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"I'm Ambivalent about It": The Dilemmas of PowerPoint

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Abstract

The increasing ubiquity of PowerPoint in the university classroom raises complex questions about pedagogy and the creation of dynamic and effective learning environments. Though much of the sociological teaching literature has focused on engagement and active learning, very little of this work has addressed the presence of PowerPoint in sociology classrooms. Teaching sociology requires discussion, critical thinking, and debate—characteristics many critics argue are at odds with PowerPoint's unique presentation style. Utilizing survey data from faculty and students at a private university, this research explores PowerPoint usage and the many ways it influences the learning environment of the sociology classroom.

Keywords

technology, student engagement, active learning

Since its introduction in 1987, PowerPoint presentation software has become almost inescapable. Found on over 250 million computers worldwide, it is estimated that over 1 million PowerPoint presentations take place each hour (Mahin 2004; Parker 2001). While long present in corporate boardrooms, in recent years the technology has become entrenched in the academy. From accounting to geology, it is now a common feature of academic instruction (Cyphert 2004; Mackiewicz 2008). The increasing ubiquity of PowerPoint in the university has been accompanied by mounting concern over the ways it shapes learning environments. Though the matter has been addressed by other disciplines, sociological exploration of PowerPoint's influence on classroom culture has been sparse (Benson et al. 2002; Reinhardt 1999; Stoner 2007). This silence is particularly surprising because much of the sociological teaching literature is concerned with critical pedagogy—a goal seen as directly threatened by slide technology. It is essential for sociologists to concern themselves with "the culture, customs, and behavior that are dragged along with PowerPoint and how they affect the way we think" (Craig and Amernic 2006:158). Recognizing this need, our research explores PowerPoint and its implications for pedagogy and learning environments.

PREVIOUS RESEARCH

PowerPoint and Learning Outcomes

Most of the sociological empirical work on technology in the classroom has been concerned with a variety of technologies, including Web sites, statistical software, Internet discussion groups, Blackboard, and other multimedia (Persell 1992; Susman 1988). This research has most often explored PowerPoint in combination with other instructional technologies. Hence, though these works have commonly concluded that technology in the classroom "makes possible and calls forth

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from students increased response to and interaction with the instructor and the course" (Koeber 2005:298), these assertions cannot be attributed to PowerPoint alone. In fact, research focused solely on the slide technology has produced decidedly mixed conclusions.

Most studies have found PowerPoint to have no measurable influence on course performance and a minimal effect on grades—concluding, as Levasseur and Sawyer (2006:111) do, the technology brings "no significant change in learning outcomes when instructors augment their lectures with computer-generated slides" (see also Dietz 2002; Howard 2005; Kunkel 2004; Susskind 2005). In the studies that found an association between slide usage and higher exam scores, students were exposed to slides during lecture and were also either given printed versions of slides prior to class or were able to access slides via the Internet. Thus, access to instructor-prepared, thorough class notes, in combination with PowerPoint, was the crucial factor in improving student performance (Levasseur and Sawyer 2006).

While its effect on student *performance* remains largely unclear, several studies have found that PowerPoint has a measurable influence on student *perception*. These works, which explore software and course experiences, find that students greatly enjoy slide technology. In their review of the research on reactions to PowerPoint in the classroom, Levasseur and Sawyer (2006) found that the majority of empirical research concludes that students view slide usage positively. For example, despite the fact that PowerPoint made relatively little difference in their grade outcomes, Susskind's (2005) students reported that PowerPoint positively impacted their learning, organization, and note taking. Similarly, Wilmoth and Wybraniec's (1998) social statistics classes had favorable perceptions of PowerPoint's ability to increase their interest in course material, promote learning, and improve their exam performance. Time and again, studies show that students favor slides over chalkboards or overhead projectors and feel that computer-generated slides improve course organization and note taking and make classes more interesting (Bartsch and Cobern 2003; Pippert and Moore 1999; Young 2004). Students also perceive PowerPoint-using instructors as more effective and are more likely to give these instructors favorable evaluations (Koeber 2005; Susskind 2005; Weinraub 1998). To date, there has been little research exploring the dynamics of PowerPoint classrooms and pedagogy, and most existing treatments of the subject are primarily theoretical. Despite a lack of empirical foundation, however, these treatments raise important debates regarding the ways that slide software shapes learning.

PowerPoint and Learning Environments

Critics observe that PowerPoint, which was created for business environments, has a style that is naturally suited for marketing and counterproductive for educating (Knoblauch 2008; Tufte 2003a, 2003b). According to Tufte (2003a:26), the software's best recognized and most vociferous detractor, it has a "definite, well-enforced, and widely-practiced cognitive style that is contrary to serious thinking." There is little question that slide software uses simplification to enable efficient and straightforward information dissemination. Though simplification is important for learning, when it becomes oversimplification, it can discourage and even derail critical thinking. Slide settings, which provide limited space for words, cultivate "oversimplification by asking presenters to summarize key concepts in as few words as possible" (Simons 2005:5). Critics charge that presentations transform content into overly simple snippets or buzz phrases that elide intricacy and nuance. This maximization of brevity trivializes and homogenizes knowledge (Adams 2006; Fendrich 2010; Norvig 2003). Further, critics note that minimally worded bullet-pointed content forced into outline form neglects context and fails to explore the multiple and complex relationships between concepts. The loss of breadth, depth, and complexity results in the transmission of material that is at best deficient and at worst so simple it belies the nature of course content.

