Increasing ActivBoard Use in Elementary Classrooms

An action research project

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Abstract

Technology is becoming an increasingly larger part of the educational setting. Today's students live with technology in every aspect of their lives; therefore, it is important for educators to use technology to enhance teaching and learning in their classrooms. The amount of technology available to educators seems to expand every year; however, the growing problem is that even though this technology is available, many educators are not using it to its fullest potential. The researcher developed the question, "Will teachers us ActivStudio Software to create original lessons provided more training on integration of the software?" This study provided an opportunity to increase the use of ActivBoards in classrooms by allowing teachers the opportunity to receive one-on-one training with the technology. The study showed a slight increase in the use of the technology by those who received the training, versus those who did not.

Increasing ActivBoard Use In Elementary Classrooms

The Kentucky Education Technology Systems has a Master Plan in place to guide the continuing work in schools. A master plan has been in place for the past fourteen years and has aided school districts in the planning, implementation, and support of technology. The current master plan covers 2007-2012 and provides much evidence that technology in schools, though improving, still has need for improvement. After reviewing the current education technology situation, gaps in core areas were identified. One of these core areas was in instructional and assessment applications.

The current education initiatives that are scheduled to be implemented over the next six years involve several Intelligent Classroom initiatives, such as Internet 2 and Next Generation Virtual Learning Environment (Kentucky Department of Education, 2006). There are also initiatives listed that are considered best practice and discretionary. Among these initiatives are electronic projection, whiteboard systems, and interactive student voting systems.

In 2006, the Technology Committee in this researcher's school district began looking at the feasibility of placing projection systems, interactive whiteboards, and student voting systems in all classrooms throughout the district. After much research and acquisition of funding, the District began a two-wave purchase of Promethean ActivBoards for placement in each classroom throughout the district. The Promethean ActivBoards were chosen because of the included software that is designed for use in educational settings. The committee concluded that this software would be a major asset to teachers to be able to create original lessons. The ActivBoards in the elementary school were first placed in third and fourth grade classrooms at the beginning of the 2007-2008 school year. First and second grades did not receive their ActivBoards until the beginning of the 2008-2009 school year under the second wave of

purchases. After each wave of purchases, the teachers were given one half day of training on the operation of the ActivBoards and halfway through the year they were given a two-hour follow-up training.

Statement of the Problem

The elementary school consists of twenty-five teachers. Most of the teachers are seasoned teachers who are not very comfortable with technology. Each teacher has been given a total of six hours of training on the use of the ActivBoard itself and the included ActivStudio Software. Teachers are expected to use the technology in their classrooms; however, many teachers do not use it to create original engaging lessons. The majority of the teachers will only download readymade lessons from the Promethean Planet website, the problem lies in the fact that many times these lessons do not exactly fit with the content that is being covered. This researcher believes that one of the main causes of teachers not creating original lessons with the included software is the fact that the teachers do not feel comfortable using it.

Research Questions and Hypotheses

Research Question: Will teachers us ActivStudio Software to create original lessons provided more training on integration of the software?

Research Hypothesis: Teachers will use the ActivStudio Software to create original lessons if they had more training on the usage of the software.

Definition of Research Terms

ActivBoard- an interactive whiteboard system that is manufactured by Promethean, it includes an LCD projector, ActiVotes, a DVD\VCR combo player, and ActivStudio Software.

ActiVotes- a student polling system manufactured by Promethean that works seamlessly with their ActivBoards via a RF frequency.

ActivStudio- the software suite that is included with the Promethean ActivBoards that allows for the creation of flipcharts for use with the ActivBoards. This software includes several instructional tools including a resource library of images and sounds that can be incorporated into the flipcharts.

Promethean Planet- the website of the Promethean ActivBoards that includes professionally created and user submitted flipcharts on various topics.

Limitations of Study

The major limitation of the study will be the small population size, which only includes twenty-five teachers in grades first through fourth. The small amount of time given to conduct the research will also prove to be a limitation of the study, because the amount of training that can be given in the length of time will be small.

