Integrating iPads into the elementary physical education curriculum

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Integrating iPads into the elementary physical education curriculum

Abstract
The purpose of this project was to investigate the effects of integrating 1:1 iPads into a Physical Education unit. The participants of this project were twenty-five six-graders, randomly assigned into an experimental and a control group, a physical education teacher and a technology teacher (teacher researcher). The preliminary finding from this one-month pilot study revealed a significant difference of the qualities of work between the two groups as a result of the implementation of iPads as a motivation factor for the experimental group. It also showed the classroom dynamics were better off with the experimental group when students and teachers were interacting and learning along side each other. Limitations and recommendations for integrating iPads into various curricula are discussed.
INTEGRATING IPADS INTO THE
ELEMENTARY PHYSICAL EDUCATION CURRICULUM

A Graduate Project
Submitted to the
Division of Instructional Technology
Department of Curriculum and Instruction
In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts
UNIVERSITY OF NORTHERN IOWA

By
Tyler M. Hellmann
May 2014
This Project by: Tyler M. Hellmann

Titled: Integrating iPads into the middle school Physical Education curriculum.

has been approved as meeting the research requirement for the

Degree of Master of Arts.

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Abstract

The purpose of this project was to investigate the effects of integrating 1:1 iPads into a Physical Education unit. The participants of this project were twenty-five six-graders, randomly assigned into an experimental and a control group, a physical education teacher and a technology teacher (teacher researcher). The preliminary finding from this one-month pilot study revealed a significant difference of the qualities of work between the two groups as a result of the implementation of iPads as a motivation factor for the experimental group. It also showed the classroom dynamics were better off with the experimental group when students and teachers were interacting and learning along side each other. Limitations and recommendations for integrating iPads into various curricula are discussed.
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Introduction

As technology continues to shape the educational setting, schools and districts are starting to implement initiatives to push more devices into their schools. Teachers are expected to use technology, often pressured by administration. As a technology leader in my school, it is only natural to determine the significance of integrating technology into the classrooms. This project was developed to determine the effects of integrating iPads into the Physical Education curriculum in allegiance to the Iowa Core Standards.

Unfortunately, trends have shown that school districts are cutting Physical Education classes. As Geraldine Sealey explained in an ABCNews article (2013): “Gym classes are being sacrificed across the country to save money and satisfy federal mandates stressing test scores in math and reading” (p.1). If districts are cutting Physical Education classes to meet the needs of ailing test scores, then how are administrators and teachers preparing to educate in a 21st Century learning environment?

In the same ABCNews article, an interview with Cathy Brewton, the coordinator for the obesity prevention program for the Florida Department of Health, shared “Kids said if they were going to do phys ed, they wanted to do something fun.” Just as any subject, physical education teachers have to adhere to local and state standards. However, physical education can often be overlooked, as rules of participation vary in each state (Brewton, 2013, p.1).

The National Association for Sport and Physical Education (NASPE) provide a statement on “Appropriate Use of Instructional Technology in Physical Education” (2009). The NASPE provides guidelines, or suggestions, as to what they expect technology integration should look like in a Physical Education classroom. In Iowa, schools are shifting towards the Iowa Core, which is similar to the Common Core, where schools are preparing students for learning and
growing in the 21st Century. Why are we teaching in 21st Century classrooms, but not necessarily 21st Century gymnasiums?

Technology Literacy is an important part of the Iowa Core and is certainly a valuable 21st Century skill to master. Technology is not a “single” subject; rather, it is an integral part to every subject. Just as math and science skills coincide with one another, technology intervenes with different subjects in a variety of ways. Similar as a pencil is a tool in writing, or a protractor is a tool in math, one cannot master technology tools without valuable learning content to apply with it.

Purpose

The basis of this project was to conduct an experiment designed to develop, implement, and evaluate a 6th grade Basketball Unit in Physical Education by effectively integrating 1:1 iPads. The basketball unit provided a structured environment where the students were instructed about appropriate techniques, as well as, the opportunity to practice in the routines on their own. The subject of the study wasn’t how the iPads were being used for the basketball unit specifically, rather, the interactions among the students and teacher using the technology was among the main focal points.

Technology Literacy in the Iowa Core is further described in Table 1. The Essential Concept is defined along with the desired skills associated with it, which will also be the basis of this project. The significance is to determine if implementing iPads to each student would help them understand and comprehend these 21st Century Skills and concepts more efficiently.

Three inquiry questions guided this project include:

1. Was there a difference between the experimental group who integrated iPads and the control group who didn’t?

2. What did the physical education teacher learn from the implementation?
3. What did the technology teacher learn from this design and implementing process?

Table 1

**Iowa Core 21st Century Learning: Technology Literacy**

<table>
<thead>
<tr>
<th>Essential Concept</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate creative thinking in the design and development of innovative technology products and problem solving.</td>
<td>Individually or collaboratively create media-rich products and display, publish, or perform them for a variety of audiences.</td>
</tr>
<tr>
<td>Collaborate with peers, experts, and others using interactive technology.</td>
<td>Contribute to a content knowledge base by creating, producing, and sharing information, models, and other creative works.</td>
</tr>
<tr>
<td>Plan strategies utilizing digital tools to gather, evaluate, and use information</td>
<td>Use technological tools to select data and organize it into a format that is easily understood by others.</td>
</tr>
<tr>
<td>Use critical thinking skills to conduct research, solve problems, and make informed decisions using appropriate technological tools and resources.</td>
<td>Use technology to gather, analyze, and assess data and its effectiveness to design, develop and test possible solutions that assist students in making decisions.</td>
</tr>
<tr>
<td>Understand the legal and ethical issues of technology as related to individuals, cultures, and societies.</td>
<td>Use technology efficiently and in a manner that does not harm them or others.</td>
</tr>
<tr>
<td>Understand the underlying structure and application of technology systems.</td>
<td>Use technology for everyday use and understand how technology systems can be applied to various situations.</td>
</tr>
</tbody>
</table>

This project is important at a local level because there have been a variety of successful integrations of technology into our curriculum, except for Physical Education. This project fills the gap by showing an example of successful technology integration into the gymnasium. At a National level, this project is important because Physical Education is similar to other subjects, as continual learning is a necessity. The inquiry project, and ideas associated and discovered within, can be shared with Physical Education teachers everywhere. The preparation and creation of this project helped express an understanding of successful Instructional Technology implementation and integration, from determining the desired outcomes, designing the research project as a whole, and reflecting and sharing the final product (Guymon, 2014).
**Terminology**

Prior to the experiment, the iPads were equipped with three specific applications that were available to the students. These, however, were not the only applications or programs they could use; this was simply a starting point. The Physical Education class itself was administered through a *Kidblog*, which is simply a web-based “member-only” education blog. There was also an application installed on the iPad that made it simple for uploading pictures and videos to their blog posts.