PowerPoint's detractors also maintain that it is an impediment to fostering engaged student participants and active classrooms, noting that slides encourage students to passively consume information and make it possible to acquire knowledge at little cognitive expense. These critics charge that PowerPoint cheapens learning experiences by

structuring the lecture hall in ways that discourage discussing, engaging, and interacting with instructors and peers. For example, they note that classroom lighting must be at least partially dimmed and seats must be arranged so that the projected images may be seen clearly by all. In essence, the screen becomes the focal point of the class, making the physical setup of a PowerPoint classroom much like that of a theater. Such a unidirectional environment is set up for one-way knowledge transmission rather than knowledge exchange and establishes "a dominance relationship between speaker and audience" (Adams 2006; Creed 1997; Tufte 2003a:13). The environment of the PowerPoint lecture hall creates "spectators rather than participants, in a classroom where the professor 'orchestrates' a multimedia presentation" (Reinhardt 1999:49). Critics argue that instead of a supplementing the educational experience, slideshows become a substitute for the lecturer.

Many also decry software's influence on pedagogy, noting that the PowerPoint-using instructor tends to proceed through class by following the predetermined path established by slides. This preplanned organization inhibits instructor digressions, anecdotes, and creativity—moments that often inspire student questions that are so vitally important for effective learning (Norvig 2003; Simons 2005). PowerPoint discourages teaching improvisation and in turn student questions, because "the slides tend to impel the lecture conversation along a pre-set unidirectional course, disregarding and sometimes blind to . . . the unbidden: the unsolicited question or unexpected comment" (Adams 2006:404). Thus, though the technology enables well-planned lectures, order may come at the cost of student engagement and instructor spontaneity. Rather than critically engaging with the meaning and context of materials, students simply copy the information they see in front of them each time they are presented with a new slide. As such, critics note that engagement with course content ends when projected information has been successfully copied into learners' notes.

While existing studies have been useful for understanding some aspects of the student-PowerPoint relationship, they fail to address the nature of PowerPoint classroom environments. In turn, those works that do address behavior and interaction in slide-using classrooms tend to be somewhat speculative and lack empirical grounding. As Benson et al. (2002:145) note, "We need research that reveals how students use digital technology in a classroom setting and the extent to which this use affects learning in both planned and unplanned ways." In addition, there are no studies that explore how sociology instructors view the technology and its influence on learning environments (Koeber 2005; Pippert and Moore 1999). Recognizing these needs, we explore student and instructor perceptions of slide technology and classroom dynamics.

METHOD

To explore PowerPoint classroom culture, we administered surveys to undergraduates enrolled in sociology courses and instructors from the sociology and anthropology department at a medium-sized private university in New England. The university's institutional review board (IRB) approved the study and the survey instruments prior to distribution. We chose to focus on PowerPoint because the overwhelming majority of presentations in higher education utilize the Microsoft software. Alternative presentation programs have emerged in recent years—one of the most commonly used alternative programs is Prezi, a software package with an interactive style that allows users to create nonlinear, nonhierarchical shows and manipulate projected content to move, flow, and connect. Although this and other similar technologies may combat many of the challenges posed by static slideware, existing critiques suggest that *all* presentational software is problematic for teaching and learning (Cooper 2009; Gries and Brooke 2010; Stryker 2010). Admittedly, the choice to limit our study to PowerPoint may neglect important developments that alternative programs have brought to the small number of classes in which they are used. However, our work will usefully inform much-needed future research on Prezi and other similar programs.

Undergraduate and Instructor Surveys

Our undergraduate sample consisted of students enrolled in one of eight sociology classes during the summer and fall semesters of 2010. We distributed

paper surveys to those enrolled in two sections of Introduction to Sociology and one section each of Deviant Behavior and Social Control, Drugs and Society, Family Violence, American Society, Environmental Sociology, and Social Theory. The sampled classes ranged in size from 9 to 113 students—five of the courses had more than 50 undergraduates and three had fewer than 30. In order to build understanding of how the average student enrolled in a sociology course experiences slide software, we did not restrict survey participation to sociology majors or minors. Although the 9 participants from the Social Theory class included in the study were primarily junior- and senior-level sociology majors, the other courses surveyed did not require prerequisites and thus contained a wide variety of majors and grade levels. The undergraduate survey consisted of 10 questions adapted from previous research on student perceptions of technology use in the classroom (Burke and James 2008; Nowaczyk, Santos, and Patton 1998). In addition to 9 fixed-choice questions regarding frequency and purpose of use, preferences, and impressions of the technology's effectiveness, the survey also included an open-response question that asked students to explain what they most like and dislike about instructional PowerPoint (contact authors for complete survey). A total of 384 students (approximately 87 percent of the sample) completed the survey.

