

Thriving *in* Academe

REFLECTIONS ON HELPING STUDENTS LEARN

Thriving in Academe is a joint project of NEA and the Professional and Organizational Development Network in Higher Education (www.podnetwork.org). For more information, contact the editor, Douglas Robertson (drobert@fiu.edu) at Florida International University or Mary Ellen Flannery (mflannery@nea.org) at NEA.

■ The Distracted Classroom!

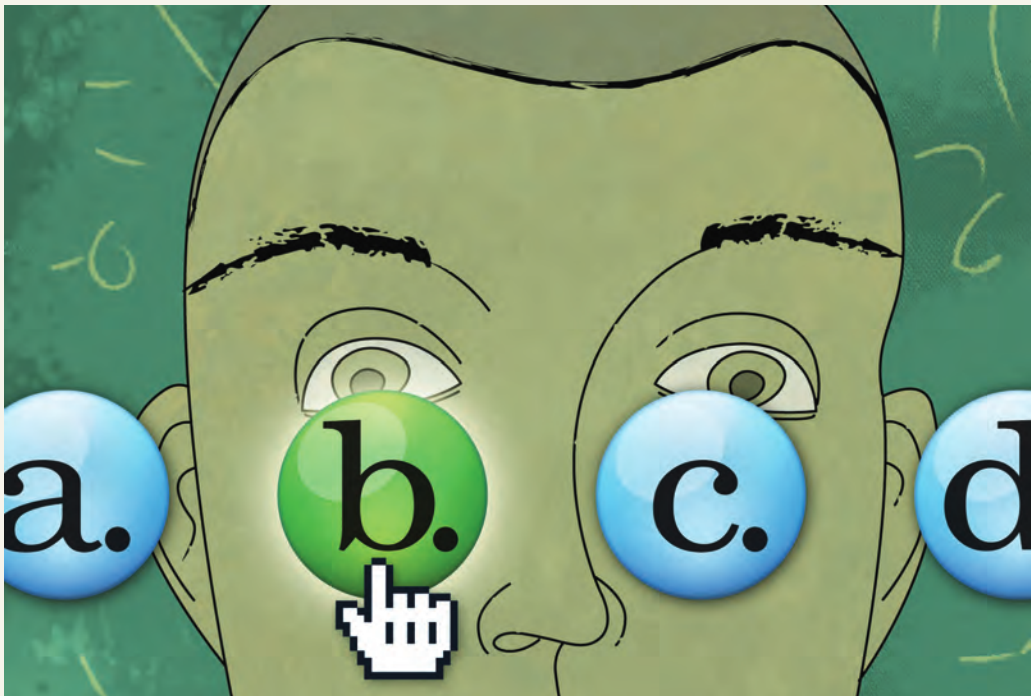
If you think your students are more distracted than ever, iOERs can help you do something about it.

BY JOHN D. SHANK
*Penn State University
Berks.*

We have all known students who sit in our classes, physically present but mentally a million miles away. While this tendency is nothing new (I'm certain Plato and Socrates could completely relate), modern technology seems to make it even more pervasive. We live in an age of information abundance — but it does not intrinsically lead to greater individual knowledge or even more collective wisdom. As Clay Shirky proclaims, “Abundance breaks more things than scarcity does.” (NFAIS, 2010)

Too often I have been in classrooms, both face-to-face and online, where students are dividing their attention between their smartphones, tablets, or laptop computers, and their professor. These students may believe they are being efficient and effective, but the reality is that they are missing important course content and interaction. Too often students are not full participants in their own learning.

Is it possible to do a “techno flip” and leverage technology to reverse this trend? Absolutely. If we intentionally use newer formats of educational resources (i.e. interactive open educational resources or iOERs), we can capture our students’ attention and refocus them on content and knowledge. The very tools that are contributing to the problem can be used to solve it.



