

The Installation of Somerset Community College's Interactive Whiteboards

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### Abstract

The Somerset Community College (SCC) campuses in both Somerset and London, Kentucky feature their own Learning Commons areas complete with a library and computer lab. The Learning Commons also feature tutoring services in core areas such as math and English. Up until the present time, math tutors would utilize mobile whiteboards that they could write down and solve math problems on when assisting students.

The whiteboards certainly have limitations in that they have a finite amount of physical space in which math problems can be written down, and they cannot be saved or printed off conveniently for the students use at a later time. This has proven to be somewhat problematic for the students and tutors. The SCC Learning Commons staff received a grant to pay for new materials and decided to buy eight 65” InFocus interactive whiteboards with the grant to enhance the tutoring experience for everyone involved. This paper will discuss what this technology is, how it is used, its installation at the SCC Learning Commons, and some tutor and student analysis of their usefulness. The paper will also discuss proper project management steps and how they were used or could have been used to maximize the efficiency of this project.

## The Installation of Somerset Community College's Interactive Whiteboards

### **Background**

Somerset Community College (SCC) has two campuses and four centers in which its students can take classes. The two centers, located in London and Somerset, Kentucky, feature Learning Commons areas. The Somerset campus Learning Commons includes a library full of books and computers for student use, a classroom/computer lab, a quiet study room, and several tutors available to help students with subjects like math and English throughout the day. The math tutors, for example, see numerous students every week as these students often need extra help with subjects like statistics, applied mathematics and college algebra.

Usually tutors use pencil and paper to write down math problems and solve them with students. However, they also are known to use one of two dry erase whiteboards to write down problems and solve them, which may be helpful if multiple students are stuck on a certain type of problem. The tutors do their best to make use of the materials that they have, yet SCC Learning Commons staff have been trying to find a way to make tutoring at SCC even more efficient.

SCC recently purchased and began to install new interactive whiteboards to enhance the tutoring experience of its students after receiving a grant. These new computerized whiteboards supposedly have advantages over the old board that tutors had been writing on with markers and then erasing to tutor math students with in the past. The Somerset Campus features approximately two of the older erasable boards, both of which feature a very limited amount of space. While students can copy the problems worked out on the boards on paper before they are erased, they cannot have them saved in a file for later or printed off for them for convenience. Also, since board space is limited, the boards must be wiped off occasionally to make room for

new problems. If a student has additional questions over previous problems that have since been erased, the tutor will have to rewrite it, costing them additional time and effort. This also poses a problem if a different student asks for help later concerning the same material.

The Information Technology (IT) specialists at SCC ordered eight InFocus Whiteboards to be installed at the London and Somerset campuses during the early part of Fall 2017 semester. Specifically, the interactive Whiteboards are called “JTouch 65-inch Whiteboard(s) with Capacitive Touch” according to the official InFocus (2017) Web site. The page dedicated to the JTouch Whiteboard tries to persuade visitors to consider buying a board by saying that they will no longer have to resort to photographing materials that had been written on their old traditional whiteboards. The page calls them “durable” and claims that they make meetings “...more efficient and productive” and that the boards are “engaging” and “interactive” (InFocus, 2017, para. 1).

SCC IT Specialist Derek Denney ordered the InFocus JTouch Whiteboard and was responsible for making sure it was received and assembled. He learned about the features of the Whiteboards by testing them out so that the tutors and students could be trained on them. According to Denney (personal communication, September 19<sup>th</sup>, 2017), content could be easily added to the JTouch Whiteboard’s whiteboard feature, which could be filled with seemingly endless content. There is no need to erase content when the page a user is working on fills up; they can simply swipe right to move to a clean portion of the whiteboard, and swipe left to visit previous writings. The JTouch Whiteboard can even allow users to save their work to a file, and may possibly let them print it. Denney (personal communication, September 19<sup>th</sup>, 2017) stated that computers would be imaged and attached to the back of the Whiteboards so that the tutors and students to have access to the Internet and a computer file system by switching inputs on the

Whiteboard. Some computers may eventually have software used for tutoring and homework completion such as the ones already in use by math students installed on them according to Gover (personal communication, September 11<sup>th</sup>, 2017).