Sociology instructors, including full-time faculty, graduate student instructors (teaching as adjunct lecturers or funded graduate instructors), and adjunct lecturers, were also surveyed. We administered questionnaires to graduate student and adjunct instructors through an online platform and distributed paper copies of the instrument to faculty during a department meeting. The nine-question survey administered to instructors included three fixed-choice questions assessing rank, teaching experience, and course load and a further three fixed-choice questions regarding frequency and purpose of instructional PowerPoint use. This survey also included three open-response questions that asked instructors to reflect on their perceptions of how students feel about PowerPoint and their personal impressions of its effects on the classroom environment and their own pedagogy (contact authors for complete survey). A total of 33 instructors (approximately 72 percent of sampled population) completed the survey.

Data Analysis

After compiling and quantitatively analyzing responses to the fixed-choice questions for both the undergraduate and instructor surveys, we then inductively coded answers to the open-ended questions and analyzed them for recurrent themes and concepts. Using a multistep process of constant comparison to analyze the qualitative responses, the authors (1) read through the written survey answers to develop a series of thematic categories, (2) sorted the written data into emergent categories, (3) compared observations to confirm or disconfirm trends in the data, and (4) reviewed data to verify the accuracy and relevance of themes (Bogdan and Biklen 2007; Glaser and Strauss 1967; Strauss and Corbin 2008). We chose to use both open-response and fixed-choice survey questions to elicit quantitative and qualitative data and thus better explore students' and instructors' perceptions of PowerPoint.

FINDINGS

Prevalence, Frequency, and Purpose of Use

We found PowerPoint to be a prevalent feature of undergraduate classes: 67 percent of students reported that all or most of their instructors use the software, and 23 percent reported that at least half of their instructors use it. According to respondents, not only are slide presentations present in the majority of their courses; they are also present in most individual class meetings: 95 percent of students reported that PowerPoint-using instructors use the software in all or most class meetings.

Sociology instructors reported similar usage prevalence: Approximately 91 percent use PowerPoint at least some of the time in their courses—76 percent of instructors use it in between one quarter and three quarters of their class meetings, while 55 percent use it in at least three quarters of their classes. Frequency of use differs by professional rank (see Table 1). Twenty percent of full professors report using PowerPoint frequently (more than three quarters of classes) or always, while 60 percent of associate and 50 percent of assistant professors use it that often. Graduate student instructors are the most frequent users of the

Table 1. Instructor Frequency of PowerPoint Use by Percentage

	Grad Student	Assistant Professor	Associate Professor	Full Professor	All Instructors
Always/frequently	68.7	50.0	60.0	20.0	54.5
Moderately	31.3	0.0	20.0	12.5	21.2
Infrequently/never	0.0	50.0	20.0	62.5	24.2
Total	100	100	100	100	100

Note: Frequency of PowerPoint use was measured using the following scale: never, infrequently (less than 25 percent of class meetings); moderately infrequently (25 percent to less than 50 percent of class meetings); moderately frequently (50 percent to less than 75 percent of class meetings); frequently (75 percent to almost every class meeting); and always.

technology—69 percent reported using slides frequently or always. Instructors' *lack* of PowerPoint use also differs by rank: 63 percent of full professors reported that they do not use it at all or do so in less than a quarter of class meetings, while no graduate student instructors gave that reply. Though our findings indicate that prevalence and frequency of use is significantly higher among graduate student instructors, we did not find a consistent rank/use relationship across the sample. Given the limitations posed by the size and nature of the sample, the relatively large dichotomy between the most (full professors) and least (graduate student) experienced instructors cannot be interpreted as anything more than a suggestive avenue for future research.

We also explored the purposes for which slideware is used. All PowerPoint-using instructors reported using slides to project lecture notes, charts, definitions, and explanations. Just over half (54 percent) of those surveyed also embed video clips in presentations, and 41 percent use slides to display discussion questions. Undergraduate answers confirmed that PowerPoint most often serves as a tool of information display; when asked what their instructors typically use PowerPoint for (e.g., to show pictures, play video clips, or project lecture notes), 95 percent answered that their instructors use slides for lecture notes most of the time.

Student Perceptions

Undergraduates reported PowerPoint is a useful feature of classroom instruction that improves learning. When asked which of the software's functions they found most helpful, a small number of students chose "showing pictures" (16 percent) or "showing video clips" (4 percent) while the vast majority—approximately 80 percent—reported that slideware is most useful when it is used to outline lecture notes and information. Students' answers to the open-ended question, "What do you like most about PowerPoint?" support this finding (see Table 2): Over half (52 percent) of the responses to this query mentioned liking the software for its ability to outline lectures and point to important information. As one student wrote, slideware is helpful because "it shows you the information and makes it easier to outline what we will be learning that day." This appreciation is manifest in students' self-reported classroom behavior, as the vast majority said that they regularly copy information from slides—82 percent report that they "always," "almost always," or "usually" do so, while only 5 percent answered that they "almost never" or "never" copy words from slides.

