

Running head: INCREASING ENGAGEMENT WITH IPADS AND MOBILE DEVICES

Leveraging iPads and Mobile Devices to Increase Student Engagement in the Classroom

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Description of the Capstone Experience

When the iPad was first commercially released in the spring of 2010 (Costello, 2012, p. 1), a new age of mobile computing was ushered in which would have major implications for education. The iPad quickly became a sought after classroom tool for educators to enrich instruction. Milman, Carlson-Bancroft and Boogart (2014) write,

“Emerging research shows that iPads improve the reading, writing, and content-area skills of students in P–12 general education classrooms (Bebell, Dorris, & Muir, 2012; Kennedy, 2011; Pierce, 2011; Quillen, 2011), develop language skills and augment the vocabularies of English language learners (Demski, 2011), and help children with special needs communicate and learn in ways they previously could not (Herbert, 2010; Shah, 2011)” (p. 121).

Looking to capitalize on these aspects, the administration of Buford Elementary has had multiple iterations of iOS devices supporting classroom instruction in the subsequent years following the iPad’s initial release. Past device access at Buford Elementary has been on a predominantly one mobile cart per pod basis. In the fall of 2014, the administration of Buford Elementary was able to increase device access and extend the usage of five iPad minis to each classroom teacher.

Findings from a recent study conducted by Kearney et al. (2015) suggest, “that regardless of experience teaching with mobile devices, professional development is needed to help tailor teachers’ pedagogical thinking to new mobile learning environments” (p. 56). With this in mind, Instructional Technology Coach Adam Meador sought out to design, develop, and implement a targeted professional development series. The focus of this was to increase student engagement with the curriculum by inspiring

teacher exploration of constructivist approaches, collaborative and project-based learning approaches, and utilizing differentiation opportunities the iPad can afford in the classroom setting.

The implemented capstone project consisted of twenty-eight targeted professional development sessions delivered by the Instructional Technology Coach, or ITC, with each session directly aligning to the primary goals of the capstone. The sessions occurred over a nine-month period. Implementation of the first session occurred on May 26, 2015 and the final sessions were conducted on February 19, 2016.

Capstone Sequence

Osmo Basic Concepts Sessions and Outcomes

According to Creighton (2003), “We cannot assume that teachers will learn how to effectively use technology to improve teaching and learning on their own, without appropriate support.” (p.92). In keeping with Creighton’s notions of appropriate support, professional developments sessions were designed to support both teachers and paraprofessionals in the implementation of the Osmo devices which was a new implementation initiative for Buford Elementary in the spring of 2015. Promptly following capstone project approval, the ITC began capstone project implementation by conducting multiple Osmo sessions on May 26, 2015 and again on May 28, 2015, which were weeks after the Osmo devices arrival at Buford Elementary. Implementation of the Osmo Basic Concepts Sessions occurred on these two post-planning days for Buford Elementary. The Osmo device is best described as a clip on piece and tiles that work in conjunction with an iPad to create virtual manipulative reading and mathematics learning experiences for students.

The first Osmo Basic Concepts session on May 26, 2015 was an optional professional learning session extended to any faculty or staff member including paraprofessionals. Of the eighteen class attendees, seventeen were paraprofessionals and one teacher. The session consisted of a product overview and a tour of each of the four accompanying companion apps: Words, Tangrams, Newton, and Masterpiece. Additionally, the session also included discussion and overview of account creation and also making custom content for the accompanying Words app. Nearly all (94%) of session participants who completed the exit survey indicated that the content was relevant to instruction and the session enhanced their ability to better deliver instruction in the classroom ([See Appendix A for more information](#)). Findings indicate that the seventeen session participants found the Osmo Basic Concepts session beneficial to their instruction.

The second set of Osmo Basic Concepts sessions occurred on May 28, 2015 and was mandatory professional learning extended exclusively to teachers. Sessions were divided into five different groups lasting forty-five minutes each and occurring over the course of four hours. Of the five sessions, the group consisting of the first grade team members was dismissive of the Osmo device and apps and reduced its usage to a free center or spelling list activity. Despite this initial resistance from teachers, participants of the later sessions, the kindergarten and non-homeroom teams, saw value in the content creation aspects of the Osmo Words app and its general usage in the classroom. Further, teachers in the later sessions discussed ways in which the Osmo could be used for test preparation and also as a flipping strategy where students create content for other students. Another highlight from the later sessions was the discovery and exploration of

Osmo community created content by other educators made public on the Osmo website. Despite the few resistors present in the first grade session, nearly all (95%) of session participants who completed the exit survey indicated that the content was relevant to instruction and the session enhanced their ability to better deliver instruction in the classroom ([See Appendix B for more information](#)). Findings indicate that the twenty-two teachers who attended found the Osmo Basic Concepts session beneficial to their instruction.

Shadow Puppet EDU Basic Concepts Session and Outcomes

The Shadow Puppet EDU Basics Concepts Session occurred on May 28, 2015, a post-planning day, and was an optional professional learning session extended to any faculty or staff member including paraprofessionals. Of the nine class attendees, eight were paraprofessionals and one teacher. The session consisted of an overview of the Shadow Puppet app which is a Web 2.0 and iOS based slideshow and narration tool for young learners to document their learning. The intended goal of the session as outlined by the ITC was to extend an easy and approachable way for teachers to begin exploring project-based learning in their classrooms. Despite these good intentions, (17%) of session participants who completed the exit survey indicated that they slightly agreed that content was relevant to instruction and the session enhanced their ability to better deliver instruction in the classroom ([See Appendix C for more information](#)). However, (83%) of session participants who completed the exit survey agreed that the session was beneficial. The impact of the session could have been greater if more faculty and staff attended and if a more detailed synopsis of the session was written in the agenda for the professional learning day.

