Adapting to digital needs

By Robin L. Flanigan

At Clemson University, aspiring teachers are working together to develop and review digital lessons. They're learning how to use social media to find classroom resources. And they're being encouraged to partner on projects that emphasize technology with students from other majors.

Those strategies reflect a shift underway at some teacher colleges that are working to revamp their programs to improve the technology literacy of future educators—and address what many see as a major shortcoming in the profession.

Technology is swiftly assuming a dominant role in classrooms, and in students' lives.
Many observers have raised doubts about whether schools of education are providing future teachers with the skills they need to address blended learning, and whether they're using digital tools to improve instruction.

Faculty members at Clemson's school of education and at a number of other higher education institutions are determined to address the issue head-on.

Officials at the South Carolina university have taken numerous steps to raise future teachers' tech-proficiency, including increasing course requirements and setting up forums for future educators to share ideas about how to craft lessons using technology tools.

"There's a really firm commitment to transforming the teacher ed. program here," said Danielle Herro, an assistant professor of digital media and learning at the school. Other higher education programs, she said, need "to recognize, embrace, and apply the shift in [technology] literacy to practice."

Some say the evidence suggests teacher colleges have a mixed record, at best, in providing future educators with the skills they need.

The National Association of State Boards of Education, in Alexandria, Va., released a report in 2012 that cast a critical eye on teacher colleges' performance in building digital skills. It said that the training of teachers "too often has not kept pace with advances in technology or new ways of learning," and asserted that educators were not being prepared to use technology to personalize learning or shape students' analytical skills.

**Novices and Natives**

The authors pointed to a variety of obstacles standing in the way of teachers and administrators improving their proficiency with technology, including steady turnover in the profession and the age gap between them and their students, who are "digital natives."

A report released last year by the Washington-based American Association of Colleges for Teacher Education, meanwhile, found that nearly all of teacher education programs, 98 percent of them, prepare students to use technology for instruction, and that 62 percent have a technology-related requirement for graduation or program completion.

AACTE President Sharon P. Robinson said her group will obtain more nuanced data in the future.
on technology's place in teacher-preparation programs and the ways in which candidates for the profession are being expected to show proficiency with digital applications.

Yet a much bleaker picture was presented by the National Council on Teacher Quality, a Washington-based research and policy organization, in an inaugural teacher-preparation review published last year.

In an evaluation of more than 1,100 colleges and universities, it found that just 15 percent of 668 elementary and secondary teacher-preparation programs required candidates to provide a rationale for their use of technology when planning a lesson or project. (The NCTQ's methodology has been criticized by some teacher programs, which describe the research as superficial and flawed.)

"We see little evidence that programs have embraced technology for its ability to improve how students learn," said NCTQ President Kate Walsh.

**Peer Review**

A number of policymakers, including President Barack Obama, have shown an interest in improving teachers' preparation to use technology in the classroom. As part of his ConnectEd initiative to overhaul the federal E-rate program and improve schools' technology access, Mr. Obama has called for the U.S. Department of Education to help teachers become more adept at using classroom technology.

Clemson officials have designed a program that they believe will give future teachers the grounding they need.

The university began requiring undergraduate aspiring educators to take the three-credit Foundations of Digital Media and Learning course, focused on building their understanding of technology and its classroom applications.

Students in the program are also taught to think critically about how, not just which, technology can best illustrate a particular lesson.

They design and develop rapid prototypes of digital stories, spending two or three hours creating simple storyboards that present academic content. They then have colleagues in the program review the work for educational value, impact on future learners, and developmental appropriateness.

They learn how social media can be used to gather resources and ideas about teaching
strategies. Additionally, a newly created digital media and learning lab offers four breakout rooms to help them experiment with various approaches to learning, a setup that includes an audio room with music-mixing software and podcasting equipment.

Clemson has also launched a series of interdisciplinary efforts that allow education students to partner with undergraduates in other departments, such as those working in digital production.

Other universities are taking different approaches to help teachers use technology more effectively.

The University of Texas at Austin's UTeach science program, which oversees more than 6,000 preservice mathematics and science teachers at 40 universities nationwide, recently received a grant from telecommunications giant Verizon to integrate mobile technologies into inquiry-based lessons.

"Good educational use of technology has to help students make the transition from being consumers of knowledge to contributors and, eventually, producers," said Michael Marder, the executive director of the UTeach science program.

"Now that mobile technology is ubiquitous, it's natural to ask how it's going to be employed in instruction," he said.

Creating Courses

In January of last year, Teachers College, Columbia University, opened a prototype technology-demonstration classroom. The program allows students in the technology-specialist-certification program, who include preservice and working teachers, to gain more experience learning in a technology-rich environment.

The classroom has multiple display screens that let students plug in their own computers and experiment with different uses of technology; two of the display screens are touch screens, allowing a student to use Google Earth to explore topography issues, for instance.

"The more we help our students learn about the thoughtful use of technology as a tool to enhance the learning experience, the better," said Ellen Meier, the co-director of the Center for Technology and School Change at Teachers College. "We want them to develop a vision for what is possible, so they, in turn, are able to help schools design technology-rich, authentic projects that engage K-12 students."

The University of Central Missouri, in Warrensburg, Mo., has taken a different approach to building teachers' technology skills. Last year, it launched a 16-week class to help graduate students design their own eight-week, one-credit-hour online courses.

Specialist Degrees

http://www.edweek.org/ew/articles/2014/01/29/19el-teachers.h33.html?tkn=WOLFgjVArjBI4qRWhUGx2SAreCkw65hpoOh&print=1
Tailored for those earning their education specialist degree in educational technology, the class gives students the option, once the semester ends, to teach their course to peers as adjunct professors. The vast majority of the program's participants are teachers already working in schools.

"I really wanted to give them a real-world experience from start to finish," said Odin Jurkowski, a professor of educational technology and chairman of the university's department of career and technology education.

"It's beyond other things they've done in their coursework, like creating modules and lesson plans," he said. "This is a neat way not just to provide opportunities for students at the highest level to practice their skills, but to allow them to create something that could benefit other students as well."

Enrollment in the University of Central Missouri’s education technology programs has more than quadrupled, from 46 to 199 students over the past six years, with the addition of a certificate in online teaching and learning in 2009 and the new specialist degree in educational technology in 2012.

More colleges and universities need to empower future teachers to help bridge the gap between what they learn on campus and what they practice in the classroom, said Tom Carroll, the president of the National Commission on Teaching and America’s Future, a nonprofit, nonpartisan advocacy organization based in Washington.

Mr. Carroll backs blended learning for preservice teachers in courses and internships and says a stronger focus on technology would keep more teachers in the profession.

**Challenging Traditions**

According to the commission, 46 percent of teachers leave their jobs within the first five years, mostly because of inadequate preparation and a lack of classroom support.

Too much emphasis has been placed on critiquing schools of education, rather than focusing on how they can improve their curriculum, in technology and other areas, to help educators and benefit students, Mr. Carroll argued.

"It's time to move beyond this counterproductive fight and adopt truly innovative practices that are embedded throughout teacher-prep programs," he said.

Those charged with helping teachers weave technology into their instruction say doing so
will take time, given that change doesn't necessarily come easily to colleges and universities steeped in tradition.

"This is all still fairly new for a lot of us in higher ed.," said Ms. Herro of Clemson. "The idea that we no longer hold all the expertise is hard to accept."

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