When evaluating PowerPoint's utility for improving several components of learning, students reported that it is "almost always" or "always" effective for aiding exam preparation (56 percent), enhancing comprehension of course material (52 percent), and improving attention in class (38 percent). Though they found the software somewhat less useful for paper writing and engaging discussion (25 percent answered that it is "almost always" or "always" effective for both), only a minority of students (fewer than 10 percent) answered it was "almost never" or "never" effective for any of the learning tasks they evaluated (Table 3).

Table 2. Students' PowerPoint Likes and Dislikes

What do you like most about PowerPoint?

Outlines lectures and points to what is important (52 percent)

"How it shows you the information and makes it easier to outline what we will be learning that day and makes it easier to follow along."

"I like how it hits the key points our professors want us to know. And it gives a general outline of the reading."

"I like that I can focus more on what the professor is saying because I can add what the professor says in class but also already have the major points I need written down (because of the slides)."

"It shortens main points up and makes them easier to understand."

Makes class interesting/keeps me awake (30 percent)

"How it keeps my attention and makes lecture easy to follow."

"When there are pictures it helps to keep my attention."

"Keeps me interested by giving me something to look at and focus on."

Good for visual learners (10 percent)

"Because I am a visual learner, it makes it easier for me to comprehend material."

"I am a visual learner, so I like to see outlines as well as pictures and video clips. If I miss what the teacher says I can see it up on the slide."

What do you dislike most about PowerPoint?

Instructor reads verbatim off of slides (32 percent)

"I wish some professors wouldn't just read the Power Point word for word, I wish there was more discussion."

"How it encourages me at times to not come to class since some professors read directly from the PowerPoint and posts them online to easily access."

"When my professor reads directly off a slide, I would rather them not use it. It makes me feel as if class is optional."

Lecturing too fast, not enough time to read/take notes (24 percent)

"Teachers switch too fast and can't copy everything. Sometimes just copy the PowerPoint and not what the teacher talks about."

"When a teacher puts too many words on the slides and you can't write everything down before they move to the next slide."

"If a professor doesn't give out the PowerPoint you have to keep up and try to copy the slides and still copy or listen to what the professor says."

Discourages discussion (12 percent)

"It distracts from actual discussions . . . people are so busy trying to take down notes, no one's really paying attention."

"It monopolizes the class and leaves little opportunity for discussion or interaction. It also can be an excuse to not take notes and not pay attention as it can be accessed online whenever it is convenient for me."

"It encourages passive rather than active learning."

Table 3. Student Perceptions of PowerPoint Effectiveness for Learning Tasks by . . .

	Exam Preparation	Paper Writing	Comprehension of Material	Paying Attention in Class	Engaging Discussion
Always/almost always	56.1	25.3	52.3	38.1	24.5
Often/usually	38.1	50.5	43.7	49.6	55.4
Sometimes	1.6	14.6	3.2	9.9	17.9
Almost never/never	4.2	9.6	0.8	2.4	2.2
Total percent	100	100	100	100	100

Written responses to the open-ended questions "What do you most like/dislike about PowerPoint?" support these findings. After projection of lecture outlines, the second most commonly mentioned advantage of slideware was its ability to make class more interesting. Approximately 30 percent of answers to the "like" question were a variation of one student's comment that PowerPoint "keeps me interested by giving me something to look at and focus on." Further, responses to the open-ended "dislike" question correspond to the previously mentioned finding that PowerPoint is less effective for encouraging discussion than it is for any other learning task. In discussing what they most disliked about the software, many students found fault with its tendency to discourage discussion—approximately 12 percent of these responses expressed sentiments along the lines of one student's observation that "[PowerPoint] monopolizes the class and leaves little opportunity for discussion or interaction." In addition, the more commonly cited failings—32 percent most disliked instructors reading from slides and 24 percent felt slides cause instructors to lecture too fast—are undoubtedly implicated in suppressing discussion, as one response illustrates: "I wish some professors wouldn't just read the PowerPoint word for word, I wish there was more discussion."

Given their perceptions of its usefulness, it is unsurprising that the undergraduates surveyed greatly enjoy classroom PowerPoint. Eighty-four percent of students agreed that the technology improves their overall classroom experience, and only a small minority (9 percent) reported that it does nothing to enhance their learning (Figure 1). Fully 69 percent of students expressed a preference for PowerPoint classes, while only 10 percent answered that they prefer classes without the technology.

