Flipping The Classroom: Why this Fad will dominate the Educational Landscape by 2018

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"Sage on the stage" versus "guide on the side" (Baker, 2000). Lecture and rote memorization based-learning compared to collaborative and discovery based learning. Student consumption of content in time-based settings as opposed to student production of content in outcome based settings. Any informed educator would know the above comparisons highlight some of the major differences between 20th and 21st century education models.

Near the end of the 20th century, computer software innovations, such as Microsoft Word and PowerPoint, served as glitzy replacements for more traditional tools like the pen and paper. In most cases, instead of transforming the way students' learned, these programs merely streamlined the drill and repetition activities that had dominated classroom culture for decades (Olliges, Mahfood, & Tamashiro, 2005).

When education entered into the 21st century, many teachers had renewed expectations for technologies transformative potential, particularly upon the advent of "Web 2.0" (O'Reilly, 2005). The Internet was no longer a place reserved solely for the consumption of content. Users could now interact and communicate with each other through social media sites, blogs, wikis, and video. Still, despite the "groundswell of enthusiasm for adopting Web 2.0 practices in education", there was little evidence to support claims that learner achievement was increasing in any significant way (Crook et al., 2008, p. 5).

Enter the flipped classroom model of education. With roots in peer instruction, teachers Bergmann & Sams (2012) took a tried and true method of education and gave it a 21st century twist. Proponents like Houston and Lin (2012) noted that the act of flipping the lecture and homework equation has humanized the classroom. In short, this is the transformational learning model for which many educators have been waiting.

By 2018, flipped education will be universally accessible and affordable; come pre-packaged with research-supported frameworks to meet the needs of 21st century learners; and be a classroom staple among the ever-expanding population of tech savvy educators.

Findings

In terms of meeting the necessary teacher technology requirements to successfully flip a classroom, future issues of cost and accessibility will become almost negligible. How is that possible? The answer is simple. Reversed instruction doesn't require any new investments in technology. The only exception might be the purchase of screen capture technology to record lectures, but even that software is typically available free of charge – albeit with limited features – through products like JING and CamStudio. For educators who prefer to use the incredibly vast and varied collection of online videos, securing funding is also a non-issue. Sites like the Khan Academy, TED-Ed, YouTube EDU and iTunes U each provide access to professional videos. Many of these websites/services also give users the ability to create or customize their own videos (free of charge). Adding credibility to these services, tech heavyweights like Bill Gates and Google's Eric Schmidt have not only praised the quality of the videos available on these websites, but also touted the many benefits of the flipped classroom model itself (Thompson, 2011). The topic has also been featured across major publications, such as Forbes and Time magazine, as well as discussed and debated on popular television shows, like The Agenda (TVO) and 60 Minutes (CBS).

In terms of meeting the necessary student technology requirements to ensure full engagement with the flipped classroom model of learning, issues of cost and accessibility will not disappear, but teachers will be able to neutralize any inadequacies. How? For one, video lectures or activities can be transferred to USB drives or burned to DVDs. This readily portable educational content affords students' the ability to complete out of class work without the need for an Internet connection (Bergmann & Sams, 2012). Furthermore, entire communities are becoming wireless; kiosks are being set up; coffee shops are connected; and schools continue to offer extended hours (particularly post secondary institutions).

Perhaps more concerning, research is now pointing to a second-level digital divide (Graham, 2011). This emerging divide splits Internet users into either passive consumers of media or active producers of media (Reilley, 2011). The flipped-classroom

model, with its focus on activities that help to build higher order thinking skills while providing a guide on the side to mentor or coach students, can help to bridge this divide.

The reverse instruction method has existed long before pre-recorded lectures became available over the Internet. When comparing the initial origins of this model to the numerous updates since, it's easy to see how the passage of time will continue to refine and improve the practice (removing ambiguity, and proving research supported frameworks for implementation across grades, subjects and learners).

