomed to solving problems they have not yet encountered, and develop positive self-identity as a mathematician.

