

Understanding Digital Distractions to Improve Teaching and Learning

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The integration of technology into modern classrooms, though beneficial in innumerable ways, has also come with its own set of difficulties for instructors and learners alike. The learning curve and cost associated with each program or form of technology can prove challenging for course developers. Another factor, and one we have found highly problematic in our hybrid or blended learning environment, is the constant threat of distraction from non-learning technologies.

As instructors and workshop presenters in the Dennis Learning Center at Ohio State University, we encounter all types of students and learners. For more than a decade the learning center has utilized what is called the Active Discovery and Participation through Technology (ADAPT) approach to learning (Tuckman 2002). This blended classroom with an instructor present in a computer lab has enabled thousands of students to learn success strategies, receive timely feedback, and transfer their knowledge to future situations. Research has shown that students who take our learning and motivation course are more likely to stay in college and achieve a higher GPA (Tuckman and Kennedy 2011).

With the integration of technology in the classroom, however, we have come across a number of difficulties we believe may be common to many, if not most, blended learning environments. Course software has sometimes been difficult to navigate, inhibiting instructors' ability to provide substantive feedback on assignments and papers. Software programs, including layouts, quickly become outdated. Probably most concerning however are the digital distractions in the classroom: cell phone use, non-learning computer activities such as social networking, and browsing of course material unrelated to current classroom discussion to name

a few. These digital distractions can be detrimental to a student's academic progress and, if unchecked, can lead to other more serious problems. We have often found that students distracted by technology do not participate in class or group discussions, and have more difficulty staying on task.

Our observations prompted us, as instructors, to look into some of the research on technology in the classroom in order to find possible solutions to these common problems.

Literature on Technology in Education

We questioned what colleges and universities are doing, besides offering exposure to in-depth content, to grab the attention of students, many of whom expect technology-heavy learning environments. A recent empirical study in Spain found that blended learning "is more effective than face-to-face learning" (Castaño-Muñoz, Duart, and Sancho-Vinuesa 2013, p. 1). But the authors assert that, "increasing the time spent studying online is only useful when it takes place as some form of interactive learning" (Ibid.). In other words, online study needs to include interactions with other learners in order to be useful.

College and university instructors may feel ill prepared when they think of the technological capabilities of young and future higher education students, but the benefits of using innovative technology in education are worth mentioning. Clicker technology in college classrooms (Cole 2010) and poll websites like <http://polleverywhere.com>, provide an engaging outlet for students to voice their opinion in spontaneous and anonymous ways. Graphics and animation classroom capabilities have engaged students in K-12 schools in novel and attention grabbing methods (Schachter 2009) that have caught on in other venues. Add to these online

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class discussions, interactive learning software, and many other digital learning tools that promote student engagement.

Sometimes efforts to make classes more interactive, perhaps by just allowing students to take notes on laptops, have created new distractions for instructors and students alike. Some instructors have been so annoyed with student off-task classroom behavior that they have implemented “no laptop computer” policies and have had (sometimes forcibly) all wireless connections turned off (Kay and Lauricella 2011). Burns and Lohentry (2010) reported that over 40 percent of students use their cell phones for text, voice mail checking, and even as lights to see in the back of dimly lit classrooms. Today, a student might use her cell phone to take notes, message, check the time, weather or their class schedule, or even access course content, and it is difficult for the instructor to know which of these the student is doing.

Every generation of students demands newer technologies, but some technologies never actually get used at all (Boles 2011). Once an expensive technology is attained, it can quickly become outdated largely because of the huge learning curve and time needed for the instructor to understand and apply it to her educational setting. Instructors need to be seriously convinced that their time invested in the project will yield significant results in student learning outcomes (Means 2010).

Solutions

It is clear that digital devices will not go away any time soon. Whether an instructor chooses to ban, ignore, or include electronic devices in their classroom, they will still have to deal with the problems surrounding digital distractions. Posting signs to turn off cell phones completely have been met with limited success. Taking the middle ground approach and asking students to digitally disengage (close their laptops), while the instructor emphasizes a few important points can go a long way (Bugeja 2007). It seems we are at a cross roads: either meaningfully integrate classroom technology or “distractions and decreased performance are inevitable” (Kay and Lauricella 2011, p. 34).

