Running Head: Attitudes and Perceptions about instructional technology trainings

A SURVEY OF ELEMENTARY REGULAR AND SPECIAL EDUCATION FACULTY CONCERNING ATTITUDES AND PERCEPTIONS ABOUT THE AMOUNT OF INSTRUCTIONAL TECHNOLOGY TRAININGS

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Abstract

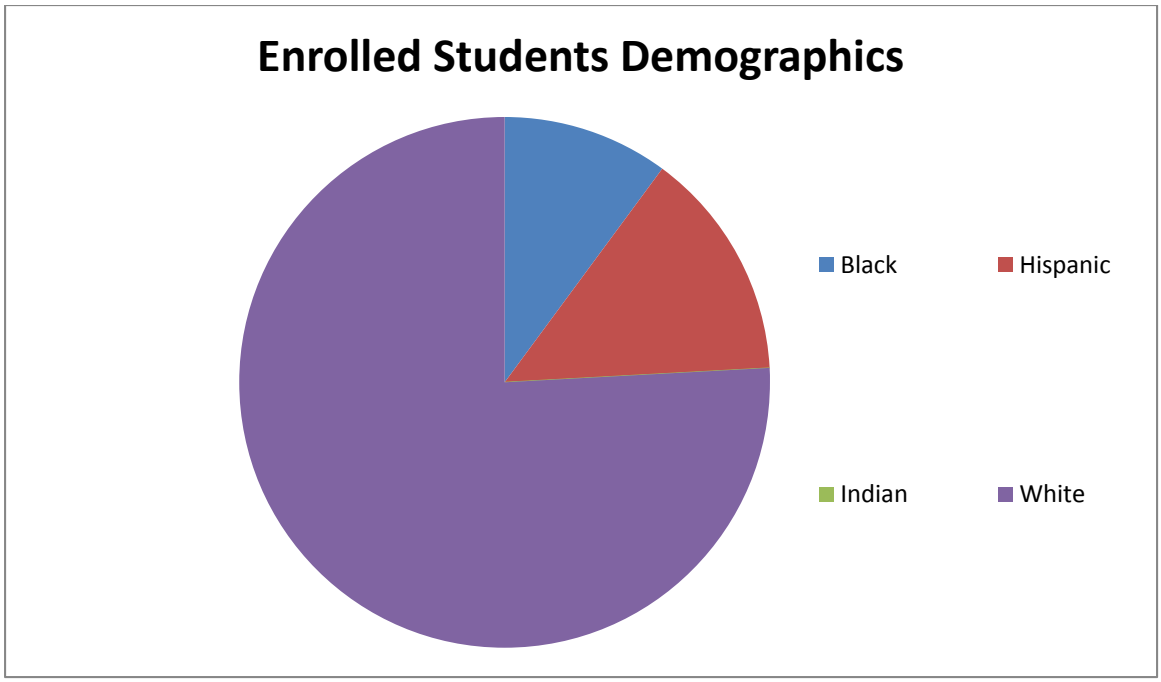
The purpose of this study was to determine if teachers are receiving adequate technology training to promote technology in instruction. The research includes findings that answer the questions, “Have professional development technology trainings increased the amount of technology you use in your classroom?”, “How do you feel about the technology training offered in your district?”, and “I would use more technology in my classroom because of the technology trainings provided?” The research was conducted using an anonymous survey distributed through Google docs to teachers at an elementary school in a Midwestern suburban school district. The findings were analyzed through Microsoft Excel and A Statistical Program (ASP) software. The findings from this research were that teachers believe technology is a vital teaching tool. The survey concluded that a majority of teachers feel there is not enough professional development that includes technology trainings. Several teachers mentioned wanting to use more technology if someone showed them how.

Introduction

Background, Issues, and Concerns:

The district survived is located on the Midwestern suburban school district. Annual enrollment is approximately 14,286. We are one of the growing areas in the state, increasing our student body by 200 each year. The district is a mostly middle to upper-middle class community enjoys a stable economy. Within the school district boundaries, there are more than 80,000 residents. The close proximity to a major metropolitan area allows residents easy access to a variety of social, cultural and educational opportunities. There is also convenient access to over 54 colleges, universities and technical schools in the metro area. The district has 13 elementary schools.

The teachers survived consisted of teachers at one elementary in the district. The elementary is a Title 1 no sanctions school. Three hundred fifty four students attend the school survived in grades Kindergarten to fifth. Below is the demographic of the enrolled students.



Of the 354 students, 9.6% of the students are black, 13.3% are Hispanic, 0% are Indian, and 72% are white. 44.4% of the students are eligible for Free or Reduced-Price lunch. The student to classroom teacher ratio is 17:1. The students to administrations ratio is 354:1.

The district's technology department is the support structure to assist in the preparation of students for a technologically changing world. Through interactive learning students will acquire knowledge and skills that enable them to gather, integrate, analyze and apply information and ideas across all curricular areas. In compliance with state and federal mandates and to assure we are effectively meeting the needs of our learners, the district has developed a long-range technology plan.

Technology is a vital educational tool when used correctly. When students are using technology as a tool or a support for communicating with others, they are in an active role rather than the passive role of recipient of information transmitted by a

teacher, textbook, or broadcast. The student is actively making choices about how to generate, obtain, manipulate, or display information. Technology use allows many more students to be actively thinking about information, making choices, and executing skills than is typical in teacher-led lessons. Moreover, when technology is used as a tool to support students in performing authentic tasks, the students are in the position of defining their goals, making design decisions, and evaluating their progress (Singh 2000).

Despite access to technology and despite the fact that novice teachers are entering the classroom with far more advanced technology skills than their counterparts of an earlier age, only 39 percent of teachers report "moderate" or "frequent" use of technology as an instructional tool (Grunwald Associates, 2010). But one cause of this difficulty seems to be the types of technology-related professional development teachers receive. Though technology training is one of the most common types of professional development for teachers—with 60 percent of teachers reporting some sort of technology-related professional development in the past year (NEA, 2008)—only 43 percent rate it "useful" or "very useful." Many teachers report that the instruction they receive in technology integration, whether online or face-to-face, is still too focused on learning how to use the software versus integrating it into the teaching and learning process (NEA, 2008). (Burns 2010).

Teachers do use technology for administration, personal productivity, and displaying content (via projectors and document cameras) but not so much as a student learning tool. Why? After 25 years of incorporating technology in the learning space, we

still may not have figured out how to do technology-related professional development that helps teachers use computers as part of the instructional process. After 25 years of having computers in schools, we still lack an approach that ensures teachers truly understand the benefits and appropriate uses of computers for instruction and that teachers actually use technology as part of teaching and learning (Burns 2010).

Practice under Investigation:

The practice under investigation is if districts are providing enough technology trainings to teachers.

School Policy to be Informed by Study:

The study was conducted to see how elementary teachers feel about technology in instruction. The opinion based survey asked questions about current professional development related to technology. As well as, what the district could do to help teachers use technology more efficiently in the classroom.

Conceptual Underpinning:

For years, technology has been used in classrooms to enhance learning. The International Society for Technology in Education (ISTE) and the Consortium for School Networking (CoSN) has been conducting research about the benefits of technology over the past five years. There is substantial evidence that technology improves learning among students of all ages in all urban, suburban, and rural areas. Technology can help improve student achievements in reading, writing, and mathematics and their learning skills. Technology has helped new teachers become “highly qualified” and

expects in their subjects and help teachers meet all student's needs. Technology in schools also helps with efficiency, productivity, decision making, and providing better data for administrators (Ed Tech Action Network).

Statement of the Problem:

The problem is to determine if technology training is adequate to promote higher student achievement.

Purpose of the Study:

The purpose of the study was to determine if the required technology trainings for teachers are increasing the amount of technology used in the classrooms. Most districts require professional development trainings that teach different technologies to their staff. The purpose of these trainings is to show teachers different software and how it can be used in the classroom. This study was created to check how effective the trainings are on teachers using what they learn. The study also was to determine if teachers are learning and meeting the objectives of these trainings.

Research Questions:

1: What is the overall opinion of required technology training for teachers?

2. Is there a difference between the desired amount of technology trainings and the years a teacher has taught?

Null Hypothesis:

There is no difference between the desired amount of technology trainings and the years a teacher has taught?

Anticipated Benefits of the Study:

If the study concludes that the trainings are not effective, the district can look at their current trainings. If trainings are not serving their purpose, something needs to be done. This survey can show districts what teachers want from these trainings and how they can provide it for them. The districts can work on training teachers so that technology is used in the classroom more frequently and in a way that teaches the most to the students. The results of this study can benefit the teachers, district, and the students.

Definition of Terms:

DESE: Missouri Department of Secondary and Elementary Education

Educational Technology: When technology is used in the classroom to help with education

IDEA: Individuals with Disabilities Education Act

IEP: Individual Education Program

Instructional Technology: "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning," according to the Association for Educational Communications and Technology (AECT) Definitions and Terminology Committee.

NCLB: No Child Left Behind Act of 2001

SPED: Special Education

Professional development: the advancement of skills or expertise to succeed in a particular profession, esp. through continued education

Tablet: A mobile computer, larger than a mobile phone or personal digital assistant, integrated into a flat touch screen and primarily operated by touching the screen rather than using a physical keyboard. It often uses an onscreen virtual keyboard, a passive stylus pen, or a digital pen.

Ipad: A computer tablet made by Apple Company.

ELL: English Language Learners

TeamBoard: a brand of interactive whiteboard.

Projector: an apparatus for throwing an image on a screen, as a motion-picture projector or magic lantern.

Title 1: The purpose of this title is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging State academic achievement standards and state academic assessments.

Summary:

The Midwestern suburban school district is an accredited district with 13 elementary schools. The district regards instructional technology very highly and has a detailed technology plan.

Technology has been used in education for years. Technology has helped new teachers become “highly qualified” and expects in their subjects and help teachers meet all student’s needs. Technology in schools also helps with efficiency, productivity, decision making, and providing better data for administrators (Ed Tech Action Network).

The problem is to determine if technology training is adequate to promote higher student achievement. The purpose of the study was to determine if the required technology trainings for teachers are increasing the amount of technology used in the classrooms. The research questions are “ What is the overall opinion of required technology training for teachers?” and “ Is there a difference between the desired amount of technology trainings and the years a teacher has taught?” The null hypothesis is, there is no difference between the desired amount of technology trainings and the years a teacher has taught? The anticipated benefits of the study are to give the district an insight on the effectiveness of their professional development. This survey can show districts what teachers want from these trainings and how they can provide it for them. The results of this study can benefit the teachers, district, and the students.

Review of Literature

If there's one thing that districts have learned during this information age it's this: Without adequate support and motivation educators will retreat to their old ways of teaching (McCrea 2012). Literally millions of dollars are being spent this year on providing computers to schools in developing countries, much of which will be wasted because teachers are not trained to use technology effectively (Carlson 2002). Approximately one third of teachers have received little or no training with integrating computers into lessons or training on instructional software (Zhoa 2006).

While technology increases teachers' training and professional development needs, it also offers part of the solution. Information and communication technologies (ICTs) can improve pre-service teacher training, by providing access to more and better educational resources, offering multimedia simulations of good teaching practice, catalyzing teacher-to-trainee collaboration, and increasing productivity of non-instructional tasks (Carlson 2002).

Here are five strategies that schools and districts can use to ramp up their own smart classroom professional development programs: develop a multifaceted training model for teachers, make the technology the incentive, take teachers out of their comfort zones, don't try to force it and let teachers decide if they want the technology or not (McCrea 2012). Research shows that while trained teachers did demonstrate positive attitudes toward using technology and used more technology than teachers who had no such training (Zhoa 2006). It is argued that follow-up programs or mentoring systems are necessary after the initial technology integration training to foster

collaboration and support, to address daily challenges, and ultimately to have more frequent and effective use of technology in the classroom (Zhoa 2006).

