Information Design and Rhetoric
Teaching Design Students to Create Effective Communication

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Abstract: In the past decade, many design educators have recognized the need to change the way they teach design. Yet, most graphic design courses still tend to focus on developing visual and technical skills of design students. How and what should design educators teach design students so that students become effective communicators in the age of information? This paper presents a case study based on my experience of developing and teaching the course, *Topics in Information Design and Rhetoric*, at Carnegie Mellon University's School of Design. I first discuss the four themes in information design that were at the core of my course. Second, I share some of students' assignments that demonstrated that they could apply rhetorical analysis to each of the information design artifacts. Last, I conclude by providing some reflections and implications why courses like this are central to design education today and in the future.

Key words: Information Design, Rhetoric, Design Education.

1. Introduction

In the past decade, many design educators have recognized the need to change the way they teach design so that students become effective communicators in the information age. Despite the fact that designing information is central to the practice, research, and education in design, most graphic design courses tend to focus on developing visual and technical skills of design students to keep pace with rapidly changing technology. There is no doubt that design students should learn basic visual language first and become proficient in it. However, problems occur when students are unable to see the roadblocks and issues beyond the formal layer. For example, when students design a poster for the specific audience, creating it with an expressive style or a simplistic one should not be the primary concern. If the form of the poster is not created to serve the needs of the audience, it is useless, although visually pleasing. In order to create a poster that effectively communicates to the audience, students need to identify issues of communication, analyze the audience and the context, and then select the appropriate style of the poster.

In fact, creating effective communication is not an entirely new idea in design practice. Identifying the audience and the context of required information has been integrated in the process of good communication design. However, when it comes to design education, there is no course that enables students to see design as a way of creating an effective and persuasive argument in diverse rhetorical situations. How can design educators develop new courses for design students in advanced levels so that they have better access and understanding of

significant topics in communication? What kind of courses should be offered to expand the current concept of information design—from making information graphics to creating a persuasive and effective design *argument* suited to a given situation?

To answer these questions, I developed and taught a course, *Topics in Information Design and Rhetoric*, at Carnegie Mellon University's School of Design, in the spring of 2007. In this seminar course, students explored the relation between information design and rhetoric, particularly emphasizing that information design can be understood as a way to create and communicate an effective argument to an audience in various rhetorical situations. This paper, through course description and examples of student work, presents a case study of a course on relevant topics in design education that seeks to broaden design students' understanding of rhetorical nature of communication design and to help them develop critical insights in the way information design artifacts communicate to the audience.

2. Method

2.1. Course Planning

The idea for this course originally came from my ongoing interest in information design. Because I have conducted information design projects and studied theories in relevant disciplines in the past, I could see that information design has a lot in common with rhetoric. Both intend to effectively communicate in a given situation. Both see audience as active participants, not passive recipients. Both are concerned with styling to some extent, but from a broader perspective, their primary objectives lie in the creation of persuasive arguments. In this sense, information design can be understood as a way to communicate information to an audience in various rhetorical situations, where the purpose is not only to instruct or to persuade the audience, but also to move and please them.

These commonalities became the motivation for me to plan this course. This was done in the context of School of Design at Carnegie Mellon University where Design courses are mostly project-based. There are no courses where design students could have access to the topics of rhetoric. There were some seminar courses offered in rhetoric department. However, these courses are not easy for the design students to grasp because they lacked basic knowledge about rhetoric and the original difficulty of seeing how rhetorical concepts could inform design problems. For this reason, I created a course where students could learn the basic foundations of rhetoric and begin to understand information design artifacts as reasoned and persuasive arguments that are audience specific and situated. Also, students would be able to use the theories and topics presented in this course to identify communication problems and to analyze the use of individual information design artifacts in the respective rhetorical context.

In addition to setting the course objectives, there were other practical concerns that I needed to consider to plan the course. First was the choice of themes and relevant readings. Because one of the course objectives was to broaden students' understanding of information design and its relation to rhetoric, providing the appropriate difficulty level of materials was critical particularly to students who may be facing these topics for the first time. Therefore, I selected readings from diverse disciplines, including rhetoric, communication studies, information science, document design, and information design. The readings on rhetoric ranged from classical and contemporary rhetoric to visual rhetoric and design rhetoric so that students could have a better understanding of relations between information design and rhetoric. Some movies were included for students to

watch in class. Short films such as *Design Q&A* and *Powers of Ten* by Charles and Ray Eames and a section from *Maya Lin: A Strong Clear Vision* were chosen to encourage further discussions in different part of the course.