Denney (personal communication, September 19<sup>th</sup>, 2017) stated that he and the other Somerset campus IT specialists imaged eight Dell OptiPlex 7050 computers with a custom Windows 10 image and fixed them to the back of the JTouch Whiteboards. They were connected to HDMI ports on the JTouch Whiteboards and can be accessed by pressing the input button on the Whiteboard and switching to this port. According to Denney (personal communication, September 19<sup>th</sup>, 2017), the computers originally came with the Ubuntu Linux operating system installed on them but no productivity software. Each computer also came with 8 gigabytes of double data rate (DDR) 4 memory and a 128-gigabyte serial advanced technology attachment (SATA) solid state drive.

InFocus (2017) discusses the most important features and the hardware specifications of the JFocus Whiteboard on their site. The JTouch 65-inch Whiteboard with Capacitive Touch features a “65-inch 1080p touch display”, a “full-featured” whiteboard, and a “multi-point capacitive touchscreen with sleek bezel-less design” that makes it even easier to write on with a stylus or finger. Also, the JTouch whiteboard does not require calibration to use them (para. 2, 7). The JTouch Whiteboard can also be used with a device called a “LightCast Key” that allows it to connect to the Internet or to other devices such as Windows or Apple devices.

The JTouch whiteboard features a 1920 x 1080 resolution, a WLED backlight, a 5000:1 contrast ratio, a 120 hertz refresh rate, a 6.5 ms response time, and a 176-degree viewing angle. The device also has two 10W speakers, four HDMI ports, four panel VGA and USB-A ports,

two USB-A ports on the bottom of the screen, and an AC 100 to 240-volt power standard among many other accessories and specifications (InFocus, 2017).

Dean of Academic Support/SCC IT director Bruce Gover served as the project manager for this project, which he deemed “the ‘Tutor Pod’ Project”. Gover (personal communication, November 21<sup>st</sup>, 2017), claims that his connection to the project is a “two-fold one” as he is responsible for the leadership of the Learning Commons as Dean of Academic Support. In this role he is responsible for providing students with “the resources and services to support their academic success”. He says that this project was meant to increase the availability of technology “in the provision of tutoring services”. Gover (personal communication, November 21<sup>st</sup>, 2017) stated that his IT Director role “involves the research, design and development of technology resources and services to support students, faculty and staff”. In order for this project to be successful, both the Learning Commons staff and the IT staff must work in “coordination” with each other. Because of Gover’s leadership position within the Learning Commons, he is able to conduct the “planning, design and implementation of the project”.

When interviewed about the goals and purposes of the project, he had the following to say (personal communication, September 11<sup>th</sup>, 2017):

The purpose of the Tutor Pod is to place presentation technology close to the tutoring operations so that tutors can utilize the large touchscreens to instructor/tutor students better than using traditional whiteboards. Tutors will have surface tablets that will interface with the Tutor Pods and therefore will be able to project content from their tablets to the large screens. It is hoped that the Tutor Pods can be utilized for one-on-one tutoring, small group tutoring, and also utilized for classroom-type instructional presentations.

Tutor Pods will also have the capability of providing whiteboard applications for on screen annotation, drawings, etc. These screens can then be printed and distributed to the students. Another use would be to link the Tutor Pod to the existing eConnect distance tutoring stations located throughout the college's Learning Commons. Currently we are utilizing a desktop workstation at each location linked with Skype to connect students with tutors. The Tutor Pod could be modified to include a webcam to provide an additional eConnect workstation.