Another application installed on the iPads was *Educreations*. This is a photo editing application, where students can edit and diagram directly on the images. They could then submit their custom picture to the Kidblog. The final application provided to the students was *PerfectVideo*, which is a video editing application, where students could mesh and edit videos together to produce a final clip. After production, the end product could then be submitted to the Kidblog.
Literature Review

The majority of the valuable literature discovered while developing background for this project came from magazines and publications produced by the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD). More specifically, information from the organization’s division of research publications, Journal of Physical Education Recreation and Dance (JOPERD) was used for a foundation of this project. The references and resources of various articles were carefully examined to determine if further relevant research was available. Online databases such as the University of Northern Iowa’s OneSearch! and GoogleScholar were also used to successfully locate peer-reviewed research.

Pertinent Literature

The impact technology has played on education and learning is quite visible. Students are exposed to technology at an early age and then they become accustomed to living in a digitally-enriched environment. Marc Prensky (2001b) claims “today’s technology enriched students are different learners than the traditional Physical Education curriculum was designed for”. With the understanding that in order to satisfy these new types of learners, we need to recognize every student learns differently. It is important to understand the idea of “task engagement” and how these new types of learners, immersed in technology, expect to use the technology throughout their daily routines (Craddock & Mathias, 2009).

As teachers differentiate their instruction, it is important to remember to justify the learning that is taking place. As for any subject, lessons and activities should be designed to allow students to express an understanding of the learning expectations. All content, lessons, and activities should align with accredited standards (Richardson, Mears, Hansen, Fine, Lawler, & Mason, 2009). Authentic assessments must be used in order to accommodate different learning styles and meet the needs of all learners. By offering a variety of assessments for
understanding, the opportunity for all students to succeed is provided by choosing an assessment that best fits their learning techniques.

Another facet that is important to consider is the ideas shared by the National Association for Sport and Physical Education. A number of guidelines are provided by NASPE, for Physical Education teachers implementing technology (2009). One of the guidelines insists instructional technology is “designed to provide a tool for increasing instructional effectiveness.” The technology is not intended to hinder the desired outcomes of the lesson. Delivery methods should supplement instruction, and any online interactions should be similar to face-to-face environments. The online aspect is not supposed to replace direct classroom instruction, and teachers “must include instructional components when using technology to develop fitness.”

Richardson et al. (2009) suggest that physical education activities should be “aligned to student learning expectations that fit students’ developmental levels, and content aligned to standards” (p. 2). This is an extremely important idea to consider, as multiple methods of assessment should be used in order to accommodate varying levels of students’ ability in any classroom.

Assessment can be defined as being authentic if the learner’s understanding is expressed in real-life settings. Furthermore, authentic assessments activate student’s higher-order thinking skills by having them achieve learning goals that can be applied to real-life settings (Schiemer, 2000). Especially in Physical Education, a variety of authentic assessments allow all students to succeed based on the learning style, or assessment, that best fits them as a learner.

The final connection among literature describes what the future entails for technology and education. It is easy to see how there is a saturation of devices and technology into our school systems today. It isn’t just the integration of these devices into classrooms that is important., rather, it is how are these devices are going to be used for maximum success.
Participatory learning is when you engage the student as a whole, including different aspects to becoming an effective learner. The purpose of participatory learning is not to focus on minute details; instead, effective and active learning requires the Four C’s of Participation (Reilly, Jenkins, Felt, & Vartabedian, 2013):

1. *Creating* projects to demonstrate an understanding.

2. *Circulating* among devices, platforms, and programs, to become diverse in the technology that is available.

3. *Collaboration* is not limited to one classroom or school, but the opportunities are endless.

4. *Connecting* and building various networks of experts to assist in organizing a list of resources that can be helpful.
Methodology

Project Initiation

The overall scope of the project was integrating iPads, with a 1:1 ratio, in a 6th grade elementary Physical Education classroom environment. As the technology teacher at our school, I play a crucial role in helping integrate technology into teacher’s lesson plans and curriculum. Mr. Travis French, a Physical Education teacher, assisted with this project. One of the desired outcomes of this project was to determine the overall effectiveness of integrating 1:1 iPads in the Physical Education setting. Another intended outcome was to see how Technology Literacy Concepts and Skills align with the integration of iPads into the Physical Education curriculum.

Project Design

A total of 25 students participated in the study, eighteen girls and seven boys ranging from 11-12 years of age. Two groups were randomly selected. The Experimental Group (EG) consists of thirteen students, nine girls and four boys. The Control Group (CG) consists of twelve students, nine girls and three boys. The choice of doing this research project with a 6th grade class was contingent on the school schedule and the ability to observe the classes during their regular Physical Education period.

The scope of this project was in conjunction with a 6th Grade Basketball Unit in Physical Education. The Control Group went about classroom activities in a regular manner. Each student of the Experimental Group was given an iPad to use throughout the duration of the project. Initially, the students were given an iPad with little instruction from the teachers. They were simply shown several applications to use for the project, and expected to explore on their own.
Student Grouping. In alphabetical order, each student was assigned a numerical value 1-25. A random number was generated and that student was placed in the Experimental Group. Another number was generated, and the corresponding student would be a member of the Control Group. This process, portrayed in Table 2, continued until there were thirteen students in the Experimental Group, and twelve students in the Control Group. Student names were altered and are reflected by their initials and this will be consistent throughout the project.

After the first day of instruction, the physical education teacher decided to alter the style of the experiment. Originally, members of the Experimental Group were given an iPad with free exploration. That did not work, so the teacher decided that he would create videos and examples to assist the students along the way. After this realization, students were properly shown how to login, view, and submit information to the Kidblog. All of the information presented in the paper is derived from the Kidblog website. On the blog, Mr. French created an example of a post that he was expecting. The main purpose of this project is to see how iPads can help students understand PE activities better. Each student was able to use an iPad during class for whatever reason they needed too. The students understood that the expectations were to create something that will present their ideas or understanding of the content.

Time Period and Procedure. Overall, the experiment lasted approximately one month. Initial ideas and collaboration took place in early December and January between the Physical Education teacher and the researcher. Each student group had six 50-minute classes throughout the duration of the project. Parents were sent information describing the research project and how it tied into the Physical Education classroom (Appendix A).

Prior to beginning the experiment, all members of the Experimental Group were instructed in how to use the applications that were on their iPads. The applications installed on the iPads were Kidblog, Educreations, and PerfectVideo. At that time, the students were
unaware of the experiment, and were simply being instructed on the new applications. All of the 6th grade students had already been taught how to use blogs for learning, and how appropriate behavior was expected in all aspects of the classroom (physically and virtually). Students in the Experimental Group were given a GoogleForm quiz to demonstrate their understanding of appropriate online behavior (Appendix B). Throughout the project, there were instructions and examples posted on the Kidblog.

Table 2.

**Student Groups**

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initials</strong></td>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>[M.B]</td>
<td>Male</td>
</tr>
<tr>
<td>[F.B]</td>
<td>Female</td>
</tr>
<tr>
<td>[A.F.]</td>
<td>Female</td>
</tr>
<tr>
<td>[K.M.]</td>
<td>Female</td>
</tr>
<tr>
<td>[S.S]</td>
<td>Female</td>
</tr>
<tr>
<td>[P.S]</td>
<td>Female</td>
</tr>
<tr>
<td>[D.W]</td>
<td>Male</td>
</tr>
</tbody>
</table>
Major Findings

There are a number of ideas and generalizations that can be gathered from the results of this project. Perhaps the most important detail would be the significant differences of the quality of work between the two groups. Another attribute enhanced by the implementation of iPads would be the motivation factor. Finally, the classroom dynamics were better off with the Experimental Group, as students and teachers were interacting and learning along side each other.

