STUDENTS' PERCEPTION OF DIFFERENCE IN TRADITIONAL VS. MULTIMODAL ASSIGNMENTS: A CALL FOR CLOSER CONSIDERATION

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In writing about the electronic composition classroom in 1991, what might now seem like a long time ago, Gail Hawisher and Cythia Selfe advocated for wise use of technology in the teaching of writing and admonished faculty not to jump into new composing practices without "the necessary scrutiny and careful planning that the use of any technology requires" (55). Since then, many teachers have incorporated technology into their instruction, particularly in requiring that students compose in a variety of modes, often sound and image, as well as in a variety of digital mediums. In 2006 the results of a CCCC Research Grant survey of writing faculty at over thirty-two institutions of higher-education in the United States revealed that 93% of the thirty-eight self-selected respondents had students analyze and compose multimodal texts (Anderson et al. 75). Few in the field of composition would be surprised to see first-year writing assignments that call for creating PowerPoint presentations, political cartoons, or blogs. Some, though, would be surprised by the breadth of multimodal assignments ushered in by electronic technology. Multimodal composing discussed in the field's scholarly literature has become so varied as to include original music (Shipka, "A Multimodal;" Shipka, "Sound Engineering"),

computer coding, and "collections of objects a la Walter Benjamin's Arcades project" (Ball and Moeller 8).

Given this rapid and profound change in the teaching of writing, it is prudent to step back and thoughtfully examine the multimodal revolution. In this article we present the results of our study in which we investigated students' perceptions of traditional versus multimodal assignments. We examined which type of composing students prefer and asked students to compare their inclination to consider their audience and their impression of intellectual rigor for each type of composing. Though multimodal assignments are becoming ubiquitous, ours is one of only a handful of studies that have contrasted multimodal assignments to traditional ones. Among others is Shawn Stowe's study in which he used surveys and interviews to learn about university students' feelings in composing traditional and multimodal assignments over the course of a semester. He was especially interested in their preference and reasons for their preference, as were we. Our study importantly differed from his in that we contrasted assignments that had identical rhetorical demands and evaluation guides, making the comparison particularly focused.

Other comparative studies, such as Kara Alexander et al.'s., did not specifically ask students to contrast their impressions of audience as ours did, but they came to similar conclusions through reviewing students' comments on open-ended questions about the affordances of various composing modes. In addition to posing a pointed audience question, our study, unlike others, directly asked students to contrast the rigor of traditional and multimodal assignments. A number of researchers' whose primary purpose was not investigating rigor, nonetheless came to conclusions and raised questions about the intellectual demands of multimodal composing, as do we. This was so in Alexander's et al.'s study mentioned above, in Daniel Ringrose's case study in a history course in which he replaced a traditional assignment with two multimodal assignments, in Irene Clark's investigation whether or not knowledge of academic argument in traditional papers would transfer to a multimodal

composition, and in Kristen Purcell et al.'s extensive survey of secondary English educators' impressions of multimodal compositions.

The direct comparison of equivalent assignments and the targeted questions that we used to explore audience and rigor extend previous research and paint a portrait of difference. Our study, complemented by others' research, affirms that the learning experiences for each type of composing are not synonymous. In drawing together findings on preference, audience awareness, and intellectual rigor, and in conjunction with scholarship on language and cognition (Bloom; Erhard et al.; Ong; Perry; Wolf), we hope to spur further exploration of the kinds of learning engendered when composing in distinctive modes. We hope to promote discussion about what may underlie the variation in learning and what the consequences may be for student development. We need to be cautious not to conflate traditional and multimodal assignments. Each can lead to distinctly different educational outcomes for students.

The Multimodal Revolution

Multimodal assignments have assimilated into educational practice for significant reasons. The predominant argument put forward encouraging faculty to incorporate multiple modes and media into their instruction is the need to acknowledge and respond to the sea change in communication that has taken place in recent decades. Various modes and their accompanying technologies are now pervasive in personal, workplace, and academic environments. In acknowledging this development, Selfe exhorts faculty to offer students "the full quiver of semiotic modes from which to select" (645) noting that certain audiences and purposes are better served by multimodal communication than by traditional alphabetic writing. Similarly Bill Cope and Mary Kalantzis, Kathleen Blake Yancey, Gunther Kress ("Literacy"), and Gunther Kress and Theo Van Leeuwen ("Multimodal Discourse") all implore faculty to expand the means for human communication through teaching a variety of media. A number of scholars ground that argument by saying that teaching multimodal composition is essential in order for people to achieve agency in their workplace and civic arenas.

Stuart Selber and J. Elizabeth Clark concur that writing in the twenty-first century demands the ability to compose in more than one modality. Others, including Chanon Adsanatham et al., affirm these ideas stating, "As teachers, we can highlight the rhetorical options—showing how multimodal composing enables more varied means to deliver, to invent, and to construct and communicate knowledge" (315).

It follows that writing faculty have been at the educational forefront in acquainting students and colleagues with this new generation of assignments. A perusal of presentation titles at conferences and journals in writing studies over recent decades will confirm that multimodal/media assignments have become one of the main foci. Prestigious awards have been bestowed upon writing programs that advance multimodal composition. For example, in 2012 the College Composition and Communication Writing Program Certificate of Excellence was awarded to the University of El Paso's First-Year Composition Program whose two-semester course sequence culminated in a film festival of winning documentaries created by first-year composition students ("UTEP First Year"). The escalation of multimodal/media in writing instruction is also evident in the guidelines and goals of writing programs such as the University of Connecticut's Writing Across Technology initiative (Department of English) and in program statements such as the National Council of Teachers of English Position Statement on Multimodal Literacies and the Writing Program Administrators Outcomes Statement for First-Year Composition which reads, "In this Statement 'composing' refers broadly to complex writing processes that are increasingly reliant on the use of digital technologies. Writers also attend to elements of design, incorporating images and graphical elements into texts intended for screens as well as printed pages" (Council of Writing Programs Administrators).

It is safe to conclude that the unprecedented access to and ease of transporting and creating digital content, particularly sound and image, has dramatically changed how people compose and share ideas, which in turn has altered the teaching of writing and the nature of assignments in higher education—as it should. It is time,

however, to more systematically consider the impact of new technologies on teaching and learning. Much of what has been published about multimodal practices in journals in composition and rhetoric consists of well-considered arguments urging faculty to embrace digital technologies along with accompanying pedagogical advice. Close examination of the differences between multimodal and traditional assignments has been lagging. Knowing more about the nature of composing in specific modes, and the consequent effect on intellectual development, will provide faculty with crucial information for prudently deciding why, when, how, and how much to incorporate modes other than the written word into their instruction.

