

Running Head: Influence of Technology on Student Motivation

A SURVEY OF FACULTY AND STUDENTS CONCERNING INFLUENCE OF TECHNOLOGY ON
STUDENT MOTIVATION IN THE CLASSROOM

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ABSTRACT

The purpose of this study was to analyze the opinions and perceptions of teachers and students concerning the influence of technology on student motivation. The research includes findings that answer the questions, “Is technology use in general a motivating factor for students?” and “Is technology being effectively utilized in the classroom by educators?” The research was conducted using an anonymous survey distributed through Google Docs to teachers and students at one Midwestern high school. The findings were analyzed through Microsoft Excel and A Statistical Package (ASP) software. Findings indicate that there is not a major difference between teacher and student attitudes concerning the concept of student motivation as related to the use of technology in general terms, but there is a significant difference in attitudes about the effect on motivation of using advanced technology, rather than just basic forms. In addition, students and teachers differ in their opinions of the effectiveness of current technology use in the classroom, regardless of its status as a motivating factor. Further training in effective utilization of technology in the classroom may be necessary for many educators, especially those with more than 10 years of teaching experience, to make sure that motivation is not stunted by improper use of technology in the classroom.

INTRODUCTION

Background, Issues and Concerns

A high school located in the Midwest, hereafter referred to as PHS, is part of a suburban district that has had substantial growth over the past 25 years, from around 6,000 students in 1987 to more than 10,000 students in 2012. However, the growth has slowed in recent years, adding only 1,000 total students in the last 8 years. PHS itself has a population that continues to grow, with a 2011-2012 population of 1551 students. As the number of students continues to grow, so does the need for technology as a tool for a variety of purposes. The ongoing maintenance and cycling of current technologies in schools continues to be a large financial commitment for the district. The current student to computer ration is 2.6 to 1, a number that has decreased since implementing laptop carts in 2006-2007. The Board of Education has approved a study to be completed by an outside firm during 2012 to analyze the climate for an increased in technology access and potential implementation of a 1:1 Technology Device initiative in coming years. Because of this increase in technology use, this project was developed to survey faculty members and students from PHS on their opinions related to technology. The analysis of the results will differentiate between students and faculty members. It will also differentiate in the number of years of service of faculty members who respond to the survey.

Practice under Investigation

The practice under investigation is how to best motivate students in the classroom utilizing technology.

School Policy to be informed by Study

Teachers at PHS are required to utilize and maintain technology tools in their classrooms to better help and engage their students. These include everything from hardware like SMART Boards and MOBI devices to online sites like BlackBoard and Twitter. Teachers are provided with professional development centered around the use of technology and teachers are seen as up to date in their instructional strategies if they can effectively integrate technology into their classrooms. While many strategies are used to generate student motivation, technology is often referred to most and additional research may inform that practice.

Conceptual Underpinning

Psychologist Abraham Maslow broke ground on the idea of motivation when he created Maslow's Hierarchy of Needs, ranging from low-level--Physiology, then Safety/Security/Health-- to higher-level--Love, Self Esteem/Recognition and Self-Actualization. The desire to meet the various levels of needs creates different levels of motivation that depend on a certain personality or goal. Psychologist Alfred Bandura expanded this idea beyond simply doing tasks to meet certain needs into his Social Cognitive Theory. At the center of his Theory is the concept of self-efficacy which plays a role in how one approaches goals, tasks and challenges. People will be more inclined to enthusiastically take on a task if they believe they will succeed-- the definition of high self-efficacy (Omrod, 1999). Sharon Andrew applied that theory to students and found a connection between self-efficacy and productivity (Andrew, 2002). Because students of this generation have life-long experience with technology, they have confidence in using it and its incorporation may increase self-efficacy, thereby increasing productivity.

Statement of the Problem

As more and more technology is integrated into daily classroom use, there is a lack of understanding about the best way to utilize it to positively influence student motivation.

Purpose of the Study

The purpose of the study is to ascertain student and faculty opinions about the effectiveness of technology as a motivational classroom tool. The information gained will help educators have a better idea of how to motivate students and use technology effectively in their classrooms, both on a day-to-day basis and for special projects.

Research Questions

RQ 1: Does technology serve as an effective way to motivate students?

RQ 2: Is there a difference of opinion between what teachers and students think about how technology effectively and consistently motivates students?

Null Hypothesis

H_0 . There is no difference of opinion between students and teachers in how technology effectively and consistently motivates students.