Student Learning

Learning of control group: From the perspective of a technology teacher, I observed when that basketball unit was taught like a traditional Physical Education course, the teacher demonstrated examples with little student input. Without the iPad, students were unable to use tools to enhance their learning experience. Students in this group were only able to breach the surface of possibilities.

When Mr. French commented on the learning of the control group, he was satisfied with learning outcome of the control group from the content aspect. In his final reflection, he wrote:

The control group did a really nice job with the basketball unit. All of the students reacted a 3 on the 6th Grade Basketball Skills Rubric, demonstrating grade level expectations in the skills. The control group students were fairly engaged for most of the unit, although as some of them finished their drills & presentation video work, they began to get a little off-task. (Personal responses to Teacher Researcher)

Learning of experimental group. The students using the iPads in the experimental group were motivated to achieve a higher learning outcome. Mr. French summarized:
The experimental group did a great job with the basketball unit. Nine of the thirteen students in the experimental group earned a 4 on the 6th Grade Basketball Skills rubric, demonstrating above grade level expectations in the skills. The remaining four of the thirteen students all earned a score of 3 on the rubric. The experimental group students were engaged throughout the unit and used time after shooting their video to correct and enhance their blog post.

(Personal responses to Teacher Researcher)

From my perspectives of a technology teacher, I observed that students in the Experimental Group were able to instantly view a video or picture to see if they were performing the skill correctly, as identified by the rubric. This allowed for students to re-assess their performance, and with the opportunity to receive this quick and effective feedback, students were able to establish whether the final product portrayed a sufficient understanding of the basketball skill. Students were also able to diagram and explain the situation, which also helped understand the concepts that were taught.

The Experimental Group was able to activate at a higher level of thinking compared to the other group because of the opportunity to create, analyze, and reflect on their skills. Students in this group used critical-thinking skills to determine if their basketball skills were being performed using the technology. The iPad and other forms of technology used allowed students to express their understanding using the creative design skills already possessed.

Finally, students examined the final products that were submitted for grading. Out of these various forms of media, the students were to identify which Iowa Core skills were also being taught. Although this activity of connecting to the Iowa Core was done towards the end of the project, this was what was needed in order to “link” technology and learning with Physical Education.
**Interaction between teachers and students.** As the researcher, I observed all of the Experimental Group Physical Education classes. Due to internal scheduling, I was unable to observe two of the Control Group classes. After the initial excitement of starting something new, the students’ questions shifted from how do we use a program, to how can we improve our videos.

For the Control Group during regular classroom instruction, there were only physical examples and verbal communication. There was very little engagement among students in the Control Group compared to the Experimental Group where student interaction was extended. Alternative assessments and various writing dimensions, as well as learning outside of the classroom took place. During class time, Mr. French guided the students as they progressed through each skill. There weren’t as many questions about the technology as I imagined, which will only get better as technology becomes better integrated in our school.

**Interaction among students.** The students took the initiative to work in groups, but all members of the Experimental Group were required to submit their own projects and posts. There were drastic differences between interactions online and in the gymnasium. There was not the web presence that I expected from the students. There were a number of students who seemed comfortable on the virtual learning community, but other students were not. All students excelled at different aspects of the project from the online component, editing and mashing videos, or the basketball skill itself. It appears that the implementation of iPads leveled the skills gap among students. They all possessed their own abilities and by having to collaborate with each other created a more dynamic learning environment for all.

Throughout the students’ non-PE classes, students do not any effective web presence. The use of a blog for writing was a new concept for the students. After a brief instruction, the students became peer learners by critiquing and commenting on each other’s blogs. Mr. French
was also commenting and reflecting on each student's posts. When students returned to the gym, they would then edit and mash their video to accommodate any suggestions from their peers.

**Teacher Learning**

I was fortunate to have such a cooperative teacher to collaborate with throughout this project. It required him to change roles, and make accommodations in order to collect research and gather data. Although there were some speed bumps along the way, the collaboration that took place among the students, teacher, and researcher was phenomenal. As a professional, Mr. French insisted on continuing to improve his teaching. As a technology integrator, it is my responsibility to assist teachers when implementing technology. We shifted his instruction from teacher-centered into student-centered approaches.

Although there wasn’t a lot of hard data and numbers, there is enough evidence to show that the experiment was extremely beneficial to Mr. French and our school as a whole. The experimental group scored higher than the control group on the Basketball Skills Rubric. As a school, we have been implementing iPads for the past few years, but the teachers have yet to really use the technology to its full potential in the classrooms. The students have also been exposed to the iPads over the past two years, and are starting to become more comfortable with them. Beyond evaluating the effectiveness of implementing iPads into the Physical Education curriculum, it is also important to consider what Technology Literacy skills assisted students along the way.

**Teacher's reaction.** Mr. French was an integral part in the success of this project, as his eagerness and willing to collaborate throughout the project was very appreciated. From the initial idea and design stage to completing the final Analysis, his participation was a crucial part to the successful completion of this research project. His thoughts and reactions will be shared
throughout this report, however, Mr. French’s full reflection on the project can be found in Appendix H.

**Grouping.** Overall, the random groups were “relatively the same cross-section of students, ranging from the more athletic and skilled students to those that are generally averse to team sport activities” (T. French, personal communication, March 23, 2014). All twelve members of the Control Group received a three on the skills rubric demonstrating grade level expectations. Four members of the Experiment Group received a three on the skills rubric, whereas, nine of the students received a four.

One major thing that Mr. French noticed was the students’ attention and motivation throughout the duration of the project. The Control Group was “fairly engaged” for the unit, but often became off-task once the basketball activities were complete. Once the Control Group mastered the skill, they then turned their attention to shooting hoops. The attentiveness from the Experimental Group was expressed by “looking to edit and revise their post” and “improve the quality of their work” The Experimental Group spent more time working on editing and revising their work in order to successfully show their understanding of the skill (personal communication, March 23, 2014).

**Differences.** A major revelation Mr. French discovered was the fact that students in the Experimental Group were equipped to expand their “cognitive aspect of the basketball skills” by communicating and collaborating using methods such as “video, pictures and typed discussions” (personal communication, March 24, 2014). Students were able to “showcase their ability to recognize the skills in a video”. This allowed them to dig deeper into the content and strengthen their understanding of the basketball skills. All of this activity throughout the class period resulted in them staying on task more efficiently.
The Control Group was only able to demonstrate a basic understanding of the basketball skills. This was due to the lack preparation of their designed drill, as well as, the choices that occurred once they were done with developing their drills. They tended to "quickly move to off-task activities" after minimally practicing their skill that was going to be assessed. They were not able to use the technology, resulting in them having to develop the skills on their own as they were assessed. This is what resulted in the lower score on the rubric.