Literature Review

The use of technology in classrooms is becoming more and more widespread. With the expansion of technological resources comes the need to study these resources and attempt to separate the beneficial from those that may actually hinder learning. Early interactive whiteboards were thought of more as useful in the business setting, rather than an educational setting, but a new breed of these boards being designed specifically for educational settings. The technology is being put in place, but as with all new resources given to teachers, there is some reluctance of individuals to part with old teaching methods and embrace the new technology.

In an article from T.H.E. Journal titled “At War over Whiteboards” one such reason for the reluctance of teachers to embrace whiteboards is discussed. The article states that some see interactive whiteboards as, “a “crutch” technology that, for all their functionality, only promote the traditional stand-and deliver method of teaching” (“At War over Whiteboards, 2007, p. 32).

This article goes on to discuss how many use this argument to oppose the use of whiteboards, because they feel that their use is in opposition to student-centered learning, because it keeps the teacher at the head of the class and does not allow room for group learning.

Negative feelings concerning whiteboards often times results from a feeling of uncertainty as to how their use can enhance instruction. In an article by Christopher Harris, the use of whiteboards in a library setting is discussed. The author states, “As with other technology, the issue at hand was not so much how to use the whiteboard itself, but how the tool could potentially enhance library instruction” (Harris, 2007, p. 20). This logic seems to be fairly far reaching, with time being at a premium in almost all educational settings, teachers feel that they must be very selective in what they use in their instruction. If teachers are not convinced that a technique or technology is beneficial, then it is easier for them to not use the technology than to use it and find out later that it was ineffective. Patricia Blanton discusses the issue of effective use of whiteboards in another article. Blanton states that, “technology must serve pedagogy, not the other way around (Blanton, 2008, p. 188). Blanton says that it should be the focus of educators to make sure that the technology that is used has a valid place in instruction. On the point of designing tasks to simply show off technology Blanton states, “designing tasks to show off that technology takes precedence over a pedagogical emphasis on enhancing student learning, then all you have is an expensive toy” (Blanton, 2008, p. 188). The idea that most technology is all “bells” and “whistles” appears to be a major reason why some choose not to use technology.

Time and training seem to be the two reasons cited the most by individuals for not using the technology that is available to them. The time excuse appears to be two-fold. First many educators cite a lack of time to explore the technology and figure out how to use it. In an article by Bell, et al., time is discussed as an easy way to solve most minor problems that are

experienced with new technology. Bell states, “By playing around with the tools available on the board, we solved most minor problems we had” (Bell, 2007, p. 29). The time to learn the workings of the new technology leads to an increased comfort level with the technology, which in turn leads to its increased usage. Bell also identified another idea that could lead to increased use of the whiteboard, “Guidance from somebody more experienced would be invaluable, too” (Bell, 2007, p. 29). Bell identifies having someone experienced with a whiteboard available to help, because many times children become familiar and confident with the use of the board more quickly than adults do. With the help of an experienced individual prospect of the teacher, becoming intimidated because children seem to know more about the technology than they do will be lessened, thus increasing the confidence that the teacher has.

Research identifies lack of professional development and ongoing training as one of the largest reasons that interactive whiteboards are not used at all or are not used effectively. Charlene O’Hanlon identifies this problem in her article titled Board Certified. O’Hanlon says, “To use the boards to their full effect, teachers must receive proper training (O’Hanlon, 2007, p. 30). O’Hanlon discusses all of the things that the whiteboard is capable of; school districts are beginning to make training mandatory before teachers are allowed to use the technology. O’Hanlon identifies a school in South Carolina that requires teachers to take a total of 45 hours of classes on the effective use of whiteboards.

Methodology

Subjects

This study involves 24 teachers in grades first through fourth, all of the teachers have a Promethean ActivBoard, ActivSlate, ActivVotes, ActivStudio Software, a combo

VCR/DVD player, an amplified ceiling mounted speaker system, and first and second grades have ActivWands in their classrooms. For first grade, this is their first year with the new equipment, while the other grades have had theirs for two years. The majority of the teachers are female, with only two male teachers out of the 24. The range of teaching experience varies from two first year teachers to one teacher with 22 years of classroom experience. The school is located in a small rural area in South Central Kentucky.