Mimio Mobile Sessions and Outcomes

For the last decade, Buford Elementary School has employed the use of Mimio Mobile products for interactive whiteboard needs. The Mimio Xi bar works in conjunction with a wireless dongle, the teacher computer, and the projector to make a dry-erase board interactive. Bundled with the Mimio hardware is productivity software called Mimio Notebook. The widespread adoption of the Mimio products has greatly benefited instruction at Buford Elementary School.

In the fall of 2014, a colleague discovered that the new Mimio Mobile screen sharing app was free for teachers with a MimioStudio license. Mimio Mobile Lite access allows for up to three students with an iOS, Android or any other mobile device with a supported browser the ability to bilaterally screen share with the hosting teacher computer and projector thus allowing for unique educational opportunities. When it was discovered by Mr. Logan that this capability was completely free for teachers he immediately brought it to the attention of the ITC. The two teachers began a dialogue about how to get the word out to teachers that this capability was a reality in the classroom and completely free.

On August 27, 2015 teacher Patrick Logan and the ITC received an email from the chair of the Buford City Schools Digital Leadership Committee identifying them as possible presenters for the Buford Technology Conference occurring on October 9, 2015. Mr. Logan and Mr. Meador began collaborating and preparing instructional materials which included a series of detailed screencasts outlining how to use the Mimio Mobile app in the classroom. Tutorial videos included an overview, connecting devices as both teachers and students, allowing student control of the Mimio, and collaboration mode.

The intention behind the collaboration and production of the screencasts and class design was to ready either one or both teachers for the Buford Technology Conference. The presentation was created collaboratively and presented to BCSS faculty and staff members at the 2016 Buford Technology Conference.

The Mimio Mobile sessions occurred on October 9, 2015 and was mandatory professional learning extended to all Buford City Schools teachers as part of a system technology-focused professional learning day. Six 30-minute professional learning sessions occurred over four hours with approximately twenty to twenty five participants in each session. Topics included controlling the teacher device from the tablet, screen sharing with students, locking screens, and emphasizing a student tablet on the interactive whiteboard. Participants were asked to provide written feedback on the session via an exit survey with an open-ended qualitative question inquiring about session effectiveness. Of the six participants that responded to the survey, four indicated that the session was helpful. Two participants indicated that the lite access only allowing for three students was a hindrance to its usage in the classroom. Another session participant indicated the need for a follow up session. Despite the minimal evidence of the session's impact, it at least reached well over a hundred educators for Buford City Schools.

Evernote Sessions and Outcomes

As part of the Buford Technology Conference that occurred on October 9, 2015, the ITC conducted six sessions focusing on how to use the digital filing cabinet mobile app and Web 2.0 service called Evernote. Evernote is a cross-platform mobile app that allows users the ability to sync and store notes with saves and changes cascading through the daisy chain of the users' connected mobile devices. The six sessions were mandatory

professional learning extended to all Buford City Schools teachers as part of a system technology-focused professional learning day. Sessions occurred over four hours with approximately twenty to twenty five participants in each session. The ITC chose to utilize the teaching opportunity to teach educators how use Evernote in conjunction with personal mobile devices to keep theirs and students' professional and academic lives organized.

The session consisted of a product tour, free and paid features, best practices, and third party add-ons that work in conjunction with Evernote. Of the attendees participating in the Evernote session, many were employees of Buford High School and Buford Middle School. The ITC tried to impress upon participants the importance of students utilizing a tool such as Evernote instead of Instagram for note taking. Further, the case was made that teachers could use Evernote as a powerful organizational tool when coupled with the tagging, search and optical character recognition features. However, many session participants openly cited that the feature set of Evernote was not enough to prompt migration away from using Google Drive as a digital filing cabinet. Participants were asked to provide written feedback on the session via an exit survey with an open ended qualitative question inquiring about session effectiveness. Of the fifteen submitted surveys, eight viewed the session positively and as a success. Seven participants had negative comments about the session with five specifically citing Google in their response. Of the negative comments, the introduction of Evernote was viewed by these respondents as redundant and of little value to them and competitory to the Buford City School System's Google Apps for Education initiative. Respondent data indicated that the session was semi-successful and resistance to Evernote was immediately felt by

presenter Adam Meador as early as the first and second session. A possible future redelivery of the session might have more positive outcomes if the session were specifically geared towards advantages over Google Drive.

Raz-Kids and Math Instructional Ideas (Using the iPads) Session and Outcomes

The Raz-Kids and Math Instructional Ideas (Using the iPads) Session occurred on October 15, 2015, an early-release day, and was an optional professional learning session extended to paraprofessionals of Buford Elementary. Assistant Principal Denise Simpson approached the ITC about the creation of a professional learning session focused on refreshing the paraprofessionals' knowledge of the Raz-Kids reading application and how to use it on the iPads.

In addition to covering Raz-Kids and its usage on the iPads, the ITC was given freedom to choose additional technology-focused professional learning content for the session's expansion to fifty-five minutes. The supplemental content extended to the paraprofessionals focused on how to use Kahoot! in the classroom.

