11-2002

# Teachers' Authentic E-learning

Judi Harris
*William & Mary - School of Education*, jbharr@wm.edu

Neal Grandgenett

Follow this and additional works at: https://scholarworks.wm.edu/educationpubs

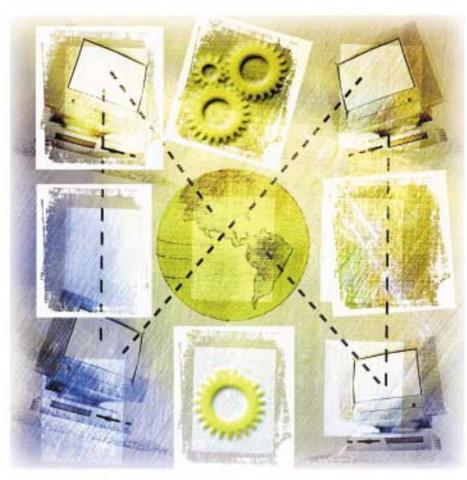Part of the Teacher Education and Professional Development Commons

## Recommended Citation

Harris, J., & Grandgenett, N. (2002). Teachers' authentic e-learning. Learning & Leading with Technology, 30(3), 54-58.

# Teachers' Authentic E-learning

Teachers actively learn through
use of the Internet in the classroom.

*By Judi Harris
and Neal Grandgenett*

**Subject:** Authentic professional development for teachers

**Audience:** Teachers, technology coordinators, library/media specialists, teacher educators

**Grade Level:** K–12 (Ages 5–18)

**Technology:** Internet/Web

**Standards:** *NETS•T* V (www.iste.org/standards)

**"Authentic learning"**—
as educators, we've thought about what it is, how to help it happen, and how best to assess it for many years. What is it? According to a definition from the Visible Knowledge Project,

> Authentic learning allows students to explore, discover, discuss, and meaningfully construct concepts and relationships in contexts that involve real-world problems and projects that are relevant and interesting to the learner. (Donovan, Bransford, & Pelegrino, 2002)

How might this definition be understood and applied if we consider *teachers* to be the learners, and *teachers' classrooms* to be the real-world contexts in which they learn? In that case, "relevant and interesting" learning for us as teachers would happen when we "explore, discover, discuss, and meaningfully construct concepts and relationships" directly related to our professional practice. If professional development is understood to be teachers' professional learning, then *authentic* professional development occurs when we actively learn—and reflect on that learning, both individually and collaboratively—as we teach.

What might characterize authentic learning for teachers—especially as it applies to using Internet tools and resources in the classroom? A series of research studies we have been doing provides some interesting insights into and potential answers to this question.

## What We Are Learning

With our most recent study, we're exploring authentic learning for teachers by asking, "What do teachers learn as they help their students learn with Internet tools and resources?"

Our research is showing that teachers participating in curriculum-based online activities created for and with their students report authentic professional development to a considerable degree. This professional learning emerges naturally from incorporating use of Internet tools and resources in the classroom. What do teachers learn, and who learns what? An online survey we conducted during the 2001–02 academic year with a diverse sample of 336 Internet-using K–12 teacher volunteers from 30 countries suggests interesting answers to these questions.

Previous studies have uncovered and documented noteworthy professional learning occurring for teachers who helped their students participate in curriculum-based telementoring (McGee, 1997; McGee, 1998). Additional multiple case research (Abbott, 2000) showed that such professional, albeit incidental, learning occurs for teachers whose students are participating in a wide range of online learning project formats beyond telementoring—those supported by online K–12 efforts such as KIDLINK, iEARN, and ThinkQuest. (**Editor's note:** See Resources at the end of this article for Web addresses.)

To see whether what was discovered in these three different in-depth studies applies to the larger population of Internet-using teachers, we constructed, tested, and administered an 80-question Web-based survey instrument, most of the items for which spring from results of our earlier, case-based research studies. The initial results of this survey study are reported below.

Taken together, the survey participants' responses provide an emerging profile of the "online K–12 teacher"—the teacher who has, at this time, elected to help students use Internet tools and resources as part of curriculum-based learning. Understanding online teachers' characteristics and how they depict their professional learning demonstrates the power and accessibility of authentic professional development when the Internet is integrated into students' learning experiences.

## An Emerging Profile

Our respondents were fairly typical of the general teaching population in their demographic characteristics. Of the 336 respondents, 76% were female and 24% were male. Their ages ranged from 23 to 68, with a median age of 47. Of the respondents, 80% live and work in the United States, 7% in Canada, and 13% in countries outside of North America. The sample included teachers from 30 countries with a range of years of teaching experience—1–39 years—and a median of 15 years of professional service in education.