Instrumentation

A questionnaire created by the researcher will be administered. It will collect the teacher's number of years of teaching experience, the teacher's comfort level with technology in general (on a scale of 1 to 5), `the number of times per week that the teacher creates original lessons using ActivStudio, and finally it will ask the teacher to identify a reason why lessons are not created more often than the identified number (predetermined reasons will include: lack of training, uncomfortable with technology in general, lack of planning time to create the lessons, lack of resources(such as someone to go to with questions), or other which they will then fill in.

Research Design

The teachers will be divided into two groups. One group will be the control group and they will receive no extra assistance or instruction on the use of the technology. The second group will be the group that is experimented upon, receiving an introduction to the training and resources that are available on www.prometheanplanet.com. Survey research will be conducted using a pretest-posttest control group design. In this instance, a control group will be selected along with an experimental group. The two groups will then complete a presurvey and a postsurvey; therefore, the actual research design will be a presurvey-postsurvey control group design.

The dependent variable is the teachers increased usage of the technology to create lessons for use on the ActivBoard, while the independent variable is the instruction on the use of and an introduction to the resources available on the Promethean Planet website.

Procedures

As a whole group, the teachers will be given the researcher created survey. A group of 12 teachers will then be randomly selected using a computer-generated table of random numbers, to receive the training. Then during their planning times, these teachers will be assisted in creating usernames and passwords to the site and will then be given a brief overview of what is available on the site and some basics of how to navigate the site to find what they are looking for. The section of Promethean Planet under Professional Development titled Activtips will be given particular attention, because this is where several short how-to videos can be found. While the experimental group is receiving this instruction, the control group will not receive any extra assistance.

At the end of three weeks, all teachers will complete the same survey that was administered at the beginning of the study.

Results and Findings

Data Collected

All teachers completed the pre-treatment survey at the beginning of the study. Each teacher was then assigned a number and a random number table was completed on www.stattrek.com, in order to choose which teachers would be in the experiment group. The experiment group received 45 minutes of one on one instruction on how to access and use the Promethean Planet online training and resources that are available online. At the end of the study

period, all teachers once again completed a survey, which measured whether or not teacher creation of lessons for the ActivBoard increased, decreased, or remained unchanged.

B. Analysis of Data

Table 1 below shows the information that was collected from the control group on the pre and post survey.

Table 1. Control Group Characteristics and Results

	Teachers	# Years Teaching Experience	Comfort Level using Technology Scale of 1 to 5 (with 1 being lowest)	# of times per week ActivBoard lessons are created and used (pre-treatment)	# of times per week ActivBoard lessons are created and used (post-treatment)
Control Group	Teacher 21	2	2	1	1
	Teacher 20	10	3	2	2
	Teacher 19	11	1	1	1
	Teacher 13	18	1	0	1
	Teacher 1	13	2	1	1
	Teacher 3	20	2	1	1
	Teacher 5	3	3	3	4
	Teacher 7	13	2	1	2
	Teacher 8	8	3	2	2
	Teacher 9	11	2	1	1
	Teacher 10	11	3	3	3
	Teacher 11	5	1	1	1
	Totals	10.42	2.08	1.42	1.67

As seen in Table 1 above, the control group has an average of 10.42 years teaching experience, and has an average of two on the comfort using technology category. On the pre-survey, they have an average per week use of 1.42 times. At the end of the study, the average per week use was 1.67 times. This shows a .25 increase from the beginning of the study to the end.

Table 2. Experiment Group Characteristics and Results

	Teachers	# Years Teaching Experience	Comfort Level using Technology Scale of 1	# of times per week ActivBoard lessons are	# of times per week ActivBoard lessons are

			to 5 (with 1 being lowest)	created and used (pre-treatment)	created and used (post-treatment)
Treatment Group	Teacher 6	6	3	2	3
	Teacher 4	8	3	2	2
	Teacher 12	18	1	1	2
	Teacher 2	10	1	0	0
	Teacher 14	1	2	1	1
	Teacher 15	4	2	2	3
	Teacher 16	4	2	1	1
	Teacher 17	2	2	1	2
	Teacher 18	2	1	1	1
	Teacher 22	10	1	1	1
	Teacher 23	10	2	0	0
	Teacher 24	22	1	0	1
	Totals	8.08	1.75	1.00	1.42

As seen in Table 2, treatment group has an average of 8.08 years teaching experience, and has an average of 1.75 on the comfort using technology category. On the pre-survey, they have an average per week use of 1.00 times. At the end of the study, the average per week use was 1.42 times. This shows a .42 increase from the beginning of the study to the end. Figure 1 below shows a side-by-side comparison of the control and treatment group per week usage both at the beginning and at the end of the study.

