PBS TeacherLine® New York

NEWSLETTER

FALL 2011

RESEARCH STUDY USING TEACHERLINE COURSE FINDS IMPACT ON TEACHER AND STUDENT LEARNING

INSIDE THIS ISSUE:

The Advancing Biology Education through Online Professional Development in New York (ABE-NY) study, funded by the National Science Foundation, examines how an online professional development course for high school biology teachers can support teaching and learning. Using an experimental design over a two-year period, the research team at EDC's Center for Children and Technology have found modest impact on teacher and student knowledge about genetics and evolution, as well as teachers' pedagogical practices, as a result of taking the TeacherLine course *Teaching High School Biology*.

THE COURSE

The course used in this study was developed by Boston public television station's online digital library, WGBH *Teachers' Domain* (now known as PBS LearningMedia) and distributed by TeacherLine NY/WNED. Study participants took either a 5-week or an 8-week version of the course. Both versions included sessions focused on teaching genetics and evolution using inquiry-based approaches and digital resources.

The 5-week course, *Teaching Genetics and Evolution*, introduced participants to content and digital media resources related to teaching genetics and evolution.

The 8-week course, *Teaching High School Biology*, included additional lessons devoted to exploring inquiry teaching strategies, lesson design, and foundations for an engaged classroom environment. In the 8-week version, participants also completed a final project that asked them to conduct an experiment over the length of the course and reflect on a variety of science-content and teaching-methodology issues.

The course is designed in the 5E Instructional Model, a framework that guides students to engage, explore, explain, elaborate, and evaluate in the sciences. As in other WGBH-produced courses, each weekly session is guided by an essential question. Course content is delivered via readings, videos, interactive digital activities, reflection questions, and assignments. In addition to individual work, participants in the course communicate with classmates and the course facilitator on a discussion board.

LATEST FINDINGS

Research Question 1: *Does participating in the professional development course increase teacher knowledge of biology, pedagogy, and digital media use?*

• During the first year, teachers participating in the treatment group had stronger gains on measures of genetics and evolution content knowledge, pedagogical content knowledge,

EDC RESEARCH STUDY CONT.

• In the second year, teachers in the delayed treatment group (formerly the control group) showed gains in biology content knowledge and pedagogical content knowledge after taking the course.

• Similar gains were seen from participants who took the 5- and the 8-week versions of the course.

Research Question 2: *Is student learning influenced by teachers' participation in the professional development program?*

We are in the midst of analyzing student gains using multi-level modeling statistical techniques but can report some preliminary results.

• During the first year, students whose teachers were in the treatment condition had stronger scores on a measure of genetics and evolution content knowledge compared to the control group.

• During the second year, students whose teachers were in the delayed treatment condition showed gains in genetics and evolution content knowledge on a pre-/post-test measure.

UPCOMING PRESENTATIONS/CONFERENCES

This fall look for us at the **New York State School Boards Association Annual Convention & Education Expo**. We will be exhibiting **October 27 and 28**. Additionally, we will be presenting at the **Science Teachers Association of New York State (STANYS) annual conference**. At our presentation, to be held **at 8am on Monday November 5**, the research team will summarize study findings and a study participant will reflect on her experience taking the course and how it impacted her teaching.

FOR MORE INFORMATION

Please visit our new website at abeny.cct.edc.org to learn more about the professional development course, our research findings, and to download publications about the study.

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FALL 2011 COURSES

OCTOBER 24TH - DECEMBER 5TH (ENROLLMENT ENDS OCTOBER 26TH)

INST315 Teaching for Multiple Intelligences:
Discover the advantages of teaching methods that engage multiple intelligences and explore ways to implement them. You will also learn to teach and assess students differently based on their individual intellectual styles.
(30 hours)

MATH250 Understanding Numbers and Operations: Addition and Subtraction in Grades PreK-3:
Learn to teach mental arithmetic to enhance your students' understanding of addition and subtraction. Develop your understanding of computational strategies by observing students, exploring lesson plans, and examining Web resources. Design, implement, and assess a numbers and operations lesson that combines technology, manipulatives, and effective pedagogical strategies.
(30 hours)

RDLA130 Teaching Reading in Science:
Help students unravel the mysteries and complexities of scientific concepts by training them to approach science texts in new ways. Learn effective strategies to help your students become independent readers and learners as they navigate science texts such as arranging ideas, understanding text organization, setting goals for reading, making meaningful connections, and persevering through challenging materials. This course aligns with the National Council of Teachers of Mathematics' (NCTM) Communication Standards.
(30 hours)

TECH325 Searching and Researching on the Internet:
Learn strategies to help students develop searching and researching skills, including the use of Web 2.0 tools. Explore ways to create authentic learning environments that make use of primary resources, go beyond sites such as Wikipedia for research, and teach responsible Web use. Create a research toolbox for developing searching and researching skills that you can use in a specific curriculum area.
(30 hours)

CHECK US OUT ON THE WEB!

WWW.THINKBRIGHT.ORG/TEACHERLINE

The PBS TeacherLine New York website is a comprehensive source for all your online professional development needs.

Enroll now for Fall courses.

Find semester dates, course offerings, how to register and other information in the course schedule.

Browse over 90 online classes, including new STEM courses, in the catalog.

"Tonight I spoke to the parents of my students about the Author Study we are doing this year. I told them that the PBS course was one of the best education courses I've taken (& I've had a lot of education courses!). The students are loving the Author Study activities that I developed over the summer. I look forward to filling out the evaluations."

~Leah Fine
Riverdale, NY educator after taking RDLA125 Children's Authors on the Web over the summer

thinkbright.org/teacherline

CONTACT US

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What is PBS TeacherLine?

PBS TeacherLine is pioneering an innovative model for on-demand, high quality, and standards-based teacher development. Focusing first in the areas of mathematics and technology, then expanding to all curriculum areas. Currently PBS TeacherLine offers more than 100 research-based courses for teachers at every grade level from pre-K to 12. Courses in math, reading, technology integration, teaching strategies, science and curriculum mapping answer No Child Left Behind requirements for high-quality professional development for teachers, and qualify for graduate credits.

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