My next concern was the choice of assignments for this course. Since this is a design course, not a rhetoric course, students should be able to make some connections between what they learn from the class and how they design. Assignments should provide students with opportunities to investigate how different information design artifacts work in diverse contexts. The detailed description of assignments will be given in part 2.3.

2.2. Course Structure

The following four themes in information design were chosen at the core of the course: 1) information design as *representation* 2) information design as *perspective* 3) information design as *deliberation* 4) information design and *design ethics*. Each theme was covered from two to five sessions depending on the number of topics that were selected to examine on each theme.

2.2.1. Information Design as Representation

Discussion of the first theme, information design as representation, began with its origin and close relation to modern typography. Students compared and contrasted information design and the new typography in the 1920s, and covered topics such as focusing on functionality, and form as stylistic expression vs. as conveyor of the message. For example, modern typographer Beatrice Warde's metaphor of Crystal Goblet was used to illustrate that the form should not be the mere stylistic choice but the conveyor of message (content) in communication [1]. Although modern typography has continued to emphasize the significance of functionalism and the clarity of communication as its communication goal, rejecting all other styles except modernistic style has created other problems. A strong favor of simplistic style led to another stylistic mannerism in information design. Also, belief in the existence of objective representation prevented designers from exploring diversities in respective context.

The next topic moved onto the use of visual and verbal rhetoric in communication design. Two papers on visual rhetoric were chosen to show earlier attempts that demonstrated how rhetoric could be used to design information design artifacts such as advertisement or play posters. Gui Bonsiepe [2] and Hanno Ehses [3] contributed to the introduction of the concept of visual rhetoric to design, yet their analyses of rhetorical figures as a way of encoding and decoding signs and symbols were based on the view that treats rhetoric as an expansion of semiotic.

2.2.2. Information Design as Perspective

The primary focuses of the second theme, information design as perspective, were diversity and subjectivity. In contrast to the first theme, this view holds the premise that information design cannot be purely neutral or value-free because information design is fundamentally rhetorical. The form of different kinds of information design artifacts may vary because of the use of different rhetorical means. For example, the form of advertisement is quite distinct, whereas that of train timetable can look subtle and almost unnoticeable. Information design always brings a point of view to the design argument when information is selected, organized, and presented. These were some of the key point to regard information design as perspective.

This theme was studied through three different sets of readings. The first set of readings was to help students to understand information design as a persuasive communication. For this purpose, "The Rhetoric of Neutrality" by Robin Kinross [4] and "Information and Persuasion: Rivals or Partners" by Katherine McCoy [5] were used with Kostelnick's paper on the analysis of the statistical Atlases of the United States from 1874 to 1925 [6]. Information design as creating a persuasive argument was further investigated through the next two class sessions. Readings for the second session were chosen to investigate the existence of visual arguments and to investigate the meaning of argument [7] [8]. The third session focused on understanding design as a process of creating persuasive arguments. In this respect, Cicero's *De Inventione* [9] was chosen to emphasize the ability of orator , four issues of communication, and five parts of rhetoric in relation to the design process.

2.2.3. Information Design as Deliberation

Rhetoric is situational because it is the situation that calls the discourse into existence [10]. This theme regards rhetoric as a process of rational inquiry into situation, which is distinguishable from the first and the second theme that see rhetoric as form or power .

In order to further explore this theme, five sessions were devoted to discussion along with a guest lecture and a film on designer Maya Lin's Vietnam Veterans Memorial Design. First, discussions began with Aristotle's *The Art of Rhetoric* providing definition of rhetoric, the three modes of persuasion, and the three kinds of rhetoric [11]. Wayne Booth's "Rhetorical Stance" was also used to emphasize the significance of keeping the balance among three stances [12]. Next, discussions moved to examining the concept of rhetorical situation.   Lloyd Bitzer's "The Rhetorical Situation" was chosen to emphasize the pragmatic and situational aspect of rhetoric. In addition, Jorge Frascara's introduction to *Designing Effective Communication* and a film, *Maya Lin: A Strong Clear Vision*, were useful for students to relate rhetoric to the design of communicational spaces, where the experience of the audience would become the primary concern [13] [14].