Meet John D. Shank



John D. Shank is the head of the Boscov-Lakin Information Commons & Thun Library at Penn State Berks, and the founding director of its Center for Learning & Teaching. One of the first instructional design librarians in the U.S., he was promoted to full librarian in 2013. In 2002, he developed the Berks Educational Technology Grant Curriculum Program, which has awarded 90 grant projects to 60 faculty, initially impacting more than 3,500 students. John has presented at hundreds of conferences, webinars, and workshops, and authored and coauthored books, book chapters, and research articles that focus on library integration into learning management systems. In 2005, *Library Journal* named him a “Mover and Shaker.” John can be reached at jds30@psu.edu.

Reducing Student Learning Distractions

There are more opportunities than ever for students to become distracted in both face-to-face and online classrooms (Sherry Turkle, 2009; Matt Richtel, 2010; Nicholas Carr, 2011; PEW Research Internet Project, 2012). As director of a Center for Teaching and Learning, I have worked with many faculty members who are frustrated with how technology impacts their classrooms, and shared a number of techniques to reduce distractions.

The most obvious and a great starting point is to have all students turn off cell phones, laptops, and computer screens during lectures or class discussions. While this method might help your students focus by reducing digital distractions, it does not necessarily increase student engagement; after all, students have been daydreaming for centuries. And, in an online environment, this “turn it off” agreement is nearly impossible to ensure.

A better approach is to shift from a passive, lecture model to a more activity based learning model (i.e. the Classroom Flip/

Inverted Classroom, Bishop, J. L., & Verleger, M. A., 2013). This model seeks to expose students to class content before they come to the classroom or participate in a synchronous, live online class session. In so doing, classroom time is freed up to integrate activities such as group discussions and role play, problem-based learning, or student response systems (e.g. polling, clickers).

TALES FROM REAL LIFE > A DECADE OF DISCOVERY

More than a decade ago, I was hired into a faculty position, “instructional design librarian,” that had never before existed at Penn State. This was inspiring and intimidating: inspiring because it opened up a million possibilities, and intimidating because

I needed to prioritize among those possibilities. I realized my position mirrored one of the most profound challenges of the digital revolution — that of ‘over abundance’. Soon I realized, as many others have, that far too often technology (a tool) was *driving* the purpose of its use

on campus, instead of the other way around. I was determined to find a way for the purpose — enhanced student learning — to drive the process. Our solution was to create competitive grants that provide incentives and support to faculty who want to integrate digital resources into

their web-enhanced, blended, and online courses. Through these grants, I have seen first-hand how interactive tutorials, games, and simulations can have a measurable and meaningful impact on student learning. Many students who struggle with a topic, skill, or prerequisite

knowledge have found these resources helpful, and faculty have found these students to be more engaged with the material and more prepared for meaningful conversations and interactions. Because of this experience, I have become a passionate advocate for the use of iOERS in all courses.

This model has an obvious weakness: It relies on students to read, watch, or listen to the course material we have assigned them. Far too often, our students come to our classes ill-prepared to learn, simply because they failed to do the readings, watch a video, or listen to a mini lecture recording/podcast. A recent study by U.S. Public Interest Research Group (U.S. PIRG Education Fund, 2014) found that the majority of students had at some point not purchased their course textbooks because they were too expensive. We certainly can't expect our students to read textbooks they don't own.

Benefits of Interactive Open Educational Resources

Technology helped create this problem of 'techno distraction.' Can it also help us find solutions? Is it possible to integrate freely available online, engaging educational resources, such as tutorials, games, and simulations that students have a natural inclination towards using because of their interactivity? What if these same digital resources could provide valuable feedback to us, telling us if, when, and how long our students used the material? And what if we could also gain valuable insight into how well students understand that material?

Sounds too good to be true! But thanks to higher education, governmental, and not-

for-profit institutions supporting the development of these resources, instructional designers, technologists, and multimedia developers are increasingly able to create these interactive open educational resources (iOERs — i.e. tutorials, games, and simulations).