Emerging Differences

As multimodal assignments proliferate, differences in composing using various modes are beginning to emerge. A few scholars have drawn attention to the need to understand the varied capabilities of specific modes. In speaking of the "revolution in the landscape of communicating" (9) Kress noted:

> The means of dealing with meaning are different; we need to understand how meanings are made as signs in distinct ways in specific modes, as the result of the interest of the maker of the sign, and we have to find ways of understanding and describing the integration of such meanings across modes, into coherent wholes, into texts. (37)

The dissimilar building blocks for creating meaning may limit what each mode can produce, and for teachers, importantly, what students can learn. Adsanatham et al. (2013) remark, "Composing with words, sounds, images, and motion using a video camera and audio editing software call forth different composing actions and processes from writers" (316). In deconstructing differences further, David Bruce points out that "word>clause>text" are the building blocks of written texts whereas "frame>image>sequence" are the building blocks for video composition (427).

Rhetorical choices look similar at a macro level since whether composing with the written word or in other modes the composer must consider audience and purpose; however, if examined more closely, the choices and the thinking processes are not identical. Some have assumed that the knowledge gleaned from composing in one mode, medium, or genre would transfer to another. Dale Jacobs notes that the choices a comic book writer makes are applicable to rhetorical choices a student makes when composing traditional academic texts and speculates that the thinking a student develops in creating comics should transfer when composing alphabetically. However, the transfer of knowledge between modes has not been well studied and assumptions about transfer must be carefully considered. When Irene Clark examined whether or not students could transfer knowledge from their written academic argument into a media argument she found that students did so problematically. In fact, she observed that students' knowledge of written word texts appeared to transfer inappropriately to their academic multimodal blog (38). Clark cautions teachers not to assume that because students use media plentifully that they can take their knowledge of academic writing and use it to compose in new media (39). As Clark says, "Because new media so profoundly impact our students' lives, we must explore its potential in the writing class—critically and carefully, without assuming that familiarity with new media will enable students to use them appropriately in an academic setting" (40).

In the C's research survey noted earlier that examined the integration of multimodality into composition curricula at the university level, most faculty did not appear to view students' learning experiences as different when students create multimodal compositions in contrast to when students write traditional papers. In response to the question "What is being displaced when teachers engage students in these writing practices?" (referring to multimodal practices) 76% (n=31) responded that they believed nothing was being displaced (Anderson et al. 70). The nominal discussion in the field of differences in composing in various modes has led to a prevalent misconception that traditional and multimodal

assignments are largely interchangeable and, as a result, many faculty do not consider the type of thinking and abilities alphabetic and non-alphabetic composing each engenders.

In my instructional forays into using multimodal assignments, I observed differences in how students responded to these types of prompts, the foremost being that many students responded with enthusiasm to multimedia assignments, but they had difficulty upholding a thesis using logic and research in some mediums, such as video. When I discussed this issue with one of our university's writing center consultants, Sara Alpert, she also noted differences in how students composed in various modes. Together, with help from a colleague in psychology, Christopher Leupold, Sara and I embarked on a study in which we explored whether or not students view a primarily alphabetic-based assignment differently from a primarily sound and image-based assignment. We asked first-year university students which type of assignment they prefer composing, a traditional paper or a multimodal electronic presentation, then queried them about their choice, including their impressions of audience and intellectual rigor. We discovered that students' perceptions of audience and cognitive difficulty were markedly different for these two types of assignments. Further, we learned through their written comments explaining their preference that students were aware that certain modes are better suited to achieve specific rhetorical ends.

Defining Multimodal for Our Study

In order to investigate differences in traditional versus multimodal assignments, we first had to define multimodal for the purposes of our survey instrument. Investigators conducting the previously mentioned C's study on multimodality chose not to define the term in their survey; instead, they asked faculty respondents how they would define *multimodality*. They discovered that writing faculty defined *multimodal* in varying ways. Sixty-two percent said multimodal "included a range of communicative modes including media such as audio, video, animation, words, images, and others" (Anderson et al. 68). Fifteen percent of the faculty in the study said they could

not define the term, and seven percent defined it as composing digital texts, such as websites, or composing analog texts using digital technologies, such as papers with images (Anderson et al. 69).

In perusing the literature, it became clear that researchers and teachers grapple with what constitutes a multimodal text or assignment, particularly since the words *mode*, *medium*, *media*, and *genre* have been conflated in the scholarly literature. Each of these terms represents a complex concept, the discussion of which is ongoing and beyond the scope of this article.[1] However, among notable scholars, some consensus has been reached. Though medium, media, and genre are important in understanding multimodal assignments and texts, fundamentally the definition of *multimodal* is centered on the concept of mode. Kress and Van Leeuwen state that, "any text whose meanings are realized through more than one semiotic code is multimodal" (177). Tracey Bowen and Carl Whithaus define *multimodal* saying "it involves the conscious manipulation of the interaction among various sensory experiences—visual, textual, verbal, tactile, and aural—used in the processes of producing and reading texts" (7). Simply put, Alexander et al. define *multimodal* as using more than one mode in a composition, such as composing with sound and image, or words and image (5).

The general consensus of what constitutes a mode, however, does not assure that compositionists agree upon what constitutes a multimodal text or assignment. In practice, some would not concur that a research paper with the inclusion of one graph is a multimodal text. The degree to which more than one mode must form the basis of a multimodal composition is not agreed upon, nor is the degree to which that mode must be comprised of original content. Not all faculty would find a composition consisting solely of borrowed material an appropriate response to a multimodal assignment. Douglas Eyman attempts to sharpen the field's understanding of this in saying:

> I also see the primary interest of our field as what I term digital rhetoric—the application of rhetorical theory and practice in and through digital media. I make a distinction,

> too, between digital literacy (being able to effectively use semiotic resources to accomplish particular tasks) and digital rhetoric (making use of semiotic resources in the process of invention—not just *using*, but actually *making* digital texts). (qtd. in Walker et al. 329)

Given the difficulty of defining *multimodal*, when creating the survey for our study we sought terminology that students would understand in order to distinguish assignments that are primarily alphabetic from assignments that are primarily sound and image-based. We decided against using the word *multimodal*; rather, we arrived upon terms easily recognizable to them: paper and electronic presentation. Further, we decided not to specify the extent to which their final product had to be original; the assignment we created allowed them to borrow content as they thought appropriate to suit the purpose of the assignment.