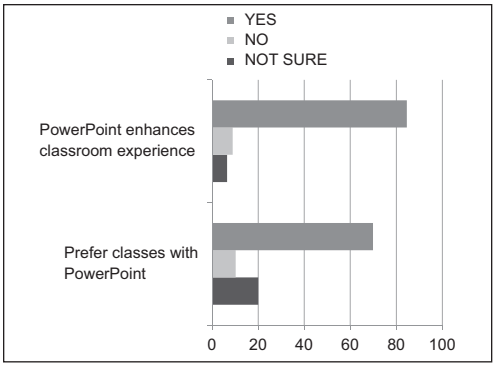

Figure 1. Percentage of students who believe PowerPoint enhances classroom experience and prefer classes with PowerPoint

Instructor Perceptions

PowerPoint's popularity among undergraduates was not lost on sociology instructors, whose responses to the open-ended question, "What are your perceptions of students' expectations regarding PowerPoint?" reflected an awareness that students expect and greatly enjoy slide-supplemented lectures. While some instructors (30 percent) answered that they felt that at least some students dislike it, more than twice as many (65 percent) disagreed, reporting that students expect and/or like slides. As one explained, "Some of our students had PowerPoint in high school and have come to expect it." Instructors revealed a commonly shared explanation of why undergraduates favor slideware: Approximately 70 percent commented that students enjoy the technology because it simplifies information and makes class easier.

Responses to the question, "What are your reasons for using/not using PowerPoint?" indicated that instructors use the software for two primary reasons—to provide clarity for students and to improve their own teaching performances. Approximately 70 percent of responses to this question explained that slides are used because they help students by organizing information. As one instructor commented, "[they] can be helpful as a 'carry-all' for information that students can look back on while they study." In addition, 60 percent of the instructors who answered this question noted that they use slideware because it improves their teaching performance and helps them manage class. This, the second most commonly reported reason for using PowerPoint, was illustrated by one instructor's explanation that using it "allows me to move away from feeling like I'm reading from my lecture notes, but rather am able to have a more natural flow prompted by slides." Of those who answered that they rarely or never use it, 75 percent commented that they do not use slideware because it discourages student discussion—as one

explained, slides put "students into passive 'audience' mode."

Answers to the open-response survey question, "Do you think that PowerPoint affects your teaching performance?" revealed that instructors recognize a significant relationship between the technology and pedagogy (Table 4). Every instructor who answered this question agreed that slideware has an impact on the way they teach. The majority—86 percent—noted that slides improve their organization and pacing by ordering lectures and keeping them on track, a function they greatly appreciate. In addition, approximately one third of instructors noted that PowerPoint alleviates performance anxiety, as one explained, it "gives me confidence, and gives me something to refer to if I have a moment of panic." Although instructors largely shared favorable impressions of the technology, a sizeable portion acknowledged that PowerPoint could negatively influence instruction. In fact, 43 percent of responses to this question mentioned that preset slideware can constrain teaching and limit interaction.

DISCUSSION: THE DILEMMAS OF INSTRUCTIONAL POWERPOINT

PowerPoint is hailed as a tool for delivering information in an entertaining, quick, and efficient manner; the Microsoft Web site boasts: "Get your class to sit up and take notice! You can easily transform your presentation from boring lists and blocks of text to a vibrant and engaging slide show with images and video to underscore your main points" (Microsoft Corporation 2012). While the technology's core purposes and strongest selling points—simplifying information and making learning entertaining—are highly valued by students and instructors alike, they also pose serious dilemmas for educators. Our research revealed that the software's strengths are also sources of potentially detrimental influences on classroom environments. According to responses to open-ended survey questions, instructional use of PowerPoint raises three serious dilemmas: First, while students and instructors appreciated the technology's manifest function of clarification, their comments revealed anxiety regarding the software's latent tendency to oversimplify. In addition, although respondents reported that the software captures attention, some students and most instructors also acknowledged that it may often result in passivity and disengaged entertainment. Finally, sociology instructors' responses uncovered a tension between pragmatic career concerns and personal pedagogical philosophies. These dilemmas shed much-needed light on the complex experiential realities of PowerPoint in the sociology classroom.

Clarification and Oversimplification

Survey responses indicate that instructional PowerPoint gives rise to a tension between clarification and oversimplification. The majority of undergraduates agreed that slides are most useful when they outline lectures, and their written comments repeatedly cited the technology's ability to organize and simplify course material as its greatest advantage. One student commented that PowerPoint "shortens up main points and makes them easier to understand," and another noted that it serves to "outline material so students know what info is important and what they can forget." In essence, the software allows learners to cut through complexity and focus on—as several put it—"only the important material." Instructors shared this appreciation for simplification—several noted that the technology increases learning by "breaking down" course material and helping "students to clearly follow the lecture."

Instructors enjoyed that slides enable them to "communicate key points to students." This appreciation, however, was tinged by uneasiness with what they see as PowerPoint's tendency to dilute knowledge, and their explanations of their slide usage revealed tension between the value of clarification and the problem of oversimplification. Instructors were aware that students desire presentations with, as one explained, "not too much text on each slide," and most reported they use PowerPoint for overviews and outlines. Though distillation illuminates basic information, it may do so by oversimplifying complex material. Half of the instructors who praised clarity also worried that slideware breaks down information too much and were concerned that excessive parsimony could deter learning. They mentioned that slides can present information as misleadingly simple and

Table 4. Instructor Perceptions of PowerPoint

What are your perceptions of students' expectations regarding PowerPoint?