Teacher professional development in the use of technology should embody and model the forms of pedagogy that teachers can use themselves in their classrooms. These trainings should empower teachers to develop their knowledge and skills in a variety of both learning environments and learning strategies. Trainings should aim at higher-order thinking skills while providing authentic learning environments. Trainings should emphasize ways that technology can facilitate and enhance teachers' professional lives. Teachers should leave feeling encouraged to be mentors, tutors and guides of the students' learning process. Trainings should promote cooperative and collaborative learning (Carlson 2002).

It's not enough to take a traditional K-12 classroom and fill it with technology. Teachers remain the gatekeepers for students' access to educational opportunities afforded by technology: they cannot and should not be ignored (Carlson 2002).

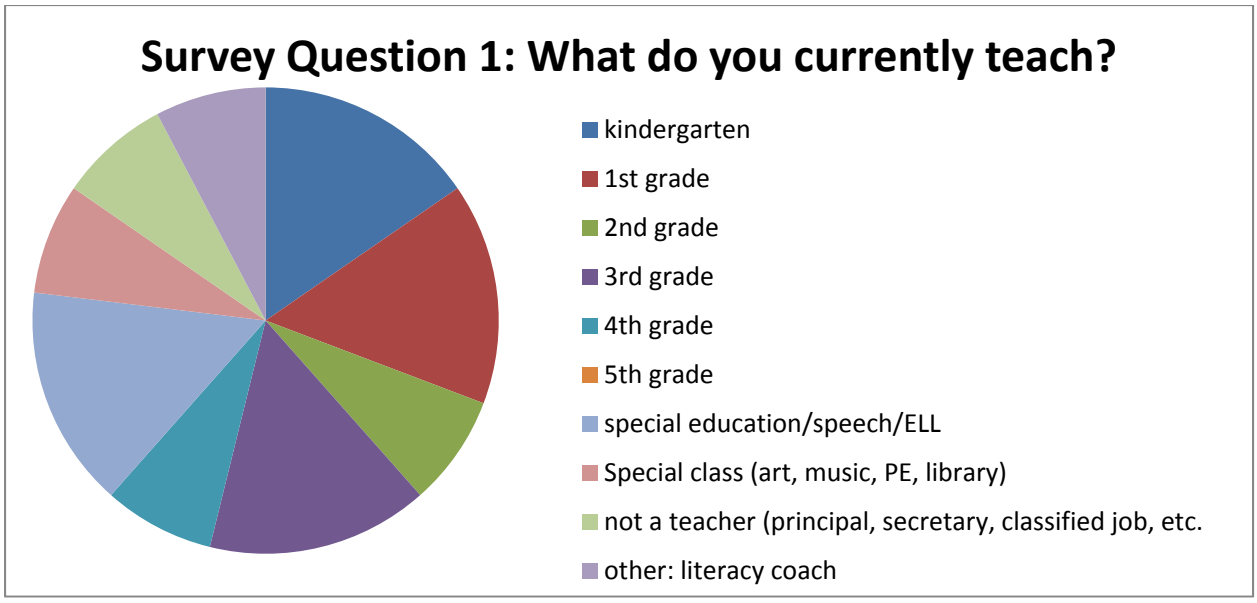
Research Methods

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 elementary teachers and the dependent variable was the amount of technology training for teachers. The survey measured teacher's opinion on the amount of technology training for teachers. Tests ran included chi square and t-test.

Study Group Description:

The study group for this research consisted of teachers at one elementary in the district. The survey was available to all elementary staff at one elementary school. Survey was optional and anonymous. Survey was not limited to just classroom teachers, other staff members were encouraged to participate. The school staff includes 58 total employees plus 2 full time volunteers and 2 student teachers. The staff consists of 1 principal, 34 certified staff, and 24 classified staff. 19 of the 34 certified employees are regular education K-5 classroom teachers. Below is the breakdown of the teachers who completed the survey.



The student to classroom teacher ratio is 17:1. The years of experience of professional staff in this elementary is 10.4. The professional staff with advanced degrees is 88.6%. The average teacher salary of teachers in this school is $50,172.

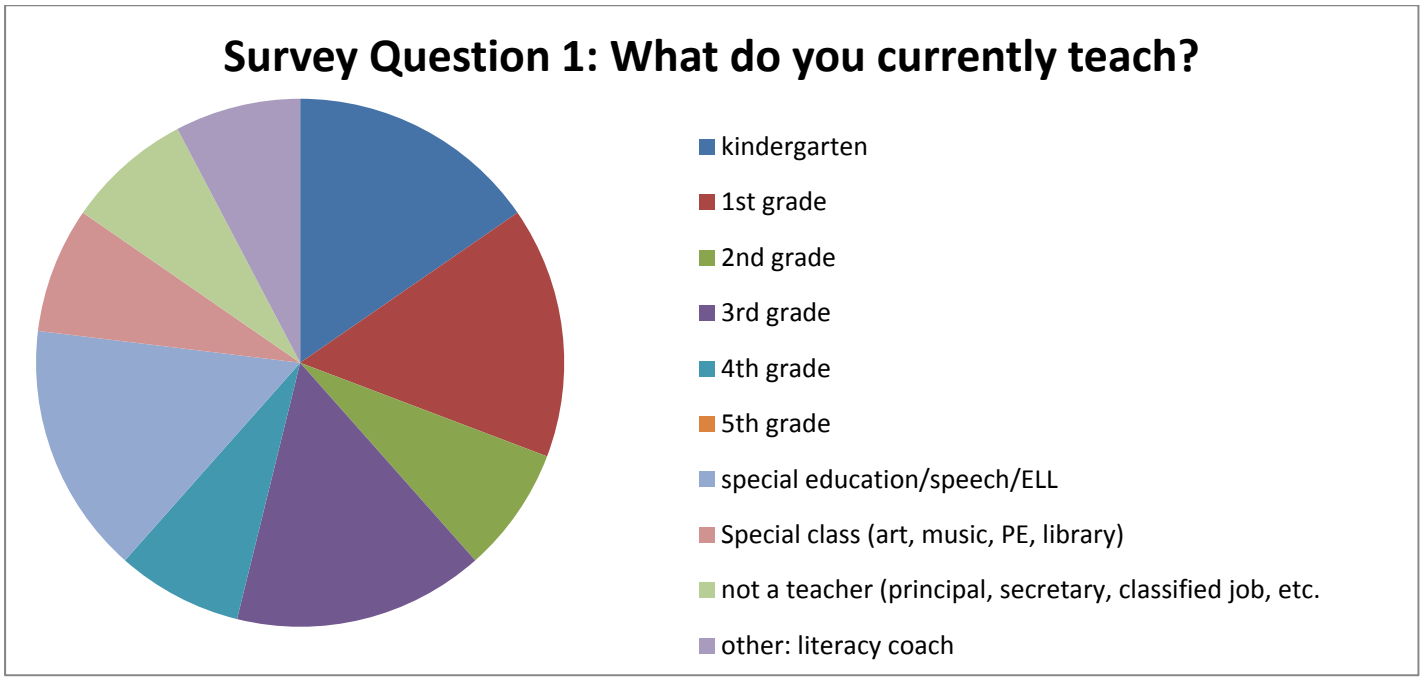
Data Collection and Instrumentation:

A survey was used to collect data for this research. The survey consisted of multiple choice question and short answer. The survey was given to determine what professional development is required and offered in both districts that related to education technology. The survey also was to find out how many hours teachers used technology and how it is used. Survey is found in Appendix A.

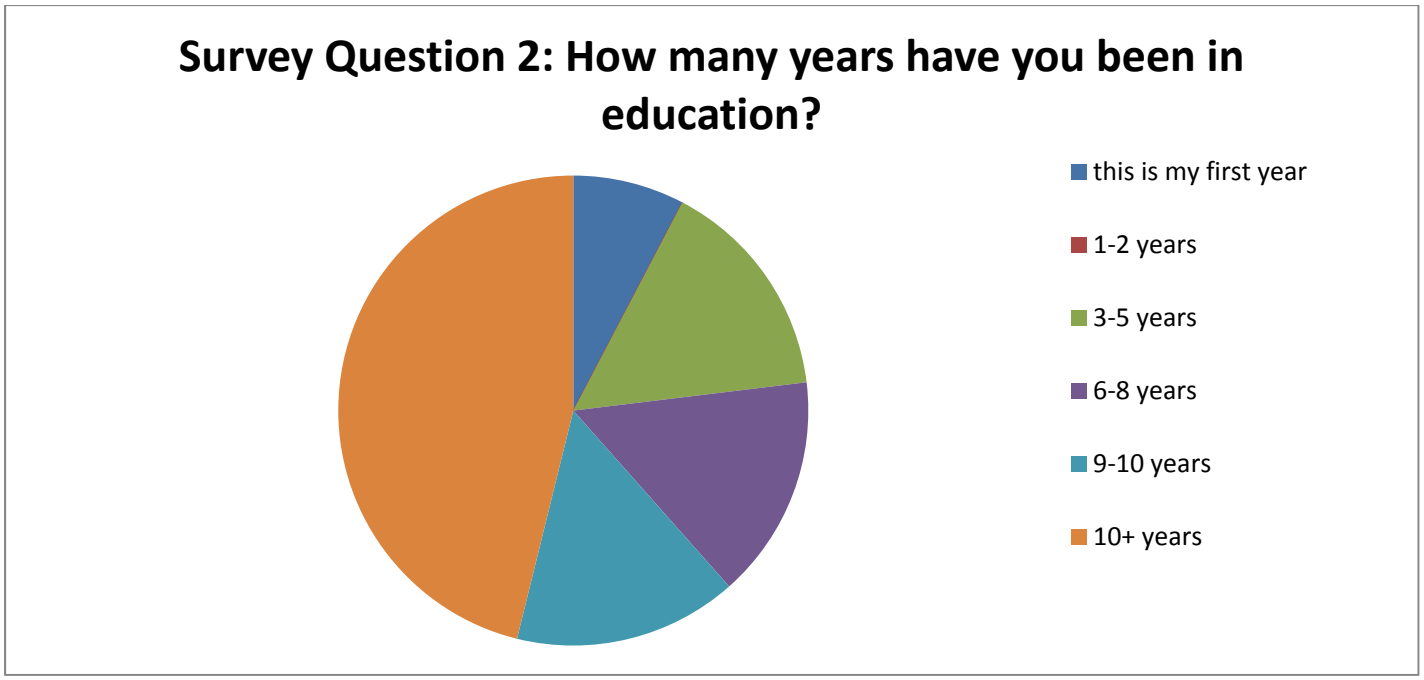
Statistical Analysis Methods:

A Statistical Package (ASP) software was used to complete the statistical calculations in this study. Descriptive statistics and t-test were calculated. Additionally, Microsoft Excel was used to compile some totals used in the research.