Methodology

Survey Instrument

As stated earlier, our interest was to explore if students view a traditional alphabetic assignment differently from a multimodal assignment. Our survey presented students with a persuasive prompt and asked them if they would prefer to respond to the prompt by composing a paper consisting mostly of written words, or an electronic presentation consisting mostly of sounds and images (see Appendix A: Survey Instrument). Through this contrast we set out to explore the extremes of a continuum where words predominate at one end, and images and sounds predominate on the other. We chose a ubiquitous, time-honored assignment, that of taking a stand on an issue of their choosing, then supporting their stance. The prompt remained the same regardless if they chose to compose the paper or the electronic presentation. We pointedly chose to contrast a paper to an electronic presentation since both are assigned frequently as major grade components in courses in higher education, sometimes with one leading into the other, sometimes with one replacing the

other. Importantly, papers traditionally are associated more with the written word and electronic presentations are associated more with image and sound.

Students' could choose to use any text-tool, including Microsoft Word, Google Docs, PowerPoint, Prezi, etc. Though not explicitly stated in the prompt, students' choice of medium also was left open in that they could deliver their composition in paper and print, or deliver their composition electronically over the Internet, all mediums typically used for turning in assignments. Notably, their preference for composing the paper or the electronic presentation was based on a hypothetical assignment. They did not complete the assignment, only stated a preference, reasons for their preference, and their impressions of composing for each type of assignment. Our reasons for making the assignment hypothetical were both practical and strategic. Firstly, we wanted to have as large a sample size as possible and believed it unlikely that a great many faculty would be willing to make the hypothetical assignment a real one and incorporate it into their syllabi. More importantly, we wanted to reduce the classroom/teacher affect if students were to carry out the assignment. Teachers could influence students' preference by subtly favoring one type of assignment over the other, or inadvertently influence students' impressions about composing for each type through their instruction. Because the prompt initiated an imagined scenario, students had to rely on the repository of their past experiences with papers and electronic presentations so their answers to the survey questions would be less focused on one experience.

In all settings where the survey was distributed, the assignment prompt was read aloud to clarify to students that if they chose the paper, words must primarily forward the argument, though images and sounds could supplement the text, and, that if they chose the electronic presentation, images and sounds must primarily forward the argument, though words could supplement their presentation. Furthermore, participants were reminded verbally before starting the survey not to imagine that the presentation would be given in front of the class, but that it would be turned in and viewed

exclusively by the professor, as would the paper. One evaluation guide was included in the survey (see Appendix A: Survey Instrument). Students knew that they would be evaluated on identical criteria regardless whether they chose the paper or the electronic presentation.

After students indicated on the survey their preference for the paper or the presentation, they were provided a textbox to give reasons for their choice, followed by additional questions asking them to compare the paper and the presentation on various measures. The answers to objective questions were tallied, and students' textbox comments were coded and categorized using Atlas software. In creating the categories for our coding and in coding the students' responses, Sara offered a student's interpretive lens on each student's textbox comments, and I offered a compositionist's perspective. We reached agreement on categories through collaborative discussion with my making a point not to overshadow Sara's interpretations. We then returned to students' textbox comments to tally their responses for inclusion in the categories.

Participants

The participants of our study consisted of first-year students at Elon University, a private, comprehensive institution in the Southern United States that emphasizes the liberal arts. The university enrolls roughly six thousand undergraduate students with an acceptance rate of approximately sixty percent. Most students who attend the university come from the East Coast, come from families whose socio-economic status is above the national norm, and come to the university directly from high school. The survey was distributed in 2013 with IRB approval to 179 first-year students, approximately half in classes and half in residence halls, with no one surveyed twice. Of those, fifty were eliminated from the study, a few because they were not first-year students and the rest because they misunderstood the instructions, explained more fully under the limitations of the study. The final data pool consisted of 129 participants.

Results

Students' Composing Preference

In answer to the survey question "Which would you most likely choose to compose: a paper or an electronic presentation?" students chose composing the paper over the electronic presentation by a small margin (see Figure 1). An examination of students' textbox comments revealed varied reasons for their preference. The paper was a fallback/default choice for many (to view the categories that emerged from the textbox comments of those opting for the paper, see Appendix B: Trends in Textbox Comments). Fourteen students made comments that they chose the paper because they had more experience writing papers or they were concerned about how they would be graded on an electronic presentation. They found composing the electronic presentation uncomfortably open and less prescribed.

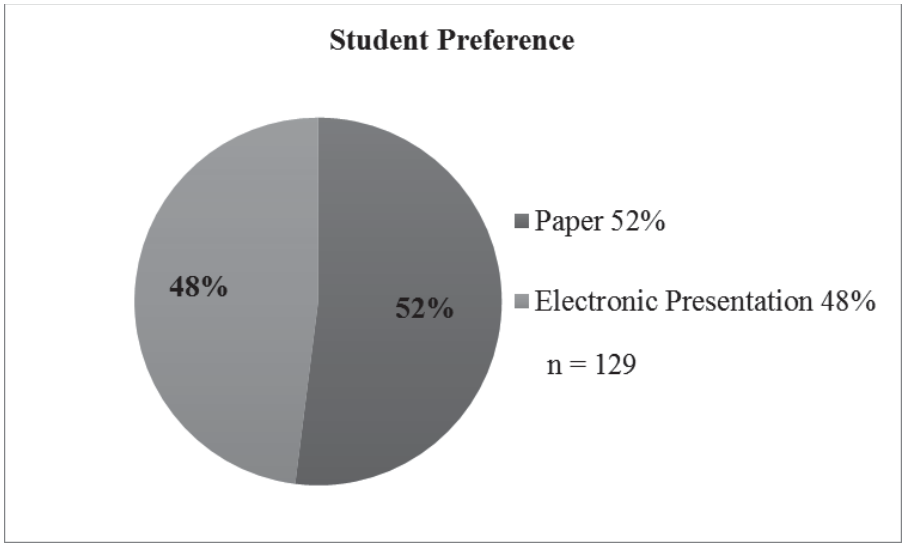

Figure 1: Students' preference for responding to a persuasive assignment as a paper or as an electronic presentation.

For many students the paper was the safer, more familiar choice. Representative quotes from the textboxes of these students included comments such as:

I like how the expectations for papers have set limits which for me makes it easier to follow through. Since multimodal projects have broader limits, it makes it harder for me to know I've done enough or too much, or if I've done what is expected of me.