Students think it simplifies information and/or makes class easier (70 percent)

"I think that students want an outline. They don't want every word the professor says. They want it before class so they know what to expect and can print it out and use the lecture to fill in the notes."

"That it simplified what they have to know for exams."

"Students like PowerPoint because it is a crutch."

Students like or expect it (65 percent)

"The students expect instructors to use PowerPoint."

"Some of our students had PowerPoint in high school and have come to expect it."

"They like it."

Some or most students dislike it (30 percent)

"I find that students are used to most of their sociology classes using PowerPoint, but are very divided about whether they like it or not."

"[Students] probably think it is boring and tedious."

What are your reasons for using, or not using, PowerPoint?

Organization and clarity for students (88 percent)

"It can provide a path for the lecture to take which can be easily followed."

"PowerPoint helps to clearly follow the lecture use. It summarizes the lecture points."

"PowerPoint can be helpful as a 'carry-all' for information that students can look back on while they study."

"Helps to organize material."

Improve teaching performance and classroom management (60 percent)

"Allows me to move away from feeling like I'm reading from my lecture notes, but rather am able to have a more natural flow prompted by slides."

"I do think PowerPoint can be helpful in that I don't waste class time writing down extensive notes on the blackboard."

"It seems like a way to avoid my anxiety about teaching, particularly since I use it every day."

Provide visuals and media (50 percent)

"I find that it helps provide a visual guide for students who may be visual learners or who may benefit from seeing the outline of a lecture laid out."

"I also enjoy using PP to show my class various pictures and graphs to illustrate what I am lecturing about."

"Also to show images, maps, links to YouTube, etc."

Reasons for not using: hampers discussion (75 percent of nonusers)

"It oversimplifies complex info and puts students into passive 'audience' mode."

"I believe in the power of the presentation and class interactions. PowerPoint detracts."

Do you feel that using PowerPoint affects your performance? If so, how?

Organization and pacing (86 percent)

"It does help with the organization and making sure that I and the students get the main points."

"Overall, I think it makes me more effective—keeps me on point, keeps the lecture structured and clear."

Works to constrain performance and/or interaction (43 percent)

"I am wary of being too tied to the slides, and therefore unwilling to veer from the presentation if the class wants to."

"[O]ccasionally, I discuss topics in a different order than I originally planned, which makes more sense in the context of a class discussion or a student question. That can be difficult to coordinate with the Power Point. Sometimes I feel like I have to 'teach to the PowerPoint'."

Relieves performance anxiety (33 percent)

"It allows me to move away from feeling like I'm reading from my lecture notes, but rather am able to have a more natural flow prompted by slides."

"I think that PowerPoint makes me more effective in the sense that it gives me confidence, and gives me something to refer to if I have a moment of panic."

Note: Percentages are calculated from the number of responses to each open-ended question. Some respondents left one or more of the open-ended questions unanswered.

uniform—one instructor wrote, "I sometimes have a concern that students will think that the take-away from the content of the lecture can be distilled into the slides." Another frequent user expressed this tension:

> PowerPoint simplifies and dumbs down the info for them into neat little bullet points. The reality of our social world is often messier and more complicated than that which can be expressed by neat little bullet points. Because the info is already synthesized for them in PP slides, the students are less responsible for (and increasingly less capable of) picking out the crucial elements of a lecture, as they always have the slides to fall back on.

Of the majority who cited improved clarity as their primary reason for use, a significant portion also expressed concern that PowerPoint's inherent tendency to oversimplify could threaten learning.

Education and Entertainment

According to survey responses, instructional PowerPoint gives rise to a second dilemma—a tension between entertaining and educating. Although the technology successfully captures learners' attention, some students and many instructors reported that this might prove to be more diversion than useful tool. The learning goals in sociological education typically extend far beyond knowledge transmission—in fact, because the discipline has a particularly powerful ability to inspire critical thinking, "teaching *only* the content of [the] discipline may do students a real disservice" (Fobes and Kaufman 2008; Roberts 2002:2). Thus, sociological learning objectives commonly include developing analytical reasoning abilities, inspiring creativity, and establishing the foundations necessary for critical intellectual growth—all vital parts of the sociological imagination. Learning experts maintain that these goals are best achieved through active learning that requires students to expend cognitive energy to reach understanding. Key features of active learning—discussions and exchanges, questions, improvisations, and off-the-map developments—ensure that learners actively participate in knowledge creation rather than simply passively consume information. When students reflectively engage by talking about what they know, questioning what they don't, and interacting with instructors and peers, they develop the ability to understand and apply what they have learned. In contrast, learning that consists of information consumption and little else may be more entertainment than education. Classrooms in which students take notes instead of actively engaging with material are little different from movie theaters—both are arenas of passive entertainment rather than active knowledge construction.

