

**JOURNAL OF LITERACY AND TECHNOLOGY**  
**VOLUME 12, NUMBER 1: MARCH 2011**

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**ENGAGING PRE-SERVICE TEACHERS IN LEARNING THROUGH SOCIAL  
NETWORKING**

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### **Abstract**

One fast-growing facet of new literacies is social networking. The purpose of this study was to examine the effects of social networking on preservice teachers' knowledge of professional organizations and resources. In this study, Facebook was utilized to expose preservice teachers to professional resources. A survey was administered to participants in a pretest and posttest format to measure knowledge of professional resources and trends in education. This article examines the process and data resulting from the use of social networks. Data provided both quantitative and qualitative results that support the use of social networks as a tool to expose preservice teachers to professional organizations and resources.

The International Reading Association (IRA) stated that the literacies used by today's students are much different from those of their parents, or even those of students just a decade ago (IRA, 2009). In May 2009, the IRA Board of Directors adopted a position statement titled "New Literacies and the 21st Century Technologies," which noted that in order "to become fully literate in today's world, students must become proficient in the literacies of the 21st century technologies" (p. 1). IRA proposed literacy educators have a responsibility to integrate information and communication technologies into the curriculum, to prepare students for the future.

Other terms for information and communication technologies in literature included digital literacies, new literacies, and media literacies. The annual survey of literacy leaders (Cassidy & Cassidy, 2009) labeled one of the 2010 topic categories *new literacies/digital literacies*. According to the survey, *new literacies/digital literacies* are among the *hot topics* in the field of reading education for 2010. In addition, at least 75 % of the survey respondents agreed new literacies/digital literacies *should be hot*.

What are new literacies, and why are they a *hot topic*? While literacy includes the ability to read and write, new literacies encompass a broader view of reading and writing in a world of technology. Researchers are now defining literacies within new technologies such as gaming software, video technologies, technologies that establish communities on the Internet, search engines, webpages, etc. (Leu, Kinzer, Coiro, & Cammack, 2004). In examining literacies within today's social context, Leu, et al. (2004) reported that there are social forces at work today that frame the changes to literacy that we are experiencing. Among those forces is the rapid emergence of the Internet as a powerful new technology for information and communication.

Others supported the notion that information and communication technologies that power complex social systems are rising in popularity and becoming integral to daily life around the globe (Schlager, Farooq, Fusco, Schank, & Dwyer, 2009).

One fast-growing facet of new literacies is social networking. Social networking is the result of the read-write Web, which enables interactive online participation and collaboration on a scale not possible during the 1990s (Knobel & Laankshear, 2009). Popular forms of social software included sites like MySpace, Facebook, and Twitter, which bring together online networks, announcement spaces, group members, and interest groups within one online location ([www.myspace.com](http://www.myspace.com); [www.facebook.com](http://www.facebook.com); [www.twitter.com](http://www.twitter.com)). With increasing mobile phone popularity and enhanced cell phone technology, social networks may be accessed anytime and anyplace (including the classroom). Today's online social networks are predominately free to join, which makes them extremely widespread. According to Schlager, et al. (2009), "the popularity of social networking among youth and teachers of the net generation is undeniable" (p. 86).

The National School Board Association (NSBA, 2007) reported that 96% of students with online access have used social networking technologies and more than 50 % communicate online about school work. In school districts with structured online communities, participation by teachers and administrations includes nearly half of staff members. The NSBA suggested teachers are comfortable and knowledgeable enough to use social networking for educational purposes with students. Schlager et al. (2009) noted the potential for online social networks to become a central context for student and teacher learning and a catalyst for instructional improvement. According to Schlager et al., "research must help education communities convert the current enthusiasm for online social networking into reliable evidence of *how*, *when*, and *why*

online social networks do and do not advance learning, and we must develop scalable and replicable models that maximize the value and benefits of emerging social networking models and technologies” (p. 87). The study presented in this paper addresses the use of social networking for instructional improvement and investigates *how*, *when*, and *why* social networks do and do not advance learning.

### **Purpose of the Study**

Evidence supports the popularity of social networks and their potential to advance learning. In this study, we utilized social networking with preservice teachers. Our research focused on Facebook, primarily because it was the social network used by the participating preservice teachers. Facebook’s widespread use has been well documented. According to Heiberger and Harper (2008), Facebook held an 85% market share of four-year U.S. colleges and universities. “Facebook puts a massive amount of information and communication power at a student’s fingertips, making it possibly the ultimate synthesis of student-relevant data” (Heiberger & Harper, 2008, p. 20). According to Facebook statistics (2010), the Facebook social network had more than 400 million active users with 50% of its users logging on in any given day. In addition, Facebook had more than five billion pieces of content (web links, news stories, blog posts, notes, photo albums, etc.) shared each week and more than three million active Pages. More than 20 million people joined Pages each day, and Pages created more than 5.3 billion fans (Facebook, 2010).

Among the Pages accessible on Facebook were educational Pages that we considered related to the curriculum our preservice teachers encounter during their undergraduate coursework. We realized that utilizing Pages of professional organizations in the field of

education was a potential source of information for preservice teachers that educators needed to examine. Since Facebook and other social networks provide social interaction and information streaming to users, it is logical that educators could utilize such a powerful network in the classroom. The question is *how* to utilize the network.

Universities have tapped into the social network as a method to recruit and inform students. In addition, some instructors/teachers have used social networks as a means of communicating with students. While researchers have analyzed Facebook as a communication tool in an educational setting (Heiberger & Harper, 2008; Schlager, et al., 2009; Vorlet, 2009), concerns regarding the use of social networks such as Facebook included teacher professionalism; social issues where roles between friend and teacher are crossed; and student complaints that faculty members would judge them or use Facebook against them (Heiberger & Harper, 2008).

In this study, social networking was *not* used as a mode for communication. Instead, we examined an alternative dimension of Facebook that avoided ethical issues and that potentially enhanced pre-service teachers' professional knowledge. We proposed the use of Facebook as a means of exposing pre-service teachers to professional resources. A goal of teacher education programs is to introduce students to professional resources. Traditional assignments in teacher education include article reviews, which are intended to expose preservice teachers to professional journals as well as resources, topics, and issues in education. In this article, we address an alternative to the traditional article review. As Kress (2003) stated, "the former constellation of medium of book and mode of writing is giving way, and in many domains has already given way, to the new constellation of medium of screen and mode of image" (p. 9). Writing an article review doesn't guarantee an understanding of professional resources. Students

could become a fan of organizations through Facebook at no monetary expense. As a result, they received informational postings throughout the week, often in a weblink or video format. The rationale behind the use of social networks as a tool for professional exposure included the idea that the internet is this generation's defining technology for literacy (Coiro & Dobler, 2007), and students will utilize popular media such as Facebook. Why not use one *Page* to access professional information?

Social networks such as Facebook provided access to valuable resources for educators. *Becoming a fan* was a fast growing use of social networks, with six million plus users joining Pages each day (Facebook, 2010). Users could become a fan of their favorite restaurant, favorite movie, or favorite college. In addition, users could become a fan of Pages posted by professional organizations that serve as resources/advocates of teacher education. Examples of professional Pages included the International Reading Association, the International Dyslexia Association, National Council for Teachers of Mathematics and the National Education Association. By joining the Pages of these professional organizations on Facebook, students received information about trends and issues in education.

The purpose of this study was to examine the effects of social networking on preservice teachers' knowledge of professional organizations and professional resources. Pre-service teachers in two separate courses (math/science strategy courses and reading courses) at a small university accessed professional organizations through Facebook as a part a course assignment. A survey was administered to the students in a pretest and posttest format to measure knowledge of professional resources and trends in education. The study examined effects of the use of Facebook as a tool to enhance professional knowledge.



## **Methodology**

The research question guiding this study was *Are popular social networks effective venues for introducing preservice teachers to resources and issues in education?* This research question posed a broad look at using new literacies for learning. This article includes quantitative and qualitative findings collected from prospective teachers' survey responses after using social networks to connect them to educational organizations and resources. This section outlines the framework for the study and presents a course assignment that integrates social networks into education.

## **Participants**

Participants for the study included two groups of pre-service teachers (N=51) enrolled in required undergraduate courses for their program of study at a small university in Central Texas. All but one of the participants were female. Participation was optional, and two students chose not to participate in the Facebook assignment. One student made the choice not to participate based on a lack of time to log onto Facebook. The other decision not to participate was associated with the student's computer problems. The ages of the participants varied. Students that chose to participate were both traditional college students and non-traditional college students. The control group (n=26) consisted of students in a math/science course taught by one of the researchers while the experimental group (n=25) consisted of students in a reading course taught by the other researcher. The students in both courses completed a pretest and posttest survey, which is described below.

## **Data Collection**

The study was conducted in the fall 2009 university semester. A pretest - posttest quasi-experimental group design was used to assess the change in knowledge of professional resources. Data sources included a pretest-posttest survey that consisted of 10 Likert-type statements (see Table 1). We developed the survey to measure preservice teacher's knowledge of professional organizations and resources. Participants responded on a five point scale that ranged from *strongly agree* to *strongly disagree*. In addition, participants were provided an opportunity to respond to each statement with a written answer supporting their answer choice. The written responses provided qualitative data.

Table 1 Likert Scale Survey Statements

I understand what a professional organization is. Explain:
I am knowledgeable about the types of resources/information professional organizations provide for educators. Provide example:
I use professional resources for information in my field. Provide example:
I understand trends in education. Name a recent trend:
I utilize online resources to locate educational information from professional resources. Example:
I am knowledgeable about professional journals relating to education. Example:
I currently subscribe to a professional journal or to a professional website. Example:
I plan to join (or renew membership in) a professional organization when I begin teaching. Example:
I intend to utilize online resources in lesson planning. Example:
I am likely to investigate professional resources for educators in my free time. Why or why not?

The experimental group was exposed to a *Professional Resource Study* assignment. The assignment required preservice teachers to become a fan of a professional organization, such as

IRA, Reading Rockets, or NEA. Upon becoming a fan, students were to 1) monitor an account to check for feeds posted by an organization; 2) examine postings, looking for topics of particular interest; 3) complete a final product. The assignment's final product was a reflection of the process and a summary of one of the followed links posted by a professional organization. Because the experimental group included students enrolled in a Reading Language Arts course, participants were required to join (become a fan of) an organization focusing on literacy. The researchers selected organizations that are known to support literacy professionals through a wide range of resources that include accurate and up to date information in the field of literacy. Participants followed organizations utilizing a social network for 10 weeks. After 10 weeks, both the control group and the experimental group completed the posttest. Posttest results are described below.

The control group did not participate in the Facebook assignment. However, the control group did receive typical exposure to professional resources through article review assignments, exposure to websites, and class discussions. Participants taking both courses simultaneously were omitted from the study.

Data were also collected from the social network Pages. While all participants were exposed to information provided by professional organizations during the study, participants in the experimental group received information electronically through a digital medium. As participants *followed* the organizations on Facebook, the researchers studied postings to learn about types of resources and information accessible through social networks. Through data collection and the process of following professional Pages, we found that organizations provided different types of online information. While we could not require students to look at all of the items posted by professional organizations on Facebook, we could access Facebook to monitor

the information that can potentially be accessed by a fan. The researchers monitored various sites from August 2009 to December 2009. Sites monitored included the International Reading Association (IRA), Reading Rockets (RR) the International Dyslexia Association (IDA), National Council for Teachers of Mathematics (NCTM) and the National Education Association (NEA). The following discussion presents detailed insight into the type of information participants received through this assignment and through their interactions with professional organizations using Facebook.

### **Interaction on Facebook**

Some organizations like IRA and RR posted information daily. Other sites were less active. After becoming a fan of an organization, preservice teachers received newsfeeds from the organizations they joined. In order to receive the newsfeed, the user must simply log onto their Facebook Page. Facebook users could either read the posted newsfeeds, or they could access their Pages and select the desired organization. By selecting an organization, participants were selecting a link that took them to the webpage of the organization. Newsfeeds could then be read within the same Page.

### **Reading Rockets**

Through observing classroom discussions and submitted assignments, the researchers found that Reading Rockets seemed to be the most popular Page with the participants. Reading Rockets differed from the other professional organizations in that it targets parents as well as educators. According to the website, “Reading Rockets is a national multimedia project offering information and resources on how young kids learn to read, why so many struggle, and how caring adults can help” (Reading Rockets, 2008). Reading Rockets partners with PBS television

programs and is funded by a grant from the U.S. Department of Education, Office of Special Education Programs.

Reading Rockets posted information almost daily, and the information covered a broad variety of topics. For example, on August 25, 2009, they posted a link about building print awareness. The link led to a helpful article. RR also posted, “A weekly classroom newsletter is a great way to keep school-to-home communication going. Try our easy-to-use template: <http://ow.ly/16zw>.” Their September 9th post asked if handwriting is still important and provided a link to vote in a poll. Another link provided access to a link for books and periodicals for readers with print disabilities (Sept. 11, 2009). The information posted was relevant to the coursework and provided exposure to many resources for the preservice teacher participants.