***

I am not creative. Requirements are usually laid out better for a paper.

***

I would more likely choose the paper because it is what I have had the most experience working on, therefore I am more comfortable writing a paper even though an electronic presentation sounds very fun, interesting and interactive.

An additional six students reported choosing the paper because they often encounter troublesome technology issues, not that they were fearful of, or particularly inexperienced with, electronic presentation software programs, but that they found it too easy to run into technology quagmires. Representative textbox comments included:

I get bogged down with technical difficulties and waste a ton of time trying to format [an electronic presentation] correctly.

***

I always get hung up on the little details [of technology] and forget about my core argument.

In considering the textbox comments, we can discern that twenty more students might have opted for the electronic presentation if it were not for their lack of experience with electronic presentations and possible technological hassles. With more multimodal composing experience and with increasingly user-friendly software, it may be the case that the majority of students would opt to compose the electronic presentation, preferring composing primarily with images and sounds over words.

Contrastively, the perceived openness that drove some students to opt for the paper was the same reason other students opted for the electronic presentation (to see the categories that emerged from

the textbox comments of those opting for the electronic presentation, see Appendix B: Trends in Textbox Comments). Representative textbox remarks from these students include:

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[The electronic presentation] allows for more creativity. It lets me impress the teacher with flair and creative ideas rather than facts.

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. . . the [electronic presentation] allows for more interesting ways to deliver information.

Seen from a broader perspective than composing, whether or not a student chose the paper or the electronic presentation may, to some extent, be explained by an individual's general comfort level with novelty and uncertainty.

However, what most determined whether or not students chose the paper or electronic presentation was their perception of which type of composing better suited the assignment. Forty-one students commented that they chose the paper because they thought it would be the better medium for this assignment. The following comments taken from the textbox remarks of these students help illuminate the reasons for their choice.

Although I am comfortable creating and executing an electronic presentation, I feel I can present my arguments more thoroughly in a paper.

***

I can say more in a paper and delve deeper into the subject matter.

***

. . . because there will be a defined thesis, evidence, etc. Words convey the message more directly, or at least more definitively.

***

I would choose to write a paper because I can put my own words into a paper. With the electronic presentation, it would almost completely be things other people have said. But with the paper, I am using my

own words, and writing style to convey the type of message I want to convey.

The eighteen students who thought that the electronic presentation would be the better medium for responding to the prompt gave as the primary reason the unique power of images.

With the use of pictures and graphs I could better my argument.

***

Images are more powerful than words.

Students' Perceptions Regarding Audience

In answer to the survey question "With which type of assignment would you be more likely to think about your audience?" by a large majority, students reported that they think more about their audience when composing electronic presentations (see Figure 2).

Few participants made textbox comments about audience in our study and all of the comments were made by participants who chose the electronic presentation. Clearly, most students report thinking

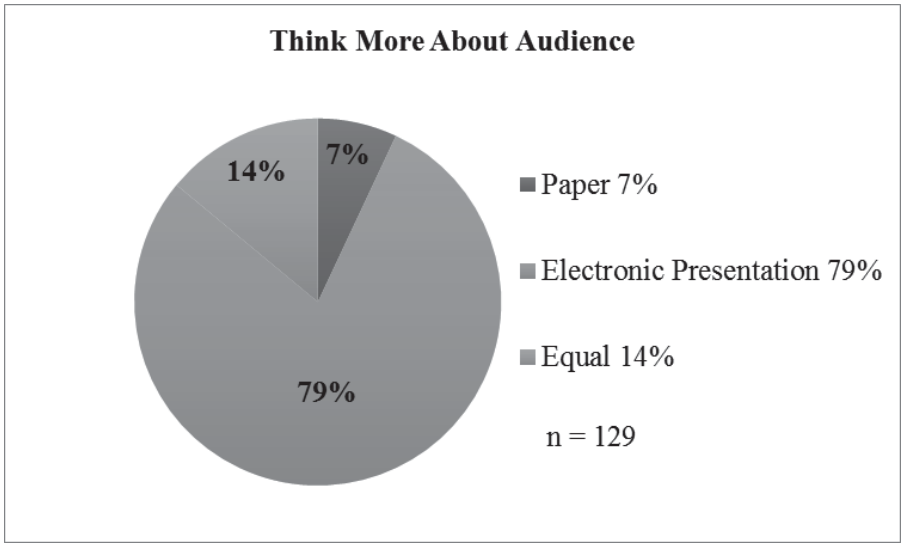

Figure 2: Students' response to whether they think more about their audience when composing a paper or composing an electronic presentation

more about their audience when assigned an electronic presentation, even a presentation that is not given in front of the class. Representative textbox comments included:

Electronic presentations entertain the audience better, more personable.

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I'd rather have an electronic presentation because it allows me to be more creative rather than having to entertain an audience only through words.

Students' Perceptions Regarding Intellectual Demand

Students' response was also skewed in answer to the survey question "Which type of assignment is likely to be more intellectually demanding, a paper or an electronic presentation?" By a large majority, students in our study found papers more intellectually demanding (see Figure 3).

Whether or not students chose to write the paper or the electronic presentation, their textbox comments made clear that they found the paper harder in a variety of ways typically associated with academic rigor.

I learn much more with (the paper).

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Electronic presentations are easier to slack on in terms of research.

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I love writing but I am too busy and would rather do a PowerPoint than write a long paper.

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(An electronic presentation) takes less time and effort.

***

It is a lot easier to find pictures than to write a paper.

***

Electronic presentations are for slackers.