Access to the Internet varies considerably in their classrooms. From the sample, 35% had 1–6 computers available in rooms used for instruction. Only 10% had just a single computer available for teaching. The range of student-accessible computers that the teachers reported, though, was quite large at 1–500.

The teachers' instructional use focuses largely on the Web and e-mail. Ninety-four percent help their students use Web pages that others create, 83% ask their students to use e-mail, and 71% help their students create their own Web pages as part of curriculum-based learning. Other online tools were less popular, with only 36%, 20%, and 17% using computer conferencing, chat, or audio/videoconferencing, respectively, in curriculum-related, classroom-based learning.

Of the sample, 95% indicated that they have Internet access at home. About half (51%) do most of the work related to instructional telecomputing at home, 47% do it at school, and 2% do it elsewhere. Also, 82.5% said they learned to incorporate the use of online resources for student learning largely on their own, without formal or specific training in how to do so. Yet, they appear to be willing and able to reach out to other teachers—93% said they regularly help other teachers learn how to incorporate online resources into teaching practices.

They consider themselves to be very innovative (Rogers, 1995). A standardized "Measurement of Innovativeness Scale" (Hurt, Joseph, & Cook, 1977) was included in the survey. Possible scores on this scale are 20–140, with higher scores indicating more self-reported innovativeness. Our sample's range of scores was 76–140, with a relatively high mean score of 121.

In a hypothetically "normal" population, using Rogers' (1995) innovator categories, the survey's respondents would be labeled as follows:

2% "innovators," the very first people in a group to adopt an innovation. Other innovator categories identify, sequentially, those group members who adopt the same innovation later than their more innovative peers.

14% "early adopters," who adopt after the innovators, but before those labeled "early and late majority" and "laggards."

34% "early majority"

34% "late majority"

16% "laggards"

Our study sample was considerably skewed toward innovators and early adopters of Internet tools and resources in the classroom—which makes sense, because incorporating use of online tools and resources into curriculum-based learning and teaching is not yet done consistently across K–12 classrooms. The following percentages illustrate just how different our sample was in terms of innovativeness:

" … relevant and interesting" learning for us as teachers would happen when we "explore, discover, discuss, and meaningfully construct concepts and relationships" directly related to our professional practice.

*… teachers participating in curriculum-based online activities created for and with their students report authentic professional development to a considerable degree.*

67% of our sample were "innovators"
32% were "early adopters"
1% were members of the "early majority"

*None* identified themselves as "late majority" or "laggards," the slowest in any group to adopt an innovation such as using the Web in curriculum-based instruction.

Also, the respondents' self-reported innovativeness was generally not correlated with age, gender, years of teaching experience, current teaching assignment (grade level or discipline), or number of Internet-connected computers in instructional areas. So, though some may assume that teachers' innovativeness is correlated with youth, particular instructional disciplines such as science, and elementary-level teaching, our study results did not support any of these commonly held ideas. Yet 92% were sure that their colleagues perceived them as teaching in nontraditional ways, and 79% were convinced that their ways of teaching are better for students' learning than their colleagues' ways. Also, 74% said they "felt frustrated" with colleagues "who seem resistant to incorporating online resources into their instruction."

Now that we know a bit about telecomputing teachers' characteristics, let's consider what they said they are learning as they help their students to use Internet tools and resources.

**Authentic Teacher Learning**
Most of the survey's items were statements taken directly from the results of the case study research mentioned earlier. We asked each respondent to indicate his or her level of agreement with each of 42 statements by selecting "strongly agree," "agree," "slightly agree," "slightly disagree," "disagree,"

or "strongly disagree." What follows are groups of these statements with accompanying response percentages that, taken together, tell us much about these teachers' authentic professional learning.