Paraprofessionals participated in a Kahoot! round, were given a product tour, and were introduced to turnkey teacher created Kahoot! presentations available in the public Kahoot! forums. Further, paraprofessionals were also introduced to the Puffin Flash browser app on the iPads. Flash browser applications open up the iPad's ability to view Flash-based applications on the internet. Paraprofessionals were allowed to freely explore a variety of flash-based educational products in use at Buford Elementary. The overall goal of the session was to educate the paraprofessionals to leverage the iPads towards more effective uses in the classrooms. All (100%) of session participants who completed the exit survey

indicated that the Puffin Flash browser would be helpful in the classroom and indicated that they would use it to let students practice math facts and sight words ([See Appendix D for more information](#)). A high percentage (83%) of session participants indicated that they would use Kahoot! in the classroom whereas (100%) indicated that Kahoot! made the iPads more fun to use. Respondent data was largely positive and the session was successful in extending necessary training to support staff on how to use the iPads more effectively in the classroom.

Google Classroom on the iPads BCSS Digital Leadership Committee Session and Outcomes

The Google Classroom on the iPads BCSS Digital Leadership Committee Session occurred on November 12, 2015. On August 21, 2015, the ITC was contacted by the co-chair of the Buford City Schools Digital Leadership Committee and asked to attend the 4th annual Griffin RESA Drive-In Technology Conference in her place. Attendance of the conference was contingent on agreeing to deliver a sixty minute professional learning session to the Buford City Schools Digital Leadership Committee on November 12, 2015. The November session with technology leaders of Buford City Schools focused on redelivering keynote speaker Tom Murray's message as well as using Google Classroom on iOS devices.

Three teacher leaders from Buford Elementary, Buford Academy, Buford Middle School, and Buford High School were in attendance. Twelve iPads were taken to the session and distributed to participants. Teachers engaged with the different session components via the Google Classroom iOS app on the iPads. The goal of the session was to both introduce and reemphasize the importance of using Google

Classroom as an engaging classroom management tool and highlight how easy it is to use on mobile devices and iPads. Though an exit survey was not conducted, the chair and co-chair of the Buford City Schools Digital Leadership Committee relayed that participants enjoyed the session and say the content as being useful to their instructional goals.

Osmo Numbers Session and Outcomes

The Osmo Numbers session occurred on January 4, 2016, a teacher workday, and was a mandatory professional learning session extended to faculty and staff members. The three 1-hour sessions consisted of an overview of the Osmo number app focusing on early numeracy in accordance with the administration's acquisition of the corresponding number tile kits for all homeroom teachers. Further, a review of how to create albums for the words app was extended to teachers. New concepts such as how to manage devices and edit student profiles was also covered with faculty and staff members, which had not been covered in the previous Osmo sessions.

The intended goal of the session was to introduce the Osmo numbers app and also increase teachers' understanding of how to both make custom content and learn some of the more advanced aspects of Osmo. Nearly all (91%) of session participants who completed the exit survey indicated that the content was relevant to instruction ([See Appendix E for more information](#)). Fewer (81%) session participants indicated that the training enhanced their ability to better deliver instruction in the classroom. Overall, the session was successful in reviewing both old and new features of Osmo.

Quizizz vs. Kahoot! Session and Outcomes

The Quizizz vs. Kahoot! session occurred on February 18, 2016, a teacher workday, and was a mandatory professional learning session extended to faculty and staff members focusing on utilizing multiplayer quizzes in the classroom. Two one-hour sessions were conducted for faculty. Class participants were already familiar and fans of Kahoot! multiplayer quizzes. However, many participants had not yet heard of or engaged with Quizizz, an alternative option to Kahoot!. The class was structured to engage participants through gameplay with both Web 2.0 quiz solutions as to compare key differences in the two products. Once gameplay of the two products was conducted, comparisons were made and data reporting options and excel exporting were looked at for each product.

The intention of the session was to review Kahoot! and also introduce a new asynchronous multiplayer quiz option, Quizizz, with the idea being that teachers could leverage the products to make learning more engaging and also make exit tickets, quizzing, and data capture easily attainable. Nearly all (93%) of session participants who completed the exit survey indicated that the content was relevant to instruction and their current teaching practices ([See Appendix F for more information](#)). Fewer (84%) session participants indicated that the content from the session increased their knowledge of mobile devices and Web 2.0 resources and would positively affect the amount of time iPads and Chromebooks would be utilized in instruction. Future survey data targeting the number of adopters and teachers who implemented the usage of these products will be needed to further assess the impact of the session. Respondent data indicates that the chances are good that

class participants will explore the utilization of Kahoot! and Quizizz in the classroom.

Mobile Device: Chromebook Tour and Outcomes

Buford Elementary School saw a change in leadership for the 2015-2016 school year. With new administration in place, principal Tara Prince brought with her new ideas about the directions of mobile devices at Buford Elementary. Mrs. Prince had seen great success with implementing classroom Chromebooks at her previous school, Buford Academy. Ultimately, it was decided that a Chromebook cart would be piloted at Buford Elementary to assess whether or not the devices would be successful at Buford Elementary School. In an attempt to sell the Chromebooks to faculty and staff, new principal Tara Prince tasked Instructional Technology Coach Adam Meador with creating an instructional professional learning session introducing the new devices.

The Mobile Device: Chromebook Tour session occurred on February 18, 2016, a teacher workday, and was a mandatory professional learning session extended to faculty and staff members focusing on utilizing Chromebooks in the classroom. The session included a product tour, log in and student saving procedures, and suggested uses for the Chromebooks in the classroom. Additionally, a variety of assistive features were demonstrated to the teachers to both provide differentiation and also accommodations for learners with special needs. Two sessions lasting approximately sixty minutes were conducted on the workday with faculty members of Buford Elementary.