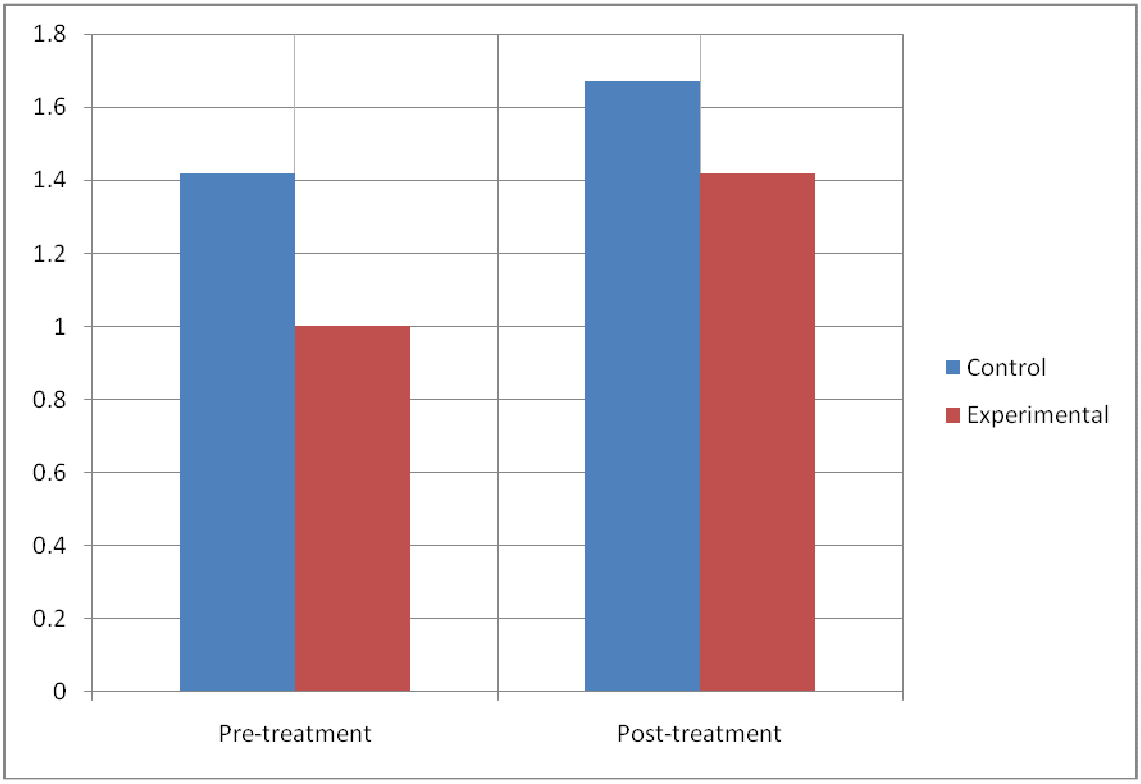

Figure 1. Pre and post-treatment comparison of Control and Experimental Groups

The final area that was looked at during this study was the reasons why teachers do not use the technology that they have more often. On the survey that the teachers answered, four possible reasons were available for the teachers to select from as well as a place for the teachers to input their own reason. The pie chart below shows the answers that were given.

