Classroom Innovation

My Jerry Maguire summer

Nathan Moore, PhD, Winona State University
September 3, 2025

Handwritten work, feedback-driven assignments, and collaborative problem solving help to ensure students grow as thinkers--even in an age of technological shortcuts

Key points:

- *Fostering genuine learning wins out over rote answers*
- *The power of instructional intent statements in assignment design*
- *How instructor feedback helps students learn academic expectations*
- *For more on new teaching methods, visit eCN's Teaching & Learning hub*

I've been teaching a summer course for nearly 20 years. At my institution, a summer course is a little extra salary for 5 weeks of extra work, and it feels like Santa comes to visit in July when the session ends. Meeting for 5 weeks means I meet with 20 or so students for 2 hours each day, 5 days per week, with another 6 hours of lab work each week.

Nobody can listen to (or give) a lecture for 2 hours a day, and the first 15 or so years of running the course it was like a Physics summer camp: 2-4 hours of problem solving, video analysis, whiteboarding, eating the Saskatoon berries when they ripened outside my office window, and doing problems in

sidewalk chalk on the path to the library. Thanks to an early exposure to Modeling Instruction, this felt like some of the most exciting, exhausting, and best teaching I've ever done.

Then covid arrived, everything went online, and suddenly the thought of taking a class in-person, at school, over the summer, was unthinkable. Nobody would sign up for an in-person summer course, particularly when the online option was available at our sister institutions, and if I wanted Santa to visit in July, I'd need to switch the class delivery method to "online asynchronous" in April to meet registration floors.

Once again, nobody can listen to an online lecture or sit in a synchronous Zoom session with camera on for more than a few minutes, and I figured out a teaching approach that seemed to work. Lecture notes, short videos of worked problems, Pivot Interactives labs, a home cooking activity measuring kcals/dollar for food items on a grocery list, and of course, online homework problems via LON-CAPA or WebAssign for massed practice. Teaching wasn't the fun social experience from my pre-covid in-person summer classes, but the approach seemed viable.

I'd never paid much attention to online AI services before they became the default search option in Google in Spring 2025. I figured AI was mostly just irrelevant marketing speak for an n+1 technological improvement–along the lines of eLearning from the early aughts, Big Data, Standards-Based Grading, the Internet of Things, and most recently, Blockchain. Then in May, per the submission logs, 5 of my students finished 3 chapters of Webassign homework in roughly 11 minutes. What in the world was I going to do with problem solving if my online students could get the answers to nearly any physics question in seconds to minutes?

I decided during covid that I wasn't going to go the route of invasive online proctoring, monitoring students with webcams. The invasion of privacy was too much for a student who only has internet access at McDonald's, and I had no desire to join an arms race of monitoring technology that would favor the devious cheater who could outfox monitoring attempts. I didn't want to punish the students who were "bad" at cheating while reinforcing the behavior of students who figured out the best way to beat the system by dabbing Vaseline on their webcam. I also didn't want my students to be put in the position of wetting their pants to avoid looking like a cheater. So Respondus Lockdown browser, Pearson Testing centers, etc. were out.

I also didn't quit my teaching job to pursue an Electrician's License, although I did consider it for an afternoon.

> *About 10 years ago I spent a few months working as a scorer of edTPA exams. The edTPA is a long assessment that many of our students complete while in their final student teaching placement. The TPA can be a meaningful assessment*

> *of teaching ability, and learning about the 15 or so rubrics the instrument uses was probably good for me, although scoring it was demoralizing.*
>
> *Grading student work is always a little self-reflective for me–if the students aren't doing something, is it because of something I've forgotten to tell them about? Have I asked them to practice the important skill? While scoring, the edTPA rubric that cut me most deeply related to feedback on student work (for wonks, see specifically the edTPA Elementary Mathematics Assessment Handbook, Rubrics 12 and 13, pp32-33. 2024). Briefly, high-quality feedback (grading) should be a tool that students can use to improve their skill, knowledge, and understanding in a content area. Feedback should be educationally useful.*
>
> *How many of my exam comments can help a student better understand force diagrams or angular momentum conversation? For me, that rubric cuts deep if I care about student learning. My graduate advisor, Shura Grosberg, loved to say, "Everything, even exams, should be a learning opportunity."*

One of the people I admire hates it when I ask, "What opportunities does this problem provide?" This is certainly not my original thought–nor is it Rahm Emmanual's Slytherian impulse to "never let a crisis go to waste." I might have heard this sentiment first in Likert's "The Toyota Way." Over the past 20 years "this problem" has been the 2008 recession and related budget cuts, covid, program reviews, the demographic cliff, new administrators, and now I suppose "this problem" is that AI systems seem to know what the answer to a physics problem looks like, and will give it to the students for free (for now…).