The 336 teachers who responded to our survey appear to be motivated by the educational potential of Internet use. They said:

- I decided to help my students participate in online activities because I thought that these would be valuable learning experiences for them. (100% agreed; 83% of them strongly)
- My students seem to be motivated by participating in online projects. (99% agreed; 56% of them strongly)
- I am motivated by participating in online projects with my students. (99% agreed; 57% of them strongly)
- I was not seeking to learn something related to teaching when I decided to help my students use online resources in their learning. (46% agreed; 54% disagreed)

Notice the strong motivations to participate and strong belief in the value of online learning experiences here. Notice, also, that about half of the respondents were consciously seeking professional learning when they decided to help their students to use online resources—and half were not. Yet…

The respondents suggest that they themselves are definitely learning while engaged in telecomputing projects with their students. They said:

- While helping my students use online resources for their learning, I feel that I learned something that related to my practice of teaching or to teaching in general. (99% agreed; 68.5% of them strongly)

- Helping my students participate in online projects helped me to increase and/or improve my technology skills. (97% agreed; 66% of them strongly)
- Helping my students participate in online projects helped me to improve my online communication skills. (93% agreed; 40% of them strongly)
- I learned more about the subjects I teach from helping my students participate in online projects. (95% agreed; 41% of them strongly)
- Helping my students participate in online projects helped me to improve my classroom management. (77% agreed; 20.5% of them strongly)
- Helping my students participate in online projects helped me to become more organized. (77.5% agreed; 17% of them strongly)
- Helping my students participate in online projects helped me to improve my instructional design or lesson planning skills. (88% agreed; 26% of them strongly)
- Helping my students participate in online projects helped me to increase the variety of my teaching/learning strategies. (97% agreed; 41% of them strongly)
- Helping my students use online resources as part of learning has changed my teaching approaches or practices in general. (96% agreed; 45% of them strongly)

It's interesting to note the rather broad range of professional skills and strategies that survey respondents felt they acquired or improved as they were helping their students to use online tools and resources.

The teachers who responded to our survey also suggest that they are learning to better understand others' thinking—especially their students' thinking—as they help them to learn with online tools and resources. We were impressed by the "student-centeredness" of much of the learning that the responding teachers reported. Specifically, they reported their learning in this realm as follows:

- Helping my students participate in online projects helped me to understand more about my students' learning and development. (95% agreed; 26% of them strongly)
- Helping my students participate in online projects helped me to understand more about my students' learning needs and preferences. (94% agreed; 26% of them strongly)
- Helping my students participate in online projects caused me to increase my expectations for my students' learning. (87% agreed; 27% of them strongly)
- Helping my students participate in online projects helped me to understand more about thinking in ways different than my own. (94% agreed; 27.5% of them strongly)

These teachers also see benefits to instructional use of the Internet related to collaboration and empathy. Specifically, they said:

- Helping my students participate in online projects helped me to collaborate better and/or more with my peers. (84% agreed; 21% of them strongly)
- My participation in online projects for students helped me to feel more connected and/or empathetic toward other people. (78% agreed; 18% of them strongly)
- I understand more about people of other cultures and in other locations after helping my students participate in online projects. (91% agreed; 33% of them strongly)

We were especially encouraged to learn that the responding teachers felt they were improving in both self-evaluation skills and assessment of students' learning as they integrated use of online tools and resources in curriculum-based ways. They said,

- I regularly evaluate and adjust my teaching practices. (99% agreed; 55% of them strongly)

---

**REFLECTING**

Do the results of this survey make you wonder about what you're learning professionally as you help your students to use online tools and resources in their curriculum-based learning? Documenting what you're thinking, questioning, experiencing, and realizing as you and your students experiment with new kinds of learning activities can provide helpful data to use during faculty evaluations—and it doesn't have to be time-consuming or tedious to do. More importantly, taking a few minutes to reflect, in writing, about your professional practice can help you—in the process of making these notes—to deepen and broaden your pedagogical understanding, making it more active as you reflect.

Try using these open-ended prompts to catalyze your reflections about the new projects that you and your students are exploring:

- What happened in the classroom today that intrigued you as you and your students worked with the new activity? What about it did you find so interesting, and why?
- What questions occurred to you today as the students were working on the new activity? As you list these questions, make notes for each about the partial answers that emerge as you reflect.
- What was unexpected today about what the students did, didn't do, said, and didn't say in response to the new activity? Why were these unexpected? What patterns do you notice as you review this list of observations?
- What didn't go as well as you had hoped today as the students were working on the new activity? What seemed to cause difficulty for them? What could/should be changed to improve the effectiveness of the activity?

Review your answers to the four questions above. What common themes do you notice in these responses? Make notes on these themes, then reflect on these notes. What do they suggest about what you're learning as you and your students work with the new activity? Make notes on what you realize as you reflect, and review these notes during your next reflection session.

Sharing these reflections, questions, and realizations with other teachers—face-to-face or online—can enhance your professional learning even more. Even if colleagues interested in engaging with you in this way are not available to you just now, we encourage you to document and enhance your professional learning by keeping the notes described above.