Most session participants (86%) who completed the exit survey indicated that

the content was relevant to instruction and found that the session was successful in increasing their knowledge of utilizing mobile devices and Web 2.0 resources to create more engaging lessons in the classroom ([See Appendix G for more information](#)).

Further, the same amount (86%) of participants indicated that the session would positively affect the amount of time Chromebooks and iPads would be utilized in their classroom. Slightly fewer (83%) attendees indicated that the session enhanced their ability to deliver instruction in the classroom. In the weeks since the session, teachers have indicated to administration that additional training sessions are needed covering the Chromebook. It should be noted that teachers are in the beginning phases of utilizing the checkout carts and this is evident on the Google Chromebook cart sign up calendar as at present two teachers have reserved the cart for use. Time will tell if the Chromebook initiative brought forth by new principal Tara Prince is in line with iPad heavy initiative already in place at Buford Elementary.

Staying Connected with Parents Session and Outcomes

The ITC created this session in response to comments made by principal Tara Prince about teacher webpages being almost antiquated. The intended goal of the session was to introduce teachers to mobile applications like Homeroom, Buzzmob, and Bloomz to help better connect classrooms to parents. The idea being that mobile applications can be just as effective at engaging parents as mobile applications are with students. The session centered on the mobile app, Homeroom, which is a partitioned and invite only social media feed that parents engage with to stay connected to their child's classroom. Through the power of push notifications and pocket access, the classroom comes directly to where the parent's attention is,

their smartphone.

The Staying Connected with Parents session occurred on February 18, 2016, a teacher workday, and was an optional professional learning session extended to faculty and staff members. The session consisted of a tour of features of the Homeroom app including uploading photographs and text updates for classroom parents to see. Teachers were also shown how to view which parents had accessed certain updates. Once these main features were covered, teachers were free to stay after the session if additional help was needed to set up the app. Two teachers stayed following the session to receive help setting up their homeroom. Given that the session was optional once the main features were demonstrated, only a handful of teachers stayed to submit exit surveys. Of the thirteen surveys, most (92%) saw the content as relevant to their current teaching practices ([See Appendix H for more information](#)).

Useful Websites and Apps Session and Outcomes

The Useful Websites and Apps session occurred on February 18, 2016, a teacher workday, and was a mandatory professional learning session extended to faculty and staff members. The focus of the session was to target specific Web 2.0 resources to aid in classroom instruction. The selected resources had dual compatibility on both the iPads and also the Chromebooks. This was intentional and meant to allow teachers cross platform Web 2.0 solutions thus allowing the simultaneous presence of both iPads and Chromebooks in the classroom to drive instruction.

A variety of Web 2.0 resources were extended to teachers during the two one

hour sessions. Resources included Padlet an online sticky note wall, Recite a graphic quote maker, Blabberize a humorous photo narration tool, Pixiclip an online whiteboard application, Jellybean Scoop a curated forum of current event articles for kids, and Flipquiz a Web 2.0 customizable Jeopardy board maker. In addition to the useful Web 2.0 resources, the student digital portfolio solution SeeSaw was introduced to teachers. SeeSaw, an app made by the developers of Shadow Puppet, lets teachers create free digital student portfolios. The intention was to extend to teachers an easy way to begin approaching project-based learning and archiving student work.

Most session participants (92%) who completed the exit survey indicated that the content was relevant to instruction and found that the session was successful in increasing their knowledge of utilizing mobile devices and Web 2.0 resources to create more engaging lessons in the classroom ([See Appendix I for more information](#)). Further, still most (88%) attendees felt the session enhanced their ability to better deliver instruction in the classroom and increased their knowledge of utilizing mobile devices and web resources. Slightly less (83%) indicated that the session would positively affect that the session would positively affect the amount of time iPads and Chromebooks were utilized in the classroom.

One of the introduced Web 2.0 resources has already been implemented. At present the Jellybean Scoop curated articles for kids website is currently embedded in the March 2016 grade level writing plans. The first grade team members immediately took to the resource and are actively using the Web 2.0 site to teacher grade level content standards associated with research. It remains to be seen if the other introduced resources

will see widespread adoption by any other departments of Buford Elementary School.

Deviations

There were a number of deviations from the Capstone Report Outline. The most notable difference would be the absence of Nearpod from the Capstone Sequence. ITEC candidate Adam Meador introduced Nearpod to Buford Elementary faculty members during the 2014-2015 school year. In the last year, Kahoot! had gained enough traction with the faculty that it seemed fruitless to try and reintroduce Nearpod again. An alternative approach was taken and the Nearpod session was abandoned, and a session was created to introduce faculty to a product similar to Kahoot! called Quizizz. The rationale being that if they liked Kahoot! then they would probably like the similarly developed Quizizz.

Another notable deviation is the omission of the Mimio Mobile Advanced Concepts session. Exit survey data from the October 9, 2015 session indicated that many session participants were put off by the fact that lite access only afforded them usage of the product with three students. With this in mind, Mr. Meador opted for alternative sessions to increase usage of the iPads in the classroom.

Further, it should be noted that Shadow Puppet Advanced Concepts Session was also abandoned. This was entirely intentional because ITEC candidate Adam Meador discovered that the developers of the Shadow Puppet app had a much more interesting product in SeeSaw. In fact many of the same features and capabilities of Shadow Puppet are embedded directly into the SeeSaw app. The key difference being that SeeSaw affords teacher a more effective way to manage large quantities of digital work whereas Shadow Puppet did not.