Placement of the Tutor Pods will be critical in the success as it will most likely influence the use of the Tutor Pods. If the Tutor Pods are not located in the correct locations they will probably not receive as much use. It is anticipated that these Tutor Pods will also be utilized for student study groups. Small groups of students can project content onto the Tutor Pod which will then be available for viewing by other students in the group. Currently many students in the Learning Commons utilize laptops and printed presentations for small group study. Tutor Pods located in the study areas will enable students to have access to an internet-enabled, large touchscreen computer with printing capabilities. Tutor Pods can also be utilized by students preparing for class presentations. Custom content can be presented on the Tutor Pod describing Learning Commons resources and services when not being for tutoring/student-use. Additionally, tutoring content can be installed for easier student access.

### **Goals**

The most important goal of the project was to increase the efficiency of the tutoring process and the students' ability to study at SCC. This will be accomplished by making it so that tutors and students could have a more interactive session, giving students a platform to work on

group projects in the Learning Commons, and by making it so that tutors and students would not have to worry about only having a limited amount of space to work regarding writing down tips or solutions to homework problems the students are working on. This, of course, is the reason why the JTouch Whiteboards are going to replace the traditional dry erase whiteboards currently in use as Gover (personal communication, September 11<sup>th</sup>, 2017) stated.

Another goal of the project was to provide training for the tutors and students so that they would know how to use the JTouch Whiteboards and therefore be more likely to actually use the technology. Gover does not want to use the grant for the JTouch Whiteboards and have them installed in the Learning Commons for them to not be utilized as a learning and teaching tool for the students. He believes that training users, especially tutors, will result in greater utilization of the JTouch Whiteboards (personal communication, September' 11<sup>th</sup>, 2017). Training will be discussed further in a later section.

As stated above, Gover (personal communication, September 11<sup>th</sup>, 2017) as well as the researcher would like to see the JTouch Whiteboards being used by tutors and students both regularly and frequently. Gover agreed that a goal of JTouch Whiteboard use for at least fifty percent of the time the Learning Commons are open may be feasible and realistic. As of this writing, not all of the JTouch 65-inch Whiteboards with Capacitive Touch have been placed in the Learning Commons for student and tutor use. Currently only one JTouch Whiteboard is in use at the Somerset Campus Learning Commons. This JTouch Whiteboard has been placed in the Learning Commons computer lab/classroom area. It is being used heavily already during sessions held by adjunct math instructor Jacob Held. Held (personal communication, November 8<sup>th</sup>, 2017) reports that the students have enjoyed the JTouch Whiteboard so far.



In order to know how much the JTouch Whiteboards will be used in the future, their usage will need to be monitored and logged. There are multiple ways in which this can be accomplished according to each JTouch Whiteboard that will be placed in the Learning Commons. Some JTouch Whiteboards will be placed in common areas of the building, some will be placed in tutoring areas and other will be in the computer lab/ classroom and in quiet study rooms. The common area JTouch Whiteboards are intended for student individual and group studying sessions. A log may be placed near the JTouch Whiteboard, which students may be required to sign and record their time using the JTouch Whiteboard in order for them to be allowed to use them. This same method may be used for the quiet study room JTouch Whiteboard. The tutors utilizing the tutor area and computer lab/classroom JTouch Whiteboards may be asked to record the time they spend using the boards with students. The logs may then be analyzed by Gover or the Learning Commons media specialists in order to determine how many total hours the JTouch Whiteboards were collectively used as compared to the total hours each day or week that the Learning Commons is open to students. Once this is done a percentage of time spent using the JTouch Whiteboards may be procured.

### **Methodology/Approach**

It was anticipated and desired that this project would take an action research approach, which is a flexible approach that allows for much project change and growth, according to Robson (2014). This approach is flexible in part because it allows the questions posed by researchers to change based on “early data collection” (p. 23). The researcher thought that a style of approach that allowed for changes to the project and its outcomes would be beneficial to the project in case the project did undergo major changes as it was implemented. Action research

projects also involves both “researchers and participants” in the execution of the project or experiment (p. 23). The researcher had a strong desire to participate in the project directly.