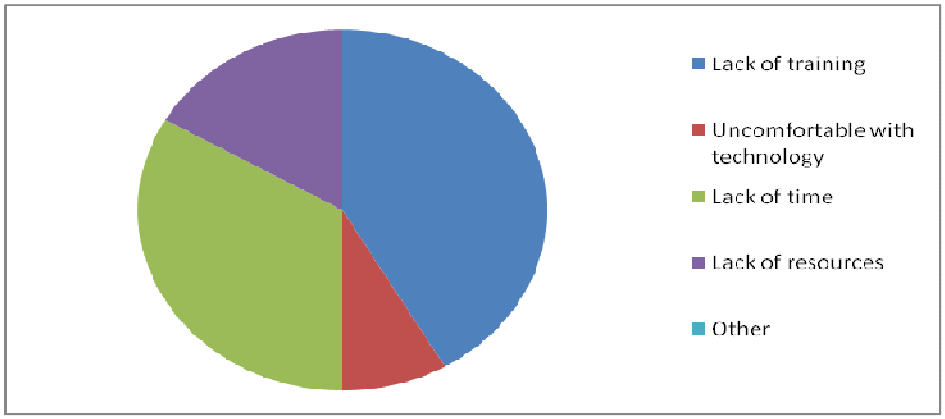

Figure 2. Reasons Teachers do not use ActivBoards

Figure 2 above shows that a lack of training was selected as the number one reason that ActivBoards are not used more often in the classrooms, followed closely by a lack of time to create the lessons. Comfort level and lack of resources were selected less often.

Conclusions, Recommendations, and Social Action

Conclusions

Both groups showed an increase in usage of the ActivBoard from the pre to the post survey. The experimental group did show a slightly higher increase in usage per week than did the control group. The control group increased .25 while the experimental group increased .42. The experimental group on showed a usage of 1.00 times per week on the pre survey, while the control group showed a usage of 1.42 times per week. On the post survey, two individuals showed an increase in their usage, while one teacher showed a decrease, the other nine stayed the same. In the experimental group, five individuals showed an increase of usage, while none showed a decrease, and seven stayed the same.

Though lack of training was identified as the number one reason teachers did not use the ActivBoards more often, lack of time was a close second. Only two votes separated the two responses.

Recommendations for further study

To fully prove the effectiveness of the research hypothesis, many areas would need to be considered. First of all, the period of time for the study would need to be increased. The teachers usage would need to be looked at on week by week basis, rather than asking teachers to think back and estimate their usage over a period of time. The treatment would also need to

applied more than one time, allowing time for the information to sink in and allow time for questions to arise and be answered.

The reasons why the technology is not used could also be complete study in and of itself. A great amount of time could be devoted to studying the reasons technology is not used in classroom settings.

Social Action

This study begins to uncover some of the reasons that technology is not implemented in classrooms to its potential. This study began to identify some factors, which this researcher will begin looking at more closely in his own school setting. The researcher will begin taking further steps to support classroom teachers to make certain that they have the resources that they feel necessary to make implementing technology into lessons a reality. The results of this study will be shared with the district technology coordinator, as well as with the middle and high schools in the district.

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Appendix A

Project Reflection Part 1

Describe the process you went through to complete this project.

- I found this project extremely challenging. I started by looking through the textbook to get some ideas on a project, as well as reviewing some of the past projects that were available. I finally decided that I wanted to choose something that could have an impact on the school where I work. I am a member of the technology committee as well as the assistant building technology coordinator, and on several occasions the building technology coordinator and I have discussed at length how many in our school are not utilizing the ActivBoards to their fullest potential. I decided that the ARP would give me a good avenue to explore why the ActivBoards are not used more than they are. I decided that the best way to find out why they are not used more than they are was to ask the teachers. I surveyed the teachers about their usage and asked them to give some reasons as to why the technology is not used more. I then looked at the data and decided that they best way to approach this research was to give one on one instruction and see if it helped. I continued to share and discuss the information with the building technology coordinator in hopes that it would lead us to a way of increasing ActivBoard usage in the building as well as the district.

What are some things you learned about yourself, the research process, or anything else?

- I learned that the research process can truly be a bear! I thought that my simple idea of finding out why teachers did not use ActivBoards would lead to groundbreaking revelation that could easily be solved. I actually found out that this issue is very complex and could take years of research and study to even scratch the surface. I learned that every step of the research process contains many areas that must be looked at closely in order to ensure that the scope of the project

does not exceed the time and resources that are available. I have really learned a greater appreciation of research and those who conduct it on a larger scale.