**Closure.** Mr. French developed three conclusions as we summarized the research project; (a) "[it allowed students to] showcase knowledge and creativity"; (b) "[provided] another option to demonstrate their knowledge"; (c) "[it] kept students [actively] engaged." I asked Mr. French what his biggest takeaway, as a PE teacher, was in respect to this project. He responded: "how I can enhance the depth of student knowledge in regards to different skill sets."

In elementary PE, students are developing the basic skills associated with basketball (dribbling, running, striking). As students progress up to middle school, they should be developing higher-order thinking skills (offense, defense, teamwork). They should already have mastered the basic basketball skills, so now they were able to express more complicated skills. The iPad allowed them to achieve these skills in a proficient and effective manner.

**Conclusions**

The biggest takeaway for me, as a PE teacher, is how I can enhance the depth of student knowledge in regards to different skill sets. By the time most students are in middle school, their movement skills (dribbling, running, striking) should provide a good base to continue to develop their movement concepts (offense, defense, teamwork). The focus in middle school is to try to hone the meshing of the movement skills and movement concepts so that they are able to execute particular movement concepts without focusing entirely on movement skills. I think the iPads, Kidblog, and Screenchomp app allowed the students to showcase their individual knowledge of the skills. The experimental group was also provided with an extra opportunity to support their knowledge by discussing different skills executed in game play. Lastly, the technology in PE kept the students engaged with a unit that, for some, can become tiresome and repetitive (basketball drills). In conclusion, bringing technology into the PE classroom in this particular manner provided three major positives: it gave students a chance to showcase their knowledge and creativity, provided students with another option to demonstrate their knowledge by discussing skills in a video, and kept students engaged. All of this was done by using a device familiar to students (iPad) who were participating in a familiar unit (basketball) but performing novel work.
**Technology Teacher Learning**

Throughout the duration of this project, the students were offered a variety of assessment techniques that accommodate various learning styles. It is important to consider the varying learning styles present in any classroom, and learn how to best let those learners succeed. One form of assessment used photos and photo editing applications, and the other examples used videos to explain their skills. These options allowed students to activate certain learning styles that they felt comfortable with. For example, students who enjoy artistic features may use photos and drawings, while a student who is more outgoing may feel comfortable recording a video.

**Researcher’s reflection.** An aspect that was new to me as we completed this research was the ability to have students dig deeper into the content. Mr. French described how this was something that he took away from this experiment. As described by the students’ final reflections in Appendix 9, it appears that they were unphased by the technology. Some students even thought that using the iPads was more “work”.

At the local level, this experience has been extremely beneficial, as teachers are becoming more familiar with the technology available to them. This is also making my job easier; I constantly remind them that I am available to assist them when wanting to implement technology. This is an excellent example of the collaboration and opportunity that is available to the teachers and students at our school.

The Kidblog can be implemented into any classroom and is very simple to use. As technology advances, the ability to work across different platforms is becoming easier. A central location for collaborating on projects and commenting on each other’s to build deeper understanding fostering higher-order thinking skills.
At the “teacher community” level, the design, project, and analysis can be described to other teachers. Although this project was used in a Physical Education classroom, a number of the activities and assessments can be used, or transformed, into a variety of formats. This Graduate Project could be published and shared for educators across the world. It happens too often, where teachers and professionals only use resources from the Internet. The important thing is to contribute back to this wonderful resource and this project is my way of collaborating and sharing ideas with others in the education field.

**Changing the roles.** This project exhibits the ability to evolve from simply providing technology support to teachers, to co-designing a unit. The focus of the project was not on the iPads or other forms of technology. The main point of implementing technology is to engage the learner, and provide assistance through the learning process. Throughout the duration of the Basketball Unit, student assistance was needed, as well as, teacher assistance as we assessed how each session went.

Continuing education is a necessity in order for teachers to keep up with the latest research and technology. This project showed me the process of becoming a teacher-researcher, and how data collection and observations were critical for the overall success of the project as a whole. Reflecting is an important part of the learning process, and I have learned how to become a reflective practitioner as I plan to improve the integration of more iPads across various curriculums.

In order to support the findings of the project, the following section provides a detailed session-to-session description of the experimental group to demonstrate the learning and interaction patterns throughout the project.
The iPads in PE Project

<table>
<thead>
<tr>
<th>Session I</th>
<th>Group</th>
<th>Location</th>
<th>Duration (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 February 2014</td>
<td>Experimental</td>
<td>Computer Lab</td>
<td>50</td>
</tr>
<tr>
<td>19 February 2014</td>
<td>Control</td>
<td>Computer Lab</td>
<td>50</td>
</tr>
</tbody>
</table>

After being introduced to the research project weeks earlier, the students learned more about the dynamics of how the experiment worked. These meetings were between the researcher and students, where the students learned more about the various applications and tools that would be used throughout the project. All students in the experiment received the Parent Information letter and the researcher answered questions proposed by the participants regarding the experiment (see Appendix A).

<table>
<thead>
<tr>
<th>Session II</th>
<th>Group</th>
<th>Location</th>
<th>Duration (min.)</th>
</tr>
</thead>
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<td>Gym</td>
<td>50</td>
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<tr>
<td>28 February 2014</td>
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<td>50</td>
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</tbody>
</table>

Today was the first official observation, as well as, the first day of the Basketball Unit. Mr. French started the class with his expectations, rules, and intended outcomes he envisioned while participating in the Basketball Unit. The researcher was there to observe interactions between the students and teacher, as well as reiterate the rules and expectations for using iPads. The students had used iPads for a number of other classes, but using the iPads in the gymnasium was a new idea. Students were given their designated iPads to use for the duration of the 50 minute class periods, and were instructed to read the first post on the blog Appendix I).
As the students finished reading basic instructions on the blog, they were free to find a partner to begin working on mastering the basketball skills. While observing the class, the researcher noticed a number of students rushing through the drill, posting the assignment, and then continuing on with playing basketball. This behavior was mentioned to Mr. French regarding the students’ brief documentation and then off to play basketball. Although we made sure the students completed the tasks, we did not push anything else onto the experiment.

Only 38% of the students commented on the blog, as it was not mandatory after the first session. One student (S.S) in particular set a great example with the comment she left. [S.S.] posted “I used it by having someone take a video of me shooting the ball correctly, and then photo [shopped] it at the place that I thought I had the correct form.” This was an excellent example for other students’ reference. In preparation for the subsequent class, students were expected to have read the second blog post outside of school (Table 3).

Table 3

| Blog Post Number | Two |

Hello Experimental Group,

After some careful collaboration between Mr. French and I, we have adapted some of the expectations for this experiment. Due to time constraints, we are changing the way we are going to do things. Instead of leaving it open-ended, we have decided to provide some examples of what we are expecting. Below what we will be doing when you come to class on Wednesday.

