

# IMPACT OF TECHNOLOGY (POWERPOINT) ON STUDENTS' LEARNING

**Abdullah K Alodail\***

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**Abstract** *This study aimed to achieve three objectives. One is to determine the impact of PowerPoint on students' learning. Another objective is to examine the relationship between technology and students' learning. The other is to assess students' reactions to teachers using technology in the class and how students respond to the technology. Qualitative method was employed using observation. The sample of the study consisted of 20 students. Results showed that the impact of PowerPoint was very good for students' learning because PowerPoint provides a unique way to make learning easier and more exciting. A strong relationship between students' learning and technology was found because it makes them more motivated and willing to learn. Use of technology will grab their attention and make them more attentive. Also results showed that students were eager to learn when the teacher used technology in the classroom. Students' reaction was strong and positive towards technology. They liked and preferred not to go without technology, so if they could not use the technology.*

**Keywords:** *Technology, PowerPoint, Learning.*

## I. INTRODUCTION

The purpose of this study is to explore the possibility of using presentation software to improve students' learning. The key issue that I address here is whether or not technology, particularly PowerPoint, impacts on students' learning. The objectives of this study are to determine the impact of technology on students' learning, to examine the relationship between technology and students' learning, to assess students' reactions to teachers using technology in the class, and to understand how students respond to the technology. In order to achieve these objectives, I will address the following research questions: How does the use of presentation software impact on my target students? What is the relationship between students and technology? How did the students' react to the use of the technology? I am interested in these questions and how the technology helps students to understand the lesson as well as benefits other aspects of students' life.

### A. Significance of the Study

It is important to know how technology impacts students' learning, particularly when using PowerPoint. It can help show positive reactions from students who have a positive experience in using the technology. It can help educators to be more aware of using technology in schools and provide more funding. It can also help bring more of a positive atmosphere to the overall situation of each student and to those who read this research. This project can help both teachers and students to relate more with technology. Another way it could help to impact on students' learning is by focusing on the positive, instead of the negative approaches. It could help future teachers to take advantage of using the technology in the classroom. Also it is a neglected area where only little research is available. Also

it is important because there is a lack of knowledge in using technology from this area which causes a lot of students' learning problems. Lastly, this project would make a suitable recommendation that may be useful for teachers and students.

## II. REVIEW OF LITERATURE

According to McDonald [1] in his article "Points of View: PowerPoint in the Classroom," PowerPoint is often misused because it focuses on reading line by line, which will hinder students' mental processes. McDonald [1] states that, a "good" PowerPoint will have few words and many pictures, which will encourage students to think critically and creatively. McDonald concludes that PowerPoint can be a positive teaching tool only if used as a "presentation enhancement, not a replacement for effective communication" (3).

According to Lei and Zhao [2], the article "Technology uses and students achievement: A longitudinal study" discussed the meaning of technology, how students used it, the amount of hours students spent on technology as a piece, a product, and a tool. The authors showed that technology has the ability to solve certain troubles if technology is used in a way that targets specific students' learning problems. For example, the Microsoft Word program has the capacity for literary composition, but only when it is used in writing a paper to solve learning problems. In their study, students spent between 3-4 hours on computer. Most students used computers to do homework (81.4%), which is a mixture of four kinds of learning with technology, followed by searching information for school work (71.4%), emailing (65.8%) surfing online for entertainment (58%), chatting online (51.1%) and working with specific software (50.2%). About half of the students used computers to play games (41.1%), and only 11.3% of the students created websites. In general, technology is massively used for inquiry and communication rather than for expression and construction.

The article "the impact of education technology on student achievement," by Schacter, discussed that use of technology increases teachers and students' achievement. He targeted at the fourth graders and found that they misused the technology because they focused on learning games. In both fourth and eighth-grade students who practiced how to perform technologies performed poorly on NAEP (National Assessment of Educational progress) than students who did not practice technology. Also, working on a computer became a social collaboration enterprise between students and teachers. This study showed over 700 empirical research studies in West

Virginia, fourth and eighth graders could access computer assisted instruction, incorporated learning system technology, simulations and software that taught higher-order thinking, collaborative network technologies and design and programming technologies.

