

## **Implementing Multimedia in an iPad 1:1 Initiative With Middle School Students**

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**Abstract:** During the 2014-2015 school year a plan was developed for a 1:1 program with all seventh grade students in the Deer Park Independent School District. The EMPOWER program deployed over twelve hundred, iPad Air 2 to all seventh grade students in DPISD. This paper will discuss the implementation and use of interactive multimedia, evidence-research practices, successes and failures of middle school classrooms with the use of iPads with middle school teachers and students. The iPad is interactive by nature and students and teachers are dealing with multimedia on a daily basis. This paper will document the start of the program beginning with teacher preparation, curriculum writing and the student rollout of the iPads, that included the development of curriculum for students to ensure they are ready for the EMPOWER initiative. Topics include digital citizenship, productivity, teacher professional development, and technology integration with the use of the SAMR and TPACK models.

### **EMPOWER**

The Deer Park Independent School District (DPISD) has implemented a 1:1 initiative called EMPOWER with iPad 2 Air with all seventh-grade students. The rationale behind this initiative is documented in the student and parent handbook written by Dr. Kari Murphy (2014) that,

Students learn differently today from a few years ago as today's students live in a digital world where:

- basic concepts presented with video and other digital content are more easily learned,
- the vast resources available digitally enrich traditional lessons in unlimited ways,
- computer-based versions of common textbooks, network communications, and interactive websites create a rich learning environment geared toward the unique learning styles of today's students.

The iPad itself is an interactive tool that incorporates several applications (apps) that allow the user to utilize a variety of multimedia tools for teaching, learning, entertainment, and a medium for accessing the World Wide Web. This program is dependent on variables that include, teachers, students, administration, support staff and more importantly the content and how it is used inside and outside the classroom. These variables were carefully considered and plans were executed to make this a successful program.

Since the introduction of the iPad in 2010, it has increased in popularity among educators and for personal use. The ease of use and its intuitive technology has proven to be a high area of interest for educators and student (Siegle Ph.D., 2013). An attractive feature of the iPad is its lightweight and large memory capacity and is much more user-friendly than a laptop computer. In addition, it is cost-effective because of the low cost or free apps. This is now a wireless generation that can use numerous tools and apps to be creative for learning. iPads also improve engagement and motivation by students (Technology & Education, 2014).

Upon the conception of this initiative, a committee was formed of school district employees that comprised of the superintendent, junior high principals, assistant principals, numerous teachers and Campus Technology

Integration Specialists (CTIS) to discuss and problem solve issues to determine if this program would be a successful endeavor for DPISD. Each of the junior high campuses at DPISD has a CTIS that provides technology coaching for all teachers and staff. The committee met regularly and it was decided that the district had the financial means and resources to proceed with this ambitious endeavor. Handbooks and Acceptable Use policies were written, parent and student consent forms signed. iPads were distributed to all junior high teachers in April of 2015. Once the plan was put into place each of the four junior high schools held a parent night in May 2015. The parent night consisted of each campus informing parents about the program policies, iPad usage fee, and answered questions and concerns that the parents had.

## Teacher Preparation

Part of any good program that includes putting technology in the hand of all students is to prepare the teachers so they can implement teaching that engages and motivates students to learn. It is important that the program be well thought out with many variables addressed before the initial rollout. (Gentile, 2012) The CTIS works with all teachers and departments to assist in using the technology tools available to them. The CTIS is an important aspect to the program to ensure its success. The CTIS held weekly training and one to one meetings to assist the teachers become familiar with the new iPad. Over the summer, each teacher was provided with intensive two-day training with an Apple Certified Trainer. The sessions were broken into five different content areas; math, social studies, science, language arts and electives. The training consisted of a hands-on workshop where teachers used multiple apps to use in the classroom. The apps focused on productivity tasks that incorporated the SAMR and TPACK models for classroom integration.

## TPACK and SAMR

It was determined that the TPACK and SAMR models (figures 1.1, 1.2) were used when planning the professional development for the teachers.