Anticipated Benefits of Study

The result of this study will inform teachers about how to effectively motivate students, and whether or not technology should play a part in that process. It will help school officials know what training teachers should have in technology and what types of technology might be most effectively motivational.

Definition of Terms

DESE: Missouri Department of Elementary and Secondary Education

NETS: National Education Technology Standards

P21: Partnership for 21st Century Skills

CCSS: Common Core State Standards

Summary

PHS is a high school in a Midwestern suburban school district. Classroom procedures consistently utilize a variety of technological tools for a variety of purposes, and teachers are provided professional development to increase their skills in the use of technology. The research investigates the use of technology in the classroom and its potential influence on student motivation. The research also looks at the perceptions and ideas of both teachers and students about that use. Finally, the research looks at whether there is a difference between student and teacher perceptions of technology as a motivation tool for students in the classroom setting.

REVIEW OF LITERATURE

In Alfred Bandura's explanation of his Social Cognitive Theory, he outlines a variety of different factors that influence achievement and learning, but one in particular is the idea of self-efficacy, otherwise known as self-confidence toward learning. As Bandura explains, students are more likely to engage in certain behaviors when they believe they are capable of executing those behaviors successfully. Therefore, they are more motivated to take on tasks they have confidence in succeeding in and put more effort into activities and behaviors they consider to be successful in achieving (Omrod, 1999).

This social cognitive theory was put into a model of motivation and cognition by Pintrich and his colleagues, emphasizing various cognitive and motivational constructs emphasizing the self in a "situation-specific" learning behavior, driven ultimately by individual motivation (Pintrich and Strauben, 1992). In addition, throughout his additional research, Pintrich emphasized task value beliefs as positively related to self-regulated learning. "Students who believe that their course work is interesting, important and useful are more likely to report the use of self-regulatory strategies" (Pintrich, 1999, 462). Though key findings were discovered connecting self-efficacy to self-regulation, Pintrich (1999) emphasized the need for additional research on how classroom practices can be changes to foster adaptive motivation and self-regulation.

Using Pintrich's model as a basis for research, Sharon Andrew (2002) examined the effects of self-efficacy and motivation on productivity of nursing students. She found that the task value that Pintrich (1999) had focused on was the strongest direct influence on students'

academic performance, establishing a stronger connection between student motivation and achievement/productivity (Andrew, 2002).

Both Pintrich (1999) and Andrew (2002) concluded that further examination was necessary, especially in areas regarding specific classroom strategies and their impact on self-efficacy leading to higher productivity and achievement. One of those strategies that has been more recently examined in different fields is the use of technology in the classroom, as its link to self-efficacy is clear in the Millennial Generation's comfort and confidence in the use of technology. Confidence in the use of technology may lead to confidence in a task, tying back to Pintrich (1999) and his ideas of task value beliefs in relation to self-regulation and increased productivity (Andrew 2002).

Many student benefits from the use of technology in classrooms have been reported, according to Stepp-Greany (2002), including "motivation, improvement in self-concept and mastery of basic skills, more student-centered learning and engagement in the learning process and more active processing, resulting in higher-order thinking skills and better recall" (165). Stepp-Greany (2002) also cited the result of task confidence gained through the use of technology, tying back to Bandura's theory of self-efficacy (Omron, 1999) and Pintrich's model of social cognition in relation to motivation (Pintrich and Strauben, 1992). She cites Warschauer (1996), whose study identified three common factors of student motivation from a technology-enhanced setting: communication, empowerment and learning. Communication was driven by the fact that students like the ability to engage in real communication acts, empowerment driven by the fact that students were less isolated and less afraid to contact others, and learning driven by receiving control over learning, enabling them to learn "faster and more

independently and to write more creatively” and leading to more positive attitudes and additional confidence in their tasks (Warschauer, 1996).

One study took on technology and motivation specifically in the EFL classroom (Genc Ilter, 2009). After examining various advantages of the use of technology in foreign language classrooms, including “students may have a chance to see the real world in classrooms and they can be motivated easily...creating challenging tasks and activities motivates the language learners” (Genc Ilter, 2009, 136), the author concluded that students wanted technology used by their teachers in the classroom, found it more motivational to use it and that foreign language classes specifically benefited from the use of a variety of types of technology utilization in the classroom. Genc Ilter referenced several other studies, including Wang (2004), which said “using computers and every kind of technological equipment gives students the sense of freedom and encouragement” (Wang, 2004, 156), and Jonassen (2000) which discussed that technology in the classroom not only positively influences not only the students, but also the teachers. Genc Ilter (2009) found that technology creates a more meaningful classroom environment, but warns that solely relying on technology as a strategy does not guarantee success and student motivation.

