

Tools for Seamless Teaching in Online and Hybrid Contexts

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Abstract: Face-to-face teaching methodologies are often very different from the pedagogies needed to deliver successful online teaching. Instructor presence, specific feedback, effective course design, engaging content, and peer interaction have all been shown to be effective predictors of success in online and hybrid learning contexts. This best-practices paper will introduce and discuss how publicly available online technology tools can be seamlessly integrated into online and hybrid course environments to facilitate effective learning. Specifically, this paper aligns with the online interactions framework which purports that students in online courses interact with content, with the course instructor, and with each other to obtain learning mastery. Online tools such as Nearpod, EdPuzzle, Voicethread, Screencastify, FlipGrid, and Google Suite can assist instructors in creating these interactions by facilitating engaging learning activities, providing a method to collect formative assessment data for learning feedback, and by promoting collaboration between students through meaningful discussion opportunities.

Introduction

Approximately 28% of students seeking a college degree participate in at least one online course in their program according to the latest report detailing statistics on distance and online education enrollment. (Allen & Seaman, 2016). Furthermore, hybrid style courses where students experience synchronous face-to-face instructor interaction and asynchronous online content continues to gain momentum as a preferable method to access higher education. Hybrid courses blend the best of both worlds by providing students with flexible, asynchronous course access while also utilizing the expertise and assistance of a live course instructor (Ward, 2004).

Several meta-analytic studies indicate the effectiveness and feasibility of online instruction, including hybrid and blended environments in higher education learning programs. A report compiled in 2010 by the U.S. Department of Education identified 51 independent effects between 1996 and 2008 that compared online instructional formats to more traditional face-to-face instruction. Of these 51 effect sizes, 44 were reported in higher education programs with the rest in K-12 education. The report identified several key findings related to online and hybrid course offerings: 1) On average, students who participated in all or most of their courses through an online format performed better than students who took the same course in the more traditional, face-to-face format; 2) A combination of online with face-to-face elements (known as blended or hybrid instruction) resulted in stronger overall performance than strictly face-to-face instruction than when compared with sole online performance; 3) Students that reported more time on task in online courses reported more benefit for online courses than students in the face-to-face section in comparable circumstances; and 4) Online learning formats were effective for a variety of content areas and learner characteristics (i.e. K-12, undergraduates, and graduate students). Means, Toyoma, Murphy, & Baki (2013) concluded in their analysis of the findings from this study that “purely online learning has been equivalent to face-to-face instruction in effectiveness, and blended approaches have been more effective than instruction offered entirely in face-to-face mode” (p. 35).

It is widely known that instructional pedagogies for online teaching differ greatly than a traditional face-to-face teaching skill set (Twigg, 2000). Emerging research has indicated several quality indicators that promote

successful online experiences among students. Course design and consistency, contact with course instructors, and dynamic/interactive discussions through online forums have all been found as significant predictors of successful online learning (Heirdsfield, Davis, Lennox, Walker & Zhang, 2007; Swan, Shea, Fredericksen, Pickett, & Pelz, 2000; Swan, Shea, Fredericksen, Pickett, Pelz, & Maher, 2000). Furthermore, instructor presence, purposeful and meaningful interaction from the course instructor, and specific feedback on student progress has also been correlated with perceived student success in online courses (Heirdsfield, Davis, Lennox, Walker & Zhang, 2007; Hurlbut, 2018; Norton & Hathaway, 2008; Ravenna, Foster & Bishop, 2012; Sheridan & Kelly, 2010; Swan, Shea, Fredericksen, Pickett, & Pelz, 2000).

When looking at a pedagogy for teaching in online environments, it is important to understand the various methods in which students interact with online content. Moore (1989) conceptualized that students interact in three main ways: 1. Student-Content; 2. Student-Instructor; and 3. Student-Student. Interaction with content refers to students' interactions with course materials that includes the knowledge, skills, and attitudes being studied (Swan, 2003). Aligned with principles from digital and higher education learning contexts, interaction with content centers around the notion of establishing clear goals and expectations, providing multiple representations of course content, including frequent opportunities for active learning, giving frequent and constructive feedback, offering flexibility and choice, and providing instructor guidance and support (p. 6). Interaction with course instructors involves overall teaching presence that includes serving in cognitive, affective, and managerial roles. Instructors answer questions, provide feedback on learning and assignments, and establish teaching authority in assignments and selected content such as recorded teaching lectures. Instructors also tend to serve as moderators and facilitators of online discussions among students (Coppola, Hiltz, & Rotter, 2001). Finally, student-student interaction is hallmarked by interactions with other students through online discussion boards, establishing social presence in courses, and verbal immediacy among participants in the course (Swan, 2003).