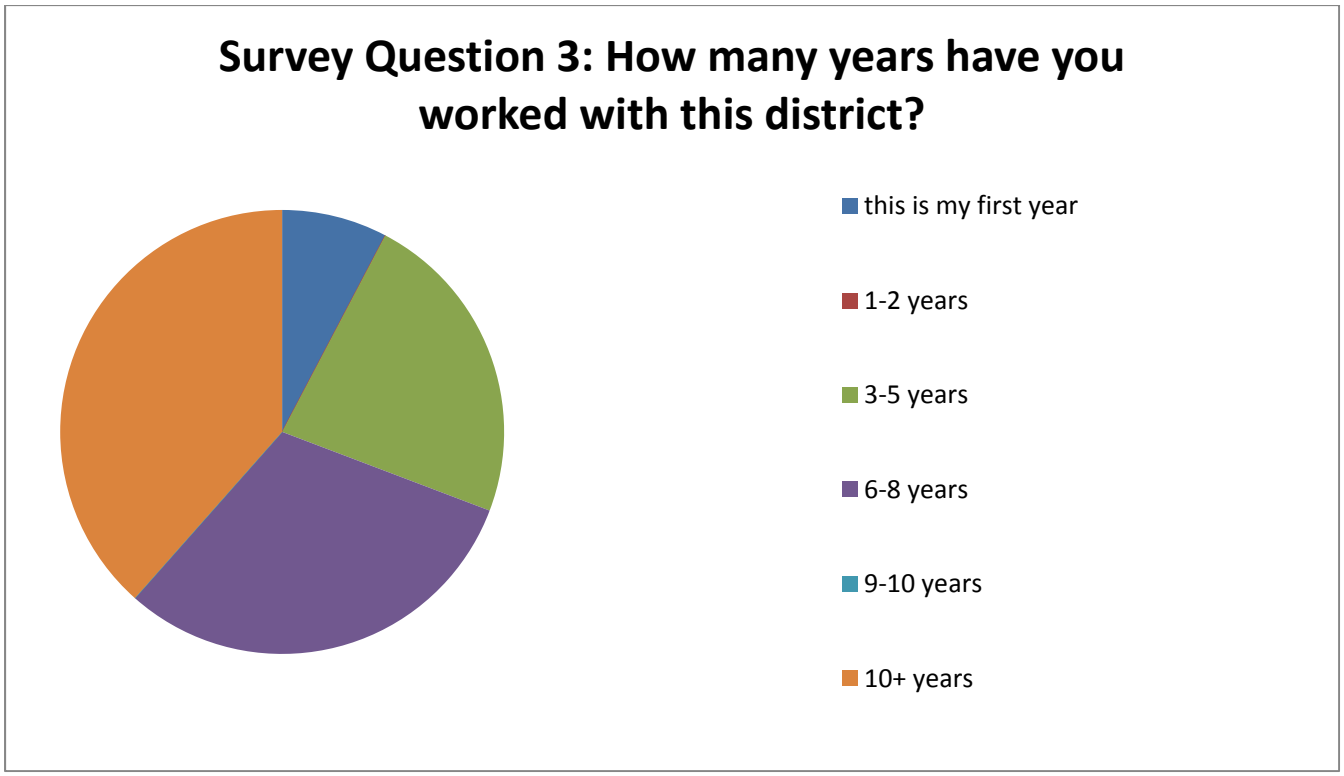
Findings



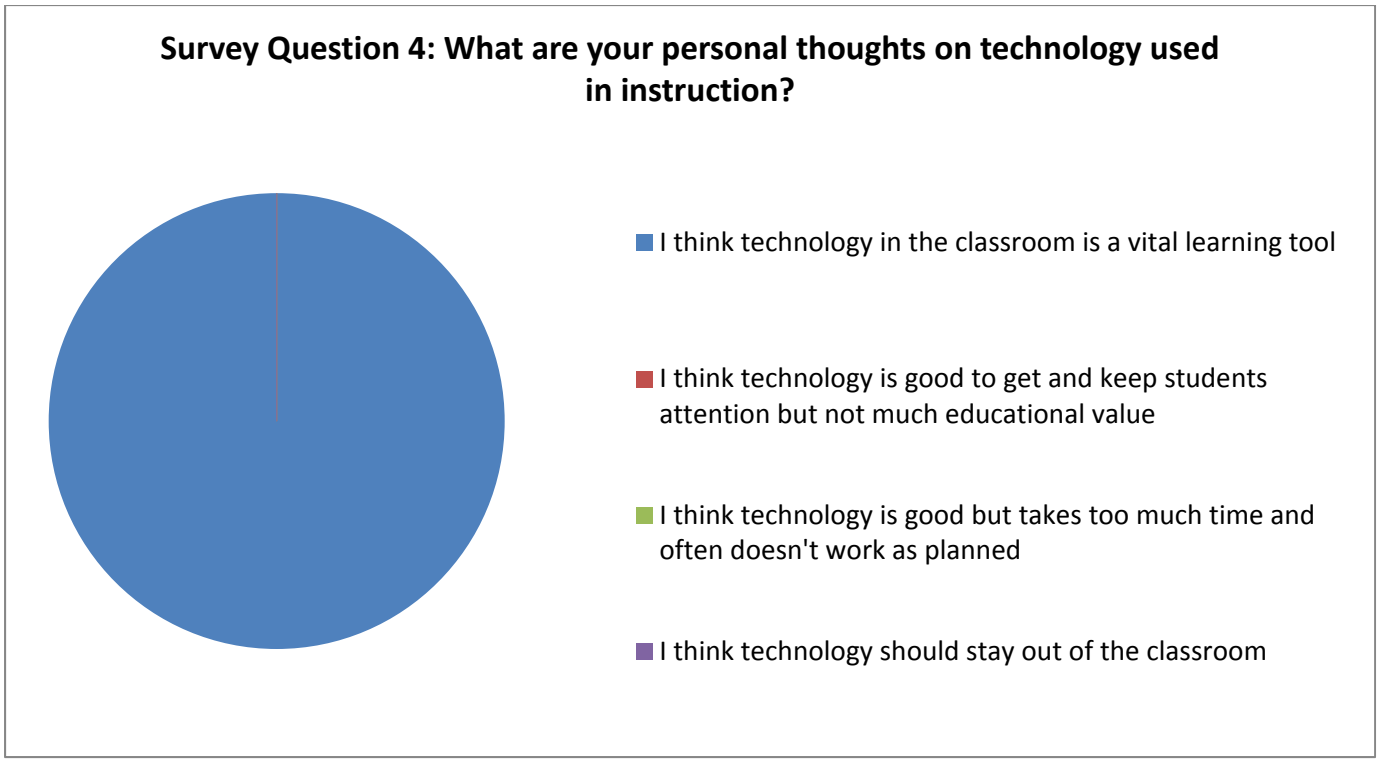
Teachers were told about the 20 question survey that was located in the teachers' lounge. Teachers filled out the survey anonymously. With the survey being optional, thirteen teachers completed the survey. Eight regular education teachers took the survey making up for 62% of the sample. The surveyed elementary is a kindergarten through fifth grade elementary. There are three classes of every grade but kindergarten has four, totaling 19 regular education classrooms. A teacher from every grade but fifth took the survey. Two special education teachers, which also included speech therapy and ELL teachers, filled out the survey making up for 15% of the sample. One specials teacher (which could be art, music, PE, or library) filled out the survey making up for 7.7% of the sample. One administrative staff filled out the survey, making up for 7.7% of the sample. One literacy coach filled out the survey, making up for 7.7% of the sample.



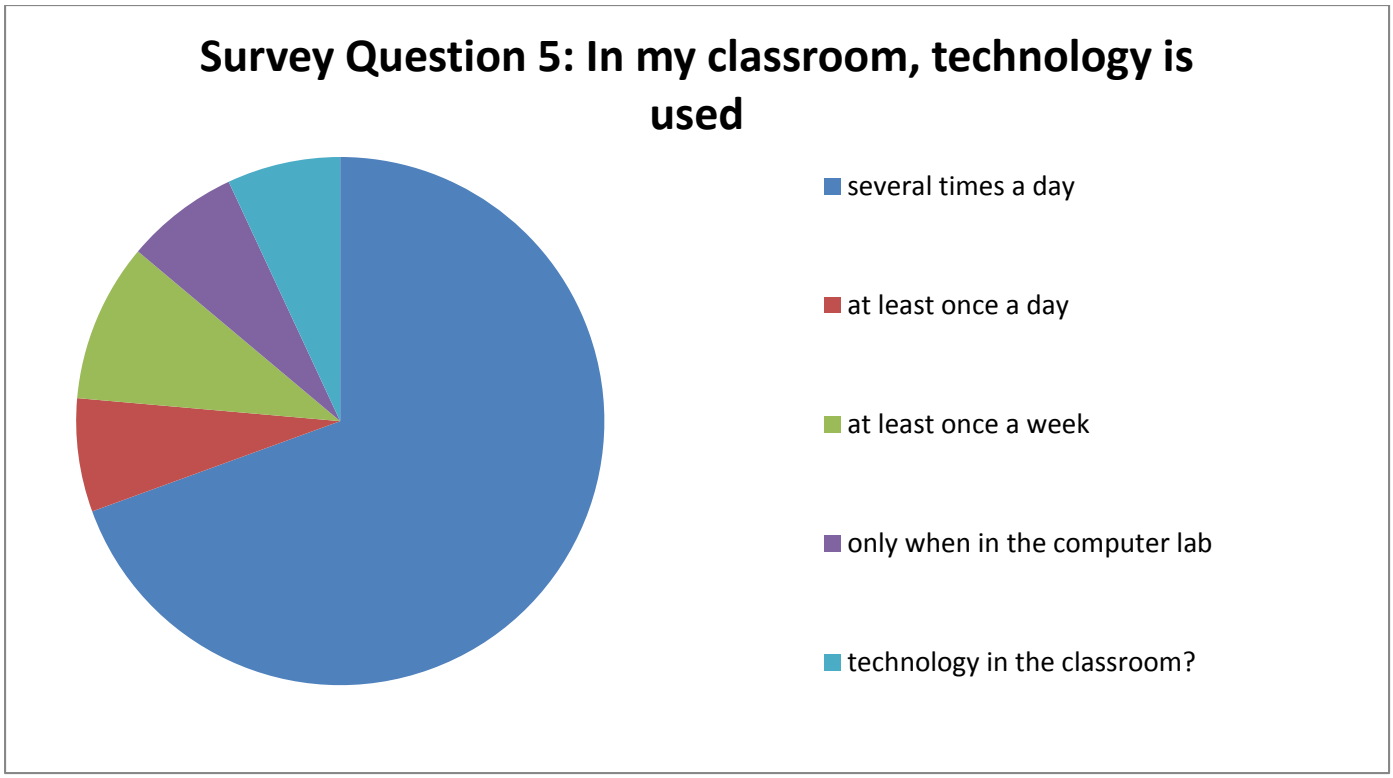
Teachers at this elementary school range in teaching experience; from first year teachers to veteran teachers. This question found out how long each teacher has been in education, not just at the current district. Of the 13 teachers that took the survey, there was one teacher in her first year; two in the 3-5 year range, two in the 6-8 year range, two in the 9-10 year range, and six in the 10+ year range. This graph shows that 77% of the teachers have been in education for over 5 years and 46% of these teachers have been in education for over ten years.



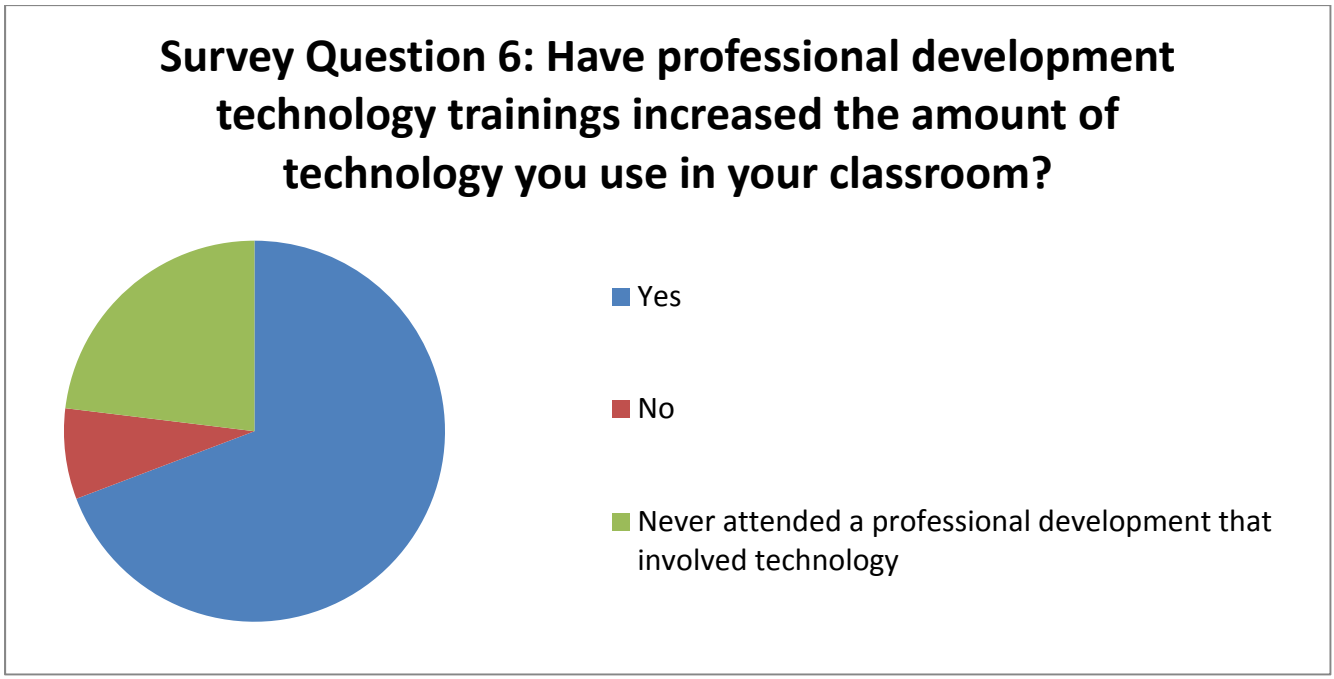
The elementary school surveyed, has teachers that range from new teachers to veteran teachers. The staff is made up of teachers that have only taught in the only the district survived and those who have taught in other districts before the current district. This question found out how many years each teacher has taught in the district. Of the 13 teachers that took the survey, there was one teacher in her first year; three in the 3-5 year range, four in the 6-8 year range, and five in the 10+ year range. This graph shows that 70% of the teachers have been in the district for over 5 years and 38% of these teachers have been in the district for over ten years.