Another study focused on technology in the science classroom. Mistler-Jackson (1999) examined students of different motivation levels who were given an assignment using technology as a main tool, and found that the use of technology had a positive impact on student learning based on increased content knowledge. She highlighted all of the potential benefits of using technology, including collaboration, authentic experiences, access to resources and, of course, motivation. Findings included data that supported the idea that

student knowledge increased by using the KGS technology, with correlations to each motivation level. “The new methods of communication,” (namely, the use of technology) “in addition to other facets of the learning environment explored in this study, create opportunities for new patterns of student participation and motivation” (Mistler-Jackson, 1999, 460).

However, Na and Chun-hao (2010) concluded in their research that additional research must be done to find conclusive results in the ties between student motivation and the use of technology in the classroom. As they claim, “very little research has been done to find empirical data to support the connection,” (Na and Chun-hao, 2010, 26). The authors propose a cognitive-situative approach as a more holistic way to examine motivation. However, they spend point out how difficult it can be to measure the effectiveness of technology since a classroom is such a complex thing. The authors advocate that a multitude of research needs to be conducted in order to really find results, especially ones using this new approach.

Bynum (2011) agreed with their studies after examining best practices associated with using social media for educational purposes in the classroom to engage students. In order to be effective in doing so, new and different approaches must be taken by educators. “Because students spend an inordinate amount of time on computers, they need to be engaged in the classroom in new and different ways that embrace that” (Bynum, 2011, 6). He highlights potential downfalls of the use of technology, including the digital divide and a lack of training many teachers may have.

This issue of the new digital divide is brought up in a great deal of research, including that of Hargattai (2011). He examined the digital divide as not just whether a student has Internet access, but also whether or not students have online skills—what he refers to as

“second level” digital divide (Hargattai, 2011). Vaidhyanathan (2008) had similar findings in his research, citing that though kids have grown up with technology, they may not be as technologically inclined or educated as many would believe. He said that though members of his so-called “tech generation” use tools like Google, Facebook and YouTube, they do not use them to their full potential or understand their power despite being “digital natives” (Vaidhyanathan, 2008).

The research of these two solidifies the idea that just because someone has access does not mean they know how to use the technology, pushing the digital divide far beyond simple access. In relationship to the classroom, that means that students and teachers both need training in how to use the technology for it to be an effective tool and/or source of motivation in the classroom.

RESEARCH METHODS

Research Design:

A non-experimental, one-time survey served as the research design. The alpha level was set at 0.25 for all tests with this research. The independent variable was whether a participant was a student or a teacher. The survey measured the results of several dependent variables involving student motivation. Tests run included plot frequency and Chi Square analysis.

Study Group Description:

The student group for this research consisted of PHS faculty members, ranging from 2 to 25 years of experience, and PHS students, ranging from 9th through 12th grade.

Data Collection and Instrumentation:

An anonymous questionnaire was distributed via Google Docs to all staff members of PHS and students in two 9-12 elective classrooms. The questionnaire had specific questions for teachers, and specific questions for students, respectively. Questions were similar in nature to allow for an understanding of attitudes and perceptions of the teachers and students surveyed. Questions were answered with a “yes” or “no.” The survey remained open for a one-week period. 24 teachers and 27 students responded to the survey. Responses automatically posted to an Excel spreadsheet. Words were recorded as numbers in answers so that the statistical analysis could be completed.

Statistical Analysis Methods:

A Statistical Package (ASP) software was used to complete the statistical calculations in this study. Additionally, Microsoft Excel was used to compile some totals used in the research.

FINDINGS

To determine the attitudes and perceptions of teachers and students, a separate survey with similar questions was given to teacher and students. However, each survey began with a question that asked teachers to identify their years of experience and student to identify their year in school, the answer of which could affect the rest of a respondent's answers. The numbers, percentages and graphs were obtained through an Excel worksheet.