Purpose, Problem, & Significance

As participation in both online and hybrid courses continues to increase, it is important that course instructors stay up to date with research and pedagogy in delivering effective instruction in these contexts. The purpose of this best-practices paper is to discuss and highlight several synchronous and asynchronous tools that can be used to enhance learning in online and hybrid learning contexts within this framework of how students interact with content, instructors, and each other to enhance learning outcomes. Many of the tools that will be discussed in this paper potentially transcend the categories and can enhance instruction by providing student access to content, the instructor and peers at the same time. For example, Nearpod, an interactive presentation and assessment tool, provides students with multiple representations of the curriculum while also engaging students in active learning and providing opportunities for instructors to establish presence and provide feedback. Each tool will be briefly described below. The presentation will provide screenshots, active experimentation, and example case studies of how each tool is used in an online and hybrid teacher education course.

Student-Content Tools

EdPuzzle is a tool that allows instructors to create/import or select existing teaching videos and embed quizzes within the video for students to view. The video editing tool allows instructors to not only crop and edit videos for length or importance, but it also allows instructors to embed voice memos as a way to highlight the most important features. Similar to how a face-to-face teacher might pause a video shown in class to discuss important elements of the film, this feature allows teachers to provide a similar experience in an asynchronous environment where students can watch the video on their own time with teacher input. Additionally, EdPuzzle allows instructors to prevent students from fast forwarding through the video, tracks video completion, and checks for understanding and mastery of the content by allowing instructors to embed multiple choice and open-ended quiz items (Blackstock, Edel-Malizia, Bittner, & Smithwick, 2017).

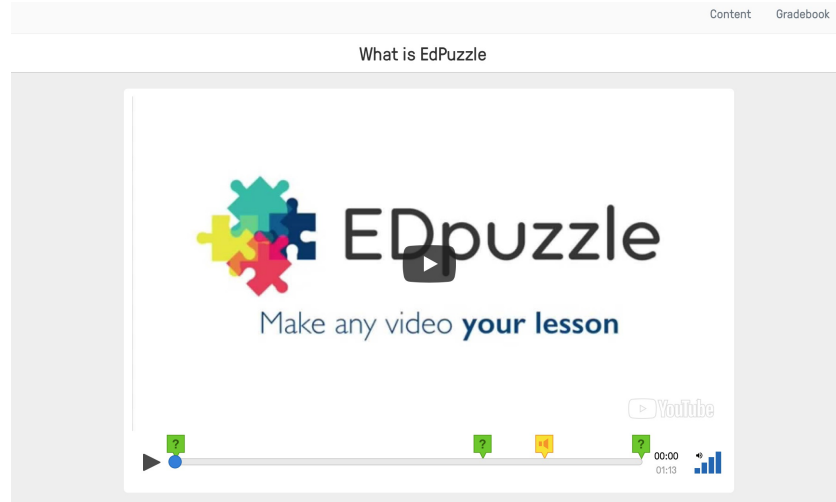


Figure 1. Example EdPuzzle Screen.

VoiceThread is another online tool that allows instructors to create narrations using previously established teaching materials (Vickers & Shea, 2017). Using an iPad or similar device, the instructor creates or imports visual presentation slides and then records a narrated teaching lecture while moving through the presentation. The recording is then posted online using a link that can be imported into a learning management system. Similarly, Screencastify is a tool that allows instructors to record teaching presentations, but uses a feature that records a screen image or screen recording on a computer. An option of this feature allows instructors to record their image as a way to establish presence in the teaching sequence.

Student-Teacher Tools

Nearpod is an interactive web application that allows instructors to create engaging and interactive teaching presentations for students while combining interactive assessment features such as quizzes, open-ended responses, draw-boards, polls, and collaborative posts that students submit throughout the presentation (Dong, Kavun, Senteney, & Ott, 2018). These activities provide students with active opportunities to engage in the content and learning, but also provide instructors with formative assessment data that can be used to quickly provide learning feedback. Using the interactive features such as the multiple-choice quizzes or matching/fill-in-the-blank activities, students can also get real time answers to their responses on these items. The best part about Nearpod is that it can be used synchronously for face-to-face class meetings or can be set to the student-paced mode where students can asynchronously access the material on their own time. This tool provides a means for instructors to not only engage their learners, but to provide multiple opportunities to receive feedback on a learning concept.

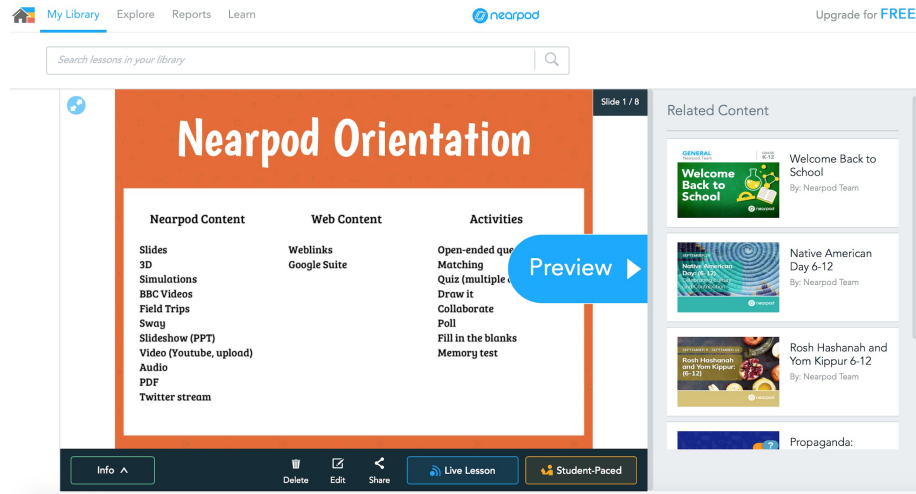


Figure 2. Example Nearpod Screen.