In addition, it should be noted that the other deviations like the infusion of Raz-Kids and Chromebooks into the capstone sequence are a symptom of administrative additions. Administrators are the gatekeepers to scheduling professional learning sessions and often graft onto established plans additional initiatives which is entirely understandable and to be expected. However, administrators do make for an interested wild card to account for when planning professional development sessions. Often their vision of technology-focused professional development might not necessarily dovetail with the instructional technology coach.

Finally, it was extraordinarily difficult for ITEC candidate Adam Meador to schedule coaching sessions as outlined in the capstone proposal. The primary reasons for this were that many teachers cannot devote time outside of school to coaching sessions. Also, scheduling coaching sessions during the workday was next to impossible. Mr. Meador is a specials teacher whose class schedule affords homeroom teachers planning time, which negated many times during the workday.

Follow-up Plans

Going forward there are a number of things that can be done to support teachers in increasing student engagement in the classroom with the mobile devices and iPads. First, because of the common complaint about Mimio Mobile lite access only accommodating three students, pursuing Mimio Mobile further isn't a necessity. Further, site licenses of the Mimio Mobile application are \$2700 and classroom licenses are \$199. The new Apple Classroom app coming in iOS 9.3 will have bilateral screen sharing capabilities and is currently under review by BCSS Technology Director Jason Downs. It would be appropriate to pilot the new Apple Classroom app with a small group of

homeroom teachers.

Additionally, it would be in the best interest of Buford Elementary to conduct an adopter survey with faculty and staff members to find out which of the capstone apps and Web 2.0 resources were implemented into regular usage. Pending approval, ITEC candidate Adam Meador will conduct this survey at the beginning of the 2016-2017 school year. Further, included in this survey would also be a battery of questions designed to ascertain the direction the faculty would like to go with technology. Finally, based on the needs and directions indicated by faculty and staff members, another series of targeted professional development sessions should be designed, developed and implemented for the 2016-2017 school year at Buford Elementary.

Deliverables

A variety of deliverables are included to document the series of professional developments making up the capstone experience. Included are session instructional materials, which typically consisted of a publicly accessible Google Slides document with in some instances embedded screencast tutorials aiding in the instruction of faculty and staff members. Additionally, exit surveys were conducted. That information can be seen documented in the appendix section of the capstone report.

[Evernote Sessions Instructional Materials](#)

[Google Classroom on the iPads BCSS Digital Leadership Committee Session](#)

[Instructional Materials](#)

[Mimio Mobile Session Instructional Materials](#)

[Mimio Mobile Screencast Video 1](#)

[Mimio Mobile Screencast Video 2](#)

[Mimio Mobile Screencast Video 3](#)

[Mimio Mobile Screencast Video 4](#)

[Mimio Mobile Screencast Video 5](#)

[Mobile Device: Chromebook Tour Instructional Materials](#)

[Osmo Basic Concepts Session Instructional Materials](#)

[Osmo Numbers Session Instructional Materials](#)

[Quizizz vs. Kahoot! Session Instructional Materials](#)

[Raz-Kids and Math Instructional Ideas \(Using the iPads\) Session Instructional Materials](#)

[Shadow Puppet EDU Basic Concepts Session Instructional Materials](#)

[Staying Connected with Parents Session Instructional Materials](#)

[Useful Websites and Apps Session Instructional Materials](#)

Reflection

A number of insights were gained from the completion of the capstone experience about technology facilitation and leadership. First and foremost, in reference to Charles Bishop Jr.'s work, Knight (2007) states, "the path to organizational change is through individual change . . . change happens one person at a time" (p. 22). Teachers are the dominos in the change process, and if you can get the right ones to fall and follow along, then initiatives can take hold. This of course is easier said than done. Through the completion of the capstone, it has become evident that teachers crave technology-based solutions to their instructional problems so long as the technology is turnkey, free, and easy and its instructional value is demonstrated in the first five to ten minutes of professional learning. But piquing interest in new technologies isn't the sole duty of the ITC, for the ITC must also provide the necessary support and continued training for those

interested in moving forward with the change initiative or technology at hand. An ITC's time is a resource as well and a balance must be struck between introducing and engraining technology initiatives.

Additionally, administrators are instrumental in the successes of the instructional technology coach. With the stroke of a pen, administrators can influence the amount of faculty members an instructional technology coach can affect with any given professional learning session with just two words, *mandatory* or *optional*. This means a couple of things. First, it is imperative to have administrative buy-in on an initiative. Second, if administration deems a professional learning session or technology initiative mandatory it will increase the amount of people the instructional technology coach can reach, but it will also increase resistance. Whereas optional sessions or initiatives will affect less individuals, but those coming to it will likely not resist and be open to moving forward. Further, administrators are the rudder of the sailboat making small trajectory changes to the course of the school and the instructional technology coaches are the sail trying to harness the energy of the teachers to drive technological change forward. The union of the three, administrators, teachers, and ITC are paramount to the success of any change initiative.