Figure 1: Teacher Experience

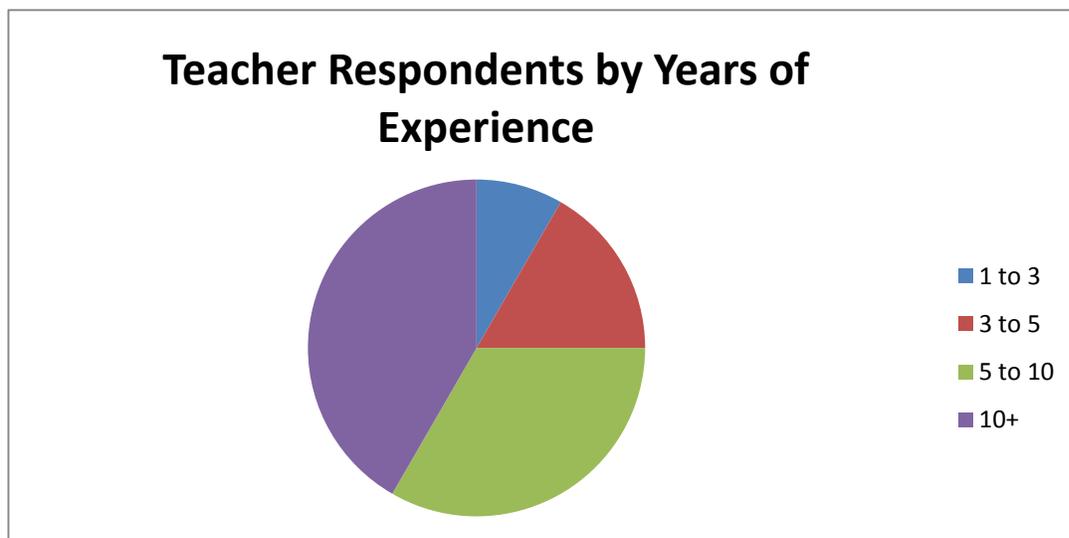


Table 1: Teacher Experience

Experience (Years)	Number of Respondents	Percentage
1 to 3	2	8.33%
3 to 5	4	16.67%
5 to 10	8	33.33%
10+	10	41.67%
TOTAL	24	100.00%

Figure 1 and Table 1 show the breakdown of the number of years of service of the

teachers who responded. The highest number of responses came from teachers with 10 or more years of teaching experience, with 10, or 41.67% of respondents. 2, or 8.33% of the respondents, indicated that they are in years 1-3 of service. 4, or 16.67% of the respondents, indicated that they are in years 3-5. 8, or 33.33% of respondents, have 5-10 years of experience, the second highest number of responses.

Students also had to indicate their grade in school, as their answer could influence other responses in the survey.

Figure 2: Student Grade

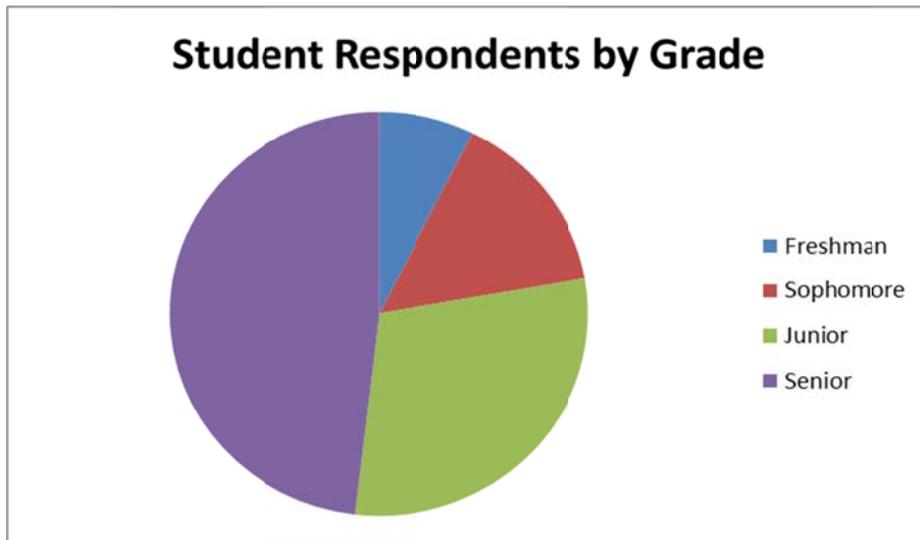


Table 2: Student Grade

Grade	Number of Respondents	Percentage
Freshman	2	7.41%
Sophomore	4	14.81%
Junior	8	29.63%
Senior	13	48.15%
TOTAL	27	

Figure 2 and Table 2 show the breakdown of the grades of the students who responded. The highest number of responses came from seniors, with 13, or 48.15% of respondents. 2, or 7.41% of the respondents, indicated that they are freshmen. 4, or 14.81% of the respondents are sophomores. 8, or 29.63% of respondents, are juniors, the second highest number of respondents.