However, the project unexpectedly ended up taking more of a case study approach in the end due to limitations discussed in a later section. Robson (2014) states that case studies, which are also considered flexible research designs, are used to research a “...single case, or a small number of cases”. Case studies can be used to study a variety of objects or “situations” and still feature several advantages such as being able to “capture complexities, relationships, and processes” (p. 23, 25).

### **Project Deliverables/Expected Results**

In order for the goal of increasing tutoring service and study time efficiency to be completed, the JTouch Whiteboard 65-inch with Capacitive Touch would have been received and installed. Gover (personal communication, September 11<sup>th</sup>, 2017) and the SCC IT Specialists wanted and needed to make sure that these JTouch Whiteboards were ordered, received, and installed as soon as possible in order for students and tutors to have quicker access to them.

As stated previously, Gover (personal communication, September 11<sup>th</sup>, 2017) and the IT specialists knew that it would be wise to train students and tutors on using the JTouch Whiteboards once they arrived. In order to be able to do that, however, they would have to learn how to use them themselves and to hold training sessions for tutors and possibly students. Denney (personal communication, September 19<sup>th</sup>, 2017) received the JTouch Whiteboards on or just before September 18<sup>th</sup> and began assembling them and learning how to turn them on/off, switch inputs, and use the whiteboard feature.

In mid-to-late October, IT specialist Guy Hamm visited the Learning Commons and trained Held on some basic functionalities of the JTouch Whiteboard according to Gover (personal communication, October 25<sup>th</sup>, 2017) When interviewed, Held (personal communication, November 8<sup>th</sup>, 2017) claimed that Hamm showed him essentially just how to power the JTouch Whiteboard on and off and switch inputs. Held figured out how to use the whiteboard feature of the device on his own.

Monitoring student and tutor use of the JTouch Whiteboards will require physically tracking the usage of each JTouch Whiteboard and figuring up how many hours and/or minutes each day that the JTouch Whiteboards are collectively used. It is expected that Gover or other SCC Learning Commons staff will make and print off logs that can be kept with tutors and also kept near the common area JTouch Whiteboards. If the tutors and students properly fill out what times they started and stopped using the JTouch Whiteboards each time they are used, Gover will be able to accurately determine whether or not the goal of JTouch Whiteboard use occurring at least fifty percent of the time was met.

### **Requirements/Resources**

As stated previously, SCC received the JTouch Whiteboards on a grant; Gover (personal communication, September 11<sup>th</sup>, 2017) stated that the grant was conditional upon our ordering and receiving the Whiteboards by September 30<sup>th</sup>, 2017. Fortunately, the JTouch Whiteboards were received before the deadline as stated previously.

Gover was required to inform the IT specialists of the project and ask them for assistance for the project to be possible. If the IT specialists had not assembled and installed the JTouch Whiteboards, the project could not have been completed. The Somerset campus has three IT

specialists that were involved in the assembly and installation of the JTouch Whiteboards for this campus. However, they also had to transport two JTouch Whiteboards to SCC's London campus, where they may have assisted that campus's IT department in JTouch Whiteboard assembly and installation (Gover, personal communication, September 11<sup>th</sup>, 2017).

The JTouch Whiteboards needed to be meticulously placed in certain areas of the Learning Commons for them to be the most effective. As discussed previously, six JTouch Whiteboards were assigned to the Somerset campus and one was placed in the Learning Commons computer lab/classroom area for tutoring sessions conducted by Held. Gover and the IT specialists knew that this area would be suitable for a JTouch Whiteboard because there were power outlets, power strips, and RJ45 phone and Ethernet ports already in place in this room.