Finally, the capstone experience accomplished what it set out to do, which was to not only increasing the usage of iPads, but to also increase student engagement in the classroom by leveraging these devices and Chromebooks more effectively. For these reasons, the experience gained through the capstone project directly and positively affected the faculty and staff of the school and also the knowledge, skills, and dispositions of the ITEC candidate. By engaging firsthand in the all aspects of the change

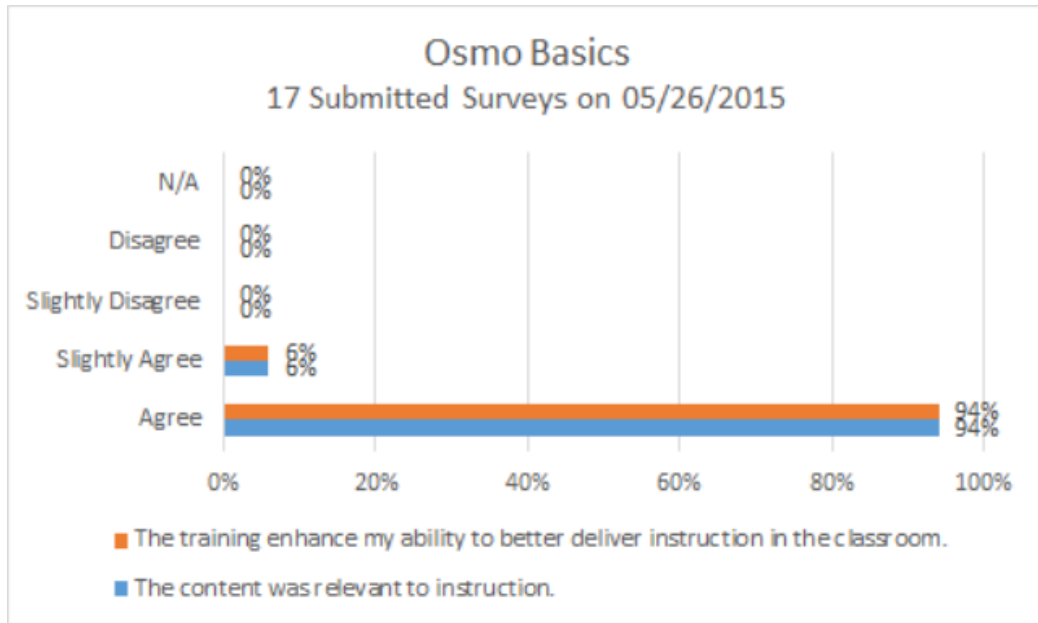
process through this capstone, with all of its success and failures, a deeper understanding of the complexity of personal and organizational change was gained.

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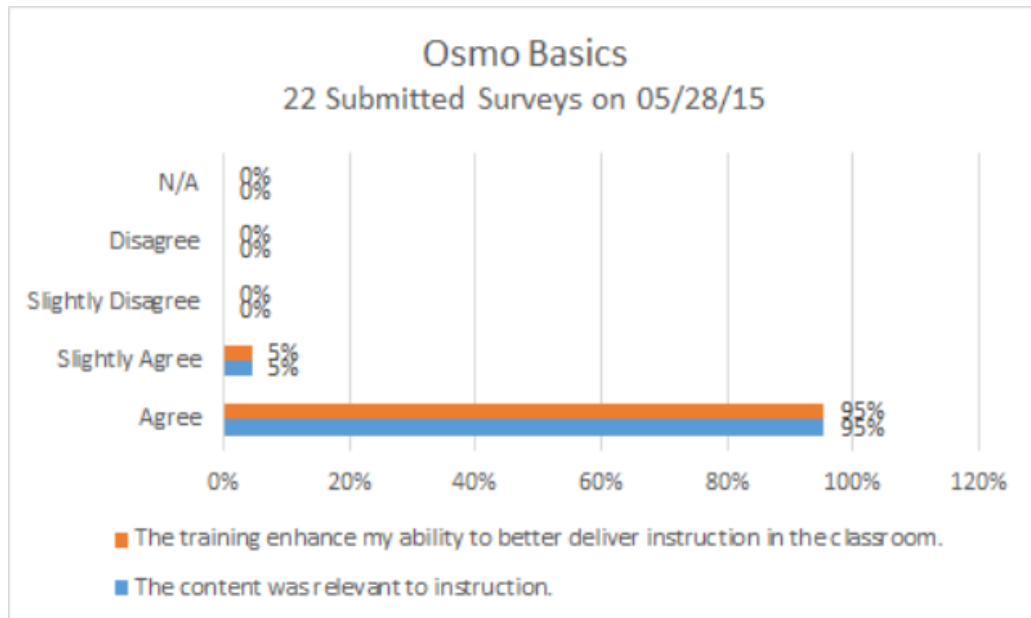
Appendix A