### **International Reading Association**

IRA posted several updates per week, which included items of interest for literacy educators such as national standards, notifications of journal publications, tips for teachers, and educational resources. According to IRA’s website (IRA, 1996-2010), the organization has been committed to worldwide literacy since 1956. IRA has more than 70,000 members, and the organization supports literacy professionals through a wide range of resources, advocacy efforts, volunteerism, and professional development activities.

The following examples are postings from fall 2009:

- 1.) Take a look! The Standards for Reading Professionals 2010 Draft is available for public comment from September 15 – November 1. We need your opinion about the content and the new format. We encourage you to complete a brief survey to share your comments with us. More details at the link below (IRA, September 15, 2009).

- 2.) A DVD set of "Reading as a Psycholinguistic Guessing Game," an institute organized by Ken Goodman at IRA's 2009 Annual Convention in Minneapolis, is available through the Center for Expansion of Language and Thinking. Find out more (IRA, September 18, 2009).
- 3.) What kind of online tools are you using in your classroom? Read about using Web 1.0 and Web 2.0 in *The Reading Teacher* article linked below, and then join in a conversation with the article authors under the "Discussions" tab (IRA, September 24, 2009).
- 4.) Just published - the October issue of *The Reading Teacher* (IRA, September 29, 2009).

### **National Education Association**

NEA has crusaded for the rights of educators and children since 1857. They provide magazines and newsletters to members, and they post links on their Page to distribute relevant information regarding trends in education. The links often lead to news articles. Sample posts included the following:

- 1.) Not in isolation: Research shows that teachers improve their teaching when their colleagues improve theirs (September 29, 2009).
- 2.) Students live in a Digital World. Are schools ready to join them (September 29, 2009)?
- 3.) Latest edition of the National Education Association: Is this going too far? Teachers banned from contacting students on social networking sites... What do you think (October 24, 2009)?

### **National Council of Teachers of Mathematics**

Although NCTM was not utilized by the participants in the Reading/ Language Arts class, it was monitored by the researchers. NCTM did not post links during the summer of 2009. However, they posted math problems during the school year. For example, they posted a Monday math problem, a Tuesday math problem, etc. Fans could participate in posting answers and responses. Other posts announced opportunities for professional development.

Facebook statistics (2010) reported that the average user becomes a fan of four Pages each month. We tracked the number of members on the Pages of professional organizations to monitor their growth. Table 2 provides the number of fans for professional organizations as they were monitored throughout the study.

Table 2 Fan Numbers of Professional Organizations

Pages	# of fans in June 2009	# of fans in October 2009	# of fans in February 2010
IRA	1104	3239	4240
RR	2895	4771	5775
NEA	1610	3439	4615
IDA	151	328	487
NCTM	716	1262	2064

Table 2 shows that the number of fans from June 2009 to February 2010 doubled and in some instances nearly tripled. The growing popularity of these Pages suggested an interest in the use of social networking as a source of information. It must be noted that Facebook (2010) has recently changed the language for Pages from *Fan* to *Like*. While the terminology changed, the

concept of Pages has not. Instead of selecting *Become a fan* to join a Page, users will select *Like* to join a Page.

### Data Analysis

The participant responses on the survey pretest and posttest provided the data for this mixed methods study. Statistical analysis included the ANCOVA to compare the mean scores from the survey. The pretest score was the covariate to control for small preexisting differences between the groups since random assignment was not used. The independent variable was the professional resource assignment, and the dependent variable was awareness of professional resources as measured by the posttest. SPSS Statistics 17.0 was the data analysis software. A probability level of  $p < 0.05$  was the standard to determine if results were statistically significant. Qualitative information was analyzed as themes emerged.

### Results

Preservice teachers in the experimental scored slightly higher on the posttest survey. The survey consisted of 10 Likert-type items. Individual survey scores could range from 10 to 50. Students that failed to answer all ten questions were omitted from data analysis, resulting in the sample size ( $n$ ) for the experimental group and the control group. The mean scores are presented in Table 3.

Table 3 Knowledge of Professional Resources Posttest

Groups	Mean	Std. Deviation	n
Control	31.6087	6.91335	23
Experimental	33.5652	4.64000	22



The ANCOVA was used as the statistic to determine if the differences were significant. The ANCOVA controlled for initial differences in the pretest by calculating the pretest as the covariate. The ANCOVA indicated there is no statistically significant main effect between groups ( $F = 1.711$  and  $p = .198$ ).

Two survey items were most directly related to exposure to resources and issues in education. Therefore, these items were analyzed independently. These items were also items that all participants answered. Therefore, the sample size included all 51 participants. Survey item one required participants to rate their knowledge of professional organizations. The mean results for posttest question one are provided in Table 4.

Table 4 Rating of Knowledge of Professional Organizations

Groups	Mean	Std. Deviation	n
Control	3.4231	.94543	26
Experimental	4.2400	.72342	25

The ANCOVA was used as the statistic to determine if the differences were significant. The ANCOVA controlled for initial differences in the pretest by calculating the pretest score as a covariate. The ANCOVA indicated there was a statistically significant main effect between groups ( $F = 10.903$  and  $p = .002$ ). Therefore, students in the experimental group reported a greater knowledge of professional organizations after the Facebook assignment.

Survey item two required participants to rate their knowledge about the types of resources/information professional organizations provide for educators. The mean results for posttest item two are provided in Table 5.

Table 5 Rating of Knowledge of Available Resources/Information

Groups	Mean	Std. Deviation	n
Control	3.0385	.99923	26
Experimental	4.0800	.70238	25

The ANCOVA was used as the statistic to determine if the differences were significant. The ANCOVA controlled for initial differences in the pretest by calculating the pretest score as a covariate. The ANCOVA indicated there was a statistically significant main effect between groups ( $F = 17.255$  and  $p = .000$ ). Therefore, students in the experimental group reported greater knowledge of resources and information after completing the Facebook assignment. Analyzing survey items one and two provided significant quantitative data.

Participants' written responses to each survey statement provided information about their knowledge of professional resources. The written responses on the pretest were compared to responses on the posttest and were analyzed qualitatively. We again concentrated our analysis on survey items one and two. We provide here only a brief illustration of the overall results.

Differences between group explanations were analyzed in an effort to understand the reasons behind the survey results. *What was the difference in the experimental group and control group?* After rating their knowledge of professional organizations (item one), participants were prompted to explain their response. Responses for both groups demonstrated that participants gained knowledge about professional organizations and resources. Participant explanations emerged on the posttest to include accurate ideas conveying knowledge of professional organizations. Responses varied but included ideas about organizations as providers of *support, legal information, professional information, and ideas*. Some responses included one of these ideas while others may have included many of these ideas. The most significant change

in responses for both groups was a broader understanding of professional organizations. While pretest responses seemed to focus on one idea, which was primarily that organizations were legal/insurance providers, posttest responses demonstrated knowledge of professional organizations as services with multiple roles.

Comparison of groups was difficult because the control group participants did not all write responses to the open-ended survey items. Participants in the experimental group did write responses/explanations. The researchers do not have enough information to determine if the responses were left blank due to a lack of understanding or due to other factors. What *was* determined was that the experimental group's answers were more thorough and indicated a greater (more explicit) understanding of the *ideas* mentioned above.

After rating their knowledge about types of resources/information professional organizations provide for educators (item two), participants were prompted to explain their response. Written explanations on the pretest survey for both groups reflected a lack of understanding of professional organizations as sources of information for educators. Participants could not explain the types of resources available from professional organizations. They lacked knowledge regarding how to utilize professional organizations in their field of study.

Responses for both groups on posttest survey item two demonstrated that participants gained knowledge about the types of resources/information available from professional organizations. Participant explanations evolved to include many services provided by professional organizations. Responses included the following categories of answers: *articles/journals, books, liability insurance, ideas, regulations, standards, benefits, activities/lessons*. In addition, participants realized that professional organizations represent the members in the legislative process. Again, not every participant in the control group wrote a

response to the survey item. The researchers determined that the experimental group's answers were more thorough and indicated a greater (more explicit) understanding of the *services* mentioned above.

Posttest responses for the experimental group included concepts about professional organizations that were learned from exposure to professional organizations on Facebook. Experimental group responses included specific ideas they read online. For example, participants explained that organizations provide activities and lessons, *and* their responses included specific examples of activities provided. One student wrote about a phonemic awareness activity posted by Reading Rockets while another student mentioned a mystery reader activity that had been posted by Reading Rockets. Participants were exposed to a variety of information through their access to professional organizations on Facebook. While some class discussion resulted from postings encountered on Facebook, the various resources provided by professional organizations was not *taught* to participants. The researchers assumed the differences could be attributed to the independent variable.

### **Discussion and Conclusions**

This study examined effects of the use of social networking as a tool to enhance professional knowledge. Data supported the use of social networks as a tool to expose preservice teachers to professional organizations and to trends and issues in education. Although there was no statistically significant main effect between groups on the Likert-type survey, researchers found statistically significant differences between groups' pretest/posttest scores on survey items one and two. In addition, qualitative analysis suggested that participants gained knowledge about

professional organizations and resources through the independent variable, which was the professional resource assignment utilizing social networks.

The researchers introduced an alternative to the traditional article review. We did not determine greater success of one over the other. Instead, we suggest that using popular social networks may enhance preservice teachers' knowledge of professional organizations and of trends and issues in education. Exposure to articles through professional journals does not always result in knowledge about the organization that produced the journal. However, by becoming a fan of the IRA, the Facebook user received notices when the journal was published. Students in the education program began to make connections regarding the type of information professional organizations provide as they interacted with organizations online. They recognized professional organizations and learned about resources provided by the organizations.

Social networking is not the only way to electronically access professional organizations. The more obvious way would be for a student to use a direct link to an organization's website. The rationale behind using the social network in the course assignment (as opposed to a direct link for each organization) was to provide one link where multiple organizations could be accessed simultaneously. In addition, we knew social networks were highly popular among our students, and we wanted to engage them with a medium we knew they were likely to access. As professional information is posted as feeds on Facebook, group members may respond and interact with other members, just as users can interact with their *friends* on Facebook. The potential for motivation through a Facebook Page was an innovative way to introduce preservice teachers to professional organizations and to get students involved with discussions initiated on Facebook Pages. Student learning became more social, which potentially increased interest in learning. Interaction on Facebook often stimulated classroom discussions among the preservice

teachers. Bledsoe and Pilgrim (2011) collected student written reflections which included the following statements:

-I was amazed at how much information was out there for teachers. I was even more surprised to find it on Facebook.

-Facebook made it easy to keep up with the organizations and post feedback to discussions.

-I became a fan of the International Reading Association to find that social networking is not only used to generate content for teachers, but is the process of initiating, developing, and maintaining friendships and collegial or professional relationships for mutual benefit.

(p. 28)

### **Implications for Education**

New literacies refer to new forms of literacy made possible by digital technology developments. The nature of literacy changes regularly and rapidly as the Internet and other communication technologies emerge. The challenge of new literacies is to integrate information and communication technologies into the curriculum to prepare students for the future. With this in mind, we sought an effective use of new literacies to advance learning by using social networking to intentionally connect students to professional organizations.

While the nature of literacy is changing, communication technologies are emerging as a widely popular facet of the Internet. Interaction with social networking is becoming a part of daily social activity. Integrating education into this social phenomenon is an effective way to promote continuous learning. These changes and trends support a need for educators to improve and adapt instruction in the classroom. While literacy becomes richer and more complex,

educators should adapt instruction and assignments that reflect these changes. Findings from our study suggest that educators need to devote attention to social networks as source of *learning* for pre-service teachers. Social networks are among the information and communication technologies of the future. We earlier cited an appeal for research that helps education communities convert the current enthusiasm for online social networking into reliable evidence of *how, when, and why* online social networks do and do not advance learning (Schlager et al., 2009). The findings from this study indicate utilizing social networks for professional information could promote learning in a social, engaging way. It is also probable that the students may continue to reap the benefits of the Pages after completing the assignment, since many students are using Facebook for social networking. Exposing pre-service teachers to professional organizations is a necessary component of teacher preparation, and social networking provides information at the touch of a key.

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**EXPLORING MAIN IDEA GENERATION VIA ELECTRONIC NOTE-TAKING**

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## **Abstract**

In this study we explored the spontaneous strategies students used as they employed copy-and-paste note-taking and generated main idea statements for a long web-based expository text. Analyses indicated that students employed ten different strategies. For three of these strategies students relied solely on their notes to generate a main idea, while in five strategies they relied both on notes and the full text. For two strategies students used elaborative processing. On average, students used three different strategies across multiple segments of the text. Students with higher comprehension scores more often paraphrased or elaborated to generate a main idea and those with lower scores more often restated parts of the text found in their copied notes. Implications for strategic reading comprehension and instructional practice are provided.