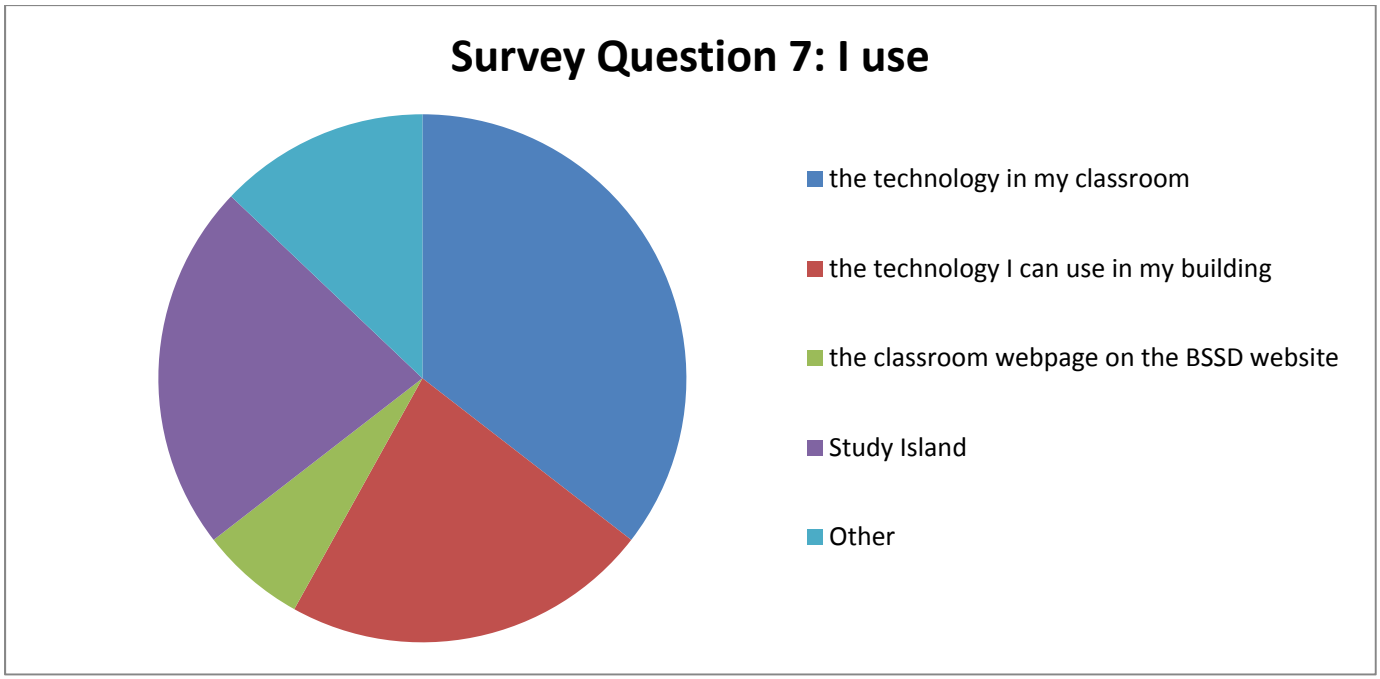
Question 4 asked teachers their opinion on technology used in the classroom. All 13, 100%, teachers think technology in the classroom is a vital learning tool. 0% of the sample think technology is just good to get and keep students attention but not much educational value. 0% of the sample think technology takes too much time and often doesn't work as planned. 0% of the sample think technology should stay out of the classroom.



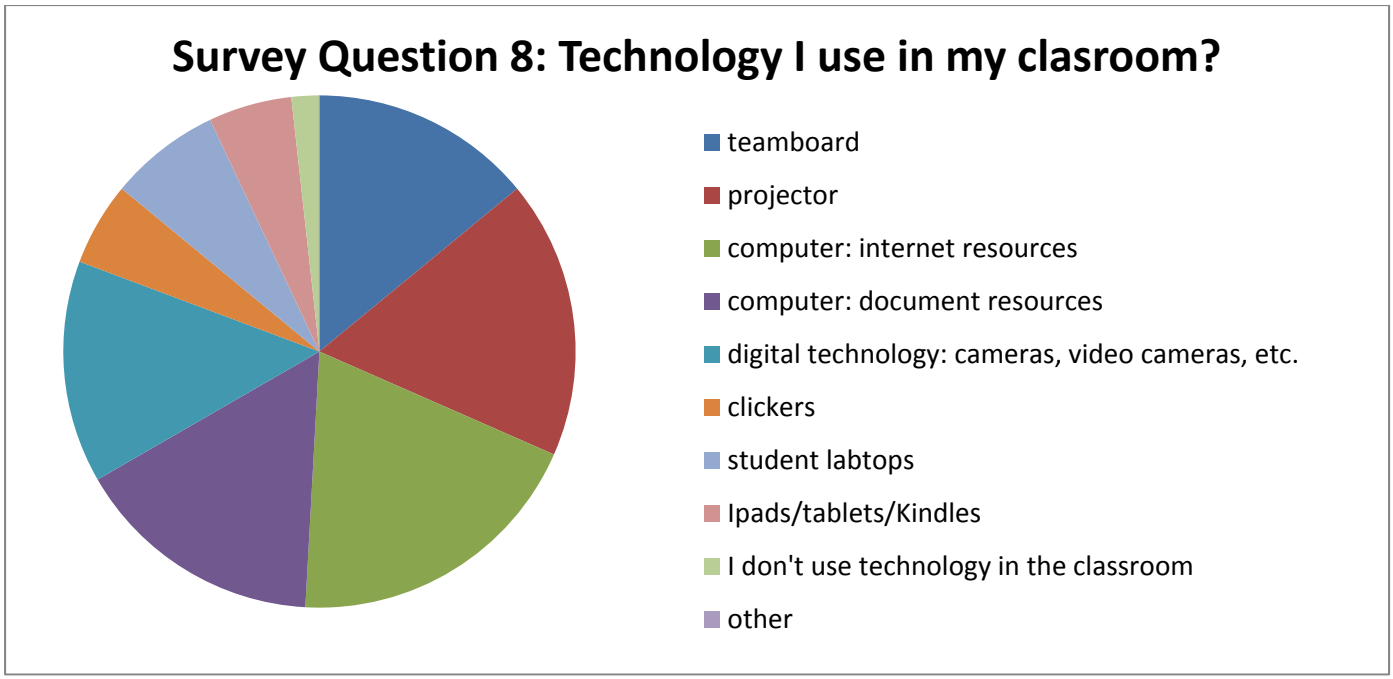
Question 5 asked teachers how often technology is used in their classroom. Ten of the thirteen teachers, 77%, use technology several times a day in their classroom. One teacher, 7.7% said technology is used at least once a day. One teacher, 7.7% said technology is used at least once a week. One teacher, 7.7% choose technology in the classroom? This teacher wrote on the survey that no technology is in her classroom making it impossible to incorporate in instruction.



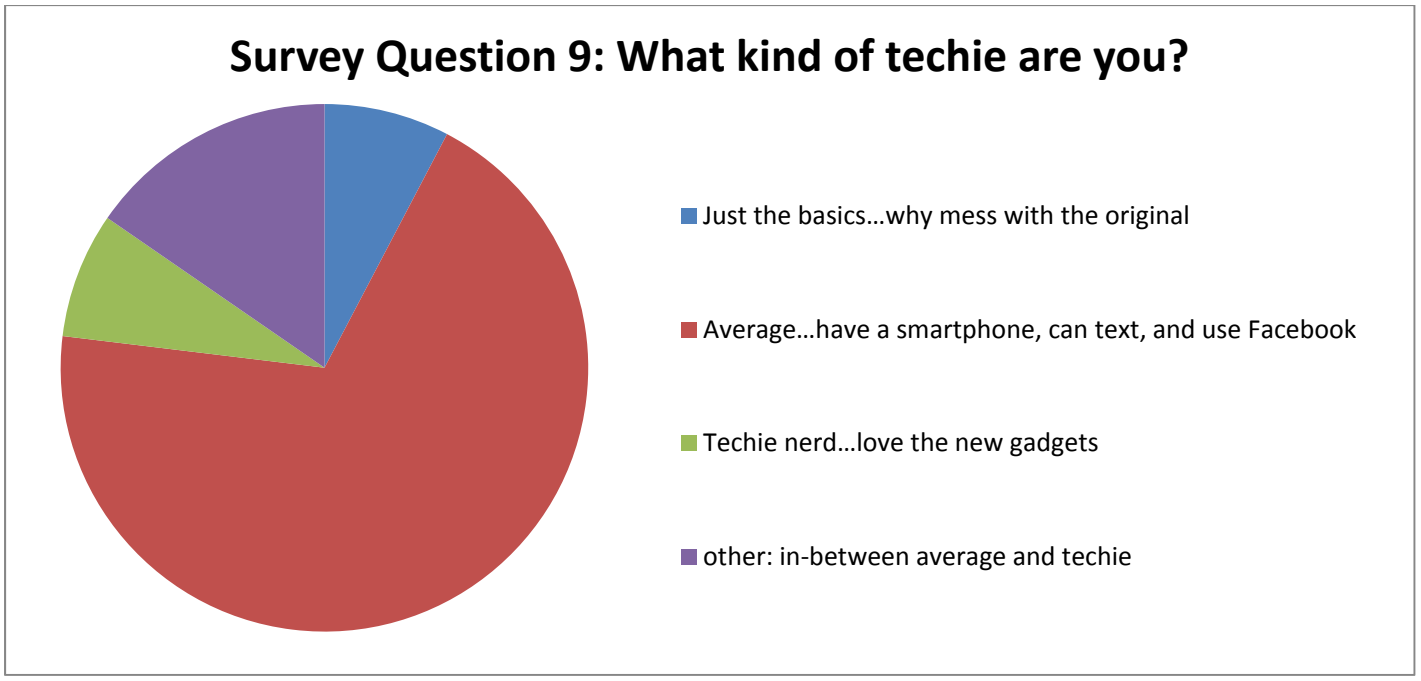
Question 6 asked teachers if professional development technology trainings have increased the amount of technology used in their classroom. Nine of the thirteen teachers, 70%, said yes the trainings have increased technology time in their classroom. One teacher, 7.7%, said no the trainings have not increased technology time in their classroom. Three, 23%, said that they have never attended a professional development that included technology.