Textbox comments also revealed students had a sense of accomplishment upon completing a paper. No such comments were made about the electronic presentation. Comments included:

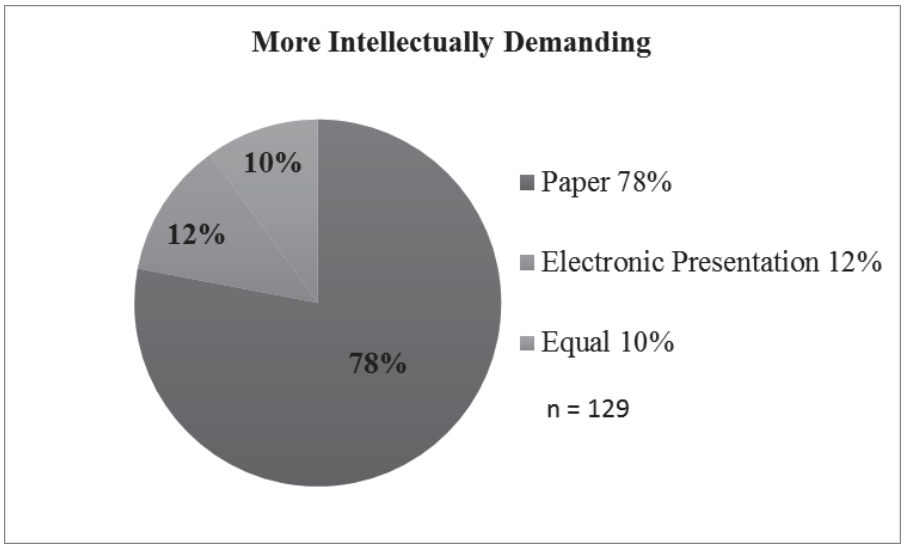

Figure 3: Students' response to whether composing a paper or an electronic presentation is more intellectually demanding

I get more out of (writing a paper) and would do a better job.

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Although papers are more difficult, I enjoy the end result and feel more accomplished than I do with an electronic presentation.

Limitations of the Study

Firstly, a limitation of our study that could be of some consequence in interpreting the results is that students only imagined responding to the prompt. Their answers relied on past experiences with papers and electronic presentations, as we wanted. However, perhaps in actually composing a paper or electronic presentation their answers to the questions regarding audience awareness and intellectual demand might be different.

Secondly, our participant pool was not a large one. Fifty students were removed since the wording in their textbox comments indicated that they thought they would be giving an electronic

presentation in front of a class, even though they were instructed not to imagine this. We believed this imagining could affect students' responses to the question asking which type of assignment would they more likely think about their audience, so they were taken out of the data pool.

Lastly, as with many studies, our results would be more reliable and generalizable if the sample size were larger and more diverse, particularly diverse with regard to participants' educational and socioeconomic background. Our participants' affluence could determine their exposure to and training in using digital technologies; nonetheless, our results often echoed those of other researchers who conducted similar investigations at a variety of institutions.

Discussion

Students' Preference for the Paper vs. the Electronic Presentation

In our study as in studies conducted by Adsanatham et al. and Alexander et al., students were divided about whether they prefer composing primarily alphabetic assignments or primarily image-sound based assignments. Given the many variables in the assignments used across studies, it is difficult to draw a firm conclusion about which type of composing students prefer. However, our study, Shawn Stowe's, and Alexander et al.'s studies as well as Debra Journet's observations, reveal that similar motivations underlie student preference.

The study that most approximates ours was a master thesis done by Shawn Stowe. However, unlike our study, Stowe sought to explore changes in preference during a semester long multimodal-oriented composition course in which students were given both alphabetic and sound and image-based assignments. At the beginning of the semester, students preferred multimodal composing over traditional writing more than two to one (33). However, by the end of the semester, many students reported that they felt less confident with multimodal composing in comparison with their level of confidence at the beginning of the semester and preferred

it less (27, 33. 47). This finding surprised Stowe who conjectured the result was a consequence of students having been asked their preference at the end of the semester when they were anxious about the completion of a multimodal project (27).

As in our study, students in Stowe's study who reported that they preferred more traditional composing to multimodal composing gave as reasons that they had more instruction and were more practiced in writing traditional papers (47-48). Two other studies found similar results. Adsanatham et al. noted that students expressed discomfort about creating a video and did not want to take risks composing in a medium that placed them in an inexperienced position; by contrast, students felt more practiced and capable in writing papers (319). Additionally, in a study to be discussed in more detail to follow, Alexander et al. found that "students expressed a preference for the clarity and safety offered by a print text" (18).

As in our study, Stowe found that students who preferred multimodal composing commented that such composing is more creative and quicker (48-50). Multimodal assignments, it appears, are generally seen as more fun. In her post-semester course evaluations, Journet found that multimodal assignments were students' favorites of the semester (116). Aside from students who are worried about how they will be graded on multimodal compositions, students find much that they like in composing in non-alphabetic modes.

In our study, the foremost reasons students offered for their composing preference were based not on prior familiarity with a mode, nor ease and creativity in composing in that mode, but on whether or not using written words, or using sounds and images, would be best for conveying their meaning. This finding complements the results of Alexander et al.'s study. They investigated students' understandings of the affordances (meaning the potentials and limitations) that various semiotic modes offer for communication. They gave pre- and post-questionnaires to fifty first-year students who composed both a print and a multimodal assignment. Multimodal was defined as "using more than one mode in a composition such as

sound and image, words and image" (5). The nature of their assignment was different from the prompt we used. Ours was a persuasive task; Alexander et al. assigned a descriptive/explanatory task. Their prompt asked students to profile a person, place, or activity. In their study approximately half the participants were required to complete the word composition before the multimodal composition, and the other half completed the multimodal composition before the word composition (5).

Consistent with our results, Alexander et al. reported that the clear majority of students considered the affordances of a mode when composing; however, it is important to note that students in their study were prompted to reflect on modes:

> Through composing, comparing, and reflecting on print and multimodal composition, students in this study became more aware of how modal affordances work to convey meaning. They realized that various semiotic modes contain unique possibilities and limitations, which make the modes particularly capable of communicating specific meanings. . . . Their observations help teachers understand how first-year students perceive and approach their assignments and how they are able to distinguish modal and rhetorical possibilities depending on what type of composition they are creating. (19)

Exposure to different semiotic codes, particularly if instruction includes reflection on those codes, likely provokes consideration of choices when composing and heightens students' awareness of rhetorical situations, which helps explain students' perceptions of audience when composing a multimodal electronic presentation in comparison with a paper.

Students' Perception of Audience

Students in our and Alexander et al.'s study reported that they pay more attention to audience when including sound and/or image in their composition. Alexander et al. found that students conceive of their audience more concretely when composing multimodal

texts; in fact, no student in their study mentioned envisioning a specific audience when commenting on their printed essays, similar to our study in which no student who chose to write the paper remarked about audience. In Alexander et al.'s study, only six out of fifty participants mentioned any reader at all for their written text. Yet, for their multimodal texts, all the students in their study envisioned a specific audience (11).

We speculate that students may envision their audience more often and more concretely when composing multimodal texts for several reasons. Firstly, media of many kinds populate students' worlds, more so than academic papers. Nearly everyone, and particularly young people, are frequent recipients of podcasts, wikis, websites, blogs, and videos which enable them more readily to slip into the shoes of an audience receiving messages steeped in image and sound. Their abundant exposure to, and their understanding of, media are conversely why some scholars contend that faculty should assign multimodal tasks with the expectation that their rhetorical understandings of media texts will transfer to academic papers.