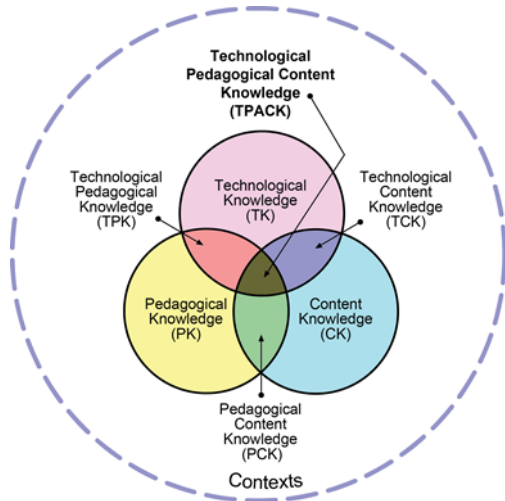


Figure 1

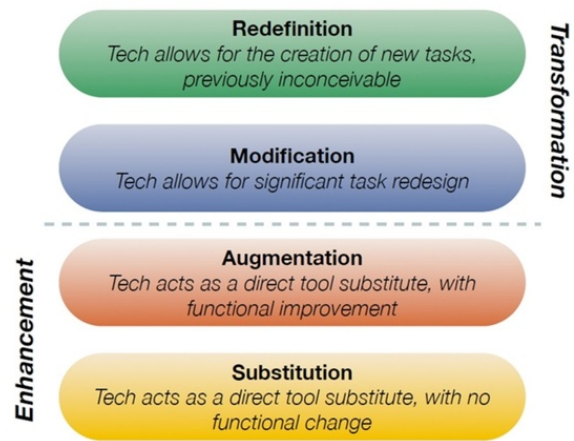


Figure 2

The Technological Pedagogical Content Knowledge (TPACK) is a framework that helps teachers determine the knowledge needed to use technology in the classroom (Koehler, M. J. 2015). The major part of the framework is

that the three main parts of the model overlap to create the ‘heart’ of the model. When these parts overlap, they use Technological Knowledge, Content Knowledge and Pedagogical Knowledge that seamlessly integrate technology in the classroom.

The SAMR model is a framework for integrating technology into the classroom (Puentedura, R. 2013). The first level is *Substitution*, then rising to *Augmentation*, *Modification* and on the top *Redefinition*. It is important to point out that the transformation of the model starts at enhancing the technology to transforming the use of technology in education. The goal is to transform a lesson using technology. In other words, the lesson cannot be done without the use of technology.

**Substitution** happens when one-tool substitutes for the other. For example, a pencil and paper are substituted with a computer word processor.

**Augmentation** is still a substitute but has some modifications, for example using an interactive discussion board to submit a paper and other students and teachers provide peer feedback. These two phases are the enhancements of using technology.

**The modification** takes place as a redesign of the task using a technology tool. This portion of the model represents transformation and a true integration of using technology in the classroom. An example is by the use of a cloud sharing document tool and use it for collaborating, commenting and sharing feedback with others on the same document.

**Redefinition**, the final stage of this model is a total transformation or redesign of the task that was impossible to do in the past. An example is the use of augmented reality when exploring elements using blocks and determining which ones bond of by using the camera and the Elements 4D (DAQRI, 2015) App on the iPad to point at the blocks and ‘magically’ see the reaction of the elements on the screen of the iPad.

When teachers use technology as a tool, the levels of usage can be classified into this model, teachers are encouraged to carry out lessons using all levels but strive to be at the redefinition level of the model. Introducing teachers and administrators, the SAMR model, and TPACK model help teachers understand how and why using a variety of digital tools, will help the process of teaching and learning.

### Apps for the Classroom

In addition to teacher training, the CTIS personnel worked closely with the districts’ Department of Instruction (DOI) and seventh grade teachers to write curriculum for the main content areas of language arts, social studies, math, and science. The CTIS staff met several times in May and June of 2015 to update the districts’ curriculum bundles that follow the Texas Essential Knowledge and Skills (TEKS). During the curriculum writing sessions, posters were created that identify a variety of apps that can be used in the classrooms for teaching and learning. Figure 3 depicts the final posters that were printed and displayed in the seventh-grade classrooms. The intention is that the classroom teachers and students will refer to these posters for guidance when creating projects and using apps for teaching and learning. The apps listed in figure 3 are tools that the CTIS’s and content area teachers agreed



Figure 3

would be the most useful for the beginning of the Empower program. These infographics will be updated yearly as new apps are discovered that prove to be valuable for classroom use. Many of the apps can be used across content areas for creating multimedia projects and productivity use such as note taking and collaboration.

### **Fall Semester 2015**

The iPad rollout took place in August 2015 during the first week of school at each of the junior high schools. The personnel from the technology department took care of inventory and creating the Apple id's for each student. Each student was given an email address from the district that was used to create the id's. Parent consent was required for each student so the importance of having the proper paperwork was required for a successful rollout. Once the students were issued an iPad, they were assisted in the set up of the pad that included email set up, and an automatic download app was installed so paid and free apps were pushed out to each student using Self Service by Casper (JAMF Software, 2015). The second day each student attended a class covering three different topics that consisted of digital citizenship, using productivity apps, and iPad basics. The instruction for these topics were delivered using an app called Nearpod, (Nearpod, 2015) that is an interactive lesson delivery app that utilized several multimedia elements, such as video, images, audio and internet. All students in the district received this training to prepare them for responsible use in and outside the classroom.

