

Great Ideas for Great Public Schools

NEW JERSEY

Science teachers in short supply? Grow your own

The New Jersey Center for Teaching and Learning—created by the New Jersey Education Association in 2006 to empower teachers to lead school reform—launched the **Progressive Science Initiative (PSI)** in 2009 to address a statewide shortage of physics and chemistry teachers. Instead of recruiting professionals from other fields to fill science and math vacancies, PSI equips teachers certified in other disciplines to fill them. In partnership with the state department of education, Kean University, and the Newark Teachers Union, in just 18 months PSI has taught some 80 teachers physics and how to teach it (60 new to the subject)—more than twice as many as all New Jersey colleges combined. In Newark alone, the program has tripled the number of physics teachers qualified for certification. An additional 25 teachers have taken courses in chemistry and how to teach it. As a result of the program, thousands more students in Newark, Paterson, and Jersey City are studying physics and chemistry.

How the program works

- The teacher-students—most of whom work in schools in Newark, Jersey City, or Paterson—spend five weeks in an intensive summer course that qualifies them to teach PSI physics, a freshman class.
- After passing the Praxis exam in physics and general science, participating teachers become certified to teach physics in any New Jersey school. They also earn 30 credits, from partner Kean University, which can be applied to a master's degree in curriculum and instruction.
- The teachers are part of an online community where materials such as textbooks, lessons, and assessments are posted for use by teachers around the United States and the world.

Impact on science education

- Districts that join the program agree to overhaul their science programs. Traditionally, students take physics in the third year of high school. Under the PSI model, they take physics as high school freshmen.

- Organizers plan to expand the program to biology. The goal is not to certify new biology teachers, since there is no comparable shortage of teachers in that field. Instead, it is to help current biology teachers tackle advanced topics with students who have a firm foundation in physics and chemistry.

More students study physics

- Interest in Advanced Placement (AP) physics has risen sharply. One-third of the students who took PSI physics in ninth grade last year requested AP physics in tenth grade this year—far above the 1.5 percent of U.S. students who typically take AP physics.
- At the site where the program was initially developed, Bergen County Technical High School in Teterboro, PSI students are taking and passing AP science exams at up to 24 times the state rate.
- More than 100 teachers are receiving training in physics and chemistry, and more than 80 of them are expected to become newly certified in those fields.

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Great Public Schools for Every Student