In addition, rather than turn in a paper to a teacher, when students compose texts that are reliant on sound and image they frequently present their final products to fellow students in class presentations or on websites. The rhetorical situation for many multimodal texts is real and keenly felt as a result of public exposure, spurring students to consider their audience. Historically for students, alphabetic composing is rhetorically constricted, often used as a means to show a teacher what one has learned rather than as a means to reach real audiences for an array of purposes. It may be that the discrepancy in how much students consider their audience would narrow significantly if students' traditional texts were read by more than the teacher and written for purposes relevant to their aims. This discrepancy serves as a reminder that teachers should continue to use real audiences for multimodal texts and to create varied authentic communication situations to make alphabetic writing potently rhetorical.

Students' Perception of Intellectual Rigor

We believe that the most significant finding of our study is that students view primarily alphabetic composing as more intellectually demanding than primarily sound-image based composing. Whether one type of composing is cognitively more taxing, however, has been a point of some contention with teachers and scholars of composition. Outside of anecdotal remarks and assumptions, few investigations have been conducted to explore how types of composing differ with regard to intellectual rigor or to uncover what particular cognitive development each type of composing engenders.

Unlike our study, students in Stowe's study who preferred multimodal composition made few claims that it was easier (51). Scholars, such as Diana George, also defend the rigor of multimodal assignments anecdotally by noting that in her class evaluations, "Not one of these students seemed to think that their visual argument was any less complicated or took less research or thought than the typical assignment essay that they were also assigned in the course" (28). Jody Shipka identifies ways that composing multimodal texts evoke challenges similar to alphabetic texts:

> I have found it helpful to highlight for colleagues the complex decisions-making processes students report engaging in while producing work for the course, reminding them that while the students' final products may not resemble more familiar or traditional looking academic texts, the framework still requires that students conduct research, compose various kinds of written texts, and respond both purposefully and appropriately to different kinds of rhetorical situations. ("Toward a Composition" 107)

The complexity of multimodal assignments is explicated as well by Adsanatham et al. with regard to video composing:

> Combining spoken voice, music, effects, and even silence alongside displayed alphabetic text, images, and animation,

> video composing demands a great deal of rhetorical consideration and invention. Keeping track of multiple moves and textual layers as they occur can help composers make more informed decisions before delivering their finished video project. (318)

However, some studies have indicated that traditional forms of alphabetic composing are more amenable to rigor, at least specific kinds of rigor. In addition to students in our study expressing this opinion, many teachers have stated similar views. In 2013 the Pew Research Center published the results of a study examining the impact of digital technologies on student writing. They surveyed 2,462 advanced placement and National Writing Project secondary teachers and noted as a major finding that these educators thought truncated forms of expression frequently used in digital communication "are hindering students willingness and ability to write longer texts and to think critically about complicated topics" (Purcell et al.).

In their study examining the affordances of traditional versus multimodal assignments, Alexander et al. also indicated that students' multimodal texts lacked depth of thought:

> Students perceive both potentials and limitations in multimodal texts. The potentials include layering, implicit persuasion, a clearer understanding of the audience, creativity, and affective appeals; the primary limitation is difficulty in constructing a clear, well-supported thesis . . . findings also show that students' multimodal compositions tended to privilege appearance and surface messages rather than critical inquiry into the complexities of the profile subject. (6)

In her study of transfer, Irene Clark found students' written essays were well argued but their multimodal extensions of those written essays were lacking:

> . . . each essay contained compelling support from credible sources. However, unlike the print essays, in which all sources pertained directly and appropriately to the idea being

> argued and were adequately introduced and discussed, the essays posted on the blogs included items that were only peripherally related to the ideas being addressed and some of them were inappropriate for formal academic writing because they consisted simply of unsupported assertions. (35-36)

We speculate that three factors may explain, to a large extent, why students in our study viewed composing the electronic presentation as less intellectually demanding than the paper. The first factor is based on the degree to which a composition is original. To create original images and original sounds typically is more intellectually demanding than borrowing already composed audio, video, or static images. Students' responses to assignments that require multimedia often are liberally comprised of borrowed works; whereas, with more traditional papers, students' texts typically are comprised of their own words with sparse, strategic insertions of quotes or images. Though a collage or remix of others' works can result in an original work of art, artistry is not usually the main objective of assignments in first-year composition or indeed, most courses in academia. Outside of courses in the arts and communication, time is rarely devoted to educating students on the finer points of composing with images and sounds, such as in teaching students about cinematography or composing a musical score, the kind of knowledge needed for original creations using sound and image.

A second factor, the text-tools and the genres they spawn, may also account for the perceived difference in intellectual demand between composing primarily with words or primarily with sound and image. A large, multi-institutional study conducted by the WIDE Research Center at Michigan State discovered that first-year writing students placed more value on writing academic research papers in contrast to common forms of digital composing, such as blogs and wikis (Grabill et al.). In terms of assessing the demands of an assignment, it is widely acknowledged in education that assignments asking students to relay information are generally less demanding than those asking students to analyze information, or those asking students to formulate a thesis or stance, particularly

when a thesis demands significant support through means of logic and corroborating evidence (Bloom; Perry). Perhaps many students do not value composing with sound and image as much as with words and view it as less rigorous because a number of the genres they have encountered spawned by multimodal and digital assignments have not required them to engage in higher-level thinking, such as engaging in a sustained, reasoned argument supported by scholarly sources.

In transferring knowledge, Irene Clark concludes that students need help understanding how to incorporate new media elements into a text in order to substantiate, develop, and refute academic arguments (39). Alexander et al. affirm the difficulty students have when not using written words for higher order thinking. They observed that students had "difficulty in developing a clear thesis. Many students, in fact, expressed reservation about the quality of their multimodal argument because they were unsure how to make a clear point" (16). Such an inability was reported as well in two case studies in which Ringrose replaced a traditional paper with a multimodal project in a history course. He found that students' multimedia projects were "visually stunning . . . yet often empty of meaning" (221), and he lamented that students "gather information in discreet visual bits even when the connections between them are tenuous" (222). Though still committed to experimenting with multimodal projects in his discipline, Ringrose concluded, "A crucial pedagogical lesson to draw from these two projects, therefore, is that it is extremely difficult to make and sustain a complex argument in the multimedia format" (221).