Osmo Basic Concepts Session on May 26, 2015



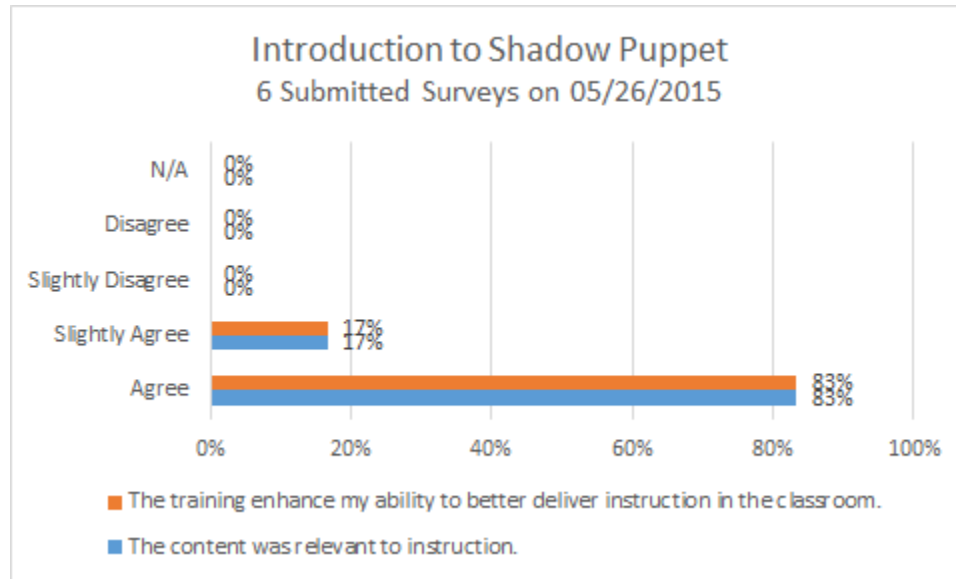
Appendix B

Osmo Basic Concepts Session on May 28, 2015



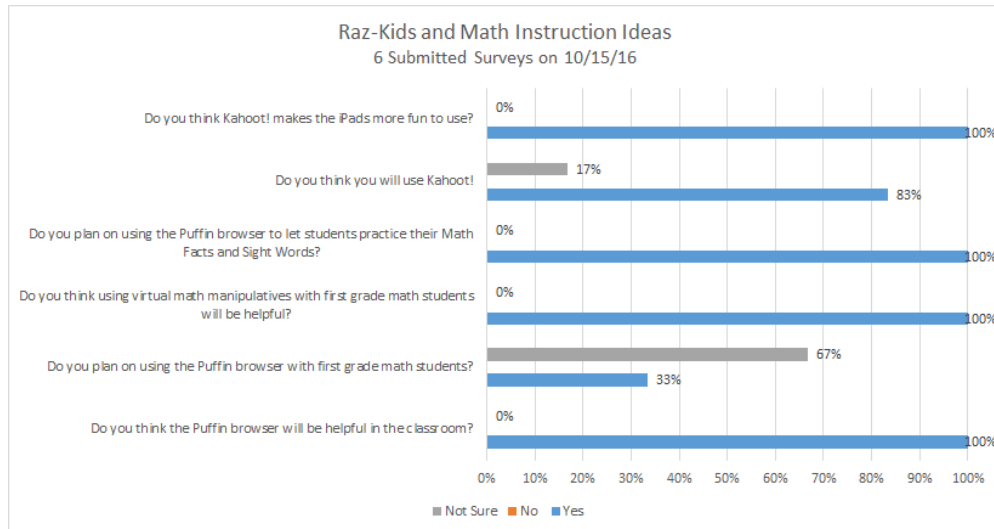
Appendix C

Introduction to Shadow Puppet Session on May 26, 2015



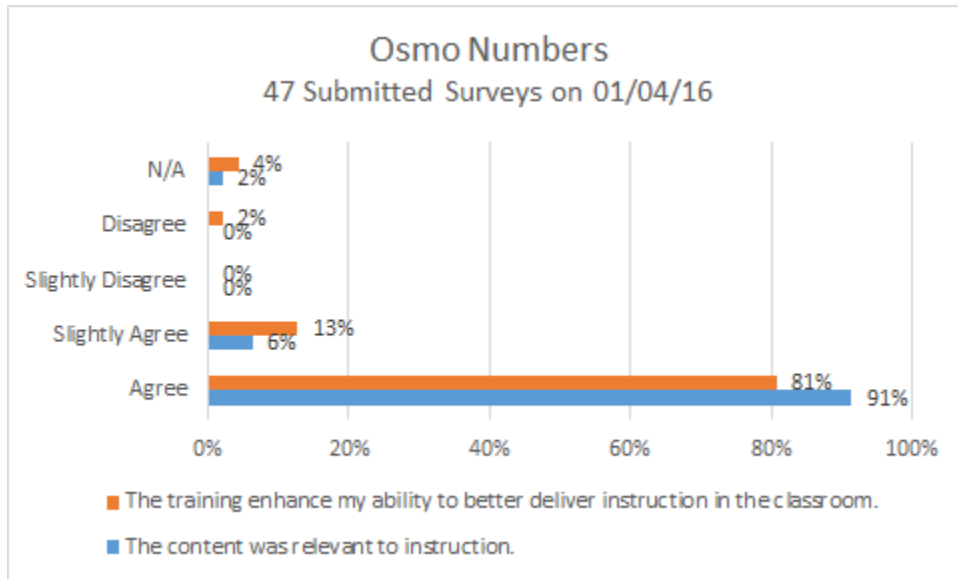
Appendix D

Raz-Kids & Math Instructional Ideas (Using the iPads) Session on October 15, 2015