The other five JTouch Whiteboards also had to be near these kinds of items for them to be useful to the tutors and students as well. It was more important for them to have power and Internet connections than to be in convenient locations. However, Gover (personal communication, October 25<sup>th</sup>, 2017) still wanted a JTouch Whiteboard in the quiet study room, two in common areas where students could use them to study without disturbing anyone else, and he wanted to place two near the tutoring stations. It was decided that JTouch Whiteboards would be able to be successfully placed in these locations. The two JTouch Whiteboards that were sent to London were also placed in their tutoring areas. See Figure 1 below for the exact placement of both campuses' JTouch Whiteboards. The name "TutorPod" refers to the JTouch Whiteboards:

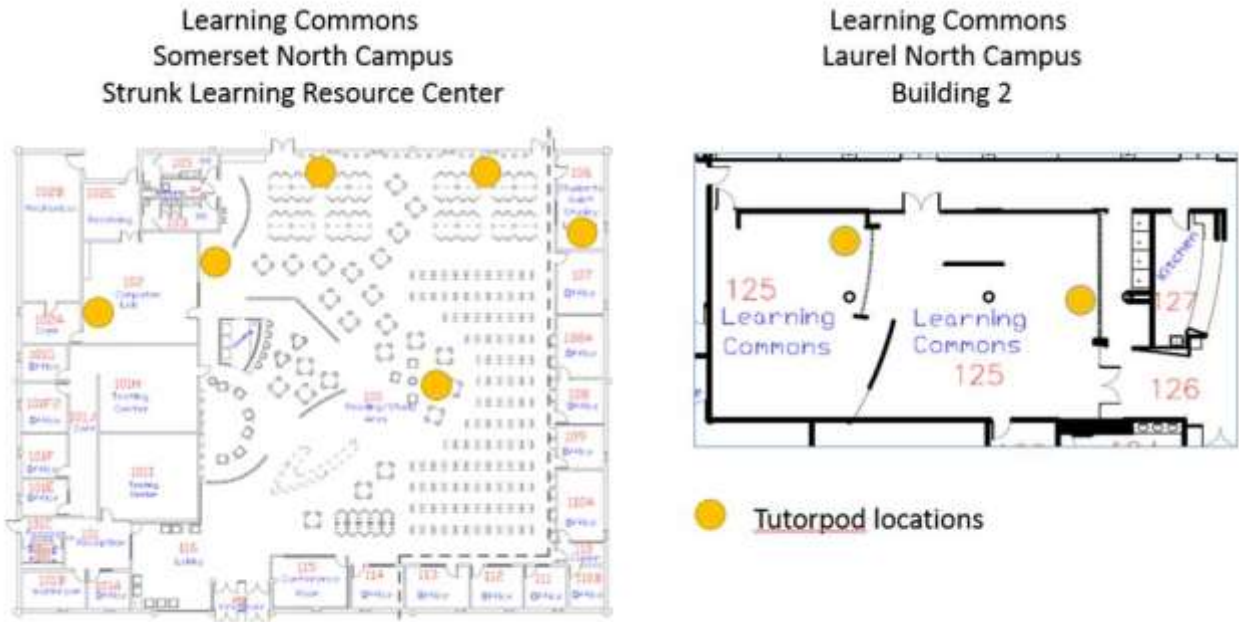


Figure 1: SCC Somerset and London campus JTouch Whiteboard locations. This figure was obtained from Dean Gover, who refers to the Whiteboards as “TutorPods”. Yellow dots indicate the presence of a JTouch Whiteboard/Tutorpod. The top two Whiteboards near the eight groups of four squares on the Somerset campus image represent the tutoring area Whiteboards.

### Assumptions

Gover assumed (September 11<sup>th</sup>, 2017) that the JTouch Whiteboards would arrive at the SCC Somerset campus by September 30<sup>th</sup>. He knew that they had been ordered and should have shipped by the time of this interview. Again, it was imperative that the college receive them by this date or there would be no guarantee that the grant would cover the cost of the JTouch Whiteboards.