It may be the case that the written word is better than sound and image for supporting a thesis. Cheryl Ball and Ryan Moeller touch on this point in discussing the difference between the scholarly and the creative. They posit that the difference between the academic essay and the multimedia presentation could be thought of as paralleling the difference between the scholarly and the aesthetic. Ball and Moeller speak of a scholarly electronic presentation as one that would contain a significant amount of words:

> Here we are defining a scholarly electronic presentation as one that employs the logic of linear arguments to persuade an audience. The most common association of a scholarly electronic presentation would be the academic article or essay. In contrast (as is often the case) is the aesthetic electronic presentation, which we define as the use of persuasive and emotional appeals made through multimedia. A common example of an aesthetic electronic presentation would be a photograph, an animation, or a video with a soundtrack, for instance. (9)

In writing about blurring the boundaries between the scholarly and the creative, Ball and Moeller use as an example Michael Wesch's YouTube video, "The Machine is Us/ing Us." They draw attention to the fact that though Wesch composed with image and sound, "the logic of his argument is still embedded in words, words that he recorded himself typing on screen–yes–but words, and thus traditional, academic structures, nonetheless" (3). As Journet observes, composing with words is "generally characterized by evidence-based argument; hierarchal and logical organization; coherence, elaboration and cohesion; and certain stylistic qualities, such as clarity, consciousness, and even elegance" (112). In considering the work of a number of scholars, Alexander et al. identify the affordances of print text as "linear, sequential logic and evidence showing time and sequence." In contrast, they identify the affordances of audio as "accent, tone of voice, mood, or music," and the affordances of video as "movement, process, and passage of time" as well as showing meaning and representing space and simultaneity (2).

Some consensus, then, has been reached among scholars that words are the vehicle of rational thought, and that sound and image are particularly suited for conveying expressive functions; all modes, however, create understanding and meaning. It may be words' special capacity to transform thought and create new ideas that accounts for students reporting that alphabetic assignments are more intellectually rigorous than sound and image-based assignments.

Many faculty may value traditional assignments more as well since rational thought via words is the fodder for scholarship in the academy.

The third factor that we speculate may account for students perceiving alphabetic assignments as particularly intellectually demanding may go beyond originality, genre, and the logical affordance of words; it may be that the cognitive challenge posed by composing with the printed word is a consequence of our biology. Maryanne Wolf contends that reading requires multiple cognitive processes, whereas speech and vision are more closely related to our basic genetic make-up. She notes that learning to read is dependent on the environment and is less pre-programmed and natural (8-9). "If there are no genes specific only to reading, and if our brain has to connect older structures for vision and language to learn this new skill, every child in every generation has to do a lot of work" (19). This implies that it is harder to engage with written language in the creation of meaning than it is with sound and image. Wolf quotes cognitive scientist Pinker who said, "Children are wired for sound, but print is an optional accessory that must be painstakingly bolted on" (19). If reading is challenging in this way, it follows that composing with words might be as well.

If semiotic modes are not all the same, composing using words and composing using sounds and images likely call upon and develop different intellectual abilities and different areas of the brain. In a study of expert and novice writers, researchers found differences in the brain activity of each group while participants were composing. Even before beginning to write, novice creative writers activated the visual centers of their brains, while expert creative writers activated the area involved in speech (Erhard et al.). Though not an investigation of the differences between alphabetic and sound and image-based composing, this study indicates how practice in composing with words had developed the language area of the brain and leads to speculation that composing with sound and image would develop other areas.

Relying upon work of scholars, such as Walter Ong (2013), who have noted the connection of complex thinking with the written word, Wolf additionally draws upon neuroscientific studies that

have investigated the relationship of writing with brain circuitry. In doing so she forwards the far-reaching claim that the invention of writing changes the circuitry of the brain and consequently the intellectual evolution of our species (3, 21). "As humans learned to use written language more and more precisely to convey their thoughts, their capacity for abstract thought and novel ideas accelerated." (66). Wolf argues that our species' intellectual evolution now "is changing before our eyes and under our fingertips" as a result of digital technologies (4). She makes the case that texts that do not allow for sustained interaction with words nurturing deep and complex ideas are not only undermining our ability to immerse ourselves in thought, they are also changing the way we can think by physically altering our brain structure. These are important matters for faculty to consider. As teachers we are not simply "filling" brains; we are building and transforming them.

Implications for Teaching and Research

It is welcome news that our and Alexander et al.'s studies found that students' pay attention to the affordances offered by various modes of composing. Particularly when students have a stake in the outcome, such as in earning a higher grade, many thoughtfully consider what each mode offers in meeting the demands of an assignment, and they consider what composing strengths and weaknesses they bring to that mode. It is incumbent for us as educators to design assignments that offer students choices of modes and to design assignments that engage students in a variety of modes over the course of a semester. To further develop their understanding about affordances, we can accompany these assignments with reflection about the nature of composing in each mode.

It is useful to know as well that students are more keenly aware of audience when composing with sound and image than when composing with the written word. Educators could capitalize on students' audience awareness with media as a segue for approaching audiences in traditional genres. However, Irene Clark's study cautions that students' knowledge of media did not transfer well to

academic genres. If teachers begin an assignment having students compose with media, they may need to invest time in guiding students to adapt their understandings to a more traditional mode or genre. As Clark notes:

> In particular, when we include new media in our courses, we need to help students understand how multimodal essays are similar to and different from the print essays with which they are already familiar and show them how to incorporate new media elements thoughtfully and coherently, not simply downloading them as they might on a blog or Facebook page. We must also choose our new media genres carefully, evaluating their suitability for the purpose of our courses. . . . (40)

Fundamentally, suitability is key. As students noted in explaining their preference, some types of assignments, particularly those that require academic argument and analysis, may be best accomplished primarily through alphabetic means. Faculty need to consider not only the suitability of modes for the objectives of an assignment and the course overall, but also may need to think more consciously of the type of thinking an assignment calls forth. For assignments that require mostly sound or image, faculty could consider if the assignment requires more than reportage, and the extent to which the final creation is original. If desirable, depending on the assignment, the intellectual ante could be enhanced by requiring more written words to extend ideas, by requiring scholarly sources be consulted, or perhaps by requiring that a media assignment is based on a thesis-driven paper. Faculty also could accompany an image or sound-based assignment with a word-based essay that analyzes the rhetorical aspects of the composition.