In the last session, the relationship of new rhetoric to design and the role of audience were discussed. Richard Buchanan's "Design and the New Rhetoric" was chosen to examine the close relation between design and new rhetoric as productive arts in numerous aspects [15]. Also, Chaim Perelman's new rhetoric emphasized the humanistic aspect and the role of audience in new rhetoric [16].

2.2.4. Information Design and Design Ethics

The last theme of this course focused on the consequence of design products and the design process. First, selections from Wayne Booth's *The Company We Keep* opened the discussion on ethics. For Booth, ethical criticism is not just about morality [17]. Writers and designers should pay attention to any effects and be aware of any consequences of the products that they create. He discusses the powers of narrative and its ethical implications while at the same time emphasizing and maintaining the subjective nature of individual experiences. Milton Glaser's short statement was chosen to elaborate this point by arguing that being a good designers means being a good citizen [18]. Finally, Richard Buchanan's "Design Ethics" was useful in examining the issues and concerns in depth; it emphasized again that design is ethical action itself because design creates and supports for human choice [19].

2.3. Course Assignments

The assignments of the course consisted of three parts: an information design collection, two short analyses reports and presentations, and an integrated long analysis as a final paper .

For the first assignment, the information design collection, students gathered information design examples throughout the course, either because they found them well designed or poorly done. Then, these examples were organized in a folder along with a short note that included a brief description and their initial responses or analyses. Students brought their folders to class every week so that the examples could be used as materials for discussion points in class.

The second set of assignments included two short analysis reports and information design presentations in class. For the short analyses reports, students analyzed two examples from their information design collection, based on the readings and discussions in class. In addition to submitting short reports, students did a 7-10 minute informal talk by showing an example that was analyzed in the report and by sharing their findings based on the topics that were discussed in class.

The third assignment was an integrated analysis paper that demonstrated a student's working knowledge of the topics covered in class. Students were not asked to address all the topics, yet their final paper should appropriately reflect and demonstrate the significant issues that had been discussed in class. Students were free to choose any subject. They turned in a page long proposal that included the subject matter and the relevant topics by the middle of course term, and feedback was provided to help them either to narrow down the scope or to recommend relevant topics for their analysis. Students did presentations on the last day of course along with submitting the integrated analysis papers.

3. Results and Discussions

This course was taught at Carnegie Mellon's School of Design in the spring semester of 2007. It was offered as a mini-semester class, which consisted of two 90-minute sessions per week. A total of eight students were registered, including six from design, one from information systems, and one from engineering.

3.1. In-class Discussions

Overall, the students' understandings of rhetorical topics in relation to design were enhanced as they became familiar with basic concepts and terms in rhetoric towards the end of the course. This understanding was demonstrated in two ways. First, students began to use rhetorical terms and concepts in analyzing information design examples in class discussion. For example, one student applied the terms ethos and pathos when she analyzed a Tiffany advertisement and a Bailey Banks & Biddle's advertisement. In the Tiffany advertisement, she pointed out that the association between the mint color and brand image were effectively used so that credibility of the brand name and the color convinced the consumer easily. In the Bailey Banks & Biddle's advertisement, she took the text of the advertisement, 'after a century or two, fashion comes and go, but true beauty endures,' as a way of applying pathos because the meaning of message touched people's sense of history. Second, students were able to apply rhetorical frameworks better in their final paper . Among three paper assignments, there were some differences observed between the first short analysis and the final paper . Unlike students' first papers, which mostly focused on the formal aspect of examples, their second and final papers were well-rounded because they addressed other rhetorical aspects, such as the audience and the context. In addition, students were able to use rhetorical terms and frameworks more comfortably towards the end of the course

leading to informed critiques and discussions.

Another finding was that the students' discussions and responses became more active when the topic was closely related to design or when topics were discussed with specific design examples in mind. For this reason, diverse examples, such as maps, campaign posters, or advertisements, were provided to help students make connections to design. Students' information design presentations were also useful to encourage their participation and discussions.

3.2. Assignments

3.2.1. Information Design Collection

Examples were chosen either from a variety of resources or from a specific category, depending on individual interest. Some students collected only magazine advertisements, whereas some