Students in classrooms in secondary and higher education are required to independently read and comprehend lengthy expository text (NCES, 2000; 2005). Unfortunately, they are often unable to effectively carry out these tasks (Dembo & Seli, 2007; NICHD, 2000). In the current study we explored these difficulties as we prompted students to use a copy-and-paste note-taking strategy and to subsequently generate main ideas as they read a long and challenging text. Our intent was to increase students' effective strategy use and comprehension across multiple segments of an expository text. Our approach was similar to the mixed methods explanatory design (Creswell & Plano-Clark, 2007). Through this approach we explored the nexus of electronic note-taking; content area reading; and a known reading comprehension strategy, the Main Idea (MI) strategy.

Specifically, this study allowed us to examine what students do when they are instructed to copy and paste notes and generate main ideas from a content area text presented in an electronic environment. We know that readers' working memory capacity is limited (e.g., Baddeley, 2003; Miller, 1956). As such, when reading a long dense text, it is imperative that students are able to abstract the 'gist' of what they read (e.g., Kintsch, 1998; Kintsch & van Dijk, 1978). In this work we considered students' determination and notation of a text's gist to be the Main Idea strategy (MI). In a world where students are bombarded by informational texts and at a time when exceptional performance on high stakes tests is paramount, stepping inside of students' actual notes to examine *how* they implement the common main idea strategy in an electronic environment is critical to our understanding yet is a research task not previously undertaken.

In a previous quantitative study, multiple measures of reading comprehension were collected from more than 300 students at a large research university to compare the relative benefit of prompted comprehension strategies to students' spontaneous study strategies. In that work (Ramsay, Sperling, & Dornisch, 2009), students who employed the Main Idea strategy did not perform as well as anticipated in reading comprehension as measured by matching items, and explicit and implicit recognition items. It was beyond the scope of the research questions in the initial experimental study to delve more deeply into the actual responses of participants to address research questions related specifically to one of the research conditions. Therefore, in this qualitative follow-up study, we posed additional novel research questions and further investigated how students engaged in the MI task through examination of their actual note-taking artifacts. The reason for this exploratory follow-up of 250 responses from 25 students from our first study was to answer the critical question that emerged from findings from the data set from our experimental research study: What do students actually do when instructed to generate a main idea from electronic notes?

In this work we draw from and inform several areas of reading research and practice. First, we situate our study in a construction-integration (Kintsch & van Dijk, 1988) model of comprehension that focuses on the macro-structures of text. Second, this study expands recent research in main idea generation and electronic note-taking. Third, we consider the findings of this work within the context of the new literacies required for reading in electronic environments.

### **A theory of reading comprehension**

As a reader proceeds through a text passage, limitations of working memory demand that the text be reduced to its 'gist.' According to Kintsch and van Dijk's (1978) theory of discourse

processing, such reduction requires negotiating two structural text levels, a micro-level and a macro-level. The micro-level is comprised of propositions, the separate semantic units that, when connected, form an idea or concept. The second structural text level is a macro-level that represents the structure of the whole text. Readers engage processes related to both levels when developing text summaries and recall protocols.

As supported by the 2009 NAEP Reading Framework (National Assessment Governing Board, 2008), there are several informational text structures. The macro-level text structures that regularly comprise informational texts include description, sequential, comparison/contrast, cause/effect, and problem/solution (e.g., Meyer, Brandt, & Bluth, 1980). Such structures represent ways of organizing text content and of aiding readers in creation of mental representations of text (e.g., Meyer & Poon, 2001; Williams, 2008). A long history of research supports that such organization facilitates comprehension and recall (e.g., Kintsch & Yarbrough, 1982; Ozuro, Dempsey, McNamara, 2009; Wolfe, 2005). To best exploit a text's structure and aid creation of a coherent mental representation, students may ask questions (e.g., Almassi, 2008, King, 1995; Palinscar & Brown, 1984), make predictions (Moss, 2008; Palinscar & Brown, 1984), or interpret textual signals (Meyer et al., 1980; Meyer & Poon, 2001; Moss, 2008). Navigating such structures and strategies facilitates main idea generation and comprehension (e.g., Almassi, 2008; McMahan, 2008; Palinscar & Brown, 1984).

### **The main idea (MI) strategy**

To understand how we addressed our research question, it is critical to know how we defined what a main idea is, what a main idea strategy is, and how critical it is for students to build main idea skills. Consistent with existing literature, we defined the main idea of a passage

as the ‘gist’ of the text (e.g., Armbruster, Anderson & Ostertag, 1987; Baumann, 1983). The Main Idea strategy (MI) is an empirically-supported summarization strategy used by students to improve reading comprehension (NICHD, 2000). As a strategy, this important means for effective comprehension of expository text requires students to identify and generate main ideas (e.g., Jitendra, Chard, Hoppes, Renouf, & Gardill, 2001). Researchers both historically (e.g., Axelrod, 1975; Dishner & Readence, 1977) and recently (e.g., Jitendra et al., 2001; Wang, 2009) argue that the ability to extract a text’s central ideas and themes is the most fundamental skill in reading comprehension.

As such an important reading strategy, it is not surprising that the Progress in International Reading Literacy Study (PIRLS) (Mullis, Martin, Gonzalez, & Kennedy, 2003) reported that by second grade identifying main ideas is a focus of strategic reading instruction in the United States, and that 94% of American 4<sup>th</sup> grade teachers report emphasizing MI on a weekly basis. Thus, students experience high exposure to the MI strategy. This exposure is consistent with an increasing recognition by educators of the need to teach strategies that specifically aid in comprehension of expository texts. This need is also reflected in current standardized tests, such as the NAEP assessments (NAGB, 2008), which include items that require students to comprehend texts’ main ideas. According to Daniels (2002), 70-80% of text material found on standardized reading tests is expository. A combination of the demands of the “Information Age” and the realities of standardized testing have boosted teachers’ recognition of the instructional imperative that students know how to read and understand informational texts (e.g., Montelongo & Hernández, 2007; Moss, 2004). Students require effective strategies, such as the MI strategy, to successfully navigate these texts.

Extensive research supports that instructing students in the use of the MI strategy results in improved reading comprehension (e.g., Brown & Day, 1983; Mastropieri, Scruggs, & Graetz, 2003; Meyer, Brandt, & Bluth, 1980; Sjostrom & Hare, 1984; Stevens, 1988). Benefit from the strategy transcends age and ability. For example, researchers found benefit for 4<sup>th</sup> and 5<sup>th</sup> grade students taught a main idea strategy as part of direct instruction in sentence completion tasks (Montelongo, Berber-Jiménez, Hernández, & Hosking, 2006; Montelongo & Hernández, 2007). Secondary level students' comprehension has been shown to improve following MI instruction (e.g., Sjostrom & Hare, 1984). Additionally, researchers studying effective comprehension strategies for struggling readers have found the MI strategy to be effective (e.g., Mason, Meadan, Hedan, & Corso, 2006; Mastropieri et al., 2003). As additional support, in a recent research synthesis, Gajria, Jitendra, Sood, and Sacks (2007) found large effects at posttest among studies testing the effects of MI on students with learning disabilities.

In spite of extensive empirical evidence in support of MI, the National Reading Panel (NICHD, 2000) reported that readers do not identify main ideas, summarize text, nor integrate multiple comprehension strategies to effectively construct meaning. In order to effectively identify the main idea, students must integrate other comprehension strategies such as identifying text structure. As with MI, unfortunately, readers often lack the ability to recognize and understand the structure of a text (e.g., Armbruster et al., 1987). However, when students receive instruction in identifying text structure, memory for main ideas increases (e.g. Meyer et al., 1980). In summary, extensive research leads us to conclude that instructing students in MI can increase reading comprehension. Further, research clearly supports efficacy for MI as a strategy to support reading comprehension for nearly any learner. Yet, some research indicates



readers struggle when independently using the strategy. Therefore the benefit of the strategy may be limited. In this work, we meaningfully contribute to the existing MI research by exploring what college learners do when given the task of executing the strategy to facilitate their comprehension of a long, authentic, expository text delivered in a web-based learning environment.

A deeper understanding of MI, as represented in this work, is critical, because not only do students report using the strategy and teachers report teaching it but it is also one of only five empirically-supported student-level comprehension strategies (NICHD, 2000) and has been shown to be an effective strategy with expository text, a type of text students must know how to comprehend. Still, evidence supports that students need to be better at integrating MI with other effective strategies to maximize comprehension and learning. What is not known, and is foundational to this study, is how students actually go about generating a main idea, especially when doing so from their own electronic notes.

### **Electronic note-taking**

In addition to its important contributions to the existing MI research base, this work also adds to our understanding of learners' electronic note-taking (e.g., Igo, Bruning, & McCrudden, 2005; Katayama, Shambaugh, & Doctor, 2005; Nesbitt, Winne, Jamieson-Noel, Code, Zhou, & MacAllister, et al., 2006; Perry & Winne, 2006) and self-regulated learning (Azevedo, Moos, Greene, Winters, & Cromley, 2008), both critical areas of recent research given the prevalence of online and electronically-supported reading materials. This emerging area of focused research suggests that students' performance on comprehension tasks that require them to apply what they have read from an electronic text source may vary depending on effective note-taking and other

self-regulated learning strategies. In this work we explored students' use of strategies when learning from an electronic text and found support for students' spontaneous use of copy-and-paste tactics and regulatory processing.

Note-taking, online or not, serves multiple purposes. DiVesta and Gray (1972) first suggested that note-taking serves either an encoding function or an external storage function. Kiewra, DuBois, Christian, McShane, Meyerhofer, and Roskelly (1991) acknowledged encoding and storage functions, but added a function, encoding *and* storage, finding that students benefited most when they took notes and were also given an opportunity to study them. In addition to studies of the forms and functions of note-taking, other research has addressed the processes of note-taking (e.g. Katayama & Crooks, 2003; Kiewra et al., 1991; Robinson, Katayama, Beth, Odom, Hsieh, & Vanderveen, 2006). Others have considered the nature of the target information itself, formal vs. informal (Bretzing & Kulhavy, 1981). Still others (e.g., Igo et al., 2005; Igo & Kiewra, 2007; Van Meter, Yokoi, & Pressley, 1994) have examined the decision-making of students as they solve the problem of what to 'note.'

Increasingly, students are searching and exploiting electronic resource material (Kriebel & Lapham, 2008) and presumably taking notes from it. Academic standards in states across the nation require students to research, comprehend, and evaluate electronic resources. Given the prevalence of students' self-reported MI training (Mullis et al., 2001), it seems reasonable to expect that they would employ the MI strategy when taking electronic notes. The current study is strategy-specific research conducted on students' use of the copy-and-paste function. Igo et al. (2003) (as cited in Igo, Kiewra, & Bruning et al., 2007) noted that approximately 80% of high school students will select a copy-and-paste note-taking approach if given the opportunity to do

so. Given the pervasiveness of electronic text material, the prevalence of the MI strategy as an instructional focus, and the simultaneous preference of students to use copy-and-paste note-taking, in this study we examined what students actually do when instructed to generate a main idea from their generated electronic notes.

## **Method**

In this study we examined artifacts of students' note-taking. The data were initially collected during an experimental study of comprehension strategies. The experimental study compared three reading comprehension strategies. The context was an electronic environment where students were required to read, take notes online, and generate main ideas. The main idea (MI) strategy focused on extracting the 'gist' of the text's meaning. The elaborative interrogation (EI) strategy required participants to determine the main idea of the text, to pose a 'why' question about the content, then answer the question. Finally, the independent study (IS) strategy functioned as a control where participants were simply instructed to read the text as they might read any online text for a class. While we held high expectations for participants instructed to ask elaborative questions, we also expected students in the MI condition to perform well, especially given their expected prior experience with the MI strategy. Contrary to expectations, however, on all dependent measures from the initial experimental study, participants in the MI condition posted the lowest means behind both EI and IS. As an extension of this work we posed a critical new research question that emerged from the initial experiment (Creswell & Plano-Clark, 2007) and set to examine how students in the MI condition actually carried out the task of the Main Idea strategy in practice and whether their approach might have led to their unexpectedly poor

performance. The present study is a qualitative look at the previously unexamined artifacts of these students' note-taking.

### **The original study**

Participants in the MI condition of the original study were 119 students recruited from introductory Educational Psychology classes at a large Mid-Atlantic university. They were given a URL to link them to the study. Once online, they read an experimental text, copied and pasted main idea statements, and answered varying types of recall and recognition items. The text and all relevant measures were presented electronically. The experimental text was a 5518-word passage from nineteen actual text pages from an American History survey text (Foner, 2005). As history is a content area routinely encountered by both younger and older adolescents, a history text met criteria for both exposition and generalizability to both high school and undergraduate students.

To support students' use of the MI strategy, participants were asked to read the text, copy and paste main idea statements, and then rewrite the main idea in their own words. A text box was provided at each of ten natural section breaks for participants to copy and paste notes and again for them to type the main ideas they generated. To assure students were familiar with the MI strategy and to scaffold their use of the strategy, a page describing and modeling the MI strategy on a single paragraph of unrelated text was provided.