“INTERACTIVE OPEN EDUCATIONAL RESOURCES... HELP US FOSTER **'PEAK LEARNING EXPERIENCES'** FOR ALL OUR STUDENTS IN ANY TYPE OF CLASSROOM.”

What sets iOERs apart from traditional, more passive forms of course resources (i.e. articles, books, videos) is their ability to help us foster 'peak learning experiences' for all our students in any type of classroom. The best iOERs are able to accomplish this by integrating high quality content with:

- hypermedia
- decision making activities
- learner assessment
- learner feedback & reflection

To be clear, a 'peak learning experience' occurs when a student's complete atten-

tion is focused on what we want them to learn. The above mentioned components of iOERs force students to focus on the material — or fail to successfully complete or master it. Entertainment video games often create just such a dynamic, requiring the player to focus on achieving a set of tasks to reach a particular goal (usually winning or completing the game).

The best interactive open educational resources embed hypermedia, incorporating images and/or videos, sound, and text to allow students to receive information in multiple ways. This approach engages students' bodies (i.e. eyes and ears) as well as their minds by playing to the cognitive strengths of auditory and visual learners.

We all are familiar with the phrase 'we learn best by doing.' Educational games and simulations are excellent tools for allowing our students to virtually experience a process, environment, or system with little cost (e.g. travel, time, or money) or danger. Also, if done in an exciting way, the decision-making activities embedded in the resource can be enjoyable and motivational for students. A game or simulation that requires students to mix chemicals and predict what type of reaction might occur will, by its very nature, contain practical decision making activities.

Another integral component embedded in the best iOERs is an assessment feature. To be most useful to faculty and students

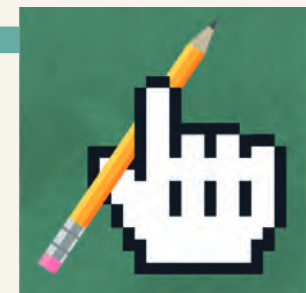
■ BEST PRACTICES > MAKING IT REAL

Faculty often express a desire to help students see how the topics and concepts they are learning are relevant and applicable to 'real world' skills or jobs. Interactive open educational resources can do just that. When a Penn State Berks faculty member who taught introductory accounting wanted to help her students better understand basic concepts that they could apply

as business operators someday, we created an interactive tutorial with practice exercises that replicated the accounting principles that students would need in operating a business. We also added a gaming element that challenged students to keep their business healthy by correctly answering questions.

Another big challenge for instructors is that too many of their students have forgot-

ten or not learned prerequisite knowledge or skills that are fundamental to their success. Compounding the problem is the reality that instructors cannot always take the time to review material that the majority of other students have mastered. Interactive open educational resources offer a solution to this dilemma. I have worked with faculty to identify foundation topics, skills, or knowledge that



students often need help to remember or learn. We would then identify high quality pre-existing online resources to assign or make available to students. Also, when we developed our own interactive tutorials, we would often include related-knowledge vignettes.

alike, iOERs need to have some type of testing feature. This allows both the learner and the instructor to measure and gain insight into the knowledge that students are acquiring as a result of using the resource. Also, this allows both parties to know students' areas of strengths and weaknesses, and enables the instructor to address the areas that most students are misunderstanding. It also allows students to focus on the content that they are struggling with, and to get additional practice at their own pace.

Lastly, as we all know, students need feedback to learn — it is good practice as noted by Arthur Chickering and Zelda Gamson in their highly cited work *Seven Principles For Good Practice in Undergraduate Education*. iOERs that have built-in feedback components guide learners so that they can gain a better understanding of what they are doing correctly as well as why they may be making mistakes. Through this feedback and reflection, students can build upon their prior knowledge and correct misunderstandings as well as misperceptions.

While entertainment video games and simulations have been around for decades (anybody remember pong?), online educational tutorials, games, and simulations have only more recently entered the higher education scene. This means the quality of the resources varies widely and the ability to locate them can be challenging. Now that you have had a glimpse of the educational value and potential to enhance the student learning environment, I encourage you to take the next step in creating a new type of student learning experience, one that encourages students to be fully engaged with the critical course material they need to learn.