According to Kimble [3], in her article "the impact of technology on learning," technology is used everywhere in the world in gathering information, keeping records, creating proposals, constructing knowledge and so on.

Kimble cited Becker's idea that educators must stay away from teaching isolated technology skills and focus on constructive learning so that educators can take full benefits of technology. Also, educators should use technology to achieve goals of schools. When teachers use technology in the classroom, this will help to determine what part technology would play in meeting the goals.

Therefore, teachers will be able to choose what kind of technology to use and how to use.

According to Reiser [4], the definition of instructional technology has been viewed differently over time – when it started to be viewed as media in the 1920s through the 1940s, and later in the 1960s through the 1970s as a process of solving instructional problems. In 1963 instructional technology is defined as the design and use of messages which control the learning process. However, the definition evolved in 1970, when it was defined as a systematic way of designing, carrying out and evaluating the whole process of learning and teaching related with specific objectives.

In 1977 the definition of Instructional Technology became a complex, integrated process involving people, procedures, ideas, devices, and organizations for analyzing problems and devising, implementing, evaluating, and managing solutions to problems in human learning. In 1994 instructional technology is defined as theories and practices as following specific learning or teaching theories like behaviorism and constructivism, so students learn in groups design software that followed constructivism theory.

The recent definition of Instructional Technology is the analysis of students' problems, then design, development, implementation, evaluation and management of Instructional Technology. Instructional design Models are illustrated as theory and process of analysis, design, development, implementation, and evaluation of instructional technology. The characteristics of instructional design are learner-centered, goal-oriented, outcome-based, empirical-based, collaborative, and meaningful in performance.

### III. METHODOLOGY

Qualitative methodology was chosen to access the impact of using technology in a typical classroom environment. Qualitative methodology specifically analyzes events and people without the use of numerical data [5]. In order to address this concern, one teacher and

his students in one middle grade school in Trimble Middle School were identified as subjects for this project. This study used a qualitative method of interviewing and observation in the classroom. Students that were observed and interviewed in the simile and metaphor lesson with and without teaching were the same. I chose this school because it is close to my house, and easy to reach by car.

#### A. Sample size

Since I had decided to use qualitative methodology, I needed a sample that was not too large as it would have been in a quantitative methodology. Patton [6] asserts that, "qualitative methods typically produce a wealth of detailed data about a much smaller number of people and cases. Qualitative inquiry focuses in depth on relatively small samples ...selected purposefully" (p. 227). My choice of sample (participants) was purposefully selected because of the proximity of the school(Trimble Middle School, Athens) and also the issues to be researched, prevail in that particular school. The class in this school had a fairly manageable class for a qualitative study, about 15-20 students,

#### B. Sample Unit

Ten female and ten male students were in eighth grade and the ages between 12-14. All of them were White students at the Trimble middle school. All of them are from Mr. Goody and were selected by him for the project. The class period observed was an English class about simile and metaphor.

#### C. Research and Assessment Location

Trimble Middle School serves 5th through 8th Grade Students from the City of Glouster Which is Part of Athens County. This School is Eligible for Participation in State & Federal Title I Programs. Some Or All Students From this School Participate in Free Or Reduced Lunch Programs.

#### D. Research Instrument

The researcher used a notebook and pen, interviewing and observing methods to conduct the study in the classroom.

#### E. Data collection

The researcher collected the data by observing the students who were sitting in the classroom while the teacher used PowerPoint in the lesson, and by interviewing them before and after the class.

#### F. Data analysis

The observer and interviewer tallied the responses of the students concerning their views toward the use of PowerPoint.

#### G. Limitation of Study

The scope of the study is limited because it intends or aims to collect data from Athens, Ohio only. This has limited the generalization of the findings of this study. Sample size is another factor because the sample size is not large enough to generalize the whole population. Also, the nature of the study may inevitably produce subjective conclusions.