1. Each group will have a specific basketball skill to master and present.
2. Examples of what we want are below. Instead of using Educreations, we are going to use ScreenChomp instead (easier to use).
3. Groups
   -PS and KM (Set Shot)
   -DW, WM, GH, MB (Give and Go)
   -FB and AF (Screen)
   -CH and MS (Layup)
   -IA, SS, RG (Jump Shot)

Click here to see an example using ScreenChomp
Below is an example using PerfectVideo
Here is the rubric to follow for your creations –
### Table 4

#### Communication

<table>
<thead>
<tr>
<th>Title</th>
<th>(4) Skill name is included in title</th>
<th>(2) No skill name included</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Uses labels to explain concept</th>
<th>(4) effectively</th>
<th>(3) somewhat effectively</th>
<th>(2) minimally explain</th>
</tr>
</thead>
</table>

#### Visuals

<table>
<thead>
<tr>
<th>Selected photo _____ to the reflection</th>
<th>(4) adds significant meaning</th>
<th>(3) adds meaning</th>
<th>(2) adds minimal meaning</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Fonts are _____</th>
<th>(4) Clear and easy to read</th>
<th>(3) are legible</th>
<th>(2) unclear to read</th>
</tr>
</thead>
</table>

Part of the students' grades for PE was participation. Participation included logging into the website and reading and understanding the material. Beyond having the ability to see who logs in or out of the blog, it was also apparent who did their homework and who didn’t. In the post, there was an example that Mr. French and I created. It was very basic, but it covered the different aspects of the rubric that students should follow. The video example and corresponding post by Mr. French satisfies the intended outcomes for their blog posting according to the rubric in Table 4. For a photo rendition of the video example see Appendix C.

**Table 4**

**Teacher Rubric for Grading Blog Posts**

As students came to class, opened up their iPads and started to read the blog they either reviewed the information or found out what we were doing for their first time. Mr. French had all of the students log into Kidblog, and look at the post with the video example. As they finished reading the post, they found their respective partners and started brainstorming ways to
begin their projects. As groups began to form, the researcher noticed a number of students were struggling to get started. One student, [F.B.], asked how she was supposed to record their project. Another student, [D.W.], came up and asked if he was supposed to use a video or take pictures. All groups were instructed to “freeze”, close their iPads, and turn their attention to the center of the gymnasium. Mr. French then took over and reiterated the applications that the students could use. Shortly after, [M.B.] asked, “can we use screenshots if we know how to use them?” Mr. French replied, “absolutely, does anyone know how you could use screenshots in a video?” After students ponder the idea, the groups start to disperse and begin working on their projects. In Figure 1, Mr. French is answering questions from students, and other students are seen collaborating with their groups determining the best approach to getting their message across in their blog post.

![Figure 1. Collage showing students and teacher collaboration](image)

Each student was expected to create a blog post showing an understanding of his or her specific basketball skill. There were a total of seven completed blog posts for this specific assessment (some projects featured multiple students). Figure 2 represents a number of blog posts that would be classified as “needing improvement”. Comparing that to the blog rubric represented in Table 5, these postings would be considered “minimal”.

Figure 2. Photos depicting a successful jump shot, and a photo rendition of a basketball skill. These are examples of “below expectation” as they are without any explanation or justification as to why they understand that specific basketball skill.

Although most of the students had their blog post appropriately labeled with their basketball skill, they didn’t use labels to explain the concept effectively. Furthermore, the font on the pictures made it more difficult to read, and took focus away from the main ideas. With help from the researcher, Mr. French brainstormed some reasons why these posts were below par and settled on three ideas;

• Lack of group collaboration
• Lack of understanding of assignments
• Inadequate use of class time

As these were new class “splits”, or groups of classes, Mr. French was unsure if students were able to work together. As the researcher walked around to observe each group, it appeared that the groups were working together and were on task. The latter two, go hand-in-hand as the students ability to pay attention in class correlates to their ability to perform on assignments or assessments. Since the iPads were only used in the gym, the students had to understand and organize their class time efficiently.

One student in particular, [I.A.], suggested to her group that they get their video or photo content posted, and then they can go back and edit the text or explanations at a different time. I
gained the attention of everyone in the gym, and had [I.A.] share the idea that she came up with the rest of the class. In Figure 3, you can see how [I.A.] has created a blog post that meets the desired outcomes of the blog rubric. The picture is easily readable, and the labels add significant meaning to the overall picture as she circles and identifies the “jump”. [M.B.] decided create a video that depicts his basketball skill, which in this case is the “give and go”. A photo rendition of the video created by [M.B.] can be seen in Figure 4.

Although the projects by the students in Figure 3 and Figure 4 are presented in a way that was expected, their justification and reasoning behind the basketball skill wasn’t to the standard in which Mr. French expected. Mr. French assured there is always room for improvement, as details described on the rubric (Appendix F).

"To be at a sixth grade level you have to be able to perform this task with defensive pressure. To be at an above sixth grade level or seventh grade level you have to be able to perform this task during a game."

Figure 3 (Left). Blog post identifying and exhibiting a clear understanding of intended basketball skill. Figure 4 (Right). Photo series of a video post showing a clear understanding of intended basketball skill.
The students were instructed to complete their blogging outside of class. If they needed to add detail they could, if not, the students would be assessed on what they had posted. Mr. French commented on each of the six initial posts, as one group failed to upload a blog post. You can see each initial post and their description (if applicable) in Appendix D.

In reference to the four examples that have been discussed, consider the two on-level ([I.A.]’s Jump Shots and [M.B.]’s Give and Go) examples, and the two below-level ([R.G.], [J’s Jump Shots and Screening by [F.B.]) examples. The dialogue between Mr. French and a student was similar for on-level and below-level examples, respectively. Meaning that although the student may have posted his/hers in the correct format, the reasoning and justification wasn’t sufficient.

“Just a couple of suggestions to possibly enhance the post,” Mr. French commented to [R.G.], “could you describe your shooting form prior to the picture? When you need to execute a jump shot to score a 3 on the basketball skills rubric?” The response by [R.G.] can be seen in Figure 5.
In the other project completed by [F.B.], Mr. French compliments the group on the video being clear, but with little documentation it is hard to understand what is going on in the video. “When would a basketball player use this skill,” asks Mr. French, “and is this skill considered offensive or defensive?” [F.B.], and her partner, [A.F.], completed this part of the project together. They did not respond to the comment by Mr. French directly, rather, they edited their post to reflect their learning. The pair added, “Screening is an offensive action and is best used if [you’re] trying to help another person on your team escape!”

It is important to provide a number of assessment opportunities so each student has the ability to succeed and achieve the desired outcomes. Physical Education assessment can be divided up into two categories (Hay, 2006):

1.) Assessment for learning (purposeful tasks)

2.) Assessment for accountability (large-scale)

Throughout this part of the project, the students were held accountable for a number of responsibility and tasks. For example, the students were instructed on the tasks for recording their information. It was their option to decide which route they wanted to go, or which assessment they wanted to pursue. Literature suggests that teachers with a structured lesson plan, or “subject matter”, and a number of tasks for assessing throughout, tend to have their
students’ attention more often than not. Students are held accountable for their learning and effective instructional strategies can reduce off-task behaviors.