This education/entertainment dilemma plainly was apparent in survey responses. Students overwhelmingly reported that slideshow presentations capture their interest—most agreed that slides help them pay attention (Table 2), and 30 percent commented that they feel PowerPoint helps them, as several students put it, "stay awake" in class. One undergraduate explained that presentations are useful because "they give me something to look at so I don't get distracted by other things." Although slideware does the important job of capturing students' attention, it could discourage in-depth, reflective engagement. Responses from the undergraduate survey indicated that the technology is less useful for engaging discussion than for any other task. Students' written comments further illuminated this: Several noted that although graphics help them focus, they sorely missed the active discussions that they felt slideshows discouraged. According to one respondent, PowerPoint "monopolizes the class and leaves little opportunity for discussion or interaction."

Students frequently mentioned that PowerPoint "makes class less exciting" because it compels them to replicate what they see on slides, a task that they feel consumes their classroom experience. Indeed, the overwhelming majority of students (82 percent) answered that they focus on copying projected words into their notes. Although transcribing information requires students to focus to a certain degree, this type of attention can be mindless, unreflective, and even counterproductive. Many students were aware of this problem and admitted that copying slides negatively affects their learning, as one student explained:

> I frequently write down blindly anything that is written on the Power Point without

> absorbing it until studying for the test. Also, when I'm copying down the Power Point words I'm not usually listening to the instructor. Power Point minimizes the engagement I have with a class and instead condenses it into a few slides with bullet points.

Some undergraduates reported that focusing on copying projected words distracts them from the meaning and context of the topics being discussed; as another student commented, slides make it "easy to lose focus on the topic and JUST copy PowerPoints without engaging in the topic." These critiques make it clear that although slides capture notice, thoughtful engagement and attention are not one in the same.

The worry over entertainment and education was more troubling to sociology instructors. Their open-ended comments revealed a deep and broadly shared concern that PowerPoint distracts and fosters passivity among students. Those who never or infrequently use the software were most critical of the ways it shapes classroom dynamic; as one infrequent user noted, the technology "often makes class discussions less engaging. Students focus on 'writing notes' . . . instead of engaging in critical thought and discussion." In fact, passivity was the most cited reason that non- and infrequent users rejected slideware. Regular users of the technology were less critical, but did express anxiety over the disengaged, entertainment-like nature of slideshows. Many instructors expressed suspicion that students' copying of projected information may inhibit discussion, as one commented, "I do worry that they may become too reliant on [slides] (rather than paying close attention to the lecture and taking their own notes)."

Instructors were also highly critical of PowerPoint's influence on pedagogy—all agreed that the technology shapes instruction, and most commented that it does so in ways that inhibit engaged, interactive teaching. Again, non- and infrequent users were most critical of PowerPoint instruction. One nonusing faculty member noted that it "has nothing to do with teaching and learning," and another remarked that it is "not as effective as raw teaching." While frequent users were most likely to report that slides improve teaching, many also conceded that streamlined lectures can sometimes make classes more like "entertainment" or a "show" and less interactive and spontaneous. These instructors worried that slides may create distance between themselves and their students. One reflected, "I feel PowerPoint lowers my engagement with students," and another admitted, "it takes away some of the spontaneous nature of class discussions, [and] limits students' active participation sometimes." Slide-using instructors also mentioned that PowerPoint can constrict creativity, as one explained, "[it] puts me in lecture mode [and is] less interactive." The majority of users noted that slides make ad hoc interactions and off-the-cuff examples a challenge, as another explained:

> Occasionally, I discuss topics in a different order than I originally planned, which makes more sense in the context of a class discussion or a student question. That can be difficult to coordinate with the PowerPoint. Sometimes I feel like I have to "teach to the PowerPoint."

Thus, on one hand, most students and instructors agree that slideware aids learning by capturing attention and organizing teaching. On the other, however, reports of disengaged teaching and learning behaviors indicate that the technology may be passively entertaining rather than actively educating learners.

Career Pragmatism and Pedagogical Commitment

Finally, instructors' reflections unveiled a third dilemma brought forth by instructional PowerPoint—there exists a significant tension between career pragmatism and pedagogical commitments. Though the majority of sociology instructors expressed at least some unease regarding the technology's pedagogical merit, most use it regularly. Many instructors explained that they continue to use slideware in spite of their concerns because they know students expect and desire it, as one noted: "I think that students want an outline. They don't want every word the professor says." Awareness of and compliance with this expectation was most prevalent among graduate student instructors, as one explained:

> The first time I taught, I didn't use PowerPoint for the first half of the semester, and on my mid-semester evaluation (that I hand out to see how things are going generally for the students), there was such a big request for PowerPoint that I used it in every class after that.