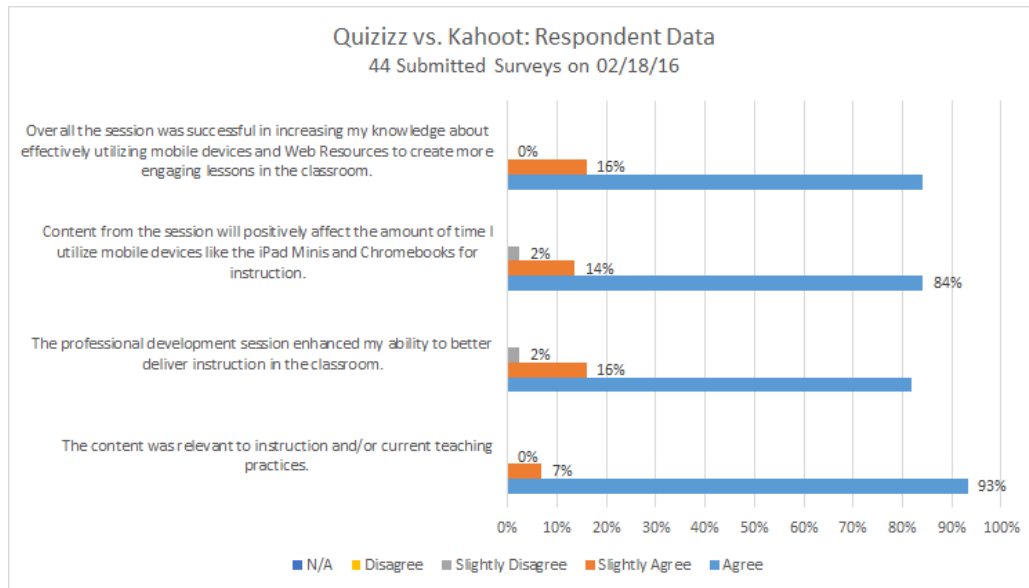
Appendix E

Osmo Numbers Session on January 04, 2015



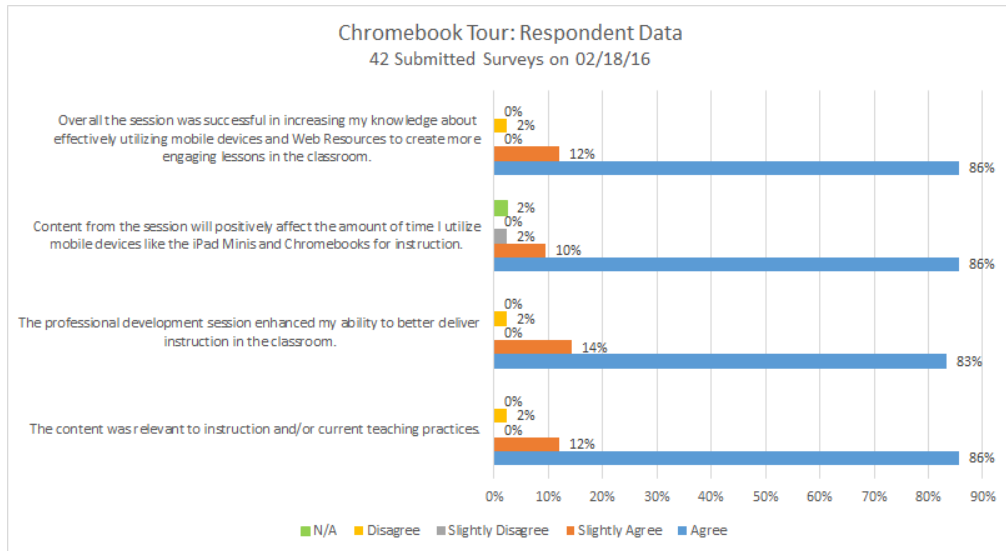
Appendix F

Quizizz vs. Kahoot! Session on February 18, 2016



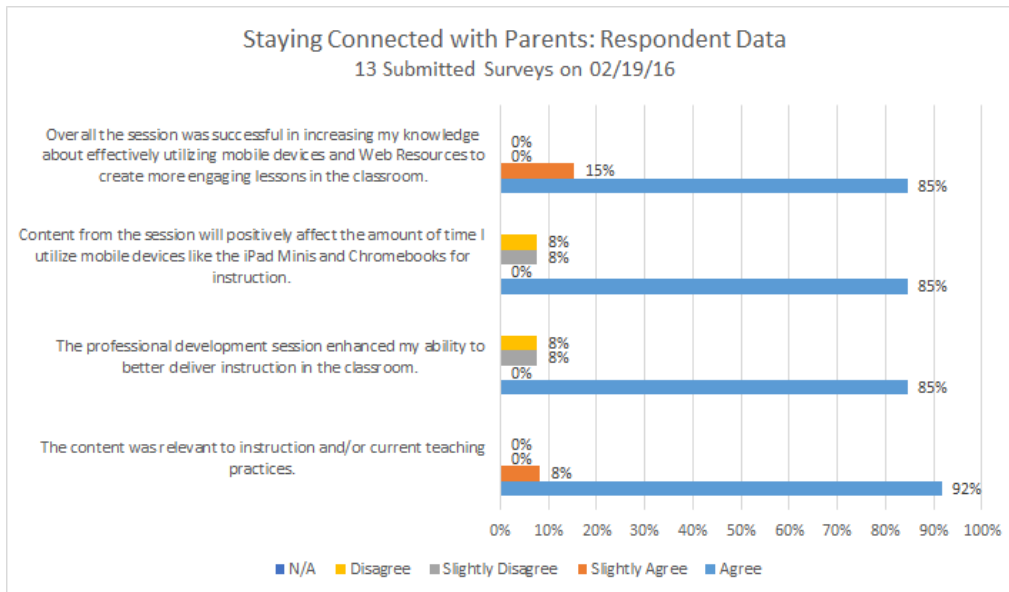
Appendix G

Mobile Device: Chromebook Tour on February 18, 2016



Appendix H

Staying Connected with Parents Session on February 19, 2016



Appendix I

Useful Websites and Apps Session on February 19, 2016