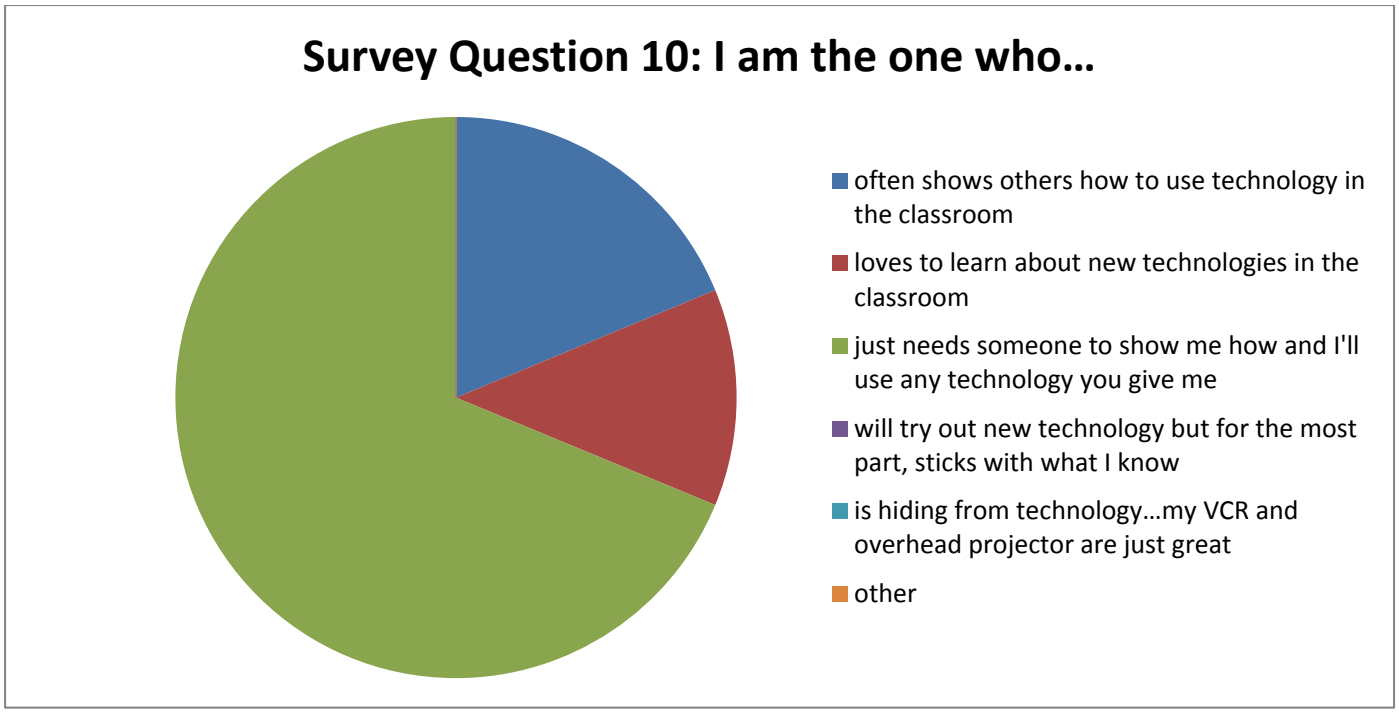
Question 7 asked teachers if they just use the technology in their classroom or other district technology. Teachers were told to check all that applied. Eleven of the thirteen teachers, 85%, said the technology in their classroom. Seven teachers, 54%, said the building technology. Two, 15%, said the classroom webpage on the district webpage. Seven, 54%, said Study Island. Three, 23%, said “other”. The three teachers that choose ‘other’ wrote in Rosetta Stone, their own classroom website, and no technology in classroom.



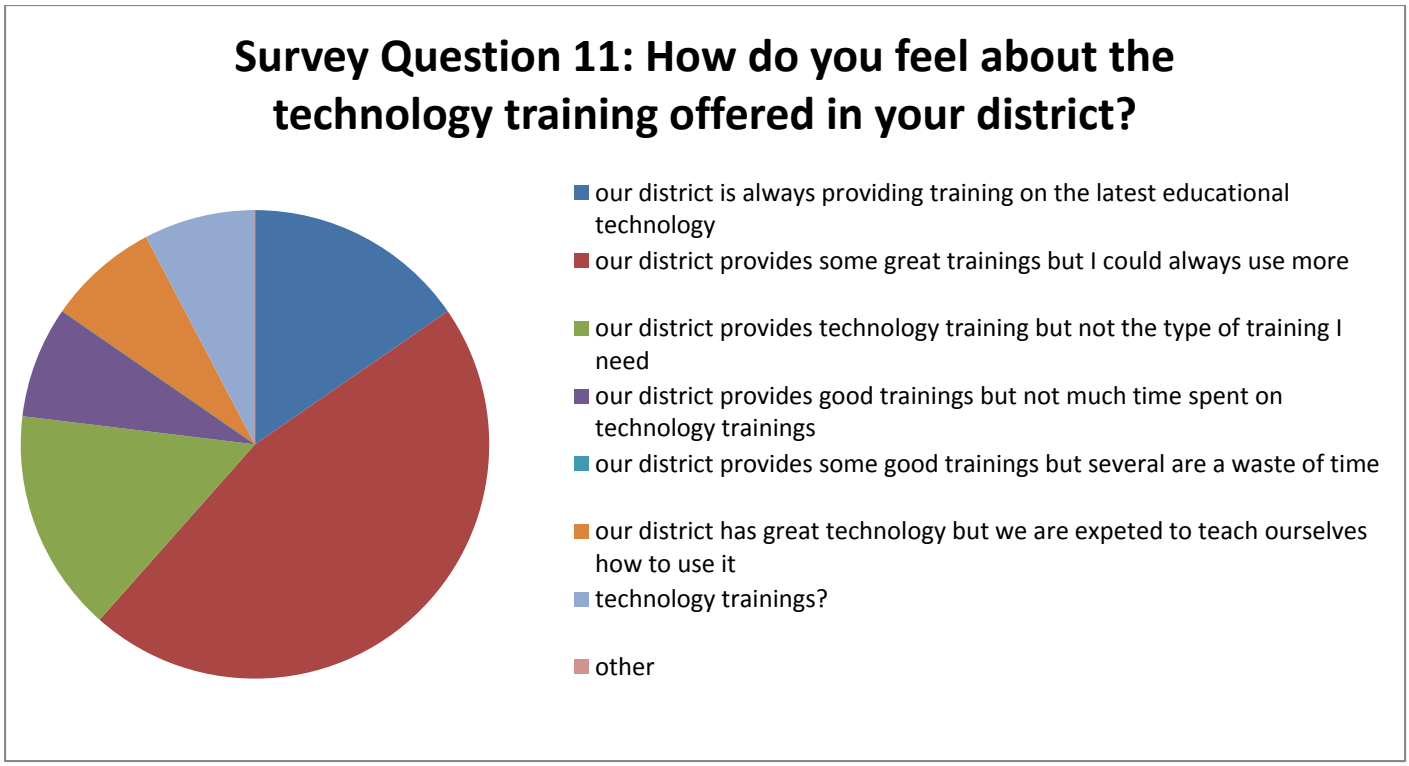
Question 8 asked teacher to check all the technologies that they use in their classroom. The school has all of these technologies available, not necessarily in every room though. Eight teachers, 62%, use team boards and ten teachers, 77%, use projectors. A majority of the teachers use computers, eleven teachers, 85%, use internet resources and nine teachers, 69%, use computer document resources. Eight teachers, 62%, use digital technology such as digital cameras and video cameras. Three teachers, 23%, use clickers. Four teachers, 31%, use student laptops. One teacher, 8%, chose the answer “I don’t use technology in my classroom.” One teacher, 8%, chose other and wrote in Kindles.



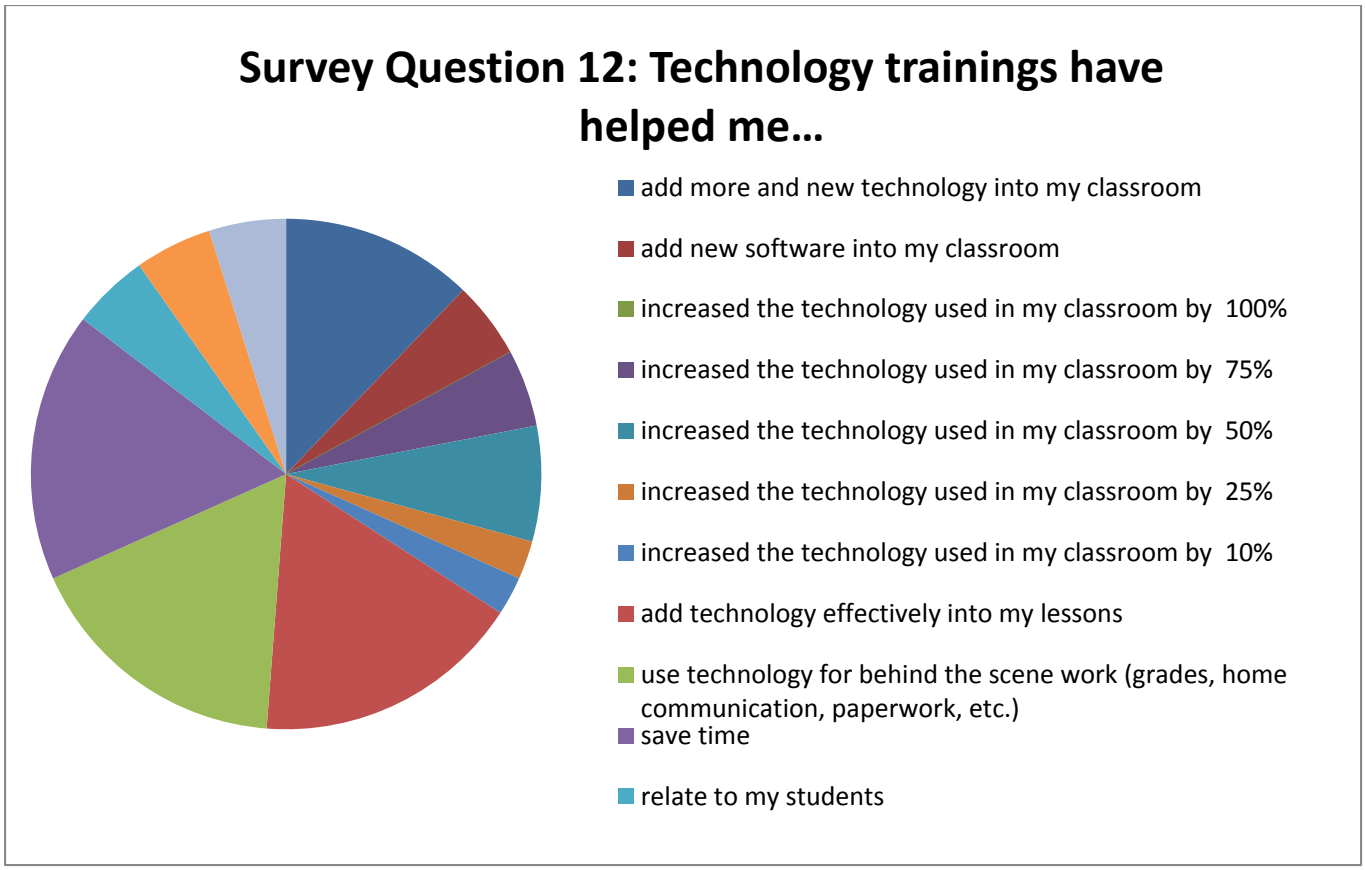
Question 9 asked teachers what kind of techie they consider themselves. One teacher, 8%, found the statement 'just the basics…why mess with the original' most appropriate. Nine teachers, 69%, found the statement "average…have a smartphone, can text and use Facebook' most appropriate. One teacher, 8%, found the statement "techie nerd…love the new gadgets" most appropriate. Two teachers checked the other box and wrote in "in-between average and techie nerd."



Question 10 asked teachers to finish the sentence "I am the one who…" Three teachers, 23%, chose "I am the one who often shows others how to use technology in the classroom." Two teachers, 15%, chose "I am the one who loves to learn about new technologies in the classroom." Eleven teachers, 85%, chose "I am the one who just needs someone to show me how and I'll use any technology you give me." Zero teachers chose "I am the one who will try out new technologies but for the most part, sticks with what I know," "I am the one who is hiding from technology…my VCR and overhead projector are just great," and "other."