#### IV. FINDINGS

During my observation of the technology classroom, I noticed that the children looked at the PowerPoint on the board with motivation. The PowerPoint started with classical music that attracted students' attention to the lesson. Students paid attention to the teacher and the lesson, engaged or participated with teachers, and asked questions. Also, students showed positive body language related to using PowerPoint in the lesson by smiling, having eye-contact focused on the presentation, sitting quietly, moving closer to the presentation screen, and acting happy. The State of Ohio requires that students must have PowerPoint use skills. Using technology (PowerPoint) in the classroom impacted on students' learning and career positively because it relates to future job skills. Students will be able to get a job in the future, and I hold the belief that technology plays a positive role in the classroom for students to learn and understand.

I also observed a classroom that does not have any kind of technology. The teacher used paper, pencils, and a book, but the scope of access to information was very limited. The teacher had no access to the use of any technology, so his approach resulted in a biased experience for the students as well. The students were struggling, being destructive, and not paying attention. Also, there were a lot of behavioral problems from the students that caused the teacher to go around the class to get students' attention and ask them to be quiet. Some of the students demonstrated a short attention span; they got off-task, pushed and hit other students, acted disrespectful and disruptive, and showed aggressive behaviors. Therefore, the teacher had to be more authoritative in his approach.

I interviewed the students in the English class about their experience with the lesson on simile and metaphor both with and without technology. When the teacher did not use any kind of technology the majority of the students said, that the class had so much irrelevant information that they were confused. However, when using technology, students found it easier to understand and learn the information they needed. Other students said that the class without PowerPoint was a lot harder; instead of the teacher talking, they preferred having technology to speed up the process of learning. Students said that they sought technology use in teaching, because it helped them know how to use PowerPoint, Word, and Google Earth in their own projects. They also stated that technology allowed them to get answers faster by looking them up on Google. Without technology it is difficult for students to understand the lesson and the teacher to grab students' attention, and the lesson took more time to explain. One of students said that "he would fail the class without technology since it is a lot harder to learn; but with technology, he will learn better visually. Although he has problems with spelling, technology (e.g. computer) would help him to correct his spelling mistakes". In the part where I interviewed students

who used PowerPoint, the elements of easy access to the lesson understanding have been improved.

In this inquiry, I was trying to determine if technology tools have replaced pen and paper or support them.

"Would you rather write your personal narrative using pen and paper or doing PowerPoint? And Why?"

Students reported that use of a computer during classroom lecture was helpful. After classroom lectures, students were able to demonstrate their understanding of PowerPoint by downloading pictures and backgrounds to their PowerPoint presentations. In comparison to using a pen and paper, a different student said that a using computer helped him to write faster, complete project quicker, and fix errors before adding them to PowerPoint. Some students said that a using of PowerPoint is better because it allows them to demonstrate content knowledge in the PowerPoint presentation. They can illustrate more ideas on the computer in a faster and easier way.

In this inquiry, I was trying to find out if the technology tools have played a good role in grammatical and spelling mistakes for students.

"If you have grammatical or spelling mistakes, how do you correct that?"

Students said that they prefer using an electronic dictionary and Microsoft word to correct their grammatical and spelling mistakes. Students said that using a computer is easier than an electronic dictionary. Student said that "a computer is easier to use than other technology tools because it has spelling checks". Other students prefer using computer and electronic dictionary. Students said that they prefer using spell check, electronic dictionary because it is right at their finger tips.

In this question, I am trying to know how PowerPoint helps learners with their learning.

"Does the PowerPoint help you with your learning?"

Students said it helped to share their information with classmates, they understood well the lessons taught, and they also acquired the skills to use power point. Using power point also assisted them to do a better presentation to their colleagues in their class. Power point facilitates presentation; it allows the presenter to stay focused and methodical, well organized pieces of information on the slides. One can reduce a lot of information into a few sentences which may embody a lot of information. Some students enjoyed the PowerPoint presentation because they found it more interesting and attractive than traditional teaching methods through chalkboard. One student in particular said that "the animation and sound effects were fun, and the bright colors were cool." She also added that PowerPoint was "way better than that old chalkboard."