The next question for both teachers and students asked if respondents used technology in their classes on a consistent basis. An plot frequency chart was used in ASP (A Statistical Package) to determine overall usage in the classroom by all respondents, regardless of teacher/student status.

Table 3

Question: I use technology on a consistent basis in my classes for learning.

VARIABLE: Use of Technology on Consistent Basis					
	FRQ.	CUM. %	CUM.	FREQUENCY PLOT	
x < 1	0	0	0	0	
x = 1	41	41	80.4	80.4	*****
x = 2	10	51	19.6	100	*****
x > 2	0	51	0	100	
TOTAL	51	100			

As shown in Table 3, 80% of the 51 total respondents (both students and teachers) perceived that technology was being used on a consistent basis in their classes for learning (1=yes), whereas only 19.6% reported that it was not being used consistently for learning (2=no). Since technology is being used on a consistent basis in an overwhelming majority of

classes, it is important to continue to analyze data to see if its use is effective and/or motivational.

As a follow-up to the previous question, teachers and students were asked if they or their teachers were implementing strategies to effectively use technology in the classroom.

Table 4

Question: I know and implement/My teachers implement strategies to effectively use technology in the classroom.

VARIABLE: Effective Use of Technology					
	FRQ.	CUM. %	CUM.		FREQUENCY PLOT
x < 1	0	0	0	0	
x = 1	32	32	62.7	62.7	*****
x = 2	19	51	37.3	100	*****
x > 2	0	51	0	100	
TOTAL	51	100			

Table 4 shows the overall results regarding whether or not technology is effectively being used. In Table 3, 80% said technology was being used consistently, yet here in Table 4, that number drops to 62.7% of respondents (1=yes), when the question comes to effective use, rather than simple use at all. The number of negative responses (2=no) jumps from 19.6% in Table 3 to 37.3% in Table 4, indicating that fewer teachers and students perceive that technology is effectively being used in the classroom. Regardless of this decline, however, still nearly two-thirds (62.7%) of respondents believe that technology is effectively being used in their classes.

Because of this decline, additional tests were done to determine if there was a difference between student and teacher opinions in effective use of technology.

Table 5

Question: I/My teachers implement strategies in my classes to effectively use technology.

Summary of Chi Square Analysis Results- Is Use of Technology Effective?					
Source	Students	Teachers	Chi Sq	df	p-value
Yes	48.1 % (13)	79.2 % (19)			
No	51.9 % (14)	20.8 % (5)	5.22978	1	0.0222
Sig. = or < .25					

A chi-square analysis was completed to compare attitudes of teachers and students concerning whether technology is being used effectively in the classroom. 19 teachers, or 79.2%, said that they did know and implement strategies to effectively use technology. 5 teachers, or 20.8%, said that they did not. By contrast, only 13 (48.1%) of students said that their teachers were effectively using technology and 14 (51.9%) of students said that their teachers were not implementing effective technology strategies. As shown in Table 5, there is a significant difference (Chi Square (1) = 5.23, p-value = 0.0222) between teacher and student opinions on whether technology is effectively being used in the classroom. The null hypothesis is rejected for this question, as there is a different in opinion between students and teachers about whether or not they are implementing strategies to effectively use technology.

The fourth question for students and teachers asked whether using any form of technology on a project or assignment makes students more motivated to complete the task.

Table 6

Question: Using any form of technology on a project or assignment makes me more motivated to complete the task.

Summary of Chi Square Analysis Results- Is Use of Any Technology Motivational?					
Source	Students	Teachers	Chi Sq	df	p-value
Yes	55.6 % (15)	62.5 % (15)			
No	44.4 % (12)	37.5 % (9)	0.2529	1	0.6149
Sign = or < .25					

A chi-square analysis was completed to compare attitudes of teachers and students concerning whether use of any form of technology on a project/assignment increases motivation. 15 teachers, or 62.5%, said that use of any form motivates students. 9 teachers, or 37.5%, said that any form was not necessarily motivational. By contrast, 15 (55.6%) of students said that using any form of technology was motivational, and 12 (44.4%) of students said that simply using any form of technology did not increase motivation to complete a task. There is a difference in student and teacher opinion when it comes to use of technology as a motivator. However, as shown in Table 6, there is not a significant difference (Chi Square (1) = 0.2529, p-value = 0.6149) between teacher and student opinions on whether use of any form of technology increases motivation for students to complete a task. The null hypothesis is not rejected for this question.