### **The current analyses**

Data from our related quantitative study (Ramsay et al., 2009) indicated students were not able to effectively employ the MI strategy. It was beyond the purposes of the initial

investigation to delve into the student responses; therefore, to address how students employed the MI strategy, in this new study we turned to the electronic artifacts students generated during the experiment. These data included students' copied and pasted notes and the main idea statements they generated. It was through analyses of these data from students' independent reading that we addressed what strategies students use when they employ copy-and-paste note-taking and generate main idea statements for a lengthy expository text.

Analyses of the data required a multi-step process. First, we randomly selected a subset of participants from the MI condition ( $n=37$ ) for examination. From these, we examined a subset of responses. That is, we analyzed all 37 students' generated main ideas for text segments 1, 2, 3, 4, 9. The first four segments were representative of all ten. Responses to segment 9 were examined as we considered the possibility that effortful responses may have waned if students experienced fatigue by the end of the long passage. In spite of our concern, this did not appear to be the case as data across these sample segments were consistent. This subset of responses was deemed adequate to begin identifying response patterns.

A coding scheme was developed from patterns in students' responses. When participants' generated MI statements were examined ( $n=185$  responses), four broad categories of strategies students appeared to use emerged. In the first category, students *Recopied* directly from their copied and pasted notes. In the second category, students *Restated* from their copied and pasted notes but did not merely recopy. In the third and fourth categories, students *Paraphrased* from their notes or *Elaborated* their notes.

To test the adequacy of this coding scheme, we randomly selected a second set of students from the MI condition and coded all of their responses ( $n=10$  students; 100 responses).

As both authors individually and collaboratively examined the data and themes, nuances suggested that there were important subcategories within the original themes. Through additional coding and further examination, it became clear that student-generated main ideas were either constrained or unconstrained by the notes they took during the copy-and-paste note-taking phase of their task. That is, constrained main ideas were those that relied solely on the text that students copied and pasted to generate a main idea. In contrast, responses not constrained by the copy-and-paste notes drew, at least in part, from the text itself. Through analyses, six additional codes were revealed.

These six codes were: *Elaborated*, a category expanded to include elaborations on text content outside of what students recorded in their notes; *Recopied-Text*, a main idea statement recopied, not from student notes, but from the text only; *Recopied-Text-Copy/Paste*, a main idea recopied from the text as well as from what was copied and pasted; *Restated-Text-Copy/Paste*, the main idea as a restatement of both text content and copied and pasted notes; *Paraphrased-Text-Copy/Paste*, representing a paraphrase from the text and the copied and pasted notes; *Paraphrased-Text Only*, a main idea paraphrased from content in the text only; and *Nonsense* information reflecting minimum effort or noncompliance.

To train on the expanded coding scheme, both researchers scored a random 30 responses. These were a sub-sample from among the middle-scoring 80% of participants whose data were not part of our primary investigation. Next, researchers then independently rated an additional 70 responses to establish inter-rater reliability and validity of the coding scheme. The correlation between researchers' independent ratings was  $r=.91$ . Discrepant items were discussed, clarified, and rescored.

Confident in the external validity of the coding scheme, we returned to our MI data set and split the data file into those students with either high or low scores on the dependent comprehension measures employed in the quantitative study. We examined responses from the MI participants who scored at the 90<sup>th</sup> percentile or above (the high-achieving group,  $n=13$ ) and those scoring at the 10<sup>th</sup> percentile or below (the low-achieving group,  $n=12$ ). Having earlier reached acceptable inter-rater reliability on the coding scheme, one researcher scored all responses ( $n=25$  students, 250 responses).

## **Results**

In this investigation, students were directed to read a multi-paragraph passage, copy and paste words or phrases related to the main idea, and, from those, generate a main idea statement. Our analyses explored what students did when they were asked to employ the MI strategy while reading an authentic electronically delivered expository text. We examined results for the overall sample, for low-scoring students, and for high-scoring students, and also considered within-student patterns. Ten categories representing student strategies emerged from students' responses. (See Table 1.)

Table 1. Students' main idea generation strategies.

Strategy	Definition	Constrained or unconstrained by copy/paste notes	Example	
			Copy/paste notes directly from text	Stu
Recopy	Main idea was copied directly from copied and pasted notes	Constrained	<i>Railroads and other companies tried various means of bringing order to the chaotic marketplace.</i>	Railroads various n chaotic n
Restate	Main idea was a restatement of what was copied and pasted.	Constrained	<i>Despite the emergence of a few "bonanza" farms that covered thousands of acres and employed large numbers of agricultural wage workers, family farms still dominated the trans-Mississippi West.</i>	Farming was dom the emerg farms.
Paraphrase	Main idea represented a paraphrase from what was copied and pasted (may include inaccuracies but content bound).	Constrained	<i>Two decades following the Civil War also witnessed the golden age of the cattle kingdom. The Kansas Pacific Railroad's stations at Abilene, Dodge City, and Wichita, Kansas, became destinations for the fabled drives of millions of cattle from Texas. A collection of white, Mexican, and black men who conducted the cattle drives, the</i>	The post of the cat frontier. ' flourishe ideal for stations. ( romantic but his lit



			<i>cowboys became symbols of a life of freedom on the open range. Their exploits would later serve as the theme of many a Hollywood movie, and their clothing inspired fashions that remain popular today. But there was nothing romantic about the life of the cowboys, most of whom were low-paid wage workers.</i>	
Elaborate	Main idea was an elaboration; This could be accurate or inaccurate as long as it was deemed effortful or intentional.	Constrained or Unconstrained	<i>The 600 dignitaries (598 of them men) who gathered on what is now called Liberty Island for the dedication hoped the Statue of Liberty would inspire renewed devotion to the nation's political and economic system.</i>	Even though 600 people gathered for the dedication of the Statue of Liberty, hoping it would inspire devotion to USA's politics and economics, the fact that only two were women-and that this was important enough to be noted-show that not all the original hopes of equality had been realized.
Nonsense/ Noncompliance	Main idea was 'made up' nonsense; This strategy represents minimum compliance.	Constrained or Unconstrained	<i>The combination of a market flooded with goods and federal monetary policies that removed money from the national economy led to a relentless fall in prices.</i>	The policies federal money and the flood with goods from the market should put together, then national economy removed relentless.
Recopy Text Only	Main idea was a copy of text outside what the student copied	Unconstrained	<i>Evidence of this strategy appeared in developmental samples, but none appeared in the final sample chosen for qualitative study.</i>	

	and pasted.			
Recopy Text and C/P	Main idea was a copy of text content and of copied and pasted notes.	Unconstrained	<i>Evidence of this strategy appeared in developmental samples, but none appeared in the final sample chosen for qualitative study.</i>	
Restate Text and C/P	Main idea was a restatement of text content and of copied and pasted notes.	Unconstrained	<i>The incorporation of the West into the national economy spelled the doom of the Plains Indians and their world.</i>	The Plains Indians communities were attacked and demolished throughout Western expansion until nearly none were existent.
Paraphrase Text and C/P	Main idea was paraphrased from the text and from copied and pasted notes (may include inaccuracies but is content-bound).	Unconstrained	<i>Striking as it was, the country's economic growth distributed its benefits very unevenly.</i>	Even though there was economic growth in America, the distribution of the wealth was uneven therefore the rich was getting richer and the poor was getting poorer.
Paraphrase Text Only	Main idea was paraphrased from the text only (may include inaccuracies but is content-bound).	Unconstrained	<i>A collection of white, Mexican, and black men who conducted the cattle drives, the cowboys became symbols of a life of freedom on the open range. The West was more than a farming empire. By 1890, a higher percentage of its population lived in cities than was the case in other regions.</i>	Cattle driving became very important, and while cowboys are highly revered, life was very difficult. At the same time San Francisco and other regions in the west were becoming more industrialized. New Mexico was also becoming industrial, with the introduction of railroads to some regions.



We first examined the strategy choices of the overall sample. Ideally, when generating a main idea from text, we hope students either paraphrase or elaborate upon what they have read. Four categories in the current study encompassed those two behaviors: *Paraphrase*, *Elaborate*, *Paraphrase Text and Copy/Paste*, and *Paraphrase Text Only*. Data revealed that 60% of responses in the overall sample represented these strategies. Of these, the vast majority (96%) were paraphrases. We concluded that, as the research literature suggests, students use MI strategies. (See Table 2.)

*Table 2.* Frequency of students' overall strategy choices.

Item	Recopy	Restate	Paraphrase	Elaborate	Nonsense/ Noncompliance	Recopy Text only	Recopy Text & C/P	Restate Text & C/P	Paraphrase Text & C/P	Paraphrase Text Only
Item 1	0	10	4	2	3	0	0	0	6	0
Item 2	0	8	11	0	1	0	0	0	4	1
Item 3	1	9	8	0	1	0	0	0	4	2
Item 4	2	6	7	1	3	0	0	0	6	0
Item 5	2	4	5	1	4	0	0	1	7	1
Item 6	2	7	9	0	0	0	0	0	7	0
Item 7	2	4	10	0	3	0	0	0	5	1
Item 8	2	7	4	1	3	0	0	0	5	3
Item 9	2	4	10	1	2	0	0	1	5	0
Item 10	2	3	13	0	2	0	0	0	5	0
Total	15	62	81	6	22	0	0	2	54	8

Students generated main idea statements that were either constrained or unconstrained by the notes they copied and pasted. Main idea statements constrained by copy-and-paste notes reflected only content recorded in students' notes. Unconstrained MI statements reflected content found completely outside of the copy-and-paste notes or content that combined both noted content and content outside of student notes. In such cases, students went beyond their copied notes to generate a main idea. Among the paraphrasing and elaboration strategies, the *Paraphrase* strategy was constrained by students' notes, *Paraphrase Text and Copy/Paste* and *Paraphrase Text Only* were unconstrained, and the *Elaboration* strategy was either (see Table 1 for examples). In the overall sample, when students were apt to constrain their generated main idea to their copy-and-paste notes, the least used strategy was *Recopy* while the most used strategies among those formulated from copy-and-paste notes were *Restate*, *Paraphrase*, and *Recopy*.

*Elaboration* was one of two strategies not necessarily constrained by students' copy-and-paste notes. It was also the one strategy that was sometimes challenging to differentiate from the *Nonsense/Noncompliance* category. Among these, some responses were clearly identified as sophisticated elaborations. Others were just as clearly defined as nonsense. It was difficult, at times, to discern subtle differences between meaningful elaboration and articulate nonsense.

Upon examination, differences were indicated between the low-comprehending and high-comprehending students (see Table 3). First, while there were no instances of the simplistic *Recopy* strategy among high comprehenders, 12.5% of responses by low comprehenders were generated this way. Another 28.3% of low comprehenders' main ideas were generated by merely restating copied and pasted notes, compared with 21.5% among high comprehenders. A

third difference between the two groups was evident in students' use of paraphrasing strategies.

The coding scheme included three possible paraphrasing strategies (*Paraphrase*, *Paraphrase Text and Copy/Paste*, and *Paraphrase Text Only*). The combined total of these three strategies used by low comprehenders comprised 19% of all responses compared with 38% generated through these means by high comprehenders. Thus, high comprehenders used paraphrasing strategies—strategies we want students to use—twice as often as low comprehenders.

Table 3. Frequency of strategy choices among high and low comprehenders.

Item	Recopy	Restate	Paraphrase	Elaborate	Nonsense/ Noncompliance	Recopy Text Only	Recopy Text & C/P	Restate Text & C/P	Paraphrase Text & C/P	Paraphrase Text Only
High Comprehenders ( <i>n</i> =13)										
Item 1	0	5	1	2	1	0	0	0	4	0
Item 2	0	4	6	0	0	0	0	0	2	1
Item 3	0	2	6	0	0	0	0	0	3	2
Item 4	0	3	5	1	0	0	0	0	4	0
Item 5	0	2	2	0	1	0	0	1	6	1
Item 6	0	2	5	0	0	0	0	0	6	0
Item 7	0	1	6	0	0	0	0	0	5	1
Item 8	0	4	3	0	0	0	0	0	4	2
Item 9	0	3	5	1	0	0	0	0	4	0
Item 10	0	2	7	0	0	0	0	0	4	0
Total	0	28	46	4	2	0	0	1	42	7
Low Comprehenders ( <i>n</i> =12)										
Item 1	0	5	3	0	2	0	0	0	2	0



Item 2	0	4	5	0	1	0	0	0	2	0
Item 3	1	7	2	0	1	0	0	0	1	0
Item 4	2	3	2	0	3	0	0	0	2	0
Item 5	2	2	3	1	3	0	0	0	1	0
Item 6	2	5	4	0	0	0	0	0	1	0
Item 7	2	3	4	0	3	0	0	0	0	0
Item 8	2	3	1	1	3	0	0	0	1	1
Item 9	2	1	5	0	2	0	0	1	1	0
Item 10	2	1	6	0	2	0	0	0	1	0
Total	15	34	35	2	20	0	0	1	12	1

Once we had established a coding scheme that represented students' overall responses and were able to compare strategies between high and low scorers, we were curious about whether there were patterns *within* students. The most notable pattern within participants was that, regardless of their score at posttest, students employed, on average, three different strategies across the ten segments. The highest number of strategies employed by any one student across the text was five, while the lowest was two. Not one participant chose to implement the same singular strategy time and again across every section of the passage. In short, all students used a combination of strategies, but high comprehenders chose strategies that required them to evaluate and manipulate their notes as they generated main idea statements. This is especially important as we revisit the implications of students' strategy choices and the characteristic encoding and storage functions they afford learners.