The rigor of media-based compositions may also be enhanced through means of evaluation. Assessment of multimodal compositions can, and needs to, vary depending upon the modes, mediums, and genres required of an assignment. This is new territory for many faculty. Chanon Adsanatham (153), Daniel Anderson et al. (72), and Elizabeth Murray et al. (par.1) have pointed out that grading

media assignments can be daunting and that faculty express discomfort about grading fairly. Faculty rightly wrestle with the extent to which they should weigh technical skill, rhetorical savvy, and aesthetics in grading media assignments. It makes sense that if faculty are unsure of their expectations for multimodal assignments, students, as mentioned previously, see these assignments as more unstructured, informal, and less definitive than more traditional ones. Some scholars and teachers are exploring and addressing the challenge of grading media-based compositions (Adsanatham; Borton and Holt; McKee and DeVoss; Odell and Katz; Wyatt-Smith and Kimber). As more consensus and specific criteria emerge for what constitutes quality in various types of multimodal compositions, evaluation will become more transparent to both teachers and students. These advances could engender more depth of thought in the composing process and prompt students to focus more on substance over style, and content over delivery.

What our study and the work of other scholars suggest is that traditional writing assignments and assignments that are not primarily alphabetic are different animals, capable of accomplishing different aims, and in so doing, honing different abilities. Faculty can err in thinking they can replace a paper with a multimodal presentation, or vice versa, and assume that students would be engaged in parallel learning experiences and developing corresponding skills. Even an assignment with an argumentative script written in advance and then spoken in an electronic presentation or as part of a video is not quite the same as a written argument composed for a paper. Because a scripted multimodal argument is presented, or in other words is spoken aloud as opposed to read silently by an audience, the argument likely cannot be as complex. As Vincent Ferraro and Kathryn Palmer point out, spoken arguments must accommodate listeners' needs in recognizing that the audience cannot slow down their pace, pausing, and re-reading in order to consider what has been said. A good spoken argument requires a ". . . tradeoff between comprehensiveness and comprehension." Ferraro and Palmer point out that "trying to put too much into a

speech is probably the single most frequent error made by speakers."

It behooves writing specialists, working independently and with scholars in related fields, to conduct analyses that illuminate the differences between composing for traditional versus multimodal assignments so that we can better understand the decision-making processes and learning outcomes of creating meaning in various modes and mediums. Investigations that examine students' perceptions, such as the one we conducted, are first steps toward advancing this understanding. Moving beyond self-reports and anecdotal evidence to more formal studies will enable the field to engage more fruitfully in deliberative discussion about the types of assignments that best suit the goals of first-year composition and higher education. Just as we call upon our students to be critical consumers of the way technology is altering their world, faculty need to be critical consumers of the way technology is altering our teaching and our students' learning.

Note

[1]A *mode*, as explicated by Jeff Bezemer and Gunther Kress, "is a socially and culturally shaped resource for making meaning. Image, writing, layout, speech, moving image are examples of modes" (171). Bezemer and Kress go on to define *medium* as "the substance through which meaning becomes available to others," and offer oil on canvas and paper and print as examples of mediums (172). Similarly, Tracey Bowen and Carl Whithaus state that a *medium* is the means for transmission and reception of information, and offer the Web as an example (3). They also point out that the term *media* can be used synonymously with *medium* (169). Bowen and Whithaus contribute the notion of the *text-tool*, which they define as what is used to create a text. They name email, instant messages, webpages, Facebook, and wikis as *text-tools* and explain that *text-tools* and *mediums* generate different genres, sometimes hybrid genres, but in themselves, text-tools and mediums are not genres (3). They define *genre* as "ways for students to organize their experiences and, through identified conventions, relate those experiences to others within a particular social context" (6). To illustrate the difference, they offer as an example that a wiki (a text-tool) can be used to create different genres. Some wikis are dictionary-like entries, while other wikis are encyclopedia-like entries (3).

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APPENDIX A
SURVEY INSTRUMENT

For this assignment take a stand on a controversial issue of your choice. Any issue on which reasonable people disagree is a possible topic, i.e. the death penalty, gun control, the legalization of marijuana or prostitution, etc.

Either choose to write a 5-8 page paper, or to create a 5-8 minute electronic presentation.

If you choose the paper, your words must forward your position and create your argument. Any images or sounds should be in the service of your words.

If you chose the electronic presentation, your images and sounds must forward your position and create your argument. Any words should be in the service of your images and sounds. For the electronic presentation, you can use any electronic medium such as a video, PowerPoint, Prezi, or a combination. This electronic presentation will be turned in. You will not be present when it is viewed.

For either the paper or electronic presentation, use MLA documentation for all material that you use that is not your own, including others' ideas, words, images, or sounds. Be certain throughout your work to document your sources and conclude your paper or electronic presentation with a Works Cited list. Your audience is your professor, who will grade your paper or electronic presentation based on the following criteria.

Evaluation Rubric
Support for the Stand: Ideas and/or images and sound convince the reader to agree with the stand.
Organization: The organization of the ideas/slides/scenes is thoughtful and persuasive.
Editing: The work is well crafted and professional looking. Written material is well edited. Images or sounds are easy to see and hear.
Documentation: Sources are well chosen, credible, and properly cited.

Which would you most likely choose to compose?

The Paper *The Electronic Presentation*

Why?

1. With which type of assignment would you be more likely to think about your audience?

Paper *Electronic Presentation* *Equal*

2. Which type of assignment is likely to be more intellectually demanding, a paper or an electronic presentation?

Paper *Electronic Presentation* *Equal*

APPENDIX B
TRENDS IN TEXTBOOK COMMENTS*

*A student's response sometimes consisted of a number of phrases and sentences. Parts of one participant's response may be coded under more than one category.

Number of Responses	Category
41	Paper is better suited to argument/I am able to express myself better/more.
9	I have more experience with papers.
6	I feel more accomplished composing papers.
6	Electronic presentations pose technology problems.
5	Papers have clearer expectations.
4	Papers provoke more learning.

Figure 1: Categories and Tallies of Textbox Comments for Students Who Chose the Paper

Number of Responses	Category
18	Electronic presentation is better suited to argument/ I am able to express myself better/more.
11	Electronic presentations take less time to compose.
9	Electronic presentations are easier to compose.
9	Electronic presentations are more creative.
6	I am not a good writer.
5	Electronic presentations are less restrictive.
4	I am technologically savvy.

Figure 2: Categories and Tallies of Textbox Comments for Students Who Chose the Electronic Presentation