An additional question asked students and teachers about motivation in terms of advanced forms of technology, rather than basic.

Table 7

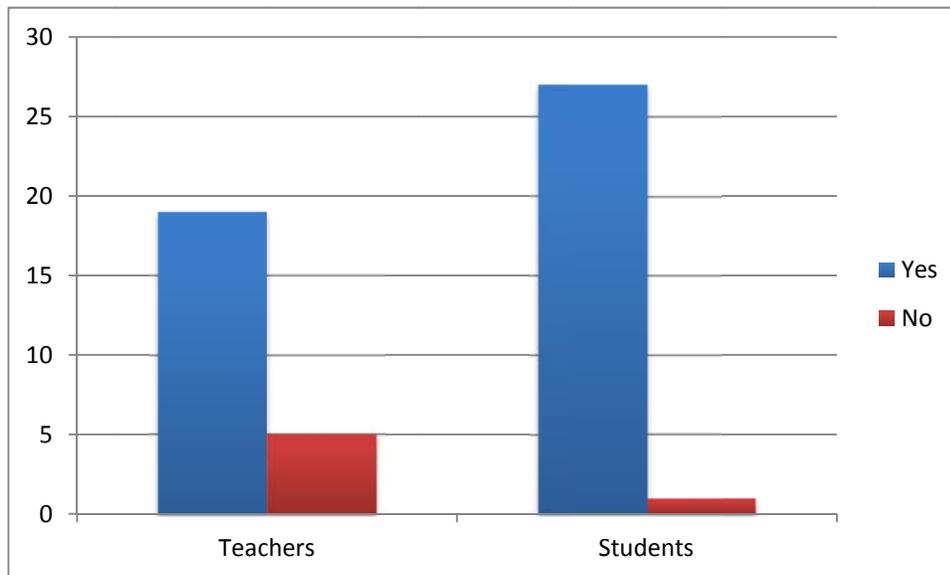
Question: My students are/I am more motivated by using advanced forms of technology than basic forms (PowerPoint, Word, e-mail).

Summary of Chi Square Analysis Results- Is Advanced Technology Use Motivational?					
Source	Students	Teachers	Chi Sq	df	p-value
Yes	96.3 % (26)	87.5 % (21)			
No	3.7 % (1)	12.5 % (3)	1.3601	1	0.2435
Sign = or < .25					

A chi-square analysis was completed to compare attitudes of teachers and students concerning whether the use of advanced technology increases student motivation. 21 teachers, or 87.5%, said that advanced technology increases motivation. 3 teachers, or 12.5%, said that they did not. By contrast, 26 (96.3%) students said that advanced technology use is more motivational than basic forms and only 1 (3.7%) student said that s/he was not more motivated by using advanced forms of technology. As shown in Table 7, there is a significant difference (Chi Square (1) = 1.3601, p-value = 0.2435) between teacher and student opinions on whether advanced technology use is more motivational for students than basic technology use. The null hypothesis is rejected for this question, as there is a different in opinion between students and teachers about the motivating factors of technology.

The final two questions for students and teachers related to training, both in the actual use of technology and how to implement it effectively in the classroom. Responses were calculated and charts drawn through Microsoft Excel.

