**BUSINESS STUDENTS’ PERCEPTION ON**

**THE USE OF POWERPOINT®**

**Samuel Leon Rohr**

**St. Mary’s College
Notre Dame, IN**

**ABSTRACT**Microsoft PowerPoint® is used extensively by college and university professors in instruction. Textbook publishers routinely provide instructors with prepackaged PowerPoint® to use with their textbooks. To date, very few studies have been conducted concerning its effectiveness as an instructional tool. Even less research has been done on students’ perception on the use of PowerPoint® as an instructional tool. This study provides insight to the advantages and disadvantages of using PowerPoint® in the classroom from a student’s perspective.

**INTRODUCTION**

 College and University faculty are continually adapting to new technologies that help increase his or her effectiveness in the classroom. Over the years, instructors have utilized classroom technology including chalk boards, video, overhead projectors, and multimedia technology. For the past few decades, the use of multimedia technology is increasingly being used as a means of instruction in colleges and universities. More specifically, Microsoft PowerPoint has emerged as a dominant multimedia presentation tool for college and university faculty.

 The use of PowerPoint® in instruction provides three distinct advantages in a collegiate classroom. First, when used appropriately, PowerPoint® can enhance learning in the classroom (Jones, 2003). Mixing various media through PowerPoint® can make a presentation more stimulating while appealing to many learning styles. Additionally, PowerPoint® presentations appear more professional than traditional hand-outs, overhead projection transparencies, and chalk-and-talk lectures. Thirdly, PowerPoint® allows faculty to repeat lectures with great accuracy (Jones, 2003). The instructor is able to replicate a lecture from classroom section to section. The repetition of class material and consistency of instruction helps ensure that program and class learning outcomes are met.

The purpose of this research is to examine students’ perception of the effectiveness of PowerPoint® in a business classroom. Many studies have examined students’ performance after the students attended lectures that included PowerPoint® in instruction. However, many factors impact student performance beyond the teaching techniques utilized.

**LITERATURE REVIEW**

 Many studies have examined the effectiveness of PowerPoint®. For example, Bartsch and Cobern (2003) investigated whether students ‘liked’ and learned more from PowerPoint® than from overhead transparencies. The students attended to lectures that utilized transparencies and two types of PowerPoint® presentations. One type of PowerPoint® included text with pictures/graphics that related directly to subject matter being discussed. One PowerPoint® presentation included text with pictures/graphics/sounds that did not relate to the subject area being discussed. The researchers found that students performed worse on quizzes in which the pictures/graphics/sounds did not match the subject matter being discussed. Ultimately, the researchers found that PowerPoint® can be beneficial, but materials not relevant to the presentation can harm student learning.

Jones (2003) examined the advantages and disadvantages of using PowerPoint® in teaching and learning. He made suggestions regarding approaches that should be utilized in Life Science teaching and learning. Ultimately, Jones concluded that PowerPoint® was being underutilized. Most PowerPoint® presentations are merely for information transmittance rather than a powerful, flexible learning tool.

Utilizing students in an Accounting course, Nouri and Shahid (2005) investigated the use of PowerPoint® and its impact on a student’s short–term memory, long-term memory, attitude toward class participation, and attitude towards the instructor. The researchers tested the effectiveness of PowerPoint® by utilizing a treatment group and a control group. In one section of Managerial Accounting, the professor utilized a traditional delivery system (lecture). In the second section, the professor utilized PowerPoint®. The study found that PowerPoint® improved the students’ attitudes toward the instructor and class presentation. However, the results were ultimately inconclusive regarding improvements in short-term and long term memory.

Shallcrossand Harrison (2007) compared traditional chalk-and-talk lectures and electronic presentations in undergraduate chemistry classes. The data was collected over a period of a year (2004-2005). Three categories were developed: Category 1 was electronic media only, Category 2 was combination of a mixture of electronic and non-electronic, and Category 3 was exclusively non-electronic media. After analyzing questionnaires, interviews with students and lecturers from each category, the researcher concluded that the impact of the type of lecture method was very slight. Non-electronic teaching means (chalk-and-talk) methods were preferred, but only slightly. The main problems that were identified included too much material being covered, not providing hard copies of notes, complicated diagrams with graphics that did not relate to the subject matter, lectures that were presented too quickly, and fewer breaks for students.

Sidman and Jones (2007) examined the impact of PowerPoint® slides and course management systems on student learning style, exam scores and perceived value of interaction utilizing a case study approach. The research found that skeletal slides, slides that contained an outline instead of detailed information, did not help students increase scores on examinations. When the courses were separated, higher exam scores were found when students elected to use PowerPoint® slides in higher level “coaching” courses.