Who did you collaborate with and on which aspects?

- I collaborated primarily with the building technology coordinator, since she and I have had many conversations about why technology is not used in the building and she was also able to give me some insight as to how past technologies have kind of been pushed to the side because of teachers refusal to give them a sporting chance. I took this information to the principal who was able to give me some explanation about how staff buy-in in crucial in any policy or technology that incorporated into schools. We talked about how I should approach this project in order to gain better cooperation from the teachers and not make them feel like the training that I was offering was another thing that was being forced on them. Finally, I collaborated with the Library Media Specialist who assisted me in locating some research on ActivBoards and successful implementation of them in educational settings.

Reflect on possibilities for your professional development based on the designing, implementing, and assessing research for this project. What are at least two areas of you professional competence that should be a focus for further training for you?

- First, I feel that I would like more training on the LoTi framework that I was introduced to in LME 535, I feel that these levels will help me better evaluate how the ActivBoards are being used in the classrooms. I feel that I should probably focus more on how well the boards are being used, rather than how much they are being used.
- Second, I would like to be better trained on the ActivBoards myself in order to be better able to assist teachers with problems or questions that they have in their classrooms. I feel that if I had more training on the ActivBoards, then teachers would feel even more comfortable coming to me for help.

Discuss how you considered the diversity of potential students.

- The teacher population in my school is not a very diverse group; therefore, diversity was not looked at very closely. The one area of diversity that I looked at was the years of teaching experience. As anyone who works in a school can tell, there is a large difference between an eighteen-year veteran teacher than a first or second year teacher. This information had to be kept in mind when approaching these individuals with help or questions.

Discuss how you assessed yourself during this research project?

- I had to assess myself several times while working on this project. At times, it was difficult to separate the fact that I was attempting to perform research, rather than trying to fix a problem in my school. I selected my topic because it was an area of concern in my school, so I took the research very personal. I had to stop several times during the research and remind myself that I had to follow the research procedure, rather than try to fix any little problems that I noticed along the way.

How long did it take you to complete the project?

- I have to be honest and say that I have no idea how many hours I put into this project. As I stated above I took this project very seriously, because it is an area in my school that I would like improve. I spent weeks looking at research hoping to find a simple solution to the problem, but I seemed to uncover were more questions and gray areas that I had not thought about. I spent time thinking about how I could get individual teachers to use their ActivBoards more. I feel that I learned a great deal about research, my school, and myself through this project, so I think that whatever time I invested, it was well spent. I have to say that I have also spent time thinking about I am somewhat disappointed that I could not produce greater improvements in the use of the technology, so I am considering more research projects on my own in order to increase usage.

Select three disposition statements for the course and discuss how you demonstrated those during this action research.

(1) 1.2.a Approaches challenges with a "can-do" attitude.

- I approached the problem that I identified in my ARP with as much enthusiasm and drive as I possibly could. I walked into this thinking that I was going to show teachers how easy technology can be to integrate into any lesson. I approached the whole project with the attitude that I was really going to make an impact on the thoughts and feelings that the teachers in the building had towards technology, though I do not feel like I made the impact that I wanted, I am hopeful that I made at least a small step in that direction.

(2) 2.1a Effectively manages a variety of tasks simultaneously.

- During the time, I was working on my ARP, I was teaching full time in a computer lab, while also doing my duties associated with being the assistant building technology coordinator, such as solving hardware and software issues in the school, as well as getting computers and the server ready for MAPS testing. I was taking this class as well as LME 535. At times it felt a little overwhelmed, but I am a firm believer in the old saying that whatever does not kill you will make you stronger!

(3) 42.3.a Nurtures learner trust.

- I feel that I demonstrated this by walking into classrooms of veteran teachers and attempting to "show" them how to do something. I am not a regular classroom teacher, and have only been at my school for five years, so I felt that it was very important to gain the trust of many of the

teachers before coming into their rooms and attempting to show them how to use the technology that they did not necessarily want or ask for.