Hopple (2005) suggests by offering a variety of assessments, students will be able to apply skills that have been mastered and become motivated to take ownership of their learning (as cited in Fencl, 2014, p. 16). Although there were minor errors, the projects at the “expected-level” took advantage of multiple assessments being offered. As pictured in Figure 3 and Figure 4, the postings of [I.A.] and [M.B.] still had room for improvement.

Looking at [I.A.]’s posting of a photo of a jump shot; Mr. French states, “I also really like the visual attention to the feet off the ground”, indicating that [I.A.] has created labels that add significant meaning to her project. “Can you describe what your form was like prior to this picture?” he asked [I.A.]. She replied, “this was my form as I was shooting the shot but before this I [was on] the ground sort of squatting.”

As presented earlier, the video representation of Give and Go by [M.B.] explains the skill effectively. [M.B.] goes further and explains the different steps of the Give and Go technique. Besides portraying it in the video post, he also adds the content to the comment section of Kidblog to eliminate and potential misunderstanding. Mr. French asked, “Why would a basketball player use this offensive skill?” [M.B.] replied in a comment post, “Because if you perfect it you can easily get rid of a defender and score.”

The remainder of the comments left by Mr. French can be seen in Appendix E.

<table>
<thead>
<tr>
<th>Session V</th>
<th>Group</th>
<th>Location</th>
<th>Duration (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 March 2014</td>
<td>Control</td>
<td>Gym</td>
<td>30</td>
</tr>
<tr>
<td>11 March 2014</td>
<td>Experimental</td>
<td>Gym</td>
<td>30</td>
</tr>
</tbody>
</table>
Class time was shortened today due to an early dismissal. Class time was devoted to students needing to catch up on their homework and projects associated with the class. Once students were finished editing any posts or submitting new information, they would begin warming up for a basketball scrimmage. For the remainder of class, the students played a scrimmage as the researcher recorded the “game” to use as an authentic assessment piece.

At the conclusion of class, Mr. French informed the students that they were required to login to Kidblog, look for the Video Assessment post, and read the directions. Students were asked note three things while they watched the video:

1. Identify the specific skill assigned by the teacher
2. Identify appropriate technique
3. Identify time slot in video

Mr. French and the researcher decided to ask for the location in the video where the skill they were discussing was taking place. This was to help eliminate redundancy among postings. The students were given the Basketball Rubric for more detailed information on what Mr. French was expecting (Appendix F).

<table>
<thead>
<tr>
<th>Session VI</th>
<th>Group</th>
<th>Location</th>
<th>Duration (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 March 2014</td>
<td>Control</td>
<td>Gym</td>
<td>50</td>
</tr>
<tr>
<td>13 March 2014</td>
<td>Experimental</td>
<td>Gym</td>
<td>50</td>
</tr>
</tbody>
</table>

After some minor editing and blending together by the researcher, the video was uploaded to YouTube and posted to the Kidlog for the students to watch. All of the student comments about the video assessment can be seen in Appendix G. Unfortunately, this was the day before leaving for Spring Break, so a number of students were not in attendance. The students whom were in attendance were the ones who responded. There was quite a bit of
difference among the responses to the video assessment, as some students’ posts were more
detailed than others. There were several students where the researcher commented on their video
assessment. Most of class time was spent on adjusting or adding to their video assessment.

The researcher asked the students to connect what was done in this class to the
Technology Literacy Skills as described by the Iowa Core. Students’ thoughts and actions
varied from not enjoying using the iPads in PE, to several students wanting their own to use
everyday. Some students didn’t even realize the quality of work they have accomplished while
using the iPads. A number of students felt that they were focusing too much on the technology,
rather than, focusing on the basketball skills. Another student exclaimed she did not like using
the iPads because “the whole point in PE is the physical part.”

A majority of the students picked the first and second Technology Literacy Essential
Concepts dealing with creative thinking and collaboration. The students made successful
connections between what we did in PE. to the Essential Concept and Skills as described by the
Iowa Core. More on this subject will be discussed in the next section.
Limitations and Recommendations

With the Common Core becoming increasingly important, and technology continuing to fill classrooms, the implementations of iPads (or any device) is going to be a necessity. Or is it? Sure, iPads and other devices are invading our classrooms, but once this massive implementation is done, what is the next step? As Matt Brittland (2013) explains, “the future is about access, anywhere learning and collaboration, both locally and globally” (p. 1). Consider how technology has impacted journalist and news media today.

With “crowdsourcing” and social media becoming more mainstream, the devices are already in student’s hands. Eventually, it will not be about getting the technology into the hands of the learners. One can view the management of technology at two levels, the first being “micro-managing”, or living in the “now”, focusing on schools implementing devices into their classrooms. Perhaps without the infrastructure or support for such implementation.

The other outlook could be “macro-managing” technology, meaning the ability to move beyond the device, and understand how communication and collaboration takes place and how important the network and infrastructure is for success. This idea can be as small as moving a wireless access point to improve connectivity, to collaborating with classrooms to design projects with students from other continents.

As discovered in this project, students are already comfortable with the technology. It is important to see how the technology can promote, and sustain, higher-order thinking skills. The students were using the iPads in ways to effectively express their understanding of the content. Collaboration is a main focus in the Iowa Core, and is important to implement among any subject. Students tend to learn better by communicating and sharing ideas with other students.

As teachers become more comfortable with implementing technology, it is important to maintain an understanding of educational technology. To help ensure this at the local level,
having teachers share their experiences and collaborate with other teachers will be beneficial. Much like how this Graduate Project portrays and documents successful technology integration. Technology today allows this communication and collaboration to easily take place. Technology also allows for teacher learning communities to span across time zones.

This project was done over a short period of time for my design of using an iPad for a physical education unit. The major findings were primarily drawn from qualitative data, such as my observation notes and document analysis (posts, pictures, videos). This may cause the data and suggestions to be subjective in nature. If I were to change this project, I would extend the length of the research and observation periods and find ways to collect more evidence. A number of the observation periods were recorded, but that did not catch all of the collaboration that took place. Perhaps I would have the students reflect on the experience more often rather than at the end of the experience.

At the local level, I would like to complete this project with more PE teachers across our district. If this were to happen, the data would be collected over a longer period of time, and with a larger sampling of students, the data could become more relevant. Additional data such as more student interviews would also enhance the overall experiment.

As easy as it may sound, schools are still struggling to get up to par with technology. During the Industrial Revolution, “schools were built to educate” the workers. Currently, the education is drastically changing, and schools are struggling to find ways to “foster creativity” among their students, and find challenging and engaging activities to keep the motivation level high. The focus should shift from “less rote-learning and more critical thinking” not about what we communicate with but why are we communicating (Coming, 2014).

Schools have to understand that there is a time and place for the teacher at the front of the classrooms. In today’s media-rich environment, it is a joint effort between the teacher and
students, and both parties are responsible for contributing to the classroom community (Schwartz, 2013). John Abbot explains how we need to tilt away from creating students dependent on teachers. Instead, students need to be instructed how to think critically, and be able to solve problems while collaborating and effectively communicating with other individuals (as cited in Vangelova, 2014).
References


Iowa Department of Education. (2013). Iowa Core 21st *Century Skills.* Des Moines, IA.