Selimoglu and Arsoy (2009) researched the effect of the preferences of students concerning PowerPoint® presentations in Financial Accounting in relation to their final scores in the course. The researchers found that the preference of students about PowerPoint® presentations had no significant effect on their final scores in the course. However, when PowerPoint® presentations were combined with an appropriate study environment, the effect on the final score was positively impacted.

 Burke and James (2009) investigated business faculty members’ degree of PowerPoint® usage across different functional areas of the business program as well as their use of specific features of PowerPoint®. In addition, the researchers examined students’ perception of the effectiveness of PowerPoint® across different business courses. The researcher found that PowerPoint’s® effectiveness across business courses depended on the nature of the course content and the students’ preference for its use. For some business disciplines, PowerPoint® distracts the delivery of information to students. In others, PowerPoint® aids in the delivery of information to students. The researchers could not draw a definitive conclusion on the effectiveness of PowerPoint® across business courses.

Finally, Brock and Joglekar (2011) compared the impact on teaching effectiveness of the number and density of slides, as well as the use of visual and non-textual elements within the slides. Researchers found that the number of slides per class had no impact on effectiveness of learning; however, lower density (number of items per slide) lead to increased effectiveness in learning. In addition, ‘experts’ or ‘facilitators’ tended to use more pictures, photos, graphics, and sounds than other styles.

**STATEMENT OF HYPOTHESES**

 Based on a review of the literature, the following hypotheses were developed:

H1: The use of PowerPoint® would be helpful in increasing learning.

H2: The use of PowerPoint® would increase student interest in this course.

H3: Students prefer the professor spend more time using PowerPoint® slides and less

 time using the whiteboard.

H4: It would be helpful for the instructor to provide a hard copy of the PowerPoint®

 presentation.

H5: Students prefer handouts contain key concepts, principles, and the solutions to the

 examples.

H6: Students who receive a hardcopy of the presentation prior to class are likely to pay

 attention in class.

H7: Students’ notes are more organized when the professors give a hard copy of the

 presentation.

H8: Students prefer the instructor use PowerPoint® for key concepts and principles but

 whiteboard for examples.

H9: Students prefer the instructor use printed handouts for key concepts and principles

 but whiteboard for examples.

The survey was conducted at a small, liberal arts college located in the Midwestern United States. Ninety-five students were given surveys to complete. Of the ninety-five, sixty-four students (N=64) completed the survey for a 67% completion rate. All the students surveyed were traditional college age students (18-22 years old). In addition, all students majored or minored in business administration or were required to take the course as part of their major requirements.

The survey was taken over two semesters in four separate courses. The courses included two Business Communication courses and two Principles of Marketing Courses. The same instructor taught all four courses. The instructor had a Ph.D. in management and was academically qualified to teach both courses. All other faculty members, all of whom were academically qualified, utilized PowerPoint® as the primary instructional method.

All surveys were completed at the completion of each course. Each survey participant was limited to taking the survey only once. The survey was administered and collected with an online program that distributed, collected, and tallied the results.

The statements were adapted from a previous study conducted by Mu, Walter, and Berry (2008) that focused only on electrical circuits courses. The following statements were utilized in the survey:

1. I think the use of PowerPoint® would have been helpful in increasing my learning in this course.
2. The use of PowerPoint® would have increased my interest in this course.
3. I wish the professor would spend more time using PowerPoint® slides and less time using the whiteboard.
4. I think it would be helpful if the instructor provides a hard copy of the PowerPoint® presentation.
5. I prefer the handouts contains not only the key concepts and principles but also the solutions to the examples.
6. When I have a copy of the presentation, I am less likely to pay attention in class since I already have the material.
7. My notes were more organized when the professors gave a hard copy of the presentation.
8. I prefer that the instructor uses PowerPoint® for key concepts and principles but whiteboard for examples.
9. I prefer that the instructor uses printed handouts for key concepts and principles but whiteboard for examples.

 After each statement, students were given a 5-point Likert-type scale that included responses that ranged from ‘Strongly Disagree (1),’ ‘Disagree (2),’ ‘Neutral (3),’ ‘Agree (4),’ to ‘Strongly Agree (5).’ Each student had the option of choosing any of the five responses or to completely skip a question.

 For analysis of the Likert-type data, the researcher utilized the mode and median as measurement of central tendency. The level of significance for the study was set at 0.05. Additionally, the Kendall Tau test was used to measure the correlation between the research questions (Boone & Boone, 2012).

**RESULTS AND CONCLUSIONS**

The study provided some useful insight on business student’s perspective on the effectiveness of PowerPoint® in instruction. The study provided information that can help business faculty improve their use of PowerPoint®. Table 1 outlined the mode and median for each question. In addition, Table 2 outlined the Kendall Tau test results.