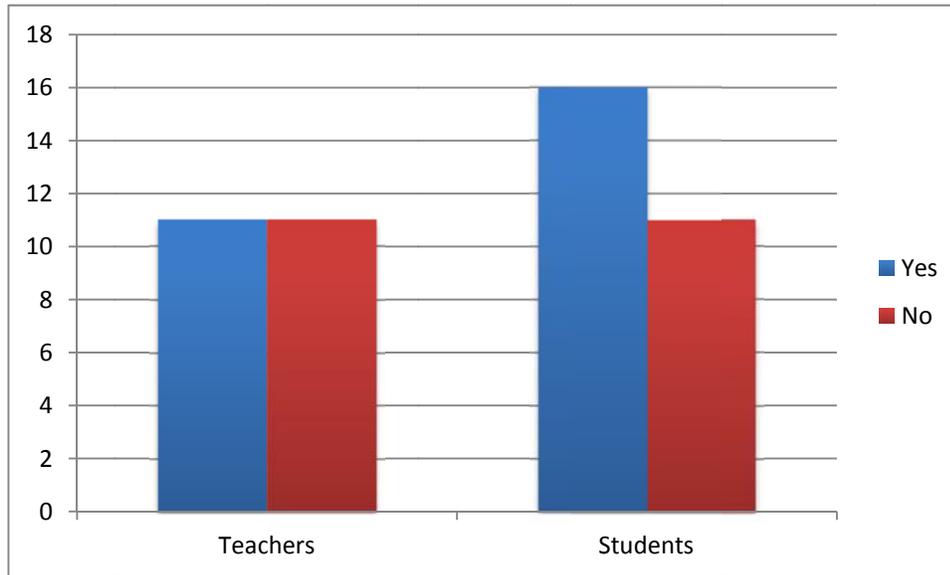
Figure 3

Teacher training in how to effectively use technology in the classroom

As shown in Figure 3, 27 students and 24 teachers responded to the statement, “I/My teachers need more training in how to implement technology effectively in the classroom.” 19 teachers (79.1%) said they need more training to effectively use technology and 5 teachers (20.8%) said they do not need more training. All 27 (100%) of student respondents said their teachers need more training in how to effectively implement technology in the classroom.

The final question also related to the need for training, asking both students and teachers whether they needed additional training in how to use advanced forms of technology.

Figure 4

Training in use of advanced forms of technology in general

As shown in Figure 4, 27 students and 24 teachers responded to the statement, “I need/want more training in how to use advanced forms of technology in general.” 11 teachers (50%) said they need more training to effectively use technology and 11 teachers (50%) said they do not need more training. 16 (59%) of student respondents indicated they wanted/needed additional training in advanced technology, and 11 (40.7%) of students said they did not need additional training.

CONCLUSIONS AND RECOMMENDATIONS

Among the 51 teachers and students surveyed, it was found that 80% perceived that technology was being used on a consistent basis in their classes for learning—an overwhelming majority. Since the condition in question was on a consistent basis, it is highly likely that technology is being used in 100% of classrooms, but not necessarily on what the respondents considered a “consistent basis.” Because of the fact that technology use is, overall, consistent in classrooms, it is important that further research be done into its effectiveness. That question was addressed in the survey, which found that although 80% of respondents were using technology consistently in their classrooms, only 62.7% indicated that the technology being used was through effective strategies being implemented by educators.

These results were further analyzed to determine if there was a difference between teacher and student opinion when it comes to the effectiveness of use of technology in the classroom. There is a significant difference of opinion concerning whether teachers are currently implementing strategies in their classes to effectively utilize technology. Teachers feel that they are effective while students are not as confident. This shows that what teachers and students see as effective implementation may be different, which warrants further research into what strategies are most effective to both students and teachers when implementing technology as a educational tool in the classroom.

Beyond simple use, the survey examined technology as a motivational factor for students. The null hypothesis stated that there is no difference of opinion between students and teachers in whether technology effectively and consistently motivates students. The results of this study indicate that there are areas of significant difference of opinion between students

and teachers. There is a significant difference of opinion concerning whether teachers are currently implementing strategies in their classes to effectively utilize technology, as explained above. Teachers feel that they are effective while students are not as confident.

In addition, the null hypothesis was rejected when examining advanced forms of technology use as “more motivational” for students than basic forms, as there is a difference in opinion between students, who had only one negative response, and teachers, who had several negative responses. Even though both respondent groups had an overwhelming majority say that advanced technology was more motivational, there was still a significant difference since nearly 100% of students indicated it was more motivational.

There was one question where there was not a significant statistical difference of opinion between teacher and student respondents. This was the major question of the research, asking if use of any form of technology increased motivation of students to complete a task. There was a difference in teacher opinion versus student opinion, as more teachers indicated any form of technology was motivational, but it was not a significant difference, so the null hypothesis was not rejected.

Finally, in order to further inform the results of the opinion questions regarding use and motivation, teachers and students were asked about their interest/need in gaining additional training in how to effectively use technology in the classroom and how to use advanced forms of technology in general. All 27 students (100%) said that their teachers needed additional training in how to utilize technology, aligning with earlier findings of students’ dissatisfaction with technology implementation effectiveness. 79% of teachers believed they needed additional training, also aligning with the significant difference found between student and

teacher opinions in this category. Only half of teachers (50%) said they needed more training in use of advanced forms of technology, while more students said they needed or wanted more training. This may be important due to the previously discussed results of advanced forms of technology being overwhelmingly more effective than basic forms.

There appears to be a lack of understanding (or at least a difference in opinion between students and teachers) in what constitutes consistent, effective use of technology in the classroom. This may be subjective judgment based on personal preferences and experiences, so additional research would bring light to what strategies students and teachers could agree are effective for learning.