Appendices

A. Parent Information Letter

B. Student Online Behavior Contract

C. Photo Rendition of Video Example

D. Initial Skill Posting and Comments

E. Teacher Comments on Initial Posting

F. Sixth Grade Basketball Rubric

G. Student Comment on Video Assessment

H. Physical Education Teacher’s Reaction

I. Kidblog Post Number One
Dear St. Augustin School Family,

As a requirement for completing my Masters of Arts in Instructional Technology, I will be conducting a research project at St. Augustin School. The focus of the project will be on integrating iPads into the Physical Education curriculum. With help from Mr. French and the sixth grade class, I will be conducting this research project in conjunction with the upcoming Basketball Unit.

Two groups have been established: a Control Group and an Experimental Group. Regular physical education classroom rules will still be expected. The Control Group will go about the Basketball Unit as normal. Each student in the Experimental Group will be given an iPad to use for each class throughout the duration of the Basketball Unit.

Anonymity is expected in educational research, and any photos or videos will be used for the sole purpose of completing my Masters degree requirements. Nothing will be published publicly throughout this project. Complete anonymity will be respected.

During the project, I will be observing interactions between both groups of students as well as interactions between students and teachers. For the Experimental Group, the classroom content will be disbursed through a KidBlog website. We will also use applications such as Educreations and PerfectVideo to not only take pictures but record and create videos as well.

Thank you in advance for your support and consideration of this project. If you have any questions, feel free to contact me.

Sincerely,

Mr. Tyler Hellmann
Appendix B

Student Online Behavior Contract

Blogging Guidelines Contract

Please read and understand the basic rules and expectations of blogging. Remember, we are all part of the same learning community with one focus - using technology in PE!

Please answer the questions and read each guideline. Then check "I understand" or "I do not understand" for each guideline.

If you have any questions or concerns, you can submit feedback at the end of this questionnaire.

* Required

What iPad are you?*

Only post things that you would want everyone (in school, at home, in other countries) to know. Ask yourself: Is this something I want everyone to see?*

- I understand
- I do not understand

Do not share personal information. Ask yourself: Could someone find me (in real life) based on this information?*

- I understand
- I do not understand

Think before you post. Ask yourself: What could the consequences of this post be?*

- I understand
- I do not understand

Know who you're communicating with. Ask yourself: Who is going to look at this, and how are they going to interpret my words?*

- I understand
- I do not understand

Know how to give constructive feedback. Ask yourself: What will I cause by writing this post?*

Do you understand how to give constructive feedback?

- I understand
- I do not understand

Treat other people the way you want to be treated. Ask yourself: Would I want someone to say this to me?*

- I understand
- I do not understand

Use appropriate language and proper grammar and spelling. Ask yourself: Would I want this post to be graded for proper grammar and spelling?

Use your skills!

- I understand
- I do not understand

Only post information that you can verify is true (no gossiping). Ask yourself: Is this inappropriate, immature or bullying?*

Remember, this is a project so stay focused!

- I understand
- I do not understand

Anytime you use media from another source, be sure to properly cite the creator of the original work. Ask yourself: Who is the original creator of this work?*

Do you know how to copy and paste links from websites so we can properly source them?

- I understand
- I do not understand

As a blogger, you will be commenting on other people's work regularly. Good comments are constructive, but not hurtful; consider the author and the purpose of the post; are always related to the content of the post; include personal connections to what the author wrote; answer a question, or add meaningful information to the content topic; follow the writing process. Comments are a published piece of writing.**

- I understand
- I do not understand

Do you have any questions or concerns about blogging?**

This is a required question. If you do not have any suggestions type "no"
Appendix C

Photo Rendition of Video Example

Offensive Skill - Pivot

One foot must remain touching the ground. The opposite foot can move from spot to spot as long as first foot remains in contact with the ground.
Appendix D

Initial Skill Postings and Comments

[I.A.] Jump Shot
(photo)

To be at a sixth grade level you have to be able to perform this task with defensive pressure. To be at an above sixth grade level or seventh grade level you have to be able to perform this task during a game.

[M.B.] Give and Go
(video/photo rendition)

"Pass the ball"
"Start running to the basket"
"Your teammate passes it back to you"

[G.H.] Give and Go
(video/photo rendition)

[F.B.] Screen
(video/photo rendition)

*S. S.] Jump Shot
(photo)

*photo only - no description

*photo only - no description
### Appendix E

#### Teacher Comments on Initial Posting

<table>
<thead>
<tr>
<th>Student Initials</th>
<th>Project Name</th>
<th>Teacher Comment</th>
<th>Student Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>[S.S.]</td>
<td>Jump Shot</td>
<td>Good work! Just a couple of suggestions to possibly enhance the post, can you describe when you need to execute a jump shot to score a 3 on the basketball skills rubric?</td>
<td>To execute a jump shot and get a score of 3 you need to be able to execute with defensive pressure. And to get a four you need to be able to execute during a game.</td>
</tr>
<tr>
<td>[G.H.]</td>
<td>Give and Go</td>
<td>Very nice work. Your written description of the events happening in the video are great. Just one thing you could improve: could you describe why you might use this offensive skill?</td>
<td>You can score and get rid of a defender</td>
</tr>
<tr>
<td>[W.M.]</td>
<td>Give and Go</td>
<td>The video does a pretty good job of showing the offensive skill. A couple things to improve: can you describe what is happening in the action as it enters the frame from the right?</td>
<td>What was happening is [D.W.] on offense passes to me and then he passes back to me and I go for a layup because we lost the defense guarding us.</td>
</tr>
<tr>
<td>[R.G.]</td>
<td>Jump Shot</td>
<td>Just a couple of suggestions to possibly enhance the post: could you describe your shooting prior to the picture? When [do] you need to execute a jump shot to score a 3 on the basketball rubric?</td>
<td>Executes with defensive pressure to get a three and execute during game play for a four.</td>
</tr>
<tr>
<td>[M.B.]</td>
<td>Give and Go</td>
<td>Very nice post! You have a lot of great written descriptive work. I also appreciate the visual representation of the skill. Quick question: why would a</td>
<td>Because if you perfect it you can easily get rid of a defender and score.</td>
</tr>
<tr>
<td>[I.A.]</td>
<td>Jump Shot</td>
<td>You did a wonderful job of describing when you would execute a jump shot for your grade level. I also really like the visual attention to the feet off the ground. One suggestion: can you describe what your form was like prior to this picture?</td>
<td>This was my form as I was shooting the shot but before this I [was on] the ground sort of squatting.</td>
</tr>
<tr>
<td>[F.B.]</td>
<td>Give and Go</td>
<td>No comment available</td>
<td>No comment available</td>
</tr>
</tbody>
</table>
### Appendix F