The humanities have used a model of reverse teaching for decades. Students would read the material at home, and then discussion it in class the next day with the teacher often taking on a guide on the side role (Khan, 2012).

In the 1990's, Mazur (1991) developed peer instruction working at Harvard. He detailed how computers could be valuable instruction aids that help to shift educator roles from lecturer to coach (Mazur, 1991).

At the turn of the century, the Internet was experiencing its own major shift with the advent of web 2.0 technologies. With that shift came many opportunities to promote student-centric modes of instruction over sage on the stage approaches. Yet, many educators resisted this change for a variety of reasons, including fears of experiencing embarrassment in front of students, and being too set in their ways (Hicks, 2011). Around the same time, Baker (2000) presented his paper, "The classroom flip: using web course management tools to become the guide by the side", and with it introduced the phrases "guide on the side" and "sage on the stage". This was an important moment in education as it brought into focus what the flipped classroom was all about – taking on the role of a facilitator or learning coach during in-class activities, and moving the lecture component outside of the school walls (Bergmann & Sams, 2012).

In 2007, chemistry teachers Jonathan Bergmann and Aaron Sams introduced the concept of using video recordings of their lectures (vodcasts) to flip their classroom. Since then, they have continued to play key roles in helping to bring the practice into the mainstream consciousness.

In that time, thousands of educators across the world have tried flipping their classroom. The options for in and out of class activities continue to expand and evolve. There is a focus on mastery learning now, which is a highly scaffolded approach to education (Bergmann & Sams, 2012). The potential for flipped instruction to accommodate the learning needs of all levels of learners has also been widely noted (Bergmann & Sams, 2012).

In terms of the most current advancements, there is new technology being developed at Khan Academy that gives teachers the ability to monitor their students' progress outside of the classroom, and to identify those who are struggling the most. It shouldn't be far-fetched to expect this functionality to be added to learning management systems (Blackboard, Desire2Learn, etc.) in the not too distant future. Educators could create their own custom made videos – tailored perfectly to the learning outcomes of their courses – and upload them to their schools LMS of choice. From there, software would monitor student progress and allow teachers to adjust their in-class approaches accordingly.

What's also exciting is the enthusiasm with which educators and researchers alike have embraced this updated reversed model of teaching. A quick search in any tech journal or research oriented database produces dozens of entries on flipped classrooms. Just as there are many proven frameworks that inform the design, development and delivery of learning objects and learning management systems, educators should expect the same calibre of research backed strategies for flipping classrooms. Any ambiguity or uncertainty that teachers may feel when attempting to flip their classroom should become a moot point for those that take the time to learn – and adhere to – teacher tested and research supported practices.

Still, so much depends on the effectiveness of individual teachers. Those who send students home to watch videos without tailoring the classroom experience to increase student-teacher interaction and/or student-to-student interaction are not flipping their classrooms (Bergmann & Sams, 2012). Those teachers are lazily using video to minimize their role in the classroom, and in turn, are just shifting their teacher-centric approach to an online setting.

If so much depends on the teacher, and it does, then how can the future success of this model be assured when many instructors still fear/resist change? The flipped model will be in good hands by 2018 because of inevitable retirements; early tech adopters talking on more senior roles; and digital natives filling out the lower and middle level teaching positions.

Parting Thoughts

The 21st century model of education favours "guide on the side" approaches over "sage on the stage" (Baker, 2000). Lecture and rote memorization based-learning methods are being replaced by collaborative and discovery based learning methods. Student consumption of content in time-based settings is steadily becoming the practice of the past. Student production of content in outcome-based settings is the future.

The flipped classroom, though not the only approach, provides educators with the right blend of technology and pedagogy to meet the needs of 21st century learners.

As technology becomes increasingly accessible and affordable; as reverse instruction frameworks continue to evolve with the needs of 21st century learners; and as teachers strive to meet the demands and expectations of their employers, the flipped classroom will outgrow its 'fad' label to become an industry mainstay.

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