### **Classroom Practices**

The iPad is a powerful tool that can accommodate all learning and teaching styles. Students can utilize many apps that incorporate all types of multimedia for demonstrating that they have mastered content. Additionally, the iPad is a great tool for discovery. The iPad inherently incorporates a variety of multimedia such as audio, video, images, text, and animation. The students are engaged in activities that support all content areas. However, it is important to note that the iPad can also be a distraction. It is imperative that teachers incorporate classroom management strategies that are consistent with all students. Classroom management that includes the teacher constantly monitoring the students while they are using their iPads has proven to be an effective strategy. Each teacher was provided a poster to display in their rooms that include the consequences for off-task behavior. Additionally, technology coaching with the CTIS and teachers has proven to be essential to a successful program. A major idea that has been included in the planning is that there is not a 'magic' app for learning, it is more about the production of creating a multimedia presentation, that demonstrates learning. As of October 20, 2015, the Empower program has been successful and the students are excited about using the iPad in the classroom. Teachers and support staff have agreed that the students are highly engaged. However, classroom management plays a big role in the level of engagement. A frequent problem is finding students playing games instead of assigned work. When this happens, swift action by the teacher must occur to redirect the misuse of time. For example, some teachers do not follow the consequences associated with being off task. The students take advantage of the teachers if they think they can 'get away' with playing games or listening to music. Administrators have quickly intervened through the use of frequent walk-throughs and observations in the classroom. The teacher must be organized and clearly enforce expectations during class time. The most effective strategy is teachers are working in the power zone of the classroom that includes walking around the classroom and giving verbal feedback to students while they are working on a project or taking notes.

Other issues that have occurred are that teachers are having difficulties in collecting and grading student work. For example, we do not have a Learning Management System (LMS) where students can hand-in or distribute assignments in a paperless environment. Teachers started with using the Airdrop feature, but it has proven to be unreliable and not all of the iPads connect to each other. The airdrop feature on the iPad also caused some other distractions in the classes. For example, students would have pictures on their iPad that they would AirDrop each other during class. This caused a disruption in the classroom, but the teachers swiftly addressed the matter and soon the students learned that this was inappropriate behavior. However, one of the junior highs felt it necessary to disable that feature of AirDrop. To date, the feature is still disabled at this junior high. One solution or turning in

assignments is to utilize the faculty web pages. The teachers can post downloadable materials for students such as images, pdf's, documents, video clips that students can download to their iPad to use in assignments and projects. Each student has a school issued email address and each iPad was configured during the setup procedure for immediate use. A student can email the teacher completed assignments for grading. Many of the teachers like this feature as they can email feedback to each child in an instant. Many teachers have utilized free apps such as Padlet and Thinglink where students can post their projects to a web page. One of the junior high schools has purchased a license using an LMS called Showbie (Showbie 2015), which has resolved many of the problems of distributing and collecting digital work.

Another roadblock is the use of Apple TV. Each classroom is equipped with Apple TV to the projector. The Apple TV can connect with the iPad and 'mirror' through the projector what is on an iPad. For example, if a teacher wants to play a video clip from her iPad it connects wirelessly with the Apple TV. The problems that have occurred are those, it is not reliable. If a teacher wanted to display student work from the iPad via Apple TV to the projector, the connection time to move from one student to another is lengthy and it will not always connect. However, a successful solution is to use a dongle that connects straight to a projector via a VGA cord. The only drawback is that the student has to present tethered to a cord.

### **Future Expectations**

The EMPOWER program will grow as the 2016-2017 school year progress. All students in grades six through eight will have an iPad by January 2017. Incoming seventh grade students will receive an iPad in the fall 2016 and incoming sixth graders will receive an iPad in spring 2017. Current seventh grade students will hand in their iPad for the summer and will receive the same iPad as eighth graders in the fall 2016. As the program advances there will be mistakes and successes: it will be imperative to identify what works and what does not by observation, trial and error, and by documenting and researching successful classroom practices to ensure that this program does improve student achievement and learning. Collaboration and consistency among the administrative staff, CTIS, DOI, and teachers continues to be an essential piece of the continued success.

Weekly meetings are planned for the entire school year, among all departments to plan lessons, discuss success, failures, troubleshoot hardware issues, and more. The exceptional partnership within the Deer Park Independent School District is imperative to this program and its advances to improve student learning through the use of technology.

### **Intended audience:**

This paper is targeted for educators and administrators of K-12 organizations that are interested in a 1:1 program with the use of iPads or tablets.

### **Presentation format:**

The research paper will be presented in a virtual poster format. Attendees will be able to discuss and interact asynchronously with the conference website and discussion board.

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