---

- Helping my students participate in online projects helped me to improve and/or increase my assessment of my own teaching practice. (92% agreed; 21% of them strongly)
- Helping my students participate in online projects helped me to improve and/or increase my assessment of my students' learning. (88% agreed; 18.5% of them strongly)

Please note that, as responses to the first item above indicates, this particular group of teachers is accustomed to both self-evaluation and self-motivated adjustment of their teaching practice. Still, they clearly reported improvement in these areas that resulted from their involvement with curriculum-based online projects.

Related to this familiarity with self-evaluation and reflexive adjustment of teaching practices is the responding educators' reflective approach to teaching and learning. They appear to be a group of professionals who are quite reflective and flexible, with high self-efficacy. (See Reflecting, this page.)

> Given increasing demands on K–12 teachers to be
> lifelong learners, despite work schedules that allow little
> time for traditional professional development activities,
> the imperative to explore and document authentic
> professional development is clear.

- I reflect frequently on my teaching practice. (99% agreed; 66% of them strongly)
- Helping my students use online resources as part of learning has inspired me to reflect more on my teaching practice. (94% agreed; 38% of them strongly)
- I am flexible in my classroom practice. (96% agreed; 67% of them strongly)
- I have learned to be more flexible in my classroom practice as a result of being involved with online educational projects. (88% agreed; 32.5% of them strongly)
- I feel more successful as an educator as a result of helping my students participate in online projects. (95% agreed; 38% of them strongly)

We thought it was particularly interesting that teachers' general feelings of professional self-efficacy surfaced in the positive ways that our survey results report when they incorporate use of the Internet in their teaching.

### Balancing and Leveraging the Results

So it seems that the teachers who currently help their students to use online tools and resources in curriculum-based learning are experienced, innovative, student-centered, flexible, collaborative, reflective, and active professional learners who are willing to share their knowledge with both peers and protégés. Does instructional use of the Internet make them that way? Probably not—and that's an important aspect of our studies' results to remember. Forcing teachers to use the Web with their students will not cause them to become like the teachers in our sample.

Yet the same teachers whose philosophies and practices were most amenable to incorporating the Internet into curriculum-based work in their classrooms at this point in time clearly tell us that such instructional innovation affects their professional learning in very positive ways. Surely these innovative teachers' learning should be recognized, valued, and credited to them by their employers.

Given increasing demands on K–12 teachers to be lifelong learners, despite work schedules that allow little time for traditional professional development activities, the imperative to explore and document authentic professional development is clear. It is our hope that our ongoing investigations of this fruitful and feasible new context for educators' professional growth will help to increase the types and quality of professional learning options open to classroom teachers.

### Resources

iEARN: www.iearn.org
KIDLINK: www.kidlink.org
ThinkQuest: www.thinkquest.org
Visible Knowledge Project: http://crossroads.georgetown.edu/vkp/

### References

Abbott, L. (2000). *The nature of authentic professional development during curriculum-based telecomputing* (Unpublished manuscript, University of Texas at Austin).

Donovan, M. S., Bransford J. D., & Pellegrino, J. W. (Eds.). (2002). *How people learn: Bridging research and practice* [Online]. Available: http://crossroads.georgetown.edu/vkp/resources/glossary/authenticlearning.htm.

Hurt, H. T., Joseph, K., & Cook, C. D. (1977). Scales for the measurement of innovativeness. *Human Communication Research, 4,* 58–65.

McGee, P. A. (1997). *Collaboration and unintentional teacher learning in telementoring contexts* (Unpublished manuscript, University of Texas at Austin).

McGee, P. A. (1998). *Unintended professional development in curriculum-based K–12 telementoring projects* (Doctoral dissertation, University of Texas at Austin, 1998). ProQuest Digital Dissertations, AAT 9838045.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: The Free Press.

*Judi Harris, professor and Pavey Chair in Educational Technology at the College of William and Mary in Virginia, directs the Electronic Emissary (emissary.wm.edu). She has authored more than 165 articles and four books, most recently* Virtual Architecture: Designing and Directing Curriculum-Based Telecomputing *(virtual-architecture.wm.edu), the 2nd edition of which is forthcoming. She began using computers to assist students' learning in 1980 and educational telecommunications with students in 1981. She played with her mother's Hollerith cards as a kindergartener.*

*Neal Grandgenett is a professor of teacher education at the University of Nebraska at Omaha, where he is co-director of UNO's Office of Internet Studies (http://ois.unomaha.edu). He has a special interest in the evaluation of educational technology projects, and has led the formative review of numerous major projects funded by the National Science Foundation, the U.S. Department of Education, NASA, and various private foundations.*