**TABLE 1**

**MODE AND MEDIAN OF SURVEY QUESTIONS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **I think the use of PowerPoint is/(would be) helpful in increasing my learning in this course.** | **The use of PowerPoint does /(would) increase my interest in this course.** | **I wish the professor would spend less time using PowerPoint slides and more time using the whiteboard.** | **I think it is helpful if the instructor provides a hard copy of the PowerPoint presentation.** | **I prefer the handouts contains not only the key concepts and principles but also the solutions to the examples.** | **When I have a copy of the presentation, I am less likely to pay attention in class since I already have the material.** | **My notes were more organized when the professors gave a hard copy of the handouts.** | **I prefer that the instructor uses PowerPoint for key concepts and principles but whiteboard for examples.** | **I prefer that the instructor uses printed handouts for key concepts and principles but whiteboard for examples.** |
|

|  |
| --- |
| mode |
|  |

 | 4 | 3 | 3 | 4 | 4 | 2 | 4 | 3 | 3 |
| median | 3.5 | 3 | 3 | 4 | 4 | 3 | 4 | 3 | 3 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
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 **TABLE 2
 KENDALL TAU CORRELATIONS**



The first question asked the students to rate if the use of PowerPoint® would have been helpful in the course. The mode was 4.0 and median 3.5. Question 1 correlated with questions 2 (.689), 3 (-.368), 4 (.213), and 8 (.259). There appears to be a relationship between the perceptions of PowerPoint® increased learning, increased student interest in the course, providing a hard copy of the presentation, and using PowerPoint® for key concepts, but using the whiteboard for examples. There was an inverse relationship between the perceptions of PowerPoint® increasing learning in the course and wishing the professor would use PowerPoint® more and the whiteboard less. Based on the mode and mean, students prefer that professors utilize PowerPoint® in their instruction because they believe it will help learning in the course.
 The second question asked the students whether the use of PowerPoint® would increase their interest in the course. The mode and median were both 3.0. Question 2 correlated with question 1 (.689), question 3 (-.379), question 4 (.394), question 7 (.226), and question 8 (.258). There appears to be a relationship between PowerPoint® increased interest in the course, increased learning in the course, preferring the instructor provide a hard copy of the presentation, having more organized notes when provided a hard copy, and using PowerPoint® for key concepts, but the whiteboard for examples. There was an inverse relationship between PowerPoint® increasing interests in the course and wishing the professor would use PowerPoint® more and the whiteboard less. Based on the mode and mean, students were indifferent that PowerPoint® increased their interest in the course.

The third question asked the students if they would prefer the instructor spend more time utilizing PowerPoint® and less time writing on the whiteboard (or chalk board). The mode and median both were 3.0. Question 2 was correlated with questions 1 (-.368) and question 2 (-.379). There appears to be an inverse relationship between students preferring the instructor utilize PowerPoint® more often, the perceptions of PowerPoint® increasing learning in the course, and PowerPoint® increasing interests in the course. Based on the mode and mean, students were neutral that the instructor spend more time utilizing PowerPoint® and less time writing on the whiteboard (or chalk board). Given that the mode and mean are both 3.0, students were indifferent on the instructor spending more time utilizing PowerPoint® and less time writing on the whiteboard.

 The fourth question attempted to evaluate students’ preference on receiving a hard copy or handout of the PowerPoint® presentation. The mode and median were both 4.0. Question 4 was correlated with questions 1 (.213), 2 (.394), 5 (.479), 6 (-.256), 7 (.592) and 9 (.308). A correlation existed between students’ preference on receiving a hardcopy or handout of the presentation, the perception of PowerPoint® increased learning, increased student interest in the course, students preferring the handouts contain key concepts and solutions to the examples, students receiving hard copies being less likely to pay attention, having more organized notes when provided a hard copy, and students’ preference in receiving printed handouts for key concepts, but using the whiteboard for examples. Based on the mode and mean, students prefer to receive a hardcopy or handout of the PowerPoint® presentation.

 The fifth question sought students’ preferences in regards to a hardcopy or handouts. More specifically, the statement addressed students’ preferences to have both concepts and solutions to examples in a handout form. The mode was 4.0 and the median 3.0. Question 5 was correlated with questions 4 (.479), 7 (.349), and 9 (.257).There was a relationship between students preferring a hardcopy or handouts of the presentation, handouts containing only the key concepts, principles, and solutions to examples, and the students’ preference for printed handouts for key concepts, but the whiteboard for examples. Given the mode and mean are different, it appears students are neutral or slightly agree about receiving a hardcopy or handouts of the presentation.

