ACASE
ASSOCIATION FOR THE COOPERATIVE ADVANCEMENT OF SCIENCE AND EDUCATION

Report on The Institute in Practical Educational Science
February 2023

The Institute in Practical Educational Science, is an initiative of the Association for the Cooperative Advancement of Science and Education (ACASE). The Institute is composed of leaders in the field of science education who are now participating in an innovative professional development program called *Community of Science as Venue for Teacher Education*. This program develops scientific research capabilities that are then applied to enhance curriculum, assessment, instruction, and evaluation in an atmosphere of collaboration and peer review.

In the winter of 2022, the Institute inaugurated its first cohort consisting of fifteen distinguished science teachers from across New York State to begin to tackle the challenge of building, testing, and refining classroom assessment resources for the Next Generation Science Standards (NGSS). The NGSS is a major, national initiative conceived and designed over several decades by teams of scientists and STEM educators. The stated goal of NGSS is to transform "science education with an effective, research-based approach that assures all students have access to a high-quality science education that provides them with the skills and knowledge they need to be well-informed citizens, to be prepared for college and careers, and to understand and appreciate the scientific enterprise." (NSTA) The State of New York has adopted NGSS and adapted it to create the New York State Science Learning Standards (NYSSLS), aimed to enliven science education and prepare young people with the capabilities they will need to meet the challenges of the future.

During the summer of 2022, the cohort met in person in Saratoga Springs, NY for a series of workshops run by ACASE associates, Jason Brechko, Paul Zachos, Deborah Newlen, and Hunter Johns, who introduced them to the principles and methods of educational science. On this foundation they began to build classroom assessment materials for the NGSS and NYSSLS. Throughout the 2022-2023 school year, the group continues its collaboration via virtual meetings and presentations at professional conferences. Their goal is to build high quality classroom assessment resources designed to elicit practical, useful, reliable, and timely information for classroom assessment purposes. Each member of the Institute is developing an assessment instrument that will reveal how well students are attaining the NGSS/NYSSLS standards. These instruments are called Assessment Kits. They are tested and refined through disciplined peer review in preparation for publication at NGSSrubrics.org. The Assessment Kits are then made available for use by other teachers at no cost.

In contrast to top-down decision-making and conventional testing and grading, the Assessment Kits prepared by the Institute generate information that is immediately accessible and appropriate to support daily activities in learning environments by revealing how well students are attaining each of the NGSS/NYSSLS standards.

The work of the Institute in Practical Educational Science grows directly out of creative interaction with learners in the classrooms and laboratories where teaching and learning take place. The institute exemplifies how educational leadership can be fostered and quality educational resources developed from the ground up. It demonstrates how valid and reliable educational information can be generated and used both to support teaching and learning and to foster humane educational environments.

ACASE is currently engaged in imagining what form the Institute will take as it moves into the future — Which educational challenges will the Institute address next? How will the Institute continue to develop and expand its members' capacities? In what ways can we sustain and strengthen the community forged through this extraordinary collaboration?

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For more information please visit NGSSrubrics.org and ACASE.org