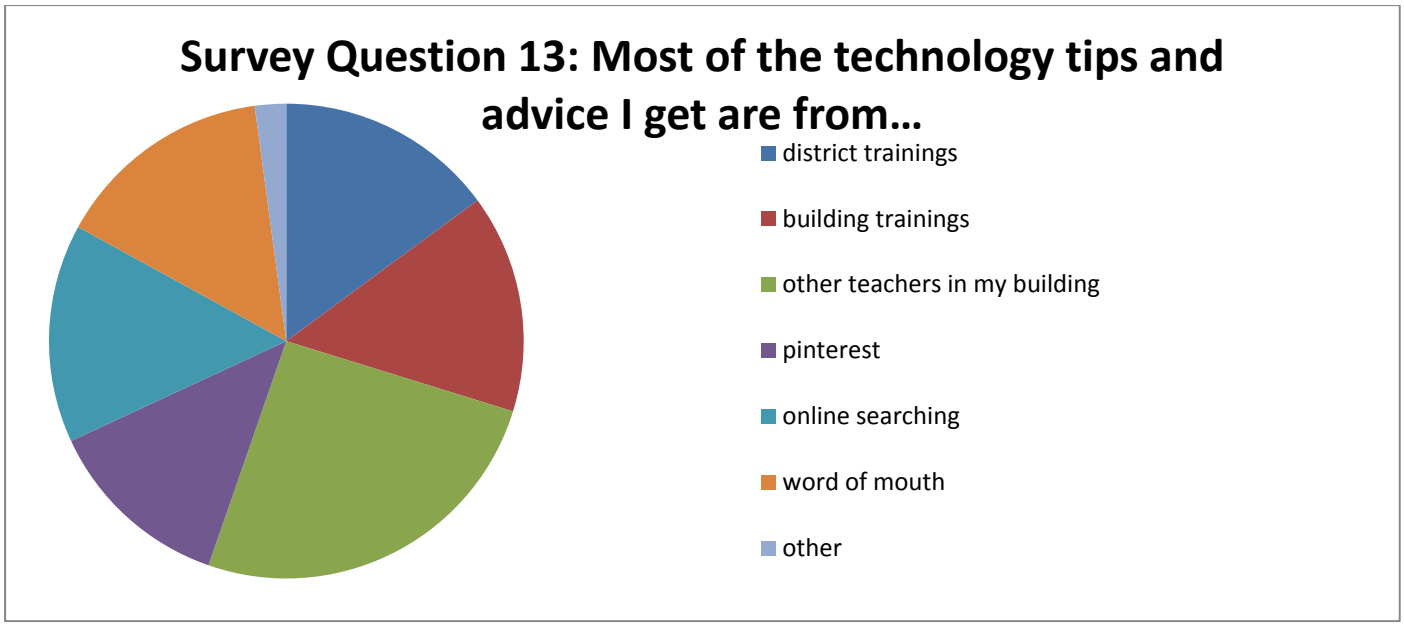


Question 11 asked teacher how they feel about technology training offered in their district. Two teachers, 15%, chose “our district is always providing training on the latest educational technology.” Six teachers, 46%, chose “our district provides some great trainings but I could always use more.” Two teachers, 15%, chose “our district provides technology training but not the type of training I need.” One teacher, 8%, chose “our district provides good trainings but not much time spent on technology trainings.” Zero percent of the teachers chose “our district provides some good training but several are a waste of time.” One teacher, 15%, chose “our district has great technology but we are expected to teach ourselves how to use it.” One teacher, 8%, chose “technology trainings?”

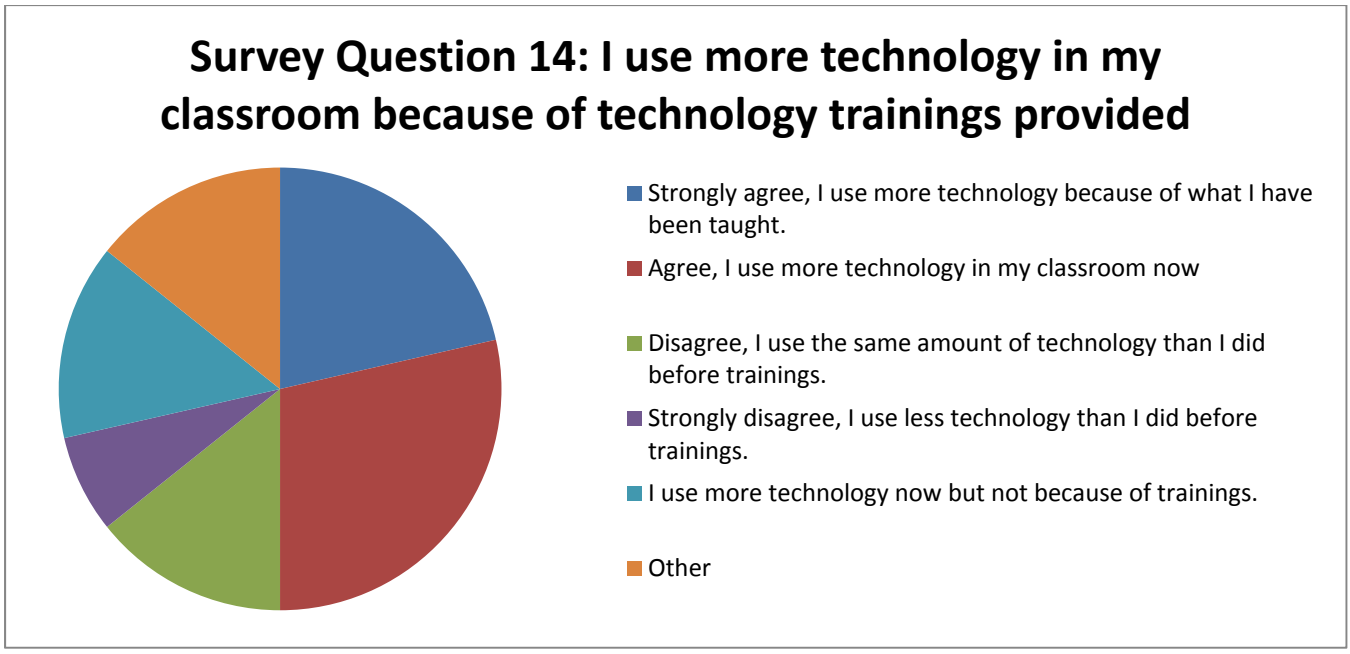


Question 12 asked teachers how technology trainings have helped them and to check all that apply. Five teachers, 38%, chose “add more and new technology into my classroom.” Two teachers, 15%, chose “add new software into my classroom.” Zero teachers chose “increased the technology used in my classroom by 100%.” Two teachers, 15%, chose “increased the technology used in my classroom by 75%.” Three teachers, 23%, chose “increased the technology used in my classroom by 50%.” One teacher chose “increased the technology used in my classroom by 25%” and one teacher chose “increased the technology used in my classroom by 10%.” Seven teachers, 54%, chose “add technology effectively into my lessons.” Seven teachers, 54%, chose “use technology for behind the scene work “grades, home communication, paperwork, etc.).” Seven teachers, 54%, chose “save time.” Two teachers, 15%, chose

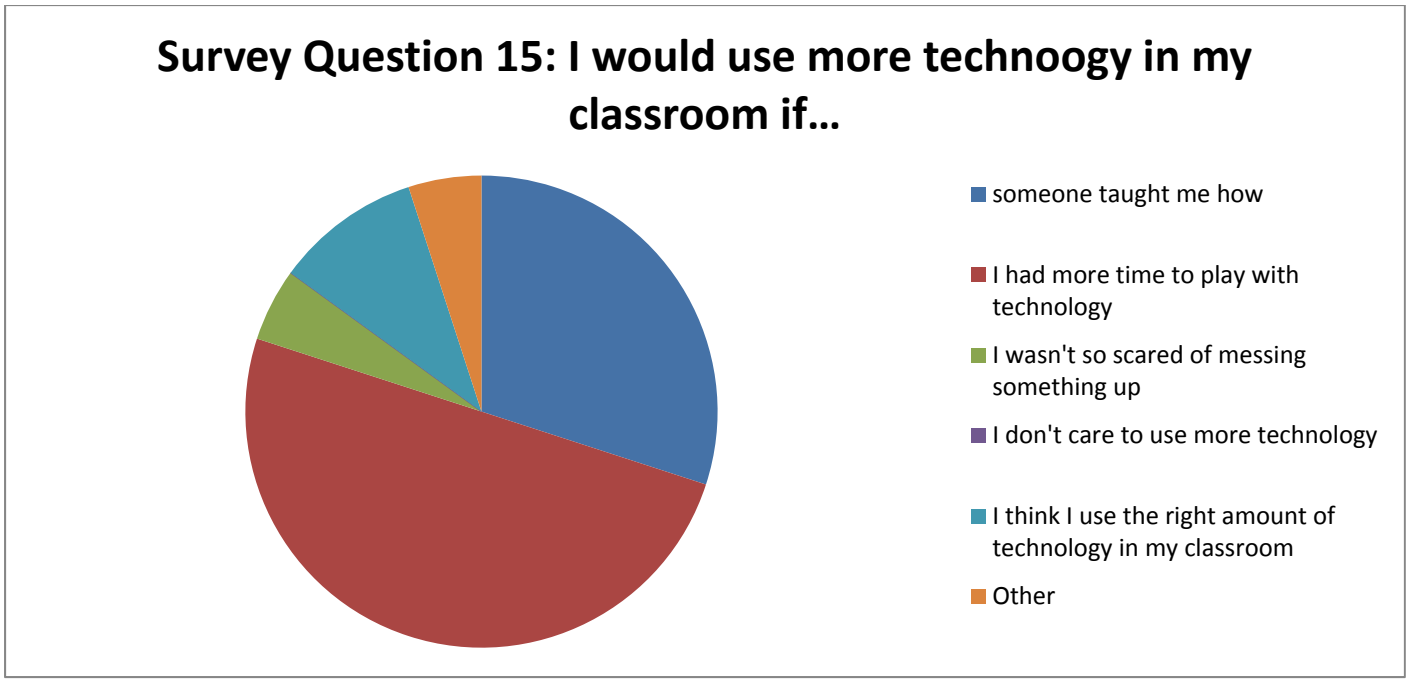
"relate to my students." Two teachers, 15%, chose "not to fear technology." Two teachers, 15%, chose other. One teacher wrote in "no specific training is on technology" and the other teacher wrote in "no technology in classroom and no trainings."