I interviewed students by asking them several questions: what is your view of technology? Students gave different responses, some said computers are generally helpful sources of information; the internet is a huge resource where virtually all kinds of information could be

retrieved. Every subject can be accessed and that makes it a very good resource. In this question, I am trying to find out what students' view of technology. The internet is like a huge encyclopedia of information in some ways it's even better. The volume of information you'll find on the internet is huge. For every topic that one may think of, there is some available material written by someone. The internet offers many different perspectives on a single topic.

What is technology?

Students answered that technology is process of making life easier with newer products such as electronics, the use of energy like electricity, computers, cell phones, and any kind of device that makes the life much easier than before.

When you say your teacher is using technology in the classroom what do you mean? The answers were when teachers use electronic equipment's like the projector,

computers, and smart board and other accessories to facilitate classroom teaching and learning. Without technology, classroom teaching and learning could be one sided with the teacher most often doing the talking. Technology allows more class participation. One student said that" he was motivated to use these technology tools in many creative ways outside of the classroom".

Also, I interviewed the instructor and I asked him what technology is, his response was, "Technology is a vehicle to instruct students to learn, which makes their lives easier. Technology is an invention that advances what we can do, such as computer, network, cell phones, and wireless network." The teacher is using some electronic devices to enhance students' learning such as TV, Data show, smart board, and computers. According to the teacher ( Goody), " technology helps to instruct the students learn more and more efficiently".

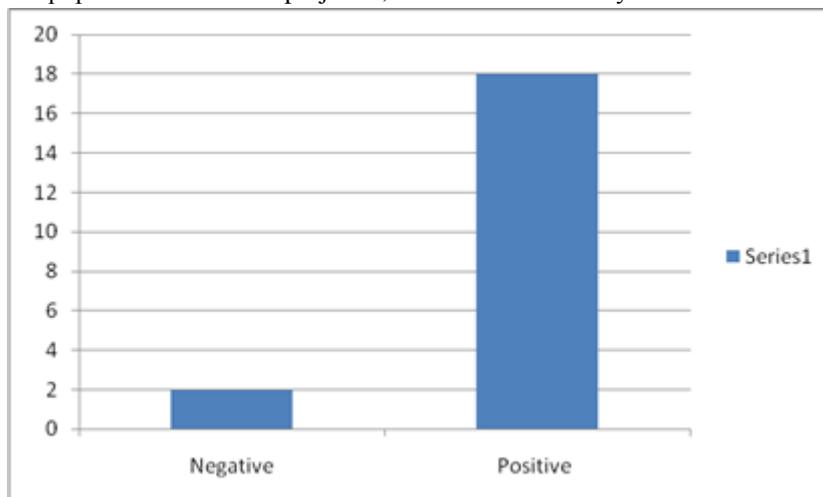


Figure 1

**Students' Preferences of Using PowerPoint in Lessons**

Figure 1 displays the number of students who preferred using the PowerPoint in the teachers' lesson and the

number of students who could understand the lesson without using technology.

