Why Use iPads in the Classroom?
The Office of Educational Technology within the U.S. Department of Education produced the document “Transforming American Education: Learning Powered by Technology” in 2010. The document encourages the incorporation of technology used in our daily, personal, and professional lives into the entire U.S. education system. Additionally, many people believe “... the days of the paper and pencil classroom are coming to an end...” and “Educators must become experiential researchers who constantly search for answers, evolve their instruction, and become adaptable to the constantly evolving mobile technology.” Although daunting, a marriage between mobile technology and education appears imminent. After careful review of iPad uses in the classroom, justification can be summarized with three simple outcomes: 1) learning versatility for the students, 2) teaching versatility for educators, and 3) student engagement for the entire class.

Learning Versatility
Mobile devices are considered very personal devices. Because of this, the iPad and similar devices are believed to be the future of one-to-one educational delivery, and even education itself. iPad usage encourages personal connectivity with knowledge and people, producing an individualized education.

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In order to adequately investigate iPad learning versatility, all students must have their own iPad and use them both in and outside the classroom. However, due to my personal lack of persuasive skills, the idea of purchasing several iPads for students was never pitched to my department chair. In addition, after considering the cost and minimal supportive data, I did not consider it a justifiable option. Yet, a few universities (e.g., Austin Peay State and Rivier Universities) have experimented with iPad learning versatility by providing iPads for all students enrolled in a course. Students were encouraged to use their iPads to access digital textbooks (e.g., CourseSmart and iBooks), view course videos (e.g., iTunes U), take notes (e.g., Notetaker HD, Notability, and Evernote), view and annotate course PDF files (e.g., Documents and WritePDF), and other activities unique to the course.

Teaching Versatility
I have spent most of my time investigating iPad teaching versatility. There are many inexpensive (and often free) teaching applications specifically designed for educators. In comparison to switching programs using a computer, there are relatively seamless transitions between mobile applications. Most importantly, a significant number of
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Presentation applications allow freehand annotating such that items can be highlighted and/or easily modified "on the fly." In addition, many teaching applications allow for recording (audio and video) of presentations. Most students find this helpful as they review lecture material in preparation for an exam.

In order to effectively use the iPad as a classroom-teaching device, it must be connected to the projector. The simplest way to connect the iPad to the projector is to use an adapter (Mini DisplayPort to VGA or HDMI Adapter) and an extension cable. However, after experimenting with this setup, it was apparent that I was forfeiting my freedom to walk around the room in order to gain the advantages of using the iPad. Besides, I was tired of tripping over the cable! To circumvent these problems, I decided to purchase an Apple TV. I could then enjoy the freedom of walking around the room, but unfortunately, at a cost (and not just the $100 price tag). Because the Apple TV did not easily connect to the BYU-Idaho network, I had to use my smart phone as a personal hotspot for connectivity. Although not ideal, it worked!

The iPad can also connect to any computer (Apple or PC) running AirServer, but problems also arise when attempting to use the BYU-Idaho network instead of a personal hotspot. However, I assume these problems can be resolved with a little help from Information Technology. AirServer allows multiple, simultaneous mirroring displays. Multiple displays can become advantageous when images from two sources are necessary for a presentation, or when a student would like to share material with the entire class, which has been helpful during a review session. Unfortunately, only “AirPlay enabled” devices (i.e., Apple products) can interface with Apple TV and AirServer; however, the third-party software AirParrot can be used to allow any PC to become “AirPlay enabled.”

Because the full version of PowerPoint is not available on the iPad, an initial effort was made to convert previously prepared PowerPoint files to Keynote files (the presentation application for Apple products). However, significant formatting was lost, and I was ultimately very disappointed with the conversion. The mobile application SlideShark resolved the PowerPoint formatting issues and even displayed complicated animations prepared in PowerPoint. Unfortunately, SlideShark did not provide an annotating zoom or recording feature. Because of this, slides requiring extensive annotations or recording were copied and pasted into a recordable virtual whiteboard application such as Vittle.

Ideally, an application that combined the features of SlideShark and Vittle was desired. Fortunately, this was found with the mobile application Doceri. The only disadvantage was Doceri could not display complex animations, only simple “appear” animations. However, Doceri did an excellent job zooming and recording for effective use of workspace. In addition, annotations...
could be prepared ahead of time and played during a classroom presentation or recording at variable speeds. The preparation of annotations and recording options in Doceri allowed for an easy transition to a “flipped” classroom environment.

**Student Engagement**

There is evidence suggesting iPads can provide unique student engagement activities.³⁻⁶ However, due to the nascent nature of iPads in the classroom, these articles suggest more information is required for validation. This has encouraged me to continue using iPads in the classroom in order to truly determine their potential. One article in particular⁶ suggests that improved student engagement results simply from improved faculty engagement in professional development activities. This brings comfort knowing that if my excitement for iPad use in the classroom cannot improve student engagement directly (which I hope it will), it may indirectly. Simply trying to use the iPad in the classroom has revitalized my teaching and brought a new enjoyment, which I feel to be extremely important.

I currently use the mobile application SyncSpace in the classroom when groups of students work problems. SyncSpace operates on any Apple or Android mobile device. The application allows for the sharing of a freehand, writing workspace. Approximately 1 in 4 students have an Apple or Android mobile device, so at least one student in each group can document what they are doing. All groups can see what all other groups are doing, and I can see what all groups are doing to provide timely assistance and correction as needed. The workspace is infinitely zoomable, so groups can effectively use their allotted workspace. Although an Apple or Android mobile device is needed to add to the workspace, any student can view the workspace in real time, in or outside the classroom, using a browser. Thus, links are provided in I-Learn for each day that problems are worked. This allows students to review work produced in class by their group and all other groups. In order to host a workspace for each day, the $10-version of the application was purchased; however, students simply need the free version. Another free application similar to SyncSpace is Talkboard.

I have used extensively the mobile-device-enabled classroom response system PollEverywhere. Students are
able to ask and answer class questions using their mobile devices, cell phones (by texting), or computers. If the instructor desires to associate student names with answers, each student is charged $14/year. However, the free version works very well if student engagement is the sole objective. Another mobile-device-enabled classroom response system similar to i>clicker GO ($16/year/student) is Socrative, and it’s free! There is no paid version, and Socrative even allows student names to be associated with answers.

Faculty members at other universities are using iPads in the classroom for student development of concept maps. Mobile applications such as Idea Sketch and Total Recall - Mind Map are used. Students present and discuss their concept maps with the entire class from their seat using AirPlay. In addition, other faculty members have students prepare short video clips of concepts, problems, or calculations using a virtual recordable whiteboard such as Show Me, Educreations, or ScreenChomp. Students subsequently share their videos with the entire class.

Concluding Thoughts
Just as many computer programs are essential to know within disciplines, many prevailing mobile applications are becoming essential to know within disciplines.\(^7\)\(^9\) In some cases, these mobile applications are reshaping how activities are performed within professions.\(^10\) Knowledge of mobile technology is becoming increasingly important for educators and students. Learning to use this technology in our teaching may not only improve teaching, learning, and student engagement, but also provide needed exposure and application for our students. For anyone interested in using the iPad in the classroom, I would suggest beginning with the preparation of instructional videos using a free recordable virtual whiteboard application such as Show Me or Educreations. As you become comfortable with the technology, you can transition into using the iPad for live instruction in the classroom. Ultimately, you can orchestrate the use of multiple iPads for the purpose of student engagement. Good luck! ☺️

References