We need to capture our students' attention and shift their focus to the course content and related discourse they need to have to learn. In an increasingly digital world, we must find the right balance between traditional, reflective resources (i.e. books, articles, and videos) and the emerging interactive education resources (i.e. tutorials, games, and simulations). Start small; focus on finding an iOER that can help your students learn a challenging topic or skill. As you progress, if you want more guidance with integrating iOER, you

ISSUES TO CONSIDER

THE ADOPTION PROCESS

1. Learning Needs Assessment. To select an iOER, you must first determine the most important concepts/skills/knowledge that students consistently struggle to learn. Although intuition may tell you the answer, a quantitative analysis of students' test scores can be helpful, as well as a survey of your students' perceptions.

2. Learning Activity Desired. Next decide on a type of activity. A good rule of thumb is to use:

- Simulations when students need to practice using a tool, system, or complex process, or if you want them to create/build something;
- Games when they need motivation or you want to foster competition to help them remember (i.e. memorize), better understand, or apply their knowledge about a concept;
- Tutorials when you

want to introduce concepts or skills, demonstrate appropriate use, and test how students analyze or evaluate those concepts.

3. Locating iOERs. Start at a big multidisciplinary repository such as MERLOT (www.merlot.org/) or OER Commons (www.oercommons.org/), then check out discipline repositories, such as the National Science Digital Library (<http://nsdl.org/>), and institutions'. Focus on well-funded schools with strong programs, such as research universities. Also, government agencies (i.e. NASA), non-profit educational institutions, and museums (i.e. Smithsonian) have excellent interactive learning content. To discover more, visit: www.scoop.it/t/oer-digital-learning-materials.

4. Evaluating iOERs.

- Validate the quality of the content (no junk allowed);
- Match the learning activity to your students' learning needs;

- Determine the level of engagement required by students—the higher the better;
 - Ascertain the level of feedback the resource provides to ;students—the more detailed the better;
 - Confirm that students can use the technology (i.e. does it play in their web browser?)
 - Establish that the material has a good user interface design (i.e. your students can use the simulation, game, or tutorial with little or no training)
- 5. Assessing the iOERs Impact.** Are students performing better on the tests? If not, discard the iOER. You can also ask students via a survey or more informally if they like it and believe it helps them learn.

may find more information in my book, *Interactive Open Educational Resources: A guide to finding, choosing, and using what's out there to transform college teaching*.

REFERENCES & RESOURCES

- Bishop, J. L., & Verleger, M. A. (2013, June). The flipped classroom: A survey of the research. *In ASEE National Conference Proceedings*, Atlanta, GA.
- Carr, N. (2011). *The shallows: What the Internet is doing to our brains*. WW Norton & Company.
- Chickering, A. W., & Gamson, Z. F. (1987). *Seven principles for good practice in undergraduate education*. AAHE bulletin, 3, 7.
- Khan, S. (2013). *Teaching for a wired generation*. ASEE Prism, 23(1), 51.

- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies*. U.S. Department of Education.
- Purcell, K., Rainie, L., Heaps, A., Buchanan, J., Friedrich, L., Jacklin, A., ... & Zickuhr, K. (2012). *How Teens Do Research in the Digital World*. Pew Internet & American Life Project.
- Richtel, M. (2010). *Growing up digital, wired for distraction: Business/Financial desk*. New York Times.
- Shank, J. (2014). *Interactive Open Educational Resources: A Guide to Finding, Choosing, and Using What's Out There to Transform College Teaching*. Jossey-Bass/ACRL.
- Turkle, S. (2011). *The Tethered Self: Technology Reinvents Intimacy and Solitude*. *Continuing Higher Education Review*, 75, 28-31.
- Weksler, M. E., & Weksler, B. B. (2012). *The epidemic of distraction*. *Gerontology*, 58(5), 385-390.