Other quizzing tools such as Socrative, Poll Everywhere, Kahoot, and Quizlet can accomplish similar goals by providing an outlet for instructors to check on learning progress and provide immediate learning feedback to students.

Student-Student Tools

Flipgrid is a tool that has gained massive popularity in Kindergarten through Twelfth grade learning contexts and is slowly catching on in higher education settings (Greene & Greene, 2018). Flipgrids are social-media inspired video discussion boards. Traditionally in online classes, students are often required to post written questions and/or responses to questions on a digital discussion board. Students often have a minimum posting requirement and are required to read and respond to others' posts. Using Flipgrid, the format of this has changed to accommodate the ease of new video recording capabilities since nearly all students have a camera on their smartphone. Using Flipgrid, students access the grid board, view the prompt, and then record a brief oral response using their camera or smartphone device. The video can be re-recorded and saved as many times as the student wishes before being posted. Students can then view others' videos and record their own responses. Flipgrid provides students with benefits of meaningful discussion centered around content, with the ease, flexibility, and novelty using a common device.

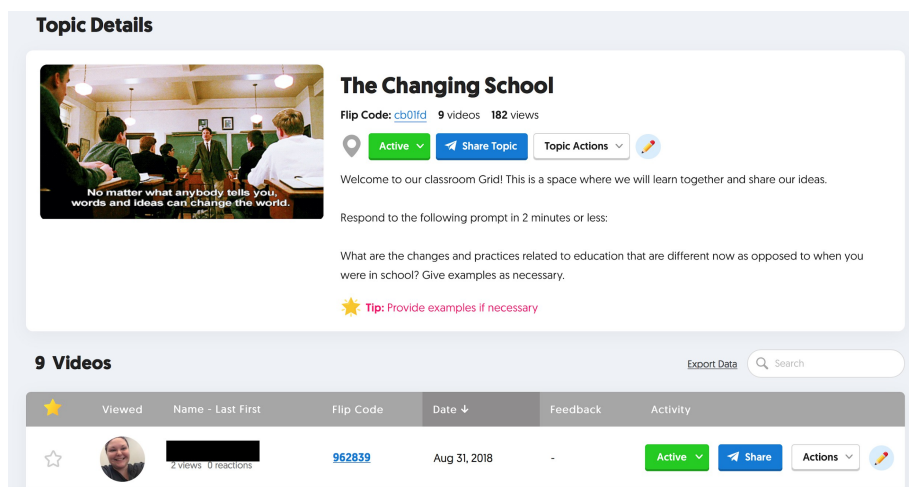


Figure 3. Example Flipgrid Screen

Prior to cloud-type applications, students working on a group project traditionally had to save their work to a hard drive, copy and distribute to group members, edit and revise as necessary, and then scramble to piece together a finished product using multiple copies of a single project. Or students had to be physically present to provide equal input. Synchronous cloud technology such as the capabilities of Google Suite applications have completely changed the way that groups can work on a project by allowing students access to a shared document that can be accessed, edited and viewed by all members at the same time, and then saved automatically for immediate access. This technology has greatly contributed to the accessibility and ease of using online platforms for learning. For example Google Docs has been used to facilitate class lectures and discussions (George, Dreibelbis, & Aumiller, 2013), to promote student inquiry through group collaboration in an online class (Chu & Kennedy, 2011), to conduct and complete lab experiments and document in real time (Spaeth & Black, 2012), to map important themes and analytical processes in a literature course (Kucukalic, 2009), and to implement collaborative writing processes among students (Brodahl, Hadjerrouit, & Hansen, 2011).

Conclusion

This paper provided a brief overview of research surrounding best online teaching pedagogies using the online interactions framework: student-content, student-instructor, and student-student. As emerging technologies become widely available and used, little is still known about how specific tools can best facilitate meaningful learning in online and hybrid environments. Future research studies should address how these tools contribute to the features of successful online and hybrid experiences through effective course design, meaningful feedback and active instructor presence in the course.

Guiding questions or individuals looking to research or incorporate these technologies in their classes include:

- Which tools are easier to use? Are certain tools better than others in course delivery, design, and feedback elements?
- How can these tools enhance learning in hybrid and fully online courses?
- What are some of the applications or takeaways that can be applied to teaching?
- What are some of your experiences, including additional tools that you have used to facilitate student-content, student-instructor, and student-student interactions online?

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