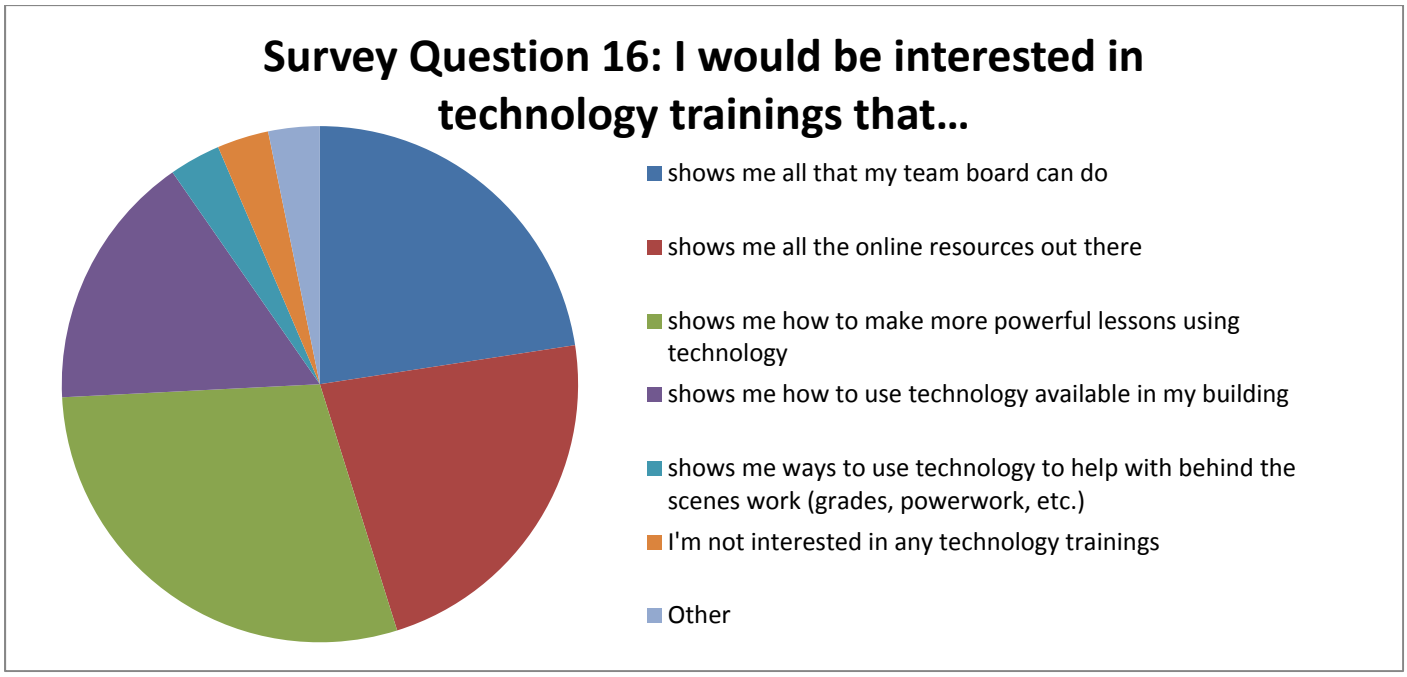
Question 13 asked teachers to check all the ways they got technology tips and advice. Seven teachers, 54%, chose district trainings. Seven teachers, 54%, chose building trainings. Twelve teachers, 92%, chose other teachers in my building. Six teachers, 46%, chose Pinterest. Seven teachers, 54%, chose online searching. Seven teachers, 54%, chose word of mouth. One teacher, 8%, chose other.



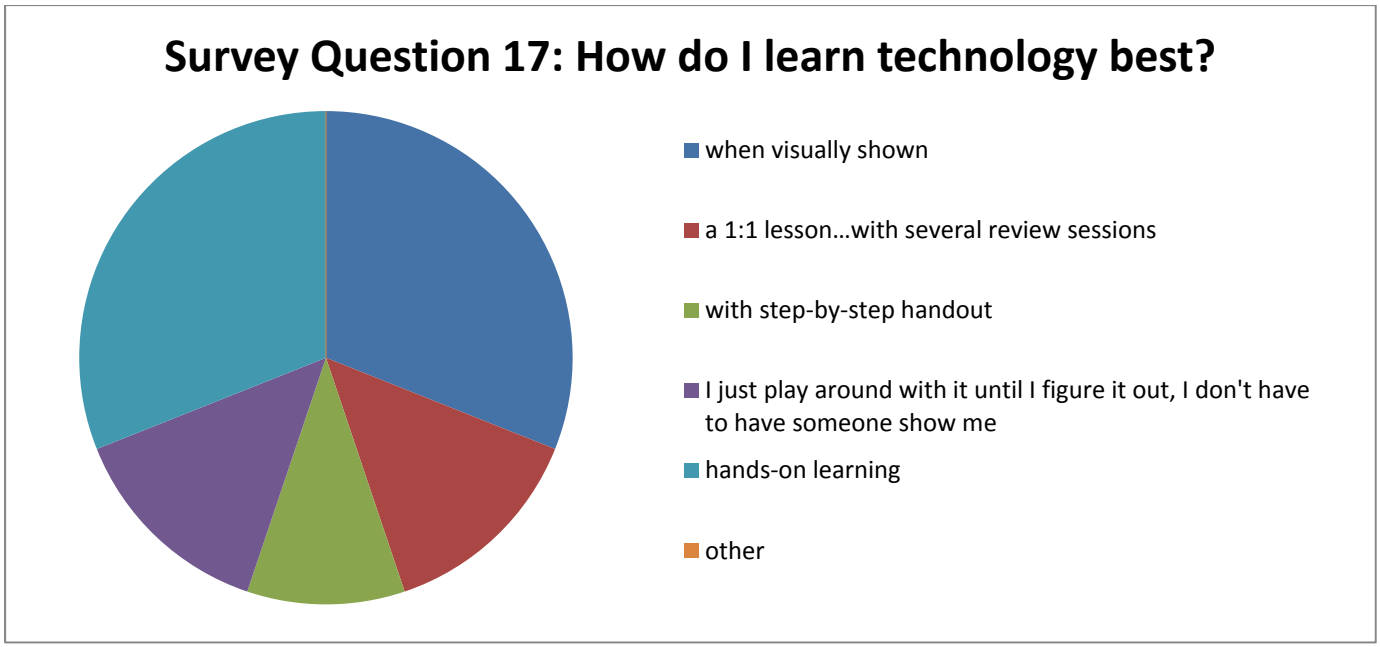
Question 14 surveyed teachers on their opinion of the statement "I use more technology in my classroom because of technology trainings provided." Three teachers, 23%, chose "Strongly agree, I use more technology because of what I have been taught." Four teachers, 31% teachers chose "Agree, I use more technology in my classroom now." Two teachers, 15%, chose "Disagree, I use the same amount of technology hat I did before trainings." One teacher, 8%, chose "Strongly disagree, I use less technology than I did before trainings." Two teachers, 15%, chose I use more technology now but not because of trainings." Two teachers, 15%, chose other. One wrote in "I use technology due to self-education" and the other wrote "no technology in classroom or trainings."



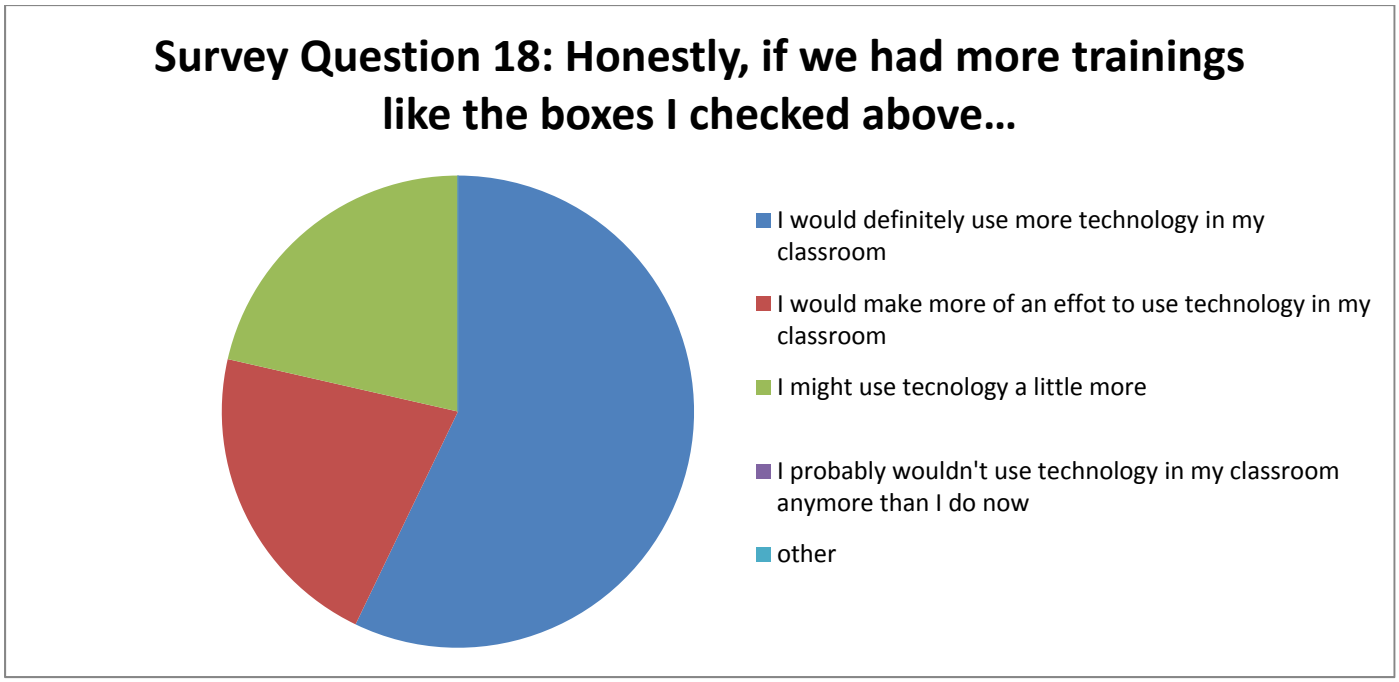
Question 15 asked teachers to finish the sentence, “I would use more technology in my classroom if.” Six teachers, 46%, chose “If someone taught me how.” Ten teachers, 77%, chose “if I had more time to play with technology.” One teacher, 8%, chose “if I wasn’t so scared of messing something up.” Zero percent of teachers chose “I don’t care to use more technology.” Two teachers, 15%, chose “I think I use the right amount of technology in my classroom.” One teacher, 8%, chose other and wrote in “If I had some.”



Question 16 asked teacher to finish the sentence, “I would be interested in technology trainings that.” Teachers were asked to check all that applied. Seven teachers, 54%, chose “that showed me all that my Teamboard can do.” Seven teachers, 54%, chose “that shows me all the online resources out there.” Nine teachers, 69%, chose “that show me how to make more powerful lessons using technology.” Five teachers, 38%, chose that showed me how to use technology available in my building.” One teacher, 8%, chose “that shows me ways to use technology help with behind the scenes work (grades, paperwork, etc.)” One teacher chose “I’m not interested in any technology trainings.” One teacher, 8%, chose other and wrote in “If I had some technology.”



Question 17 asked teachers how they learn technology best. Teachers were asked to check all that apply. Nine teachers, 69%, say when visually shown. Four teachers, 31%, say when it is a 1:1 lesson with several review sessions. Three teachers, 23%, say when given a step-by-step handout. Four teaches, 31%, say when just play around with it until I figure it out, I don't have to have someone show me. Nine teachers, 69%, say when hands-on learning takes place. Zero percent chose other.



Question 18 asked teachers if there were more training like they chose in question 17 what would they do, honestly. Eight teachers, 62%, said they would definitely use more technology in their classroom. Three teachers, 23%, said they would make more of an effort to use technology in their classroom. Three teachers, 23%, said they might use a little more technology. Zero percent said they probably wouldn't use technology in their classroom any more than currently.

Question 19: Comments: strengths and weaknesses of current technology trainings. Discuss topics, format, amount, etc.
• "I need a detailed step-by-step handout. Then the opportunity to try it out and ask questions." • "I did not know we had any training?"

- "What I know about technology is from learning it on my own."
- "I would love learning about technology but can't always try it right away then I forget how."
- "I would like to see more follow up trainings and hands-on training. Strengths, there is a variety of technology used."
- "I feel that there isn't a lot offered and they expect us to just figure it out on our own. I would love more training because I love technology."

Question 19 asked teachers to comment on strengths and weaknesses of current technology trainings. Five of the six comments, 83%, mentioned needing more trainings or specific type of trainings. Two comments, 33%, commented on the type of training wanted. One said follow up and hands-on training. The other said needed a step-by-step handout then opportunity to try it out and ask questions.

Question 20:

Comments: any additional comments on technology (thoughts, feedback, requests, etc.)

- "When I have technology, I will definitely use it."
- "I appreciate the great resources available to us."
- "I would like to use more technology in my classroom but can't use something that I don't have."

Question 20 asked for any additional comments on technology including thoughts, feedback, and requests.