It was also assumed that the SCC IT department would have the equipment available needed to install the JTouch Whiteboards. They knew that, if nothing else, they needed Ethernet cables, power cables, and the LightCast Key for the JTouch Whiteboards to have power and Internet connectivity as well as connectivity to other devices like Windows and Apple products.

Denney (personal communication, September 19<sup>th</sup>, 2017) received the Whiteboards by September 18<sup>th</sup> and received the LightCast keys in the following one-to-two weeks.

In order to be able to place all eight JTouch Whiteboards in the Learning Commons, the Learning Commons had to be spacious enough to accommodate up to six large 65-inch JTouch Whiteboards on mobile stands without obstructing other equipment or the activities and walkways of the Learning Commons staff and students. Gover (personal communication, October 25<sup>th</sup>, 2017) and the IT specialists carefully assessed the equipment and space in the Learning Commons before any Whiteboards were installed. As the floorplans in Figure 1 show, they were able to successfully place and install the JTouch Whiteboards in each Learning Commons building.

Gover assumed (September 11<sup>th</sup>, 2017) that the tutors and students would be receptive of the new JTouch Whiteboards when they were installed. Held (personal communication, November 8<sup>th</sup>, 2017) was briefly interviewed approximately two weeks after a JTouch Whiteboard was installed in the computer lab/classroom area on the Somerset campus so that he would have enough time to get used to using the JTouch Whiteboard and know if he were going to enjoy using it. He claimed to enjoy working with it and that he thought that figuring out how to use the whiteboard feature on it was simple. Held (personal communication, November 8<sup>th</sup>, 2017) stated that his students also enjoyed using it. He also stated that he was able to use a Surface tablet to control the board and control it from a distance while he was teaching students. His only complaint with the board is that, when he tries to turn off or mute the whiteboard feature when not in use, the entire board has to be shut down in order for it to load back up properly the next time he uses it.

### **Limits and Exclusions**

This project featured several limitations. As discussed previously, the researcher did not get to participate in a hands-on manner with the project as hoped. The researcher worked Monday through Thursday for much of the day which coincided with the times the IT specialists were most likely to work with the JTouch Whiteboards. On several occasions the JTouch Whiteboards were assembled, imaged, and/or installed without the researcher's direct knowledge. The researcher would on occasion contact Gover and the IT specialists for updates which was when they found out that the above steps had already been performed.

The three IT specialists on the Somerset campus themselves were limited on when they could work on the project as they had many other duties to perform that occurred alongside this project. There are also three or fewer IT specialists in London, which limited the amount of time that could be devoted to assembling, installing, and maintaining the JTouch Whiteboards there.

SCC's grant only covered the costs of eight JTouch Whiteboards, so the college was unable to order any more than this number. Gover (personal communication, September 11<sup>th</sup>, 2017) wanted six to be installed in Somerset and two in London. Somerset is where SCC's main campus is located, and it is larger than the London campus or any of our centers. The London Learning Commons is fairly small and is only large enough for two JTouch Whiteboards. If one of the JTouch Whiteboards happens to fall into disrepair, they will only have one left to use between all students and tutors unless they take one from Somerset, leaving them with only five. Since there is a limited number of boards at each center, there may be times when students and tutors will have to share JTouch Whiteboards or wait on someone else to finish using one before they get a chance to use it.

Given the impressive size of the JTouch 65-inch Whiteboards with Capacitive Touch along with the limited amount of grant money the college received, there will not be any JTouch Whiteboards installed in regular classrooms. Gover (personal communication, September 11<sup>th</sup>, 2017) thinks the JTouch Whiteboards are too large to install in these classrooms and does not want to place any in them.

### **Milestones**

There were four major milestones that made up this project. They were the receiving of the JTouch Whiteboards, the Whiteboard installation, the training of tutors and students on the Whiteboards, and the overall utilization rate of the Whiteboards reaching at least fifty percent. As stated previously, the JTouch Whiteboards had to be ordered and received no later than September 30<sup>th</sup>, 2017 in order for The SCC Learning Common's grant to cover their cost. This goal was successfully met.