I don't know how to solve this problem, but there are probably some related opportunities that a person could take advantage of.

How do I know that students are doing the work? I don't. However, in my classes, everything must now be hand-written and submitted on paper or as PDF. There are plenty of solutions for this, including tablet pens and photo to PDF software. While poetic, I think handwriting and hand-drawn diagrams are more intimate and meaningful than typed text. Could a student transcribe an answer from an AI and present it as their own? Sure, but at least the words and pictures would be moving through their brains, and in the past it has seemed normal for students to look for the answer to problems in books the professor isn't using. Handwriting is at least a speedbump for the student who would otherwise simply copy and paste typed work, and perhaps handwriting, from me, is an indication that there's a person who cares about students on the other end of a submitted assignment.

Related, during covid, a friend shared a “solution guide” activity with me that I now use regularly. In my summer class, each week students are assigned a problem to write up in the style of a textbook solution. Every student writes for a different problem, and their work is shared in an online forum. I model this activity for the students, using a rubric adapted from Physics at the University of Minnesota. Students draft solutions, on which I give written feedback, and after a few cycles of revision the students are given the OK to post their work. The rubric, feedback, and grading are structured to value the story-telling parts of a physics problem that an answer box containing “72.5 Newtons” can’t get at. When I think about physics, there’s always a picture with knowns and unknowns, there are graphs, conservation laws, and when an answer arrives, there’s productive self-doubt and evaluation of whether the answer is plausible. I can praise all these things with written feedback, and for this reason, I’m not sad to see online homework leave my class.

There must be other opportunities for student interaction and student growth in the coming semesters. I look forward to learning about them.

eCampus News

Sign up for our newsletter

First Name

Last Name

Email

SUBSCRIBE

Yes! I want to receive the Innovations in Higher Education Newsletter

By submitting your information, you agree to our Terms & Conditions and Privacy Policy.

Author | Recent Posts

ESchool Media Contributors

Nathan Moore, PhD, Winona State University

Nathan Moore, PhD, has been teaching Physics and Electronics classes on Minnesota’s Southeast Coast at Winona State University for 20 years.He was chair of the department during covid and has varied research interests, including biological knots, computers big and small, the energy associated with food, and using teaching

methods from science education research.You can read more of his letters to the editor at https://ntmoore.github.io.

Stay up-to-date with the
INNOVATIONS
in **Higher Education** Newsletter

Please enter your email addı Sign Up

By submitting your information, you agree to our Terms & Conditions and Privacy Policy.

Sponsored Content

Sponsored

From Fire TV to Signage Stick: University of Utah's Digital Signage Evolution

The University of Utah, established in 1850, is the state's flagship institution of higher education. Located in Salt Lake City, it serves over 34,000 students across 17 colleges and schools.

Newsline
Trending Products & Services

Beyond the Degree: The Rise of Skills-Based Hiring and What It Means for Higher Ed

Bridging the Skills Gap: How Universities Can Align Curricula With Workforce Needs

HEA Policy Shifts Update: How Are Educational Stakeholders Responding?

Nation's Premier Collegiate Honor Society Inducts Talethia Jean Nevaeh Gray-Nance Into Membership

How Does Higher Education Procurement Work?

See All Newsline Updates »

Newsletters

INNOVATIONS in Higher Education

Stay up-to-date with the latest edtech tools, trends, and best practices for student and campus success. Daily Monday-Friday.

IT Campus *Leadership*

Your source for IT solutions and innovations to support campus-wide success.
Weekly on Wednesday.

AI in Higher Education

Get the latest updates and insights on AI in education to keep you and your students current.
Weekly on Thursday.

Our Web Sites

eSCHOOL NEWS

eSCHOOL MEDIA

Advertise

About Us

About eCampus News

Privacy Policy

Contact Us

Contact eCampus News

Article Submissions

Press Release Submissions

Social Media

Facebook

X Twitter

LinkedIn

© Copyright 2025 eSchoolMedia & eCampus News. All Rights Reserved. 9711 Washingtonian Boulevard, Suite 550, Gaithersburg, MD 20878 | 1-301-913-0115