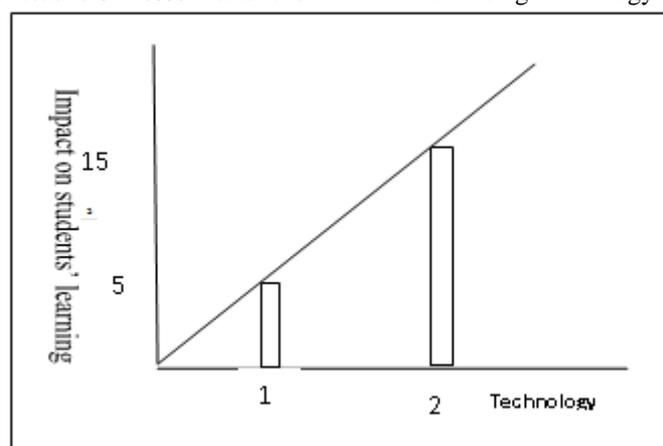
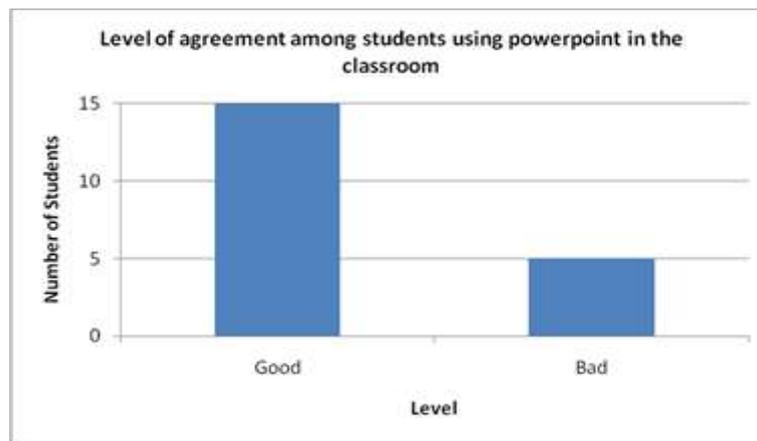


Figure 2

**the impact of technology on students' learning**

Figure (2) shows that five negative responses and 15 positives responses which revealed a positive relationship between PowerPoint in the classroom and students'

learning. 15 of students agreed of using technology in the classroom, but 5 of them do not.



**Figure 3**

**Level of agreement among students using PowerPoint in the classroom**

Figure 3 displays the number of students who preferred using the PowerPoint in the teachers' lesson to help them understanding better. The other students who could understand the lesson without using technology.

**What Can Be Learned From This Study**

I learned that my respondents are very knowledgeable students who seek to further and use their knowledge to invest it in the education of others and the people in their lives. Interview is easier, and is a much more productive use of time. If a new topic related to the objective comes up, then you can pursue that topic. I think that using the standardized open-ended interview and integrating aspects from the interview guide worked best for me in this particular interview and with these students because both or all of us needed to keep in mind our schedules. Also, I attended to give a better interview when I have my questions set up before the interview. Also, I believe that I am acquiring the basic skills of using the interview method as a research tool. I learned that by using this method it allowed the participants to expand their responses.

I learned from doing the interview is the way to interact among people in a relatively consistent manner, and it gave me new insight into another person's perspective. The interview helped me to understand the intricacies of an individual's perceptions and experiences, and the language of people. This also helped improve my manner of taking good notes and paying close attention to the interviewee when he/she speaks. This will help me to interview multiple people and ask them the same question; reinforcing the concept that interviewing reveals what observation cannot. One could be closer to people and at the same time learn more about them, by enhancing my ability to carefully listen to people in a particular way. I could not change the data, but I represented it as it was given. Another advantage is to practice writing descriptively, taking notes carefully, interviewing, analyzing the strengths and weakness of information I acquired while interviewing. The standardized open-ended interview method helped me to gain information that I could not learn through observation, such as understanding other people's thoughts, emotions, and perceptions.