The researcher had hoped that the JTouch Whiteboards would all be installed in the Learning Commons buildings by October 16<sup>th</sup>, 2017. However, this goal was only partially met. The London campus boards have been installed but the only board installed in Somerset has been the computer lab/classroom JTouch Whiteboard as discussed previously. Hopefully they will be installed by the time students return to classes for the Spring 2018 semester.

Since only one JTouch Whiteboard has been installed in Somerset, the goal of training users on them by November 7<sup>th</sup>, 2017 could not be fully met. At least one user, Held, was trained on using the JTouch Whiteboard in October, weeks before the goal should have been met.

With this in mind, Gover cannot yet determine how often all of these JTouch Whiteboards are going to be used and if the goal of having the Whiteboards in use fifty percent



of the time or more can be met. Yet, it is a good sign that Held and his students enjoy using the JTouch Whiteboards and believe that they will be beneficial in their studies (Held, personal communication, November 8<sup>th</sup>, 2017). Perhaps if Held and his students like them, then the other tutors and students will like them as well and will make great use of them.

Gover (personal communication, October 25<sup>th</sup>, 2017) also discussed increasing awareness of the JTouch Whiteboards with Held and the researcher. Gover believes that if the Learning Commons and the college itself will publicize the JTouch Whiteboards then more students will know about them once they are installed and will be more likely to use them. He thinks that it would be a good idea to advertise the JTouch Whiteboards on SCC and the Learning Commons' social media pages and perhaps the college website. Flyers with information about the JTouch Whiteboards may also be put up on campus, including in the Learning Commons.

### **Project Management and the Project Life Cycle**

According to Esposito (2015), the Project Management Institute (PMI) “developed” five main steps that comprise project management in order to create a project management “standard” (para. 3-4). These five steps are described in the PMI’s Project Management Book of Knowledge, or PMBOK. The five stages of project management are “...conception and initiation, planning, execution, performance/monitoring, and project close” (para. 3). Esposito (2015) cited the PMI as defining project management itself as “...the application of knowledge, skills, tools, and techniques to a broad range of activities in order to meet the requirements of a particular project” (para. 7).

The project begins with the project initiation phase, is when a project is given a very wide “definition” and a business’s current situation and need for change in the form of the project is

examined. It is decided in this stage whether or not the project is even “feasible” and whether or not it should even be considered. If the project is approved, a project charter or project initiation document should be drafted. These documents state the reason the project is being executed along with its “requirements”. Project charters and project initiation documents “...should include business needs, stakeholders, and the business case” (Esposito, 2015, para. 8-9).

Vaidyanathan (2013) adds that this phase should also include an estimation of the “preliminary” budget and a “delivery schedule” (para. 11).

Gover (personal communication, September 11<sup>th</sup>, 2017) began this project by defining the Learning Commons’ need for more efficient tutoring methods for SCC students. He thought that interactive whiteboards capable of saving student and tutor writings as well as connecting to other computerized devices and the Internet would be more beneficial to students than traditional whiteboards. Gover (personal communication, September 11<sup>th</sup>, 2017) believed that the project would be feasible as the college had IT employees capable of assembling and installing the JTouch Whiteboards and because the Learning Commons had been given a grant to improve their facilities. They had the funding to implement the project so long as they did not exceed the amount of the grant when ordering interactive whiteboards. However, no project charter was actually developed in the end. A project charter probably would have helped the project meet the milestones presented previously.

The second stage of project management according to the PMBOK is the planning phase. Esposito (2015) gives examples of guidelines that are recommended for use when planning project goals, including the S.M.A.R.T. guideline. This asks if the goals are specific, measurable, attainable, realistic, and timely. Esposito (2015) states that during this stage the project scope is “defined” and “...a project management plan is developed” (para. 12). When this stage is

completed, everyone involved in the project should know their “roles” and “responsibilities” (para. 13).