Literature indicated that use of technology in the classroom (in many instances that included nursing programs, Foreign Language classrooms and science classrooms) increased student motivation due to a variety of factors that included real-time interaction, real-world application and self-regulated learning and pacing. The results of this survey tended to agree with the literature, finding that students were motivated by the use of technology; however, it was more advanced forms that resulted in more motivation, and only half of students said using any form of technology made them more motivated to complete a task.

The use of technology in the classroom is one being championed by educators, administrators, districts and the new Common Core standards that advocate for focus on 21st Century Skills. As currently practiced, however, many educators are not effectively using technology in the classroom and students seem to be well aware of that issue. There appears to be a discrepancy between what teachers believe they are doing well and what students see as being effective, since this study found that more teachers believe they are effective than

students, and that 100% of student respondents indicated their teachers needed additional training in how to effectively utilize technology. For technology to be a consistent and effective motivator for students, educators must get more training in using the advanced forms of education that provide further motivation, as well as learn additional strategies for effectively implementing technology in the classroom, an area that warrants further examination.

The school district may want to consider an in-depth study of the effective uses of technology being done in the building by teachers. This could be done through an additional survey, observations in the classroom, Professional Learning Communities or other avenue. Once teachers and/or strategies for effective use are determined, those people could lead training sessions for the many teachers who are looking for additional strategies for effective use of technology in the classroom.

Next, because students and teachers are wanting additional training in the use of advanced forms of technology, the schools will want to train both educators and students (or educators, who could then train students) in additional forms of technology that go beyond the basics (e-mail, Microsoft Office, etc.). For the practice to be utilized best, the schools will want to ensure that teachers understand how higher forms of technology increase motivation for students but that using just any form is not necessarily motivational or even effective. If these steps are not followed, there likely will continue to be differences of opinion between students and teachers, especially when it comes to how technology is being used effectively in the classroom.

There are several areas warranting further study. As previously mentioned, students and teachers disagree about whether or not technology is effectively being implemented in their

classrooms; however, the definition of effectiveness and examples of effective and ineffective implementation were not explored. A study of both students and teachers could again be conducted, this time focusing more on learning strategies using technology as a tool.

An additional study breaking down the “advanced forms” of technology in terms of motivation would also prove to be beneficial for educators in terms of determining which tools they should focus on in training and if there are some “advanced” forms that students find more motivation than others. Since students said they needed more training in this area, it would also benefit them if research was done on the technology skills of different demographics within PHS, as literature has shown us that there is a new digital divide that educators and administrators need to be aware of when utilizing technology in the classroom.

Finally, it would be interesting to go in more depth in comparing the attitudes of teachers with fewer years of experience to those with greater years of experience, as age often influences comfort with and effective use of technology.

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*Appendix A:**Teacher Survey***Action Research Project Survey**

This is a survey for an Action Research Project for my Northwest Missouri State graduate class. All responses will be kept anonymous. Thank you for taking time to complete the survey.

How many years have you been teaching?

- 1-3 years
- 3-5 years
- 5-10 years
- 10+ years

I consistently use technology in my classroom for learning.

- Yes
- No

I know and implement strategies to effectively use technology in my classroom.

- Yes
- No

Using any form of technology on a project or assignment makes my students more motivated to complete the task.

- Yes
- No

My students are more motivated by using advanced forms of technology than basic forms (PowerPoint, Word, e-mail).

- Yes
- No

I need/want more training in how to implement technology effectively in my classroom.

- Yes
- No

I need/want more training in how to use advanced forms of technology in general.

- Yes
- No

Continue »

*Appendix B:**Student Survey***Action Research Project Survey**

This is a survey for an Action Research Project for my Northwest Missouri State graduate class. All responses will be kept anonymous. Thank you for taking time to complete the survey.

What grade are you in?

- Freshman
- Sophomore
- Junior
- Senior

My teachers consistently use technology in my classes for learning.

- Yes
- No

My teachers know and implement strategies to effectively use technology in my classes.

- Yes
- No

Using any form of technology on a project or assignment makes me more motivated to complete the task.

- Yes
- No

I am more motivated by using advanced forms of technology than basic forms (PowerPoint, Word, e-mail).

- Yes
- No

My teachers need more training in how to implement technology effectively in my classroom.

- Yes
- No

I need/want more training in how to use advanced forms of technology in general.

- Yes
- No

Continue »