One solution would be to consider domains of academic and social space with the use of technology. It is important to stress to students that online class discussions are not places for sharing intimate social experiences, or venues for superficial, unprocessed, or offensive content. For things to go smoothly there must be a clear distinction between on and off-task behavior. In a study about online learning, half of students in one study actively “flicked” back and forth between learning and non-learning activities (Winter, Cotton, Gavin, and Yorke 2010). The authors determined that students tend to feel more productive if they have barriers to distractions, whether inherent in the technology or set up on their own. If the distractions could not be managed, half the participants felt they would be better off reading without the use of computers. Which tasks to combine or multitask can also be a quandary. In another study, when compared to combining visual and audio tasks, combining only visual tasks decreased productivity even when the user felt like he or she was being more productive (Wang and Tchernev 2012).

The digital distractions and other problems related to technology in the classroom can create an unfortunate confrontation: professor vs. technology. Kay and Lauricella (2011, p. 34) put it well, “Outright bans on technology sends a message to students that they are not to be trusted to take responsibility for their own learning.” For today’s student, the electronic device in whatever form, is often seen as an appendage, virtually an extension of themselves, and an absolute severance policy may be viewed as an encroachment on their right to learn and their ability to do it. So, it is not a question of whether to include technology, but how to effectively use it (Wilson, Wright, Inman, and Matherson 2011).

How We Have Adapted Our Learning Environment

As instructors we try to maintain a quiet study area that limits distractions. Many signs in learning labs discourage digital and personal conversations. At the beginning of a course, we emphasize what is considered acceptable and non-acceptable use of technology in the classroom. We elicit feedback from students on what software and programs are helpful and try to make ad-

justments to class content and layout as needed. In our class content we include a section on minimizing distractions, including digital distractions, in order to help students identify and address diversions that conflict with their academic goals.

Recently we changed the physical configuration of our classroom lab to include more open table space for students. The classroom was originally set up as a computer lab, where students sat in rows at desktop computers. Now, the classroom has essentially been split into two sections, one that still includes desktop computers and one which has large tables where students sit during lectures and discussions. We believed it would enhance peer learning to have students sit at an open table without computer hardware barriers that seemed to limit student interaction with their peers and served as distractions at the computer workstations.

We quickly noticed a difference once the physical space was rearranged. Some of the comments from other instructors who teach in this space include:

Changing the physical space was the single-best thing that happened to my course!

Students talk so much more now, and talk more to each other!

We were pleased that the change had encouraged student interaction. However, there was another and unexpected consequence of this space adjustment; students would not migrate back to the computer stations after class or group discussion, but would remain to read course readings through hardcopy or small electronic devices (iPad, tablet, or phones), or use their personal laptops to access course materials. Simply changing the physical configuration of the classroom drastically changed how the students used digital devices.

Considering what we have found in the literature and what we have experienced in our class, we suggest the following:

- Set expectations early in the course on how technology is to be used in the classroom,

- Assess the physical arrangement of the classroom and make changes as needed,
- Consider how digital resources will be shared to promote interactive learning and discourage distractions, and
- Recognize that total bans on digital devices may not be helpful in developing rapport with your students.

While our glance into the literature was helpful for us, we know there is still much to consider and learn in this area. We close with some questions for instructors of all kinds, whether you teach in formal or informal spaces. Do you embrace new technology, and if so, when and why? When is it worth the extra effort and cost to adapt high learning-curve technologies for your learning environment? Which are most harmful or beneficial to interactive learning? How much autonomy should students have with personal or shared electronic devices?

From an instructor point of view, watching students with their eyes, ears, and hands engaged with an electronic device can elicit negative thoughts about students and their habits, but it is important to keep things in perspective. Nearly 90 years ago, after serving more than 25 years as a university president, one educator wrote: “The [modern] student may be a problem, but he is also an opportunity.... It should always be kept in mind that a generation of youth is vastly better than its follies or vices may suggest” (Thompson 1925, p. 34). Students that are digitally distracted can be very difficult to teach, and the challenges associated with integrating useful technologies in the classroom can be daunting for the instructor. But as we have experienced, these difficulties are often offset by the tremendous advantages of recent technology that can be carefully and selectively integrated into courses.

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