**Sixth Grade Basketball Rubric**

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Passing</strong></td>
<td>Threw a leading pass to a moving receiver off a dribble or pass</td>
<td>Threws while moving, a leading pass to a moving receiver</td>
<td>Threws, while stationary, a leading pass to a moving receiver</td>
<td>Threws a pass to a stationary receiver</td>
</tr>
<tr>
<td>1. Chest Pass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Bounce Pass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Offensive Skills</strong></td>
<td>Execute three of the offensive skills with defensive pressure</td>
<td>Execute two of the offensive skills with defensive pressure</td>
<td>Execute two of the offensive skills during warm-up activities</td>
<td>Execute one of the offensive skills during warm-up activities</td>
</tr>
<tr>
<td>3. &amp; 4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Pivot</td>
<td></td>
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<td></td>
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<tr>
<td>- Fake</td>
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<tr>
<td>- Jab Step</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- Screen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Give &amp; Go</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. Dribbling</strong></td>
<td>Execute during game play</td>
<td>Execute during warm-up activities</td>
<td>Dribbles with both hands; does not change speed or direction</td>
<td>Dribbles with one hand; does not change speed or direction</td>
</tr>
<tr>
<td>- Both hands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Change speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Change direct.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shooting</strong></td>
<td>Execute during game play</td>
<td>Execute with defensive pressure</td>
<td>Execute during warm-up activities</td>
<td>Struggles to execute with mature form</td>
</tr>
<tr>
<td>6. Set shot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Jump shot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Layup</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G

Student Comments on Video Assessment

[W.M.]

-- "[D.W.] set his feet for a screen at 1:46 for [M.B.] so he could go to the basket."

-- "[M.B.] passed to [C.H.] and [M.B.] ran to the other side by [C.H.] and she threw it to him for a give and go at 1:30."

[I.A.]

-- "[M.B.] made a nice jump shot at 0:45 sec"

-- "[D.W.] made a good bounce pass to [M.B.] at 1:40"

[S.S.]

-- "[G.H.] had a good dribbling one hand bouncing the ball and not using two hands while bouncing. This was at 0:19."

-- "[D.W.] had a nice bounce pass to [M.B.] with two hands on the ball and threw it on the ground and the ball bounced back up to [M.B.]. This was at 1:41."

-- [A.F.] made a nice chest pass to [M.B.] [with] two hands and threw it at [M.B.] while having two people trying to block it."

[P.S.]

-- "There was a set shot at 3:00 and a chest pass at 2:40 (I don't know who made them because I can not see)"

-- (Mr. Hellmann) "No problem [P.S.]! What makes it a set shot?"

-- "Their feet were set on the ground while they shot it"

-- (Mr. Hellmann) "Bingo!"

[C.H.]

-- "Nice pass from [M.B.] to [P.S.] at 0:46"

-- "Great layup by [G.H.] at 2:58"
Appendix H

Mr. French’s reaction

6th Grade Control Group
The control group did a really nice job with the basketball unit. All of the students received a 3 on the 6th Grade Basketball Skills rubric, demonstrating grade level expectations in the skills. The control group students were fairly engaged for most of the unit, although as some of them finished their drills & presentation video work, they began to get a little off-task.

6th Grade Experimental Group
The experimental group did a great job with the basketball unit. Nine out of the thirteen students in the experimental group earned a 4 on the 6th Grade Basketball Skills rubric, demonstrating above grade level expectations in the skills. The remaining four of the thirteen students all earned a score of 3 on the rubric. The experimental group students were very engaged throughout the unit and used time after shooting their video to correct and enhance their blog post.

Similarities
Both groups contained relatively the same cross-section of students, ranging from the more athletic and skilled students to those that are generally averse to team sport activities. Both groups received the same amount of instruction. For the initial assignment, both groups began with a good amount of energy and focus, starting off on-task and completing the directions. As time wore on, their on-task time began to differ which is addressed in the differences section.

Differences
There were some pretty clear differences in the two groups. The experimental group was able to dive deeper into the cognitive aspect of the basketball skills, showing a much deeper understanding of the concepts through video, pictures, and typed discussion. The control group demonstrated a surface understanding of the skills and although they may have had a deeper understanding, they were unable to express that in the format they used (designed a drill that showed their understanding of the skill). Additionally, the experimental group were provided with an opportunity to showcase their ability to recognize the skills in a video. Through this video commentary the students in the experimental group could increase their rubric score by demonstrating further knowledge of the subject. The control group did not have access to the video and had to use their designed drill to achieve their rubric score.

The other difference that became clear was how well the experimental group remained on-task. Even when they were finished with their blog post, many students were looking to edit and revise their post. Essentially, although they had completed the requirements for the task, they remained on-task working to improve the quality of their work. On the other hand, the control group quickly moved to off-task activities when they felt they had come up with a decent drill. This resulted in lower rubric scores across the board and to a considerable lack of time spent on-task, developing basketball skills.
Appendix I

Kidblog Post #1

Hello 6th Graders -

You have been randomly chosen to be a part of a research project. This research project is designed by Mr. Hellmann as a final component to his completion of his Master of Arts degree in Instructional Technology through the University of Northern Iowa.

The focus of the research project is the effectiveness of implementing iPads into the Physical Education curriculum. Mr. Hellmann wants to determine whether implementing iPads into PE will be beneficial to the learner (that's you!). With help from Mr. French, we will be integrating technology into the Basketball Unit. Throughout this unit, you will be provided an iPad to use for whatever educational value you desire. There will be times where we will complete activities together, and there will also be times where you will decide what you want to do.

Regular Physical Education classroom rules and expectations still apply. During each PE class, Mr. Hellmann will be observing the classroom learning environment. He will be looking at individual student behavior, student-student interactions, and student-teacher interactions. The notes and observations recorded by Mr. Hellmann will be anonymous, and your name will not be used in any part of the research and final project. (Goal #1)

To start, we will learn about a number of applications (apps) that we will use during the Basketball Unit. Mr. Hellmann and Mr. French have collaborated to produce a unit conducive to a 21st Century Learning environment.

Goal: for Today
- Login and understand how to use KidBlog
- Familiarize yourself with Edureations and PerfectVideo
- Read and understand the blogging guidelines we will follow (Googleform).
- Respond to the questions at the end of this blog post.

1. The first app that will be introduced to you is Edureations, which should already be on your iPad. This app allows you to take pictures and draw directly on the pictures. I would suggest activities we could use this for, but that is going to be your job! How could this app be used in the Basketball Unit? Try it out and see what it's about. Create a GoogleDoc (label it “Day 1”) on your iPad, and record some ideas or suggestions on using Edureations. The second app that you could possibly use during the Basketball Unit is PerfectVideo. This app should already be on your iPad. This is a rather simple video editing application that is fairly easy to use.

For both of these apps, you will have to use the camera and video recorder within the iPad itself. We have used this for other classes, so this shouldn’t be anything new. You may have to “allow access to camera” when you open up the apps for the first time. (Goal #2)

This is the first time we have used a blog as a class, but there are a lot of valuable resources we can gather when we are all learning together. In order to understand and complete the blogging guidelines we plan to follow, please click here (Goal #3) Also, remember the tips and tricks to being a good digital citizen.

Click here to view the Resources for Students document.

Questions to answer: please respond to these questions by commenting below (Goal #4)
- How have you used your iPad today?
- Please post at least one video or picture to this blog and comment on the action or basketball move you are doing.