Research question 1: What is the overall opinion of required technology training for teachers?

```
 FREQUENCY PLOT
 VARIABLE:  Status
      FRQ. CUM.   %    CUM.      FREQUENCY PLOT
      ---- ---- ----- ----- -------------------------
  x < 1    0    0   0     0  ¦
  x = 1    3    3  23.1  23.1 ¦*******
  x = 2   10   13  76.9 100   ¦************************
  x > 2    0   13   0   100   ¦
 TOTAL    13      100
```

This frequency plot shows the status of those who took the survey. The total number surveyed about the quality of school lunches was 13 teachers. The 1 represents teachers who have taught 0-3 years and 2 represents teachers who have taught more than 5 years. The chart above shows that the more teachers who have taught more than 5 years took the survey than teachers who have taught less than 5 years or less. Teachers who have taught 5 years of less representing 23.1% of the total survived and teachers who have taught more than 5 years representing 76.9%. The difference is big with the over 5 year teachers outnumber the 5 and less teachers by 7.

```
VARIABLE:  personal thoughts
      FRQ. CUM. %   CUM.      FREQUENCY PLOT
      ---- ---- --- ---- -------------------------
  x < 2    0    0   0    0 ¦
  x = 2   13   13 100  100 ¦************************
  x > 2    0   13   0  100 ¦
         TOTAL    13      100
```

This frequency plot shows if the survived find technology used in education as a vital learning tool. The 1 represents not a vital tool and 2 represents technology is a vital learning tool. Of the 13 survived, 100% polled that the technology is a vital learning

tool. There is a big difference between the number of teachers who said that technology is a vital tool to those who said it is not.

FREQUENCY PLOT
VARIABLE: amount of technology used in classroom

	FRQ.	CUM.	%	CUM.	FREQUENCY PLOT
x < 1	0	0	0	0	¦
x = 1	4	4	30.8	30.8	¦**********
x = 2	9	13	69.2	100	¦**********
x > 2	0	13	0	100	¦
TOTAL		13		100	

This frequency plot shows if the survived find current technology trainings have increased the amount of technology used in classroom. The 1 represents no increase in technology used and 2 represents an increase in the amount of technology used due to technology trainings. Of the 13 survived, 30.8% polled that the technology trainings have not increased technology used in classroom. Three of the four that make up the 30.8% said they have not attended a professional development that involved technology. Of the 13 survived, 69.2% polled that the technology trainings have increased technology used in the classroom. The difference is big with the teachers who said yes outnumber those who said no by 5.

Research Question 2: Is there a difference between the desired amount of technology trainings and the years a teacher has taught?

VARIABLE: Amount

	FRQ.	CUM.	%	CUM.	FREQUENCY PLOT
x < 1	0	0	0	0	¦
x = 1	1	1	7.7	7.7	¦**
x = 2	12	13	92.3	100	¦**********
x > 2	0	13	0	100	¦

TOTAL 13 100

This frequency plot shows if the survived teachers on if there is enough technology trainings. The 1 represents currently enough training and 2 represents not enough trainings. Of the 13 survived, 7.7% polled that there is currently enough technology trainings and 92.3% polled that there is currently not enough technology trainings. The difference is big with the teachers who said there is not enough training outnumber those who said there is by 12.

t-Test Analysis Results for importance of technology
Question: Is there a difference in years of teaching experience and thoughts on technology as a vital learning tool?

Source	Mean	Mean D	t-test	df	p-value
5 years or less (n=3)	100				
More than 5 years (n=10)	100	0	1	11	0.339

Note: Significant when p<=0.25

Thirteen elementary teachers were surveyed on their thoughts on educational technology. The teacher's years of teaching was asked to produce two groups: teachers that have taught 5 years or less and those who have taught more than 5 years. Three teachers were in their first year-5th year of teaching and 10 teachers have been teaching over 5 years. The mean of both the newer and more veteran teachers was 100. 100 meaning each teacher say technology is a vital learning tool in the classroom. The Mean D, or difference between the two groups, was 0. The t-test result was 1 and the df was 113. The null hypothesis states there is not a significant difference between the desired amount of technology trainings and the years a teacher has taught. Since the p-value was 0.339, and the Alpha number was set at 0.25, the null hypothesis must

be not rejected. Therefore, there is not a significant difference in feelings on technology in education based on years of teaching.

t-Test Analysis Results for importance of technology

Question: Is there a difference between the years of teaching experience and the desired amount of technology training?

Source	Mean	Mean D	t-test	df	p-value
5 years or less (n=3)	100				
More than 5 years (n=10)	90	10	0.5	11	0.606

Note: Significant when p<=0.25

Thirteen elementary teachers were surveyed on their thoughts on the current amount of professional development focusing on technology training. The teacher's years of teaching was asked to produce two groups: teachers that have taught 5 years or less and those who have taught more than 5 years. Three teachers were in their first year-5th year of teaching and 10 teachers have been teaching over 5 years. The mean of teachers who have taught 5 years or less was 100. The mean of the teachers who have taught for more than 5 years was 90. 100 meaning each teacher say there is a lack of technology trainings for teachers. The Mean D, or difference between the two groups, was 10. The t-test result was 0.5 and the df was 11. The null hypothesis states there is not a significant difference between the desired amount of technology trainings and the years a teacher has taught. Since the p-value was 0.606, and the Alpha number was set at 0.25, the null hypothesis must be not rejected. Therefore, there is not a significant difference in teacher experience and feelings on technology importance.

Conclusions and Recommendations

There is no significant difference between the desired amount of technology trainings for teachers who have been teaching 0-5 years and teachers who have been teaching over 5 years. The results of this study indicate that there are no areas of significant difference of opinion between teachers who have taught less than 5 years and teachers who have taught more than 5 years. There is no difference between the two groups in feelings of importance of technology in the classroom. Both groups agree that technology is a vital learning tool in the classroom. There is no significant difference between the two groups in opinion on current amount of teacher technology training. Both groups agree that more technology trainings would be adequate.

If there's one thing that districts have learned during this information age it's this: Without adequate support and motivation educators will retreat to their old ways of teaching (McCrea 2012). Literally millions of dollars are being spent this year on providing computers to schools in developing countries, much of which will be wasted because teachers are not trained to use technology effectively (Carlson 2002). Approximately one third of teachers have received little or no training with integrating computers into lessons or training on instructional software (Zhoa 2006).

The school district may want to consider adding more technology trainings to the current professional development offered. These teachers would use more effective technology in education if the training was available. Offering technology trainings in the formats requested in the survey (hands-on, step-by-step, etc.) would increase use in the classroom. Here are five strategies that schools and districts can use to ramp up their own smart classroom professional development programs: develop a multifaceted

training model for teachers, make the technology the incentive, take teachers out of their comfort zones, don't try to force it and let teachers decide if they want the technology or not (McCrea 2012). Research shows that while trained teachers did demonstrate positive attitudes toward using technology and used more technology than teachers who had no such training (Zhoa 2006). It is argued that follow-up programs or mentoring systems are necessary after the initial technology integration training to foster collaboration and support, to address daily challenges, and ultimately to have more frequent and effective use of technology in the classroom (Zhoa 2006). By teaching teachers, students would benefit from the technology in the classroom.

There are several areas warranting further study. A similar study with a bigger sample size would show if these feelings are shared by all in the district. Giving the survey to all elementary schools in the district would widen the sample size. A study would also be conveyed and compared between regular education teachers and special education teachers. This would show if there is a difference in amount of trainings wanted by each group.

Finally, an additional study could be done with results of technology trainings and their effects. Once technology trainings have taken place, a survey can be given to see how effective it was. The survey could ask teachers how the training has affected their classroom. Questions asking how many times they have used what they learned in their classroom. Then the teacher’s feelings about how it went. A study in this area may prove worthwhile to see if the trainings are effective.

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Appendix A

Professional Development: technology training

This survey is to get your opinion on technology in education. As well as feedback on current professional development technology trainings. Please take a few minutes to complete this survey! Thank you for your time!

---

* Required

What do you currently teach?*

- ☐ Kindergarten
- ☐ 1st grade
- ☐ 2nd grade
- ☐ 3rd grade
- ☐ 4th grade
- ☐ 5th grade
- ☐ special education/speech/etc
- ☐ Special class (art, music, PE, library, etc.)
- ☐ Not a teacher (principal, secretary, classified job, etc.)

How many years have you been in education?*

- ☐ this is my first year
- ☐ 1-2 years
- ☐ 3-5 years
- ☐ 6-8 years
- ☐ 9-10 years
- ☐ 10+ years

How many years have you worked with the Blue Springs District?*

- ☐ this is my first year

- 1-2 years
- 3-5 years
- 6-8 years
- 9-10 years
- 10+ years

What are your personal thoughts on technology used in instruction?*

- I think technology in the classroom is a vital learning tool
- I think technology in good to get and keep students attention but not much educational value
- I think technology is good but takes too much time and often doesn't work as planned
- I think technology should stay out of the classroom

In my classroom, technology is used...*

- Several times a day
- At least once a day
- A few times a week
- At least once a week
- Only when in the computer lab
- Technology in the classroom?

Have professional development technology trainings increased the amount of technology you use in your classroom?*

- Yes
- No
- Never attended a professional development that involved technology

I use*check all that apply

- the technology in my classroom
- the technology I can use in my building
- the classroom webpage on the district website
- Study Island
- Other:

Technology I use in my classroom?*Check all that apply

- TeamBoard
- Projector
- Computer: internet resources
- Computer: document resources
- Digital technology: cameras, video cameras, etc.
- Clickers
- Student laptops
- IPads/tablets
- I don't use technology in the classroom
- Other:

What kind of techie are you?*

- Just the basics...why mess with the original
- Average...have a smartphone, can text, and use Facebook
- Techie nerd...love the new gadgets
- Other:

I am the one who...*click all that apply

- often shows others how to use technology in my classroom
- loves to learn about new technologies in the classroom
- just needs someone to show me how and I'll use any technology you give me
- will try out new technology but for the most part, sticks with what I know
- Is hiding from technology...my VCR and overhead projector are just great!
- Other:

How do you feel about the technology training offered in your district?*

- Our district is always providing training on the latest education technology
- Our district provides some great trainings but I could always use more
- Our district provides technology training but not the type of training I need

- Our district provides good trainings but not much time spent on technology trainings
- Our district provides some good trainings but several are a waste of time
- Our district has great technology but we are expected to teach ourselves how to use it
- Technology trainings?
- Other:

Technology trainings have helped me...*check all that apply

- add more and new technology into my classroom
- add new software into my classroom
- increased the technology used in my classroom by 100%
- increased the technology used in my classroom by 75%
- increased the technology used in my classroom by 50%
- increased the technology used in my classroom by 25%
- increased the technology used in my classroom by 10%
- add technology effectively into my lessons
- use technology for behind the scenes work (grades, home communication, paperwork, etc.)
- save time
- relate to my student
- not to fear technology
- Other:

Most of the technology tips and advice I get are from..*check all that apply

- district trainings
- building trainings
- other teachers in my building
- Pinterest
- online searching
- word of mouth
- Other:

I use more technology in my classroom because of the technology trainings provided*

- Strongly agree, I use more technology because of what I have been taught
- agree, I use more technology in my classroom
- disagree, I use the same amount of technology that I did before trainings
- strongly disagree, I use less technology than I did before trainings
- I use more technology now but not because of trainings
- Other:

I would use more technology in my classroom if...*

- someone taught me how
- I had more time to play with technology
- I wasn't so scared of messing something up
- I don't care to use more technology
- I think I use the right amount of technology in my classroom
- Other:

I would be interested in technology trainings *check all that apply

- that showed me all that my team board can do
- that showed me all the online resources out there
- that showed me how to make more powerful lessons using technology
- that showed me how to use technology available in my building
- that shows me ways to use technology to help with behind the scenes work (grades, paperwork, etc)
- I'm not interested in any technology trainings
- Other:

How do I learn technology best?*check all that apply

- when visually shown
- a 1:1 lesson...with several review sessions
- with step-by-step handout
- I just play around with it till I figure it out, don't have to someone show me
- hands-on learning
- Other:

Honestly, if we had more training like the boxes I checked above....*

- I would definitely use more technology in my classroom
- I would make more of an effort to use technology in my classroom
- I might use technology a little more
- I probably wouldn't use technology in my classroom any more than I have to
- Other:

Strengths and weaknesses of our technology trainings*Discuss topics, format, amount, etc.

Any additional comments on technology*thoughts, feedback, requests, etc.

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