Instructors' discussions of student expectations were marked by hesitation and concern over the true educational value of the technology. One commented, "I think unfortunately [students] expect it. . . . Also—it is contributing, sadly, to [an] atmosphere of each class meeting as a drop-in experience and really more like distance learning." Another instructor agreed that the student-PowerPoint relationship has become "a hugely problematic expectation" because "there are numerous situations in which . . . their education would be better served by digesting data in a less formalized or summarized manner."

Slideware-using instructors were conflicted over their decision to integrate PowerPoint into their classes. While many recognized the importance of teaching in ways that students enjoy, they also noted that slides might not always be best for learning. Instructors indicated that student preference for slide-augmented lectures had become so prevalent that it was now an expectation they felt pressured to conform to. A full professor with over 20 years of teaching experience demonstrated the strong pull of PowerPoint culture, remarking, "I believe in the power of the presentation and class interactions. PowerPoint detracts. Having said that, I will move toward PowerPoint in a major way next year, and use it quite a bit." For some instructors, when student expectations and teaching ideology are at odds, demand trumps philosophy.

Several of those most conflicted by this dilemma noted that the institutional pressure to receive positive student evaluations of teaching lay at the heart of their compromise. Teaching evaluations play a major role in career success—they are often the primary means by which schools evaluate teaching and are routinely used for hiring and promotion decisions (Delucchi and Smith 1997; Kulik 2001; Sojka, Gupta, and Deeter-Schmelz 2002). Given that instructors who meet student expectations receive better evaluations and that today's students expect PowerPoint, it is not surprising that instructors incorporate the technology to boost their evaluations (Greenwald and Gillmore 1997; Williams and Ceci 1997). In fact, this approach has proven rewarding, as "many lecturers, to their delight, discovered that teaching scores and student satisfaction improved with the use of PowerPoint" (Gabriel 2008:257; see also Delucchi 2000; Delucchi and Korgen 2002; Titus 2008).

The lure of tailoring teaching to meet student preferences is directly related to pragmatic concerns about career success. This may be even more powerful for newer instructors who do not have the security of tenure and are often adjunct or contingent lecturers. Indeed, we found graduate students were most vocal about the dilemma of pedagogical commitment and career pragmatism, as one noted:

> I am still inclined to use PowerPoint because my future career is dependent upon good teaching evals, which only happen when the students are happy with the class. They like and expect their profs to use PowerPoint. . . . Unfortunately, I also perpetuate the overuse of PowerPoint out of fear of being unfavorably compared to my colleagues who all use PowerPoint and post the slides online. I'm troubled by the fact that I often decide to use and post PP slides because my teaching evals would suffer if I didn't, not because I think PP is always the best thing for their intellectual development or understanding of the subject matter.

The software's ubiquity, popularity with students, and instructors' perceptions of student expectations speak to a growing PowerPoint culture in the university—it has become a normative feature of academic instruction. It is important to recognize that this norm carries several potentially problematic implications. While students enjoy slides and instructors continue to use them, both users and consumers recognize that PowerPoint can shape learning environments and experiences in positive and negative ways.

CONCLUSION

The sociology instructor who concluded "I am ambivalent about PowerPoint. Sometimes it helps

the quality of discussion tremendously and sometimes it is distracting" perhaps best summarizes our study. While the technology has a great many advantages, these advantages may also have negative consequences for lasting learning. The dilemmas identified by our research contribute to an ongoing debate in the academic scholarship surrounding PowerPoint pedagogy. While many have concluded that PowerPoint should be used in academia, others have expressed concerns about how it has transformed teaching and learning. Our exploration of the issues surrounding PowerPoint in the university provides support for both advocates and critics of the software. We found that undergraduates expect and enjoy instructional use of PowerPoint, and sociology instructors who use the software often find it to be a useful teaching tool. We also found that classroom slideshows may negatively influence earning by encouraging mindless copying and discouraging questions and participation.

Future research comparing classroom dynamics and long-term learning outcomes of students in PowerPoint and non-PowerPoint courses would be useful for identifying the mechanics of how this technology influences learning. In addition, studies with larger and more diverse samples could answer important questions regarding the possible impact of class size (Are slideshows appreciated more in larger classes than smaller classes?), student demographics (Do factors such as student major, gender, or other characteristics influence how learners feel about the technology?), and course content (Are intro students more apt to enjoy slideware than upper-level students?). Finally, empirical evaluation of the various strategies instructors employ to make slides a tool for engaged learning would be enlightening for practice.

It would be a mistake to "overlook the overwhelming influence of this software presentation tool on today's educational culture, particularly in redefining what a lecture looks like, consists of, and how it is experienced" (Adams 2006:408). Whether one agrees that the technology is a tool for conveying information in a clear and engaging way or sees that even thoughtful use cannot escape an inexorable cognitive style that oversimplifies material and fosters passivity, it is impossible to deny that slide software has had transformative repercussions for education. Reflexively considering the costs and benefits of PowerPoint is essential for educators concerned with creating effective learning environments that inspire and nurture developing sociological imaginations.

NOTE

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