Esposito (2015) lists several more documents that should be created during this stage. The first is a scope statement which “...clearly defines the business need, benefits of the project, objectives, deliverables, and key milestones”. Also developed during this stage is a work breakdown schedule, or WBS, which segments the project into “manageable sections”. Milestones are developed during the planning phase of the project as well, and a Gantt chart can be used to “visualize” the project milestones and “timeline”. A communication plan and risk management plan should also be developed during this time (para. 14).

During this phase of the “Tutor Pod” project, several milestones as well as the roles and responsibilities of project participants were discussed. Gover and the IT department knew and began preparing for their respective roles. The project featured four parts, or milestones, and are listed in the previous section.

The third stage of the PMBOK project management life cycle involves the “execution” of the project, or as Esposito (2015) states, “this is the phase where deliverables are developed and completed”. She lists several events as happening during this phase, including the establishment of a “team” and the allocation of “resources”, the “execution of project management plans”, and the establishment of tracking systems. Esposito also says that the project manager “directs and manages project execution” during this stage (para. 16).

Stage four of the project management life cycle is the project performance/monitoring stage. It involves monitoring how the project “progresses” in accordance with the project management plan (Esposito, 2015, para. 17). Key performance indicators, or KPIs, are used by

the project manager to assess the project's progress. The project manager typically uses between two and five of these indicators when assessing the progress. Esposito (2015) lists the following KPIs: project objectives, quality deliverables, effort and cost tracking, and project performance.

Project objectives measures if the project is “on schedule and budget”. Quality deliverables is a measurement that indicates if the project deliverables “are being met”. Effort and cost tracking measures the “effort and cost of resources” to determine if the project is staying within its budget. It also helps to determine if the project will be completed on time “...based on current performance”. Project performance keeps track of any changes that occur to the project based on “unforeseen” problems that occur or adjustments to the project scope. It “takes into consideration the amount and types of issues that arise and how quickly they are addressed” (Esposito, 2015, para. 17).

Esposito (2015) claims that stages three and four of the PMBOK project management life cycle often occur concurrently. The Tutor Pod project remains as of the time of this writing in these two stages. During these stages, all of the JTouch Whiteboards have been assembled and had a Dell OptiPlex 7050 computer with a custom Windows 10 image attached to it. They will all be installed in the Learning Commons and users will be trained to use them. The tutors will be interviewed in the following weeks to determine how they feel about the new equipment and if they feel that any adjustments need to be made. After tutors and students have begun to use the JTouch Whiteboards, Gover will collect the usage logs and determine if the goal of fifty percent utilization is being met.

The fifth and final stage of the PMBOK project management life cycle is the Project Closure stage. At this time, any contracted workers will be “terminated” and the project manager often holds a meeting to determine what successes and failures the project had. The results of

said meeting will be helpful when future projects are implemented. During this stage the project manager still needs to determine if any project tasks were not completed and make sure that team members finish them. They will need to “perform a final project budget and prepare a final project report”. Lastly, project managers must gather all “project documents and deliverables” and store them together in a safe place (Esposito, 2015, para. 18-19). The Tutor Pod project has not yet reached this stage.

This paper has discussed the planning and implementation of the Tutor Pod project at Somerset Community College. It has also provided insight into the PMBOK project management life cycle and has attempted to relate it to the Tutor Pod project. During this project, Dean of Academic Support/IT Director Bruce Gover wanted to enhance the tutoring experience and therefore the academic success of SCC students by giving them access to newer and more efficient technological resources. Eight JTouch 65-inch Interactive Whiteboards with Capacitive Touch were ordered, assembled, and are in the process of being installed in the SCC Learning Commons areas. Tutors and students will be trained to use them, and their usage of them will be logged and audited after some time so that Gover will know how much they are used. It will be determined if the goal of having the JTouch Whiteboards in use fifty percent of the time that the Learning Commons are operational has been met.

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