## **Discussion**

We instructed students to copy and paste text that related to the main ideas of ten sections of a long naturally-occurring text. We did this as part of our controlled experiment. While we imagine that few instructors direct students to engage in this specific task, we also expect that it is common for students to do so independently when they encounter such texts in online environments. Ideally we hope that, as students read text content, they are able to critically examine it and integrate it with their existing knowledge (Igo & Kiewra, 2007). Yet when text is long and dense and contains numerous main ideas, capturing the gist quickly and storing it for later integration may be a strategy that students select for its efficiency.

Main idea literature has established the effectiveness of the MI strategy for independent comprehension of expository text and as an integrative component with other effective strategies.

We investigated how students generate a main idea from their own electronic notes. Our examination of students' note-taking and main idea artifacts indicated that students use main idea strategies. Beyond that, however, the specific way they carry out the copy-and-paste task varies across learners. Three specific findings resulted from this examination. First, students used a variety of strategies for generating main ideas across multiple segments of the same long passage. Some students constrained their main idea generation to the notes they copied and pasted as they read, while others went beyond their copy-and-paste notes and incorporated information from the text. Some students simply recopied their notes, while others paraphrased, and a few elaborated. Second, across the full text each student employed, on average, three different strategies for generating main ideas from their notes. All students employed at least two strategies.

Finally, results indicated that those considered high-scorers on outcome measures used more sophisticated strategies than low-scorers. Low-comprehending students were more likely to use simplistic strategies such as *Recopy* and *Restate* than were high-comprehending students who used paraphrasing strategies more frequently. Consistent with existing beliefs regarding the benefits of MI, our findings suggest that students who are more successful when comprehending expository text are also, when prompted, able to generate paraphrases of what they read. What is yet unclear is whether high-comprehenders elaborate because they comprehend better, or if they comprehend more because they elaborate better. Although this is an empirical question, from research on elaboration (e.g., Reder, Charney, & Morgan, 1986) and elaborative questioning (e.g., Seifert, 1993, 1994; Woloshyn, Willoughby, Wood, & Pressley, 1990), we would suspect that the elaboration aids comprehension.

In addition to the contributions this work makes to our understanding of MI, our findings also build upon current research in electronic note-taking. For example, findings support Igo and colleagues' (2005) cognitive engagement hypothesis. This hypothesis holds that when learners are forced into cognitive engagement, such as evaluation of content for inclusion in notes where space limitations have been imposed, they are forced to be evaluative in their decision-making and, consequently, recall more than those with unlimited space and no evaluative constraints. From their work, we know that limited space constraints strengthen the encoding function of note-taking.

In the present study, there were neither space constraints nor word limits. Students were free to employ any strategy they chose. Yet they were not permitted to return to their notes prior to posttest comprehension measures. This constraint rendered the storage function of note-taking irrelevant for all strategies and instead focused on encoding effects. We found that those who chose strategies with inherent encoding features (i.e., paraphrasing strategies and elaboration strategies) recalled more information after reading. In contrast, those who chose strategies which might have been helpful had they been able to return to their notes scored lower at posttest possibly because of the limited encoding effects at the initial point of note-taking. All students copied and pasted notes, but patterns in strategy choices suggested that those who chose strategies that required them to manipulate and evaluate the information, and seemingly move from a mere storage function, recalled more. This supports recent work by Igo and Kiewra (2007) that high-achieving students tend to be selective in their note-taking even when not forced to be so.

Recent work in *new literacies* (e.g., Coiro, Knobel, Lankshear, & Leu, 2008; Leu, Coiro, Castek, Hartman, Henry, & Reinking, 2008) suggests that students engage different processes and employ different strategies when comprehending online text compared with traditional text (Coiro & Dobler, 2007; Henry, 2006; Leu, 2007; Sutherland-Smith, 2002). Yet, very little is known as to the strategies learners use when they engage with electronic texts (Coiro & Dobler, 2007). Addressing this gap, we explicitly examined artifacts of students' processing. Similar to current use of gStudy and other related technologies, our methodology can help inform how to further examine students' tactics. The tactics students used in our environment may transfer to other similar environments and, as such, may be foundational for future studies such as those initiated by Dabbagh and Kitsantas (2005), Perry and Winne (2006), and others for exploration of the tactics students use during self-regulated strategic study. Knowledge of how students comprehend basic electronic text such as that used in the present study may also inform the ongoing parallel work in new literacies and studies of how strategies transfer to web-based intertextual comprehension.

Future research might also manipulate text topic. Students' theory of note-taking (Van Meter et al., 1994) indicates that how students take notes is determined partly by the nature of the content. The task in the current study was based upon a passage about the Gilded Age in American History. Note-taking in this chronological yet thematic, factual yet cause and effect, domain may be very different from note-taking on topics used in electronic note-taking research thus far: education (Igo et al., 2005; Katayama & Crooks, 2003), computers (Dabbagh & Kitsantas, 2005; Katayama et al., 2005), and physical science (Igo, Riccomini, Bruning, & Pope, 2006; Robinson et al., 2006).

Students in the 21<sup>st</sup> century encounter many types of texts, both traditional and non-traditional. The Pew Internet and American Life Project (Lenhart, Madden, & Hitlin, 2005) found that nearly 90% of teens ages 12-18 use the Internet, and more than 50% use it daily. While students report extensive use of the Internet, we are only beginning to explore ways to help them effectively comprehend what they find there (Coiro, 2003; Henry, 2006). Once students have secured the desired information from an Internet source, what do they do with it? How effectively do they comprehend it? If they take notes on it, what do those notes look like? The 2009 Program for International Students Assessment (PISA) will include assessment of online reading. Such change is an attempt to capture student comprehension of the myriad forms of electronic texts students encounter daily.

Thus we believe that, given students' increasing access to electronic text material and new efforts to assess their understanding of it, implications for instructional practice in online reading must be considered. Understanding what processes students do engage seems like a prudent and necessary starting point for outlining the steps toward more critical literacy skills. Implications for practice include a need to teach the MI strategy in technology-rich reading environments, to prompt the use of the strategy, and perhaps most importantly, to teach students how to best engage the strategy to enhance their comprehension. Future research should employ similar methodologies to examine other strategies students engage as they read text. Such research should include exploration of the nuances in which strategies are successfully prompted and implemented by independent readers.

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**LISTENING TO SEE: A FEMINIST APPROACH TO DESIGN LITERACY**

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At present, we are fully challenged to imagine new ways of locating the reader in relation to new textual and extra-textual forms; articulating and enhancing our aesthetic sensibilities for valuing what we are seeing; developing interpretive or sense-making frameworks; and, quite important, developing pedagogical frameworks and classroom strategies in order to transmit what we are coming to know to new generations of writers, readers, rhetoric, and scholars. . . .such moves are useful, not only for feminist rhetorical practices, but also for the field of rhetoric, composition, and literacy more generally.

(Gesa E. Kirsch & Jacqueline J. Royster, “Feminist Rhetorical Practices,” 663)

As evidenced by journal articles, conference titles, and textbooks, it seems fair to say that composition scholarship and practice, to varying degrees, have taken up the charge of multimodal composition. It is no longer particularly new or novel to contend that oral, written, and visual communication are modes of meaning worthy of attention within any classroom that engages in textual production and analysis (New London Group 1996; Selber 2004; Shipka, 2005; Wysocki, et al. 2004; Yancey 2004)<sup>1</sup>. Still, there often remains a disconnect between what we preach and what we practice, particularly when it comes to engaging with design elements—

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<sup>1</sup> One of the first calls for this work was the New London Group who argued “literacy pedagogy now must account for the burgeoning variety of text forms associated with information and multimedia technologies” (61). The implementation of such pedagogies acknowledges the realities of globalization, rapid technological advancements, and diverse classrooms, and thus provides a teaching method “in which language and other modes of meaning are dynamic representational resources, constantly being remade by their users as they work to achieve their various cultural purposes” (5).

those elements such as color, font, and shape that comprise a text's layout. In spite of theoretically acknowledging rhetoric as a form of meaning making, our tools for teaching design—namely handbooks and textbooks—tend to oversimplify design analysis and production, treating it primarily as a means for making a text's content readable and visually pleasing. For those of us committed to a multimodal pedagogy, and who want to bring design to a more richly discursive level, I propose we place feminist rhetorical practices alongside the goals of a digital feminist pedagogy in order to refigure multimodal pedagogies of design.

### **What is a (Digital) Feminist Pedagogy?**

Those of us who teach composition tend to understand composing as James Berlin argued years ago, that we aren't just teaching "writing" — or, in light of multimodal considerations, I would say "composing"— but instead are "teaching a way of experiencing the world, a way of ordering and making sense if it" (268). For years, feminist pedagogies have been acutely aware of this truth not only in composition studies but across pedagogies. Consider, for example, Mary Belenky's formative *Women's Ways of Knowing*. Written nearly twenty-five years ago, this study encouraged an understanding of how cultural constructions, specifically gender, play a role in knowing and thusly should be taken into consideration by educators—for if different students experience different ways of knowing, educators must consider the potential of pedagogies to enable or disable a range of knowledges<sup>2</sup>.

<p><b>Employing A Feminist Pedagogy</b></p> <p><b>Task #1:</b></p> <p>Acknowledging that various pedagogies support various ways of</p>
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<sup>2</sup> Such studies arguably spring boarded early scholarship in composition exploring women's composing practices and feminist approaches to writing instruction (see, for example, Caywood and Overing 1987; Flynn 1988; Hollis 1992; Myers-Zawacki 1992; Ritchie and Boardman 1999) and helped build the foundation for those studying the digital composing practices of women (see, for example, Hawisher and Sullivan 1998; Blair and Takayoshi 1999; Blair, Gajjala, Tulley 2009; DeVoss and Selfe 2002; Sullivan 1997).

One means of enabling a range of knowledges is to encourage reflection through both analysis and production of texts. Belenky describes that reflection

requires oral and written forms of language to move between “persons who both speak and listen or read and write” (26). This exchange of information encourages individuals to bring their whole self to the table and to question their own

beliefs and assumptions as well as those of others.

This critical work of both analyzing and producing texts helps students engage with ways of representing

the self. This representation of self allows for participation in the social and intellectual life of communities.

Employing a feminist pedagogy—which Diana L. Gustafson defines as characterized by “a self-conscious, critical and intense process of gazing inward and outward that results in questioning assumptions, identifying problems, and organizing for change “ (249)—does not require one necessarily argues for, or even embraces, that women do or don’t learn differently than men. Instead, it acknowledges that subjectivities matter, and thus educators should work to enable all students to analyze and produce texts, and to value modes of meaning that help individuals represent themselves and their experiences.

A digital feminist pedagogy shares the goals of a feminist pedagogy, but pays particular attention to digital texts. I define a digital feminist pedagogy as one **that enables and encourages questioning, reflection, participation, and agency through the critical use and exploration of digital technologies.** In this capacity, I am concerned with how those of us

**Employing A Feminist Pedagogy**

**Task #2:**

Encouraging student reflection through analysis and production of

**Employing A Feminist Pedagogy**

**Task #3:**

Encouraging student representations of self that allow for participation in

engaged in multimodal pedagogies might enable our students to consciously and critically engage with digital tools for representing their experiences so that they might engage and enter the social and intellectual lives of their communities. A digital feminist pedagogy recognizes that today, “community” is found not only in face-to-face spaces but also in the networked spaces of the Internet.

Social-networking sites, messageboards, and interactive blogs, for example, all function as communities of practice, that is, as spaces where individuals come together through the “sustained pursuit of a shared enterprise” (Wenger, 45). Participation within these communities contributes to the construction of shared and individual identities, yet these identities in online spaces are represented not only through the exchange of the written word, but also the exchange of visuals—such spaces are necessarily multimodal. In online communities, users communicate through pictures, shapes, colors, sounds, fonts, and organization in order to represent and support ideas. In this way, reflection occurs not just through those who “speak and listen, or read and write” but also through those who “see and design” or as I will be arguing, those who *listen* and design. Thus, a digital feminist pedagogy is mindfully attuned to all modes of meaning making, including design analysis and production.

In the remainder of this paper, I first describe how and why design literacy is important to a digital feminist pedagogy. Next, I describe a commonly used, yet problematic, model for teaching design. In order to offer a possible solution to this model, I turn my attention to feminist rhetorical criticism so as reframe design pedagogy through rhetorical listening. While there are

other approaches to the study of listening<sup>3</sup>, I suggest a digital feminist pedagogy of design is uniquely served through the lens of feminist rhetorical listening.