Although, I interviewed students who are not from my culture, if this had been students from my culture the situation may have presented easier in terms of language, culture, gender interaction, or various other problems. In my circumstance, I knew the interviewees through their teachers and therefore knew what I could say, and how to say it without offending them. Therefore, the questions I prepared would need to reflect this. Also, I learned what my strengths and weaknesses are in terms of interviewing. I learned with open-ended question I was able to improvise and create additional questions based on previous ones. I was able to formulate a clearer understanding of what my paper focus would be. This strengthens my research topic and question. I was patient with my interviewees being careful not to interrupt them while they were answering the questions. The interview gave a deep understanding of the students who I came comes to their sites. I could probe their attitudes, beliefs, desires, and experiences. I learned the way to get permission to tape the session and had taken good notes. After the Interview I reviewed my own performance, what went well, what went badly, and what I should prepare for the next interview. I should prepare for my job interview that could very well be one of the most important moments of my career. Just a little preparation and thought ahead of time can have amazing things on my interviewing skills. I did not conduct my interview for purpose study only, but also it is for my life experiences. Interview helped me to reduce my period of time and the requirement for interviewer opinion during interview. The weakness of this interview is that it required a greater amount of time and data, and could be difficult to pull together and analyze. Another weakness was that the same questions need to be asked in the same way each time to different students. It was difficult to ensure consistently across interviewers. Also, it was not easy to reduce time and the need for interviewer judgment during the interview. It was difficult to find a quiet location that was comfortable for both interviewer and interviewee. Lastly, the interview method that I used will help me not only to be more prepared, but also to have an advantage over others in searching for future employment. This

interviewing project helped me as an instructional designer to interview people who study instructional design. Hopefully, one day I will be able to teach these interview skills to others.

I learned several good things during my observation, which were that through my participant observations, for the first time, I saw things from a different perspective. I have also realized that one can learn much about students, teachers, classrooms, and occurrences just by observing them as they happen. In addition, I realized that by watching things closely like I did, I would be able to describe them much better, and pay more attention to detail than I ever thought possible. It is as if this exercise has opened my eyes to be able to see differently and this will be a useful method to me as a potential researcher one day.

The most important thing that I learned from this project was the importance of having technology in the classroom for those students who have a problem to understand the lesson without technology. Some teachers make me think because some students don't learn things very well without using technology. I just think that people need to become more aware of the types of technologies out there and know how to use them to help students to learn better that way they will feel more accepted in the classroom. So overall, I am really glad that I got to do this project because for the first time it really opened my eyes to a whole new world that I thought I knew but I really had no idea. This experience has thought me that as a future of technology, I need to know as much about technology tools as I can and know what are the best accommodations out there for students so that way I will be prepared to help assist my students with their learning when I become there teacher. I believe that I am acquiring the basic skills of using the observation method as a research tool. Observation allows for a certain type of insight that an interview cannot match. One could be close to people, and at the same time learn from them. This gave me a chance to deeply examine students in a particular way and begin to acquire the tools to look at things more carefully. Lastly, I could not change the data, but I represented it as I saw it. Another advantage is to practice writing descriptively, taking notes carefully, and observing strengths and weaknesses of things that I observed. Observation methods helped me to learn things that I could not learn by interviewing.

## V. CONCLUSION

This study aims to achieve three objectives. One is to determine the impact of PowerPoint on students' learning.

I found the impact of PowerPoint is very good for students' learning because PowerPoint provides a unique way to make learning easier and more exciting. Also, it provides a graphic or visual mode of learning rather than the standard pen and paper. In short, PowerPoint takes care

of the visual component of learning. Another objective is to examine the relationship between technology and students' learning. I found there is a strong relationship between students' learning and technology because it makes them more motivated and willing to learn. Use of technology will grab their attention and make them more attentive. The other is to assess students' reactions to teachers using technology in the class and how students respond to the technology. I found students were eager to learn when the teacher used technology in the classroom. Students' reaction was strong and positive towards technology. They liked and preferred not to go without technology, so if they could not use the technology, they would get upset. Based on my research, I found there is an impact on students' learning; so school district should provide more funding for technology to enhance students' learning. I found PowerPoint software to be very useful with the students, but PowerPoint is not the only useful presentational software that can be used in the classroom. Some other types of presentational software that are useful are overhead projectors for displaying data or pictures and some other computer programs that are designed to assist students in their learning. There are some limitations in this study. The scope of the study is going to be limited because it intends or aims to collect data from Athens, Ohio only. This has limited the generalization of the findings of this study. Sample size is going to be another factor, which means sample size is not large enough. Another limit is that the subject of study is quite subjective and hard to measure.

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