 The sixth question gauged whether students, if given a copy of the presentation ahead of time, were less likely to pay attention to the presentation. The mode was 2.0 and the mean 3.0. Question 6 inversely correlated with question 4 (-256). There was an inverse relationship between students given a copy of the presentation ahead of time, being less likely to pay attention to the presentation and students’ preference in receiving a hardcopy of the presentation. Given the mode and mean trending toward disagreement, it appears that students believe that being given a copy of the presentation ahead of time does not mean they will not pay attention to the presentation.

The seventh question probed whether receiving a copy of the presentation helped students have more organized notes. The mode and mean both were 4.0. Question 7 correlated with questions 2 (.226), 4 (.592), 5 (.349), and 9 (.377). There was a relationship between having more organized notes, increased interest in the course, helpfulness of a hardcopy of the presentation, handouts that contain key concepts, principles, and solutions to the examples, and printed handouts for the key concepts and principles, and using the whiteboard for examples. Given both the mean and mode were 4.0, it appeared that providing a copy of the handouts helped students better organize their notes.

The eighth question helped gauge whether students preferred the use of PowerPoint® for key concepts and principles, but a whiteboard (or chalkboard) for examples. The mode and median were both 3.0. Question 8 was correlated with question 1 (.259) and question 2 (.258). There was a relationship between students preferring PowerPoint® for key concepts and principles, but the whiteboard for examples, whether PowerPoint® would increase student learning in the course, and whether PowerPoint® increased student interest in the course. Given that both the mode and mean were 3.0, it appeared that students are indifferent whether instructors use PowerPoint® for key concepts and principles, but the whiteboard for examples.

 The final question asked students if they preferred the use of handouts for key concept and principles, but a whiteboard (or chalkboard) for examples. The mode and mean were both 3.0. Question 9 correlated with questions 4 (.308), 5 (.257), and 7 (.377). There was a relationship between students who preferred handouts for key concepts and principles, but the whiteboard for examples, helpfulness of a hardcopy of the presentation, and handouts that contained key concepts, principles, and solutions to the examples. Given that the mode and mean were both 3.0, it appeared that students were indifferent about instructors’ use of handouts for key concepts and principles, but a whiteboard for examples.

**IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER STUDY**

The study provided the following implications to improve training and development by using PowerPoint® as an instructional tool. Instructors should continue to utilize PowerPoint® as an instructional tool. Over half of the students surveyed felt PowerPoint® helped increase learning in their business courses (mode and mean =4.0). A teaching medium that reaches half the students should be utilized. However, as with any teaching medium or method, it should be used in moderation. Any teaching medium or method, when overused, declines in effectiveness. In future studies, researchers might consider determining what specifically about PowerPoint® makes it appealing as an instruction medium.

 PowerPoint®, by itself, will not increase a student’s interest in the course. Any number of factors contributes to a student’s interest in an academic subject and course. Instructors should continue to vary teaching mediums to help increase participants’ interest in the course. Another recommendation for further study is to help determine what factors or influences contribute to a student’s interest in an academic subject or a course.

 The data did suggest that it was important for instructors to provide a hard copy of the presentation to the students. Nearly 61% of the students responded positively to instructors providing a hard copy of their presentation (mode and mean =4.0). Also, many instructors fear that giving students a hard copy prior to teaching will reduce student interest or cause students not to pay attention during the presentation (mode and mean=4.0). The study implies that, from the student’s standpoint, it is simply not true. A recommendation for future study would be to measure student performance when they are not given a copy of the presentation and compare it to when they are given a copy of the presentation beforehand.

 When instructors provide a hardcopy of the presentation, students appeared to be able to better organize their notes (mode and mean = 4.0). Anytime an instructor can help a student better organizer their notes, the more likely the student will be successful in the course or seminar. A suggestion for further study might be to measure student performance in courses that routinely provide hardcopies of presentation to students. As part of the study, the research would also evaluate the organization of the students’ notes taken in the course.

 When looking at the study as a whole, several opportunities exist for further study. First, a new study may look at different student populations or combinations of courses. A researcher might study the effectives of quantitative courses versus qualitative course. Changing the student group or type of courses may also impact the results.

 Another opportunity for further research is measuring the impact of PowerPoint® on learning outcomes. A researcher could utilize PowerPoint® for instruction in some course sections and not in others. Afterwards, the research could test both groups for recall of facts, ideas, and generalizations. Although some students may like instructors to use PowerPoint®, he or she may not actually learn effectively with PowerPoint®. This type of study would attempt to link PowerPoint® instruction to student achievement.

 Finally, this study could be replicated using either single courses or academic disciplines. PowerPoint® as an instructional method may be more effective in some academic disciplines than others. A future study may examine outcomes of PowerPoint® usage from a single course (e.g. Accounting), an academic discipline (e.g. Marketing), an academic program (e.g. Bachelors in Business Administration), or any combination.

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