### **Engaging With Design**

In the multimodal space of online communication, visuals (both the pictorial and the design elements, i.e. shape, color, and layout) along with text make up the bulk of information. Composition, rhetoric and literacy scholars have worked to engage with the proliferation of the visual mode, for as composition scholar Diana George notes:

For students who have grown up in a technology-saturated and an image-rich culture, questions of communication and composition absolutely will include the visual, not as attendant to the verbal but as complex communication intricately related to the world around them. (32)

Composition and rhetoric scholars<sup>4</sup> continue to argue for increased attention to visual communication, and practitioners of a digital feminist pedagogy should consider how to best do this work.

For the most part, those of us engaged with feminist pedagogies are fairly equipped to address one type of visual: pictorial representations such as film or photographs. Along with scholarship on objectification and the gaze (Berger 1972; Mulvey 1975; Neale 1992; Kaplan 2000) films like Jean Kilbourne's *Killing Us Softly*<sup>5</sup>—which directly confront the role of pictures

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<sup>3</sup> See, for example, the work of Andrew D. Wolvin and Carolyn Gwynn, as well as the *International Journal of Listening* (which comes primarily out of an educational psychology and speech communication perspective).

<sup>4</sup> Hocks 2003; Selfe 2003; Williams 2003; Wysocki 2003; Yancey 2004.

<sup>5</sup> Kilbourne's original was in 1979. *Still Killing Us Softly* in 1987, and *Killing Us Softly 3* in 1999.

in advertising and the role they play to disempower and silence—as well as essays by such authors as Susan Bordo, often make their way into composition classrooms. These texts and subsequent engagement with pictorial representations helps provide analytical strategies for teaching with and about the role of images, both on and offline. Yet, given the landscape of online spaces in particular—spaces comprised not just of words and pictorial images, but also of design elements—I find it troubling that we may ignore and/or feel unprepared to address the role of design elements, those elements such as colors, shapes, symbols, and organization. I believe these elements are worthy of our critical attention, and that listening can provide us a lens for a digital feminist pedagogy of design.

Design choices are prevalent throughout the Internet, even when we have little choice over the production of individual design elements. Given the rise of design templates in sites such as Blogger, Facebook, and Twitter, users rarely choose all design elements to represent themselves. Yet, they often choose a design template, and this template serves as a mode of meaning making that represents the self in particular ways. Given that one's choices are limited within these templates (Arola 2010), it is important for users to consciously think about the ways in which design constructs the rhetor and the audience. Instead of being merely an aesthetic choice that has little impact, the design of the space helps shape the way the user and the content are read. Something as seemingly mundane as choosing a green template over a pink template undoubtedly is an act of meaning making—it does rhetorical work. Critically engaging with such choices in our classrooms is important so that we, along with our students, work to self-consciously produce and consume texts and so that we critically enter the social and intellectual

life of both online and offline digital communities—such skills are crucial to a digital feminist pedagogy.

### **Teaching Design: A Common Model**

A digital feminist pedagogy is attuned to multiple modes of meaning so as to encourage an engagement with the multiple tools that students can, and do, use to represent themselves and their experiences. Feminist pedagogies have placed significant attention on pictorial representations, yet the prevalence of online communication calls for a critical engagement with the analysis and production of design elements. One of the most prevalent, and arguably easiest, models for teaching design employs a set of design standards to use across genres and purposes—take, for example, Robin Williams’ *Non-Designer’s Design Book* or most bulleted lists of design “to-do’s” found in many writing handbooks. I will briefly describe the problems with this model, and then will offer an alternative that enacts a digital feminist pedagogy.

Instead of reinventing the wheel, let me rely briefly on Anne Frances Wysocki and Julia Jasken’s “What Should Be An Unforgettable Face...” in which they examine popular handbooks and guides that include instruction in interface design. The interface of any online space is necessarily a designed rhetorical space in that interface designers purposefully choose graphical elements, fonts, colors, shapes, and sounds. In the early-mid 1990s, computers and composition scholars brought the rhetoric of software and interface design to the attention of English Studies (LeBlanc 1990; Selfe and Selfe 1994; Taylor 1992). Wysocki and Jasken look back to these arguments alongside their study of handbooks so as to stress the importance of understanding “interfaces as rhetorical” (33). In spite of scholarly understandings of the interface



as rhetorical, textbooks and handbooks tend to enact a limited understanding of the rhetorical function of design.

In their observations of fourteen handbooks and textbooks that include units designed to help students analyze and design web pages, Wysocki and Jasken found instruction that:

often constructs the technical as neutrally ahretorical; emphasizes getting work done—the values of efficiency, easy of use, and transparency—over other possible human activities and relations; and separates content from form, as though form contributes nothing to how others respond to and are shaped by the texts we make for each other. (38)

When it comes to design, these texts ask students to concern themselves with readability and efficiency. Does the design make the content easy to find and easy to read? If so, then it's deemed a success. While some texts do ask students to understand how design builds ethos, the treatment tends to be limited. Overall, Wysocki and Jasken found a lack of pedagogical instruction that encourages students to consider design as a complex mode of meaning making. There was little to no acknowledgement of how design can function not just to help with ethos and readability, but also as a means of sharing and experiencing the self and community in online spaces.



*Figure 1: Malea Powell's Homepage*

Imagine, for example, were one to teach design analysis solely by using the aforementioned Robin Williams' design principles. Applying Williams' four design principles—contrast, repetition, alignment, and proximity—to this homepage (Figure 1) would likely lead to a somewhat productive, yet limited, analysis. One might, for example, comment on how the floral pattern underneath the text “Malea Powell” creates a bright focal point through its contrast with the black background. Such contrast helps add visual interest to the page. One might also discuss the repetition of colors and the way in which they help to create a unified design. The repetition of the color green—which is used for the header and the links—also emphasizes particular design elements that help make the page usable (in that if you can't find the links, then you'll have trouble using the page as it's intended). One might also describe how the left alignment of the text, and the placement of different textual elements in proximity to one another, help to make the page readable.

This type of analysis is undoubtedly a useful starting point when engaging with design in the classroom, but it results in a limited approach that leaves out the nuances of design as a mode of meaning making. Such design criteria don't explicitly ask students to reflect on the ways design encourages the audience to participate with the text and the author; nor do such criteria encourage students to reflect on how and why they come to understand certain rhetorical choices in particular ways. And, if such analysis leads to production, such criteria doesn't encourage students to reflect on how their own design choices might function beyond making a text visually appealing and usable. Students should be able to articulate not only how design functions, but why and for whom. If we are to employ a digital feminist pedagogy that enables and encourages questioning, reflection, participation, and agency through the critical use and exploration of digital technologies, we must broaden our understanding of the function of design.

### **Rhetor-Centered Design**

I find that in order to enact a digital feminist pedagogy, it is useful to take Wysocki and Jasken's critique and reframe it through a feminist rhetorical lens. Doing so allows me to draw on existing feminist rhetorical criticism and opens up a feminist model for analyzing and producing online designs.

When online design is treated as though its primary function is to create usable and visually appealing texts, we as teachers are left with little room to critically engage with design. The design criteria Wysocki and Jasken critique offer little possibility for interrogating how the design of, say, a Twitter template that includes a light-blue background and outlines of leafless trees differs from one that uses a black background and silver lightening bolts. Such design choices, which are ever present on the Web, function to represent a rhetor and her experiences in

an online community. I term the pedagogical models that Wysocki and Jasken critique as rhetor-centered—that is, under such models one becomes primarily focused on the rhetor’s ability to properly convey her message to the audience. The question becomes not, “how does this Twitter template shape your understanding of the author and her experiences?” but instead becomes “does this Twitter template make the content easy to read and access?” Such a focus ignores the ways in which design is content, in that it functions not just as a “wrapper” for the text, but also as a mode of meaning making.

Feminist rhetorical criticism offers a useful take on the problems of employing a rhetor-centered model. Feminist rhetoricians, those concerned with the ways communication can support and dismantle gender inequalities, have understood one major flaw of a rhetor-centered model to be that the rhetor is imagined to have sole control of the communicative environment. Given that a rhetor-centered design model positions the rhetor as one who wields authority over her audience through the correct use of design strategies, this model is similar to the one found in traditional rhetorical theory.

Feminist rhetoricians understand such theories to include and enact a patriarchal bias (Biesecker 1992; Foss & Foss 1994; Foss and Griffin 1992, 1995; Kramarae 1989; Shepard 1992; Spitzack & Carter 1987). Traditional rhetorical theory, as these scholars understand it, assumes the rhetor is in a position of domination, whereas the audience is in a position of submission. In other words, it reinscribes a power structure that is complicit with patriarchal models whereby the speaker (rendered active and male) is in control over and persuades his audience (rendered passive and female).

Sonja Foss and Cynthia Griffin critique this patriarchal model by saying that when a rhetor's goal is to solely "convince others to adopt their viewpoints," the rhetor "exerts control over part over those others' lives" ("Beyond Persuasion," 3). It is this taking on of control and domination, of taking power of the other, that is identified as problematic. For, under this patriarchal model of rhetoric, the communicative act is treated as though the rhetor can, and should, control the audience's response through careful rhetorical choices. Thereby, the audience is figured as homogeneous and as passive receivers of information who, if addressed correctly, will understand the intentions of, and be persuaded by, the rhetor. This model also circumscribes the possibilities and potentials of communication, in that we aren't attendant to the ways that communication can function beyond transmission.

Despite numerous scholarly critiques<sup>6</sup> of rhetor-centered oral and written communication, this rhetor-centered model reemerges in the pedagogical models of design that Wysocki and Jasken critique—in part, no doubt, because it provides an easy-to-use model in what at times may feel an overwhelming endeavor (that is, teaching students not *just* about writing, but about all modes of meaning making). Yet, when we say that a designer can use certain design criteria so as to have particular effects on all audiences, the rhetor/designer is imagined as the one with control and whose primary goal is to effectively communicate text. "Effective" in this case means efficient, visually pleasing, and legible—in other words, a design that doesn't get in the way of the alphabetic message but instead bolsters it through making the document easily transmittable. In teaching this model in the classroom, we set up a fairly basic and

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<sup>6</sup> Feminist rhetorical theorists aren't the only ones to critique this model. Reader-response theory has also done significant work in this area (Fish 1980, 1981; Harkin 2005; Iser 1974, 1978; Salvatori 1983, 1996; Schweikart 1986).

understandable situation where we put all responsibility for and control over communication in the student's hands: if you build it in the proper way, they will come.

I believe that practitioners of a digital feminist pedagogy should complicate this model so that we can richly acknowledge and explore how design functions to, in Belenky's words, "enable individuals to enter the social and intellectual life of their community" (26). I believe a digital feminist pedagogy must acknowledge how, embedded in an ecology of meaning and identification, design is far more than a tool for creating efficient, legible, and visually pleasing documents. Instead, design functions as a complex mode of meaning making.

I now offer listening as a theoretical approach for addressing design beyond rhetor-centered model. After describing a feminist understanding of listening, specifically through the lens of rhetorical theory, I offer questions that can help practitioners of a digital feminist pedagogy address design in the classroom. My intention is that such questions get us out of the "what" of design (for example, "contrast improves legibility" or "consistent alignment increases readability") and into the "how" and "why." Such a move embraces a digital feminist pedagogy, and thus helps us critically engage with the online spaces we embody.

### **Beyond Rhetor-Centered Models: Listening to Design**

Listening itself has been brought up for slightly different, but connected, reasons in feminist rhetorical scholarship. One vein of scholarship has explored the possibilities of using listening as a means of paying attention to, or rediscovering, lost voices—specifically recovering

the work of women who have been largely ignored in the rhetorical tradition<sup>7</sup>. Another vein of scholarship, the one I find particularly relevant to design pedagogy, explores listening as a way of rethinking the rhetorical situation. Under this model, communication is no longer constructed as rhetor-centered, but rather as a reciprocal environment.

This act of listening involves both rhetors and audiences being more attuned and thoughtful to the perspectives enacted in our discourses. Take, for example Jacqueline Jones Royster who proposes listening as a means for productive cross-cultural communication. She describes that to be a thoughtful communicator means to

be awake, awake and listening, awake and operating deliberately on codes of better conduct in the interest of keeping our boundaries fluid, our discourse invigorated with multiple perspectives, and our policies and practices well-tuned toward a clearer respect for human potential.... (40)

Here, she defines listening as a means of operating “on codes of better conduct” so that we keep ourselves open to new ideas and new ways of seeing and being in the world. Similarly, Krista Ratcliffe calls for rhetoricians to theorize and practice listening as a rhetorical strategy. She coins the term “rhetorical listening” which she defines as “a stance of openness that a person may choose to assume in relation to any person, text, or culture” (2005, 1). In this way, rhetorical listening is an active engagement that allows one to, in the spirit of Gustafson, undertake “a self-conscious, critical and intense process of grazing inward and outward that results in questioning assumptions, identifying problems, and organizing for change” (1999, 249).

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<sup>7</sup> For example, see Andrea Lunsford’s *Reclaiming Rhetorica*, Cheryl Glenn’s *Rhetoric Retold*, Joy Ritchie’s *Available Means*, and Nan Johnson’s *Gender and Rhetorical Space in American Life, 1866-1910*.

Such a stance of openness necessarily entails that we listen not for our own self-interested intent, but instead we listen by “consciously *standing under* discourses that surround us and others, while consciously acknowledging all our particular and fluid standpoints” (1999, 205 *emph. mine*). When we consciously articulate our discourse’s cultural logics, and if we choose to respond to them, “we become responsible for our words, our attitudes, our actions” (208). When working with Ratcliffe’s notion of consciously articulating discourses, I find James Paul Gee’s definition particularly useful:

*A Discourse* is a socially accepted association among ways of using language, other symbolic expressions, and ‘artifacts,’ of thinking, feeling, believing, valuing, and acting that can be used to identify oneself as a member of a socially meaningful group or ‘social network,’ or to signal (that one is playing) a socially meaningful ‘role.’ (131)

Discourses are inherently ideological in that they involve an understanding of “who is an insider and who isn’t” (132). Articulating such often invisible practices and beliefs can be challenging not only for us, but particularly for our students. Yet, I believe such articulation, or at minimum a striving for such articulation, is key to a digital feminist pedagogy and can greatly enrich our pedagogies of design.

As Ratcliffe describes it, rhetorical listening—insofar as it engages us in a process of questioning, reflecting, and bringing to a discursive level the ideologies functioning within our various communicative situations—is a beneficial model for understanding oral and written communication. Yet, I believe listening can also be a useful theoretical model for engaging with visual communication. Because pedagogical models for teaching design often employ rhetor-centered models and thus render silent discussions about how design functions as a mode for



expressing and representing the self (a self always engaged in one or more particular discourse communities) using listening as a lens for visual design helps us make the familiar unfamiliar.

Given my concern with visual communication, it may seem odd that I want to use a theory of listening as opposed to a term based on vision. I hope I have made somewhat clear that, as Ratcliffe employs it, rhetorical listening is not an auditory act, but instead is a mental act. Given that, as Ratcliffe describes, rhetorical listening is a way of making meaning (“Rhetorical Listening” 202), I choose to use the metaphor of listening because it encourages an act of synesthesia whereby we are encouraged to see through listening. As Ratcliffe explains “sometimes the ear can help us see just as the eye can help us hear” (202). This disruption in our usual understanding of the senses creates a pause whereby we are asked to consider “how *does* one listen to design?”

My heuristic for teaching design through listening—which I provide below—offer ways of answering this query. I believe this pause is particularly useful for educators, for while students may not entirely buy the idea of “listening to design,” synesthesia affords us the opportunity to perform critical feminist reflection on the ways in which discourses and ideologies circulate through design. It helps us see, and hear, how design is used as a complex mode of meaning making.

### **Understanding Design through Listening: Questions for Design**

A digital feminist pedagogy of listening to design is underpinned by two key ideas:

1. Listening recognizes that not all design criteria will be successful across all audiences. Instead, listening encourages us to explore in what discourse communities, and within what ideological structures, particular designs have particular meanings
2. Listening recognizes that rhetors compose themselves and their purposes through design, while at the same time design composes the audience as certain types of people and invites users to participate in certain ways based on the discourses and ideologies within which the text circulates.

These recognitions, and the following heuristics, support a digital feminist pedagogy, in that they work to encourage questioning, reflection, participation, and agency through the critical use and exploration of digital technologies.

I offer heuristics instead of criteria, for it is difficult for one set of criteria to be used across all rhetorical situations. I do believe, however, that instructors can utilize the criteria found in current pedagogical models *so long as* these criteria are supplemented with the types of questions that I offer here. For example, there is value in using rhetor-centered design principles such as the Williams' example from above. Such criteria do often help students create readable and visually pleasing texts (goals that are laudable for many designs). My questions below, then, add to such criteria in a way that encourages students to consider how design performs functions beyond aesthetics and legibility. They also encourage students to question under what ideologies efficiency and visually pleasing texts are valued. These questions can be used on their own, without accompanying criteria such as Williams', yet they are most powerful if used after asking students to design with our current pedagogical design criteria.

First, I offer questions for students *producing* design. These questions can be used for peer reviews of design projects, or as a set of response questions for a student to include with a final project. When my students produce a multimodal text, I ask them to include a design justification. This justification, based on theories of feminist rhetorical listening, includes responses to the following questions:

### ***Design Justification Questions***

1. Make a list of each design element you chose to include in your text. Include color, shapes, and fonts as well as an overall description of the layout.
2. Next to each design element, write down why you made each design choice. Specifically, consider how this design element reflects what **you** think, feel, believe, and value.
3. Next to each design element, write down how each element reflects what you imagine **your audience** thinks, feels, believes, and values.
4. Now, instead of looking at each discrete element, consider the overall design. In what ways do you hope your audience will participate with your text? In what ways do you believe your design choices invite this type of participation? Consider “participation” not only what the user will physically do (for eg, their eyes may be drawn to a particular area, or they may be encouraged to click on a particular link), but also consider how you hope the user will feel when engaging with your text.

These design justification questions first ask students to describe the individual design elements used in their text. While students may have used criteria such as Williams’ to create

their design, this question calls their attention to each individual element and positions them so as to acknowledge how each design element plays a role in making meaning. Next, students are asked to consider why they chose each element and in what ways these elements reflect his or her discourses as well as the audience's discourses. Further discussions could include the definitions of a discourse community and the ways in which ideologies circulate within discourses. Even in the absence of such discussions, Questions Two and Three help students consider the role discourse and ideology play in design, even if such explorations are cursory and the terminology of "discourse" and "ideology" is avoided. Question Four asks students to consider how all of the design elements come together to extend an invitation. Students are asked to consider how their design invites a particular kind of participation with their text.

I offer these questions with the understanding that students' answers may be speculative. I believe, however, that by considering the discourses from which their design emerged, students can at least begin to question the ways in which design invites users to participate and in this way students can begin to bring their understanding of design to a discursive level. These are questions that a rhetor-centered model does not encourage, but they are questions that are important if we are to teach students to critically understand design and, by proxy, to consciously and critically engage with digital tools for representing their experiences so that they might engage and enter the social and intellectual lives of their communities. Such action reflects the goals of a digital feminist pedagogy.

By asking students to consider the ways in which each design element reflects what they believe and what they imagine their audience believes, as well as how the design elements work together to invite participation, students' attention is drawn to the ways in which design serves as

a mode of complex meaning-making. While these questions are intended to go beyond a rhetor-centered model, they don't disallow discussions about how design may create legible and efficient documents. For example, a student may describe how she used a twelve-point serif font because she believed her audience would expect a standard readable font. Yet the questions also push the student to consider why, and for whom, such a font is expected. While her answer to this may be speculative, it still encourages her to question the ideologies behind design norms and thus critically engage with textual production and analysis.

The above questions are designed for students to use when composing a text. Similar questions can be used to analyze design, and below I rephrase the questions for such an occasion. The acts of both producing and analyzing texts, as Belenky describes, are important to a feminist pedagogy in that both acts encourage individuals to question beliefs and assumptions, and allow for a representation of self. The hope is that such mindfulness about both production and analysis can encourage thoughtful participation in the social and intellectual life of communities.

These questions for analysis ask the student to consider how they feel when encountering a text. These questions also ask the student to *imagine* what the designer wants of them given his or her design choices. I purposefully ask students to “imagine” what the designer wants of them, for students cannot, and should not, be asked “what is the designer’s intention?” Such a question is based on a rhetor-centered model whereby we listen only, as Ratcliffe says, *for* intent rather than *with* intent (*Rhetorical Listening* 28). Instead my questions encourage students to focus on the ways that certain design choices make them feel, and how these feelings are bound up with discourse expectations and social constructs. In this way, students can explore how design makes meaning not always through a set list of prescriptive criteria, but instead through individual users

making meaning given the surrounding discourses and ideologies. Here then are my design analysis questions based on a listening model:

### *Design Analysis Questions*

1. Make a list of each design element you see in this text. Include color, shapes, and fonts as well as an overall description of the layout.
2. Next to each design element, write down how **you** understand these design choices. Specifically, consider how you make sense of each design element given what you think, feel, believe, and value.
3. Next to each design element, write down how each element reflects what you imagine **the designer** thinks, feels, believes, and values.
4. Now, instead of looking at each discrete element, consider the overall design. In what ways do you feel you are invited to participate within or with this text? In what ways do you believe the design choices invite this type of participation?

Again, these questions ask students to explore design not through a set list of criteria but through considering the variety of ways in which design makes meaning. These questions help to discursively address how design elements are entwined with social structures and experiences that apply certain meanings to certain shapes, colors, and arrangement of elements.

### **Listening to Design: A Sample Analysis**

To conclude, I want to illustrate how one might use the Design Analysis Questions when encountering a text. I now return to *Figure 1*—the homepage of Malea Powell. If asked to broadly analyze how this design functions rhetorically, one may describe the contrast and repetition of the colors and how they work to create a unified design that is easy to read yet visually engaging (as seen in the above Williams’ example). One might also note how the design creates an overall tone or emotional appeal for the content (for example, the welcoming feel of Powell’s warm green and orange fonts, or the soft and playful spirit of Powell’s border of flowers and leaves) or how the design allows the user to quickly and easily find the links and textual information on the site. These are all reasonable points, but I believe my heuristic helps push such analysis beyond the “what” to the “how” and thus enables the critical thinking required of a digital feminist pedagogy.

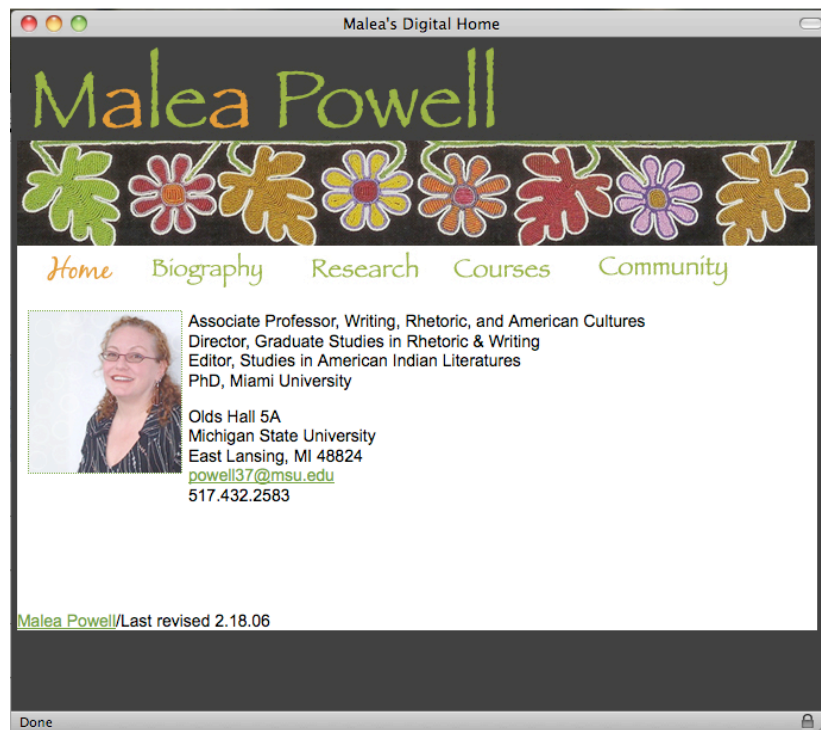


Figure 1: Malea Powell’s homepage

I encourage students to engage with the Listening to Design heuristic in two ways. The first is through answering the questions in a tabular format, the majority of which I've included in Appendix A. The second is to do something with this information, whether it be to sum it up in a rhetorical analysis paper, to write a memo to the designer in which they describe how the design is functioning for them, or to present the information in a design critique. I will call your attention here to some key moments in the analysis, and suggest how such analysis helps engage with a digital feminist pedagogy.

You'll notice in the Appendix how Questions 1-3 allow for a careful consideration of each design element's contribution to the whole. The left-hand column includes a list of the elements (Question 1), the middle-column describes the role that particular design element plays in creating meaning for the student (Question 2), and the right-hand column describes what the student imagined the designer intended through her choices (Question 3). Lastly, in the final row of the table, the student is asked to consider the function of the overall design (Question 4).

Consider how this analysis differs, and goes beyond, that found in the rhetor-centered analysis from earlier. For example, when engaging with the design element, "The words 'Malea Powell' written in green and orange in Papyrus typeface" I describe how it strikes me as being, "somewhat old fashioned and serious, while also being earthy and naturalistic." This description, the "what" of the design element, may be similar to one found in a more rhetor-centered analysis. However, the "why" of my understanding is unpacked as I move through my analysis. I describe my sense of the text as "old-fashioned" because "the crackled edges of the font remind me of hand-dipped ink writing you would see on papyrus paper from years ago. . . . I've had the luxury



of seeing old manuscripts at our University's archives, and many of the fonts look similar." I also unpack my sense of the text as "earthy and naturalistic" because "I've seen these colors used before on organic items such as yogurts, lotions, or even yoga clothes. Perhaps because I am middle class and live in a town with many educated middle to upper-middle class people who are into organic living, I tend to read these colors in a 'back to the earth' kind of way." Notice how the analysis goes beyond a focus on readability. Instead, I work to interrogate why certain elements resonate with me in particular ways, and thus question my own beliefs and assumptions about design—such critical work is essential to a digital feminist pedagogy.

Asking students to consider why they understand certain designs to function in particular ways can also help students interrogate and make visible certain aspects of their home discourses. Consider, for example, how I answer Question 2 (*write down how **you** understand these design choices*) for the design element, "A row of colorful flowers and leaves in a beadwork-type pattern." I describe that,

*I understand this element to be in some way related to Native American beadwork. Because I am part Ojibwa, and because my mother is involved in tribal traditions, I have seen patterns similar to these on various powwow regalia. ... I associate this beadwork with Native peoples, particularly women.... I also associate it in an online space like this as illustrating some connection to Native ancestry, or traditions, or perhaps just a general affinity for Native designs.*

Then, when answering Question 3 for the same design element (*write down how each element reflects what you imagine **the designer** thinks, feels, believes, and values*) I describe how

*I imagine the designer is trying to illustrate some connection to Native traditions and/or an affinity for Native designs. ... I imagine she values Native beadwork in some way, whether she does beadwork herself or simply just appreciates it. I don't know if she thinks the audience will understand the image, as a lot of people might not. But, I imagine she thinks it's important in representing herself in some way.*

To be fair, I chose an example that included a design element that resonated with my own home discourses. Nevertheless, such analysis would likely not occur when engaging with rhetor-centered design criteria—it would be unlikely I would bring my personal life to the table when employing Williams' design principles. The Listening to Design criteria necessarily encourage students to unpack their own discourses when engaging with analysis and production. It might not always be as personal as this example of beadwork, however the question opens up a space for such analysis to occur. This space encourages participation by those who may feel their home discourses are marginalized by the academy. Such a move can help open a space for discursive participation within the community of the classroom.

Finally, notice how I engage with Question 4, which asks the student to look at the design holistically and describe “in what ways do you feel you are invited to participate within or with this text? In what ways do you believe the design choices invite this type of participation?” Pay particular attention to how I discuss issues of usability along with broader concerns of participation and affect.

*I feel the overall design encourages me to see Malea Powell as an approachable, artistic, and professional professor. The bright colors of the beadwork, contrasted with the black background and very standard black text on white, creates for me a sense of*

*reliability and comfort. I believe I am encouraged to participate with this text by first, seeing her as professional yet approachable (something the standard design choices along with the more artistic beadwork and bright colors encourages), and second, by finding what I need quickly and easily (something the link structure and the text blocks allow me to do). The text treats me as though I am someone who wants to find information, but wants to do so in a way whereby I learn more about the author than simply the words provide. I'm not here just to learn where her office is, I'm also here to get a sense of Professor Powell as a person. Also, because it uses Native beadwork and because I am familiar with it, it invites me to relate with her through my Native heritage. Because I am "in the know," I feel a sense of connection that perhaps others would not. My knowledge of beadwork is honored through her use of this design element.*

The act of listening to design—spending time with each element and working to understand the discourses surrounding me, the text, and the designer—enables a rich understanding of the various ways design makes meaning. I was able to take into account my desire for a design that was usable along with my desire for a design that helped me get-to-know the homepage's author. I was also able to bring issues of gender and race to the table, and describe how they shaped the ways I understood the design to function.

This heuristic for listening to design will not necessarily lead all students to immediately interrogate every aspect of their discourse communities, however the act of attempting to understand discourses and ideologies can begin to open doors of understanding and self-reflection. The pause that listening creates provides an opening for the "self-conscious, critical and intense process of gazing inward and outward" that Gustafson argues is essential for a

feminist pedagogy (249). If, as I argued earlier, a digital feminist pedagogy enables and encourages questioning, reflection, participation, and agency through the critical use or exploration of digital technologies, listening to design is one avenue of exploring the means through which design plays a role in various ways of knowing and being. Listening to design can be a valuable tool for enacting a mindful multimodal pedagogy.

### Appendix A

<b>Malea Powell's Website Design Analysis</b>		
<b><i>1. Design Elements</i></b>	<b><i>2. How I understand each element and how it reflects (or doesn't reflect) what I think, feel, believe, and value</i></b>	<b><i>3. How each element reflects what I imagine the designer thinks, feels, believes, and values.</i></b>
The words "Malea Powell" written in green and orange in Papyrus typeface	Because it is on top of the page, and larger than the rest of the font, I assume this to be the title of the page and/or the author's name. This is largely because of genre conventions, in that I'm used to seeing titles large and on top of web pages. The typeface and color choice strike me as being somewhat old fashioned and serious, while also being earthy and naturalistic. In part this is because the crackled edges of the font remind me of old hand-dipped ink writing you would see on papyrus paper from years ago. I have this association because I've had the luxury of seeing old manuscripts at our University's archives, and many of the fonts are similar looking. The colors feel warm and earthy to me in large part because I've seen these colors used before on organic-type items such as yogurts, lotions, or even yoga clothes. Perhaps because I am middle class and live in a town with many middle-uppermiddle class people who are into organic	I imagine the designer might have been trying to convey a similar feeling as the one that I am having. I imagine the designer thought the typeface would convey a sense of welcoming and earthiness in large part because she probably believes that these colors are something you might find in nature. She probably also is familiar with organic-living products and knew these colors would generate a naturalistic feeling because of the discourses they are often found in. I imagine the designer values the earth and all things natural. I also imagine the designer is well-versed in homepage conventions, as she put the title large and at the top of the page. In this way, the designer is somewhat conventional in a safe way. The font might be a little earthy, but the size and placement are safe. It feels fun, while still being conventional.

	<p>living, I tend to read these colors in a “back to the earth” kind of way.</p>	
<p>A row of colorful flowers and leaves (some of them matching the colors in the name), seemingly done in a beadwork-type pattern</p>	<p>I understand this element to be in some way related to Native American beadwork. Because I am part Ojibwa, and because my mother is involved in tribal traditions, I have seen patterns similar to these on various powwow regalia. When looking closely at the design, you can see the individual beads, which is how I knew it was probably some form of native beadwork. I associate this beadwork with Native peoples, particularly women who tend to be the ones doing this type of crafting. I also associate it in an online space like this as illustrating some connection to native ancestry, or traditions, or perhaps just a general affinity for native designs.</p>	<p>I imagine the designer is trying to illustrate some connection to Native traditions and/or an affinity for Native designs. I imagine she knows something about this, because it would be odd to use this imagine as such a centerpiece of the webpage without knowing anything about it. I imagine she values Native beadwork in some way, whether she does or simply just appreciates it. I don’t know if she thinks the audience will understand the image, as a lot of people might not. But, I imagine she thinks it’s important in representing herself in some way.</p>
<p>A black background</p>	<p>I understand the black background as being somewhat neutral, in that it is an easy way to make the colorful content stand out against a plain background. This reflects my belief in simplicity, and in certain colors having more rhetorical heft than others. I often associate black backgrounds with more masculine pages, in part because I know a lot of men into science and technology who use black on their webpages. Yet, the flowers on the page take away this</p>	<p>I imagine the designer believes black to be a somewhat neutral color that will make brighter design elements stand out from the page. I find myself thinking that because the designer could’ve made the background one of the bright colors from the beaded floral background, but chose not to, they must be thinking of a more conservative audience in that the black makes it feel professional in a way that, say, orange, might not.</p>

	<p>masculine sense I might otherwise have and instead I just see it as a neutral, somewhat edgy, background.</p>	
<p>A white content box</p>	<p>This is probably the most invisible element to me on the page. I am so accustomed to seeing words typed on a white background, whether it be in a book or on the screen, that I don't even think about it. It just seems normal and natural somehow. In this way, it reflects my belief in simplicity and order, in that black on white is my norm. Changing these conventions would seem too edgy and would make me not take her as seriously, at least in this context.</p>	<p>I'm thinking the designer probably feels similarly to me here, in that they value simplicity and playing by the rules. That is, a white background for the majority of written content is what many readers are accustomed to, and in this way the design in no way rocks the boat and plays by the rules one generally sees in a Western literate society.</p>
<p>5 links (Home, Biography, Research, Courses, Community). The 4 links to other site page are in the green typeface of the header, and the 1 link of the current page is a script-font in the orange color from the header.</p>	<p>I find myself thinking of consistency and ease-of-use when I look at the links. The colors, because they pull from the header, make the page feel visually consistent, safe, and professional. I value these qualities, particularly when I'm learning about a faculty member at an institution. The current page link, the orange script, is the boldest choice in the link structure in that it doesn't exactly match anything else in terms of style. Yet, because the color is pulled from the header, it feels consistent while still feeling a bit edgy. This reflects my belief that those in positions of power such as professors need to come across as professional and not too</p>	<p>I imagine the designer values order and consistency, and wants the user to feel as though they can find what they're looking for. The designer also seems to want to illustrate sense of professionalism yet in a fun and approachable way. I imagine the designer values people who will see her as professional and orderly, yet artistic and approachable.</p>

	<p>edgy, but maybe just a little bit... I want my professors to be interesting, yet still play by the rules.</p>	
<p>A small photo of Malea Powell</p>	<p>This picture is a square somewhat standard professional headshot. It is positioned in the top left of the white content box (beneath the links), and in this way is one of the first things my eyes are drawn to. It's probably either because I'm so accustomed to reading top to bottom, left to right, that my eyes go to the picture first. It might also be because it is the only picture on the page, thus my eyes are drawn to it because of its contrast. This picture and its placement reflects my training in western literacy practices, and also reflects my value of being able to "put a face to a name."</p>	<p>I imagine the designer values connection to others, in that she wants us to see what she looks like and she presents us with a friendly photo of her smiling. Because the photo is fairly traditional and placed in the top left of the content box, I also imagine the designer feels as though she should play by some of the expected rules for representing the self in a professional setting. I also find myself wondering if she might value approachability because she is a woman in a position of power. She does not show us a stern looking photo (something that people who have trouble with strong women might find off putting), instead she is smiling and friendly looking, and doesn't seem threatening in any way.</p>
<p>2 text blocks. One listing Powell's titles and the other listing her contact information, both in a small, but readable, black Arial typeface</p>	<p>Because of their design and position on the page, these elements appeal to my need to find information easily. Because they are small chunks of text, and are aligned with the image, they are very easy to read. While the rest of the page serves to make Professor Powell seem approachable and unique, this information is sheer facts and appeals to the reality of my life. I may want to feel as</p>	<p>These are perhaps the most standard elements on the page, in that they are blocks of black text on a white background that serve to provide specific information about Powell's position and contact information. I imagine the designer felt as though, because this information is most likely what the audience is looking for, it had to be presented in an expected</p>



	<p>though the designer of the homepage is approachable, professional, and unique, yet the reality is that I work many hours in order to keep my job, and am most likely just visiting this website for the information. The design appeals to my need find the information in an easy-to-read, easy-to-find design.</p>	<p>way.</p>
<p>A footer with a “last revised” date (same typeface as above)</p>	<p>In terms of design, this element is very similar to the two text blocks described above, yet because of its placement at the bottom of the page it is the last thing my eye sees when scanning the page (given I was trained to read top to bottom). It also, in terms of its content, appeals to my value of current and relevant information. I know very quickly when scanning the page how current the information is.</p>	<p>I imagine the designer values genre conventions, in that most home page footers include a “last updated” date. Again, I feel like the designer is “playing by the rules” and keeping the page within an expected genre. The designer is also illustrating a value of time, in that she wants us to know how relevant and timely the information on the page is.</p>
<p><b>4. Now, instead of looking at each discrete element, consider the overall design. In what ways do you feel you are invited to participate within or with this text? In what ways do you believe the design choices invite this type of participation?</b></p>		
<p>I feel the overall design encourages me to see Dr. Malea Powell as an approachable, artistic, and professional professor. The bright colors of the beadwork, contrasted with the black background and very standard black text on white, creates for me a sense of reliability and comfort. I believe I am encouraged to participate with this text by first, seeing her as professional yet approachable (something the standard design choices along with the more artistic beadwork and bright colors encourages), and second, by finding what I need quickly and easily (something the link structure and the text blocks allow me to do). The text treats me as though I am someone who wants to find information, but wants to do so in a way whereby I learn more about the author than simply the words provide. I’m not here just to learn where her office is, I’m also here to get a sense of Dr. Powell as a person. Also, because it uses Native beadwork and because I am familiar with it,</p>		

it invites me to relate with her through my Native heritage. Because I am “in the know,” I feel a sense of connection that perhaps others would not. My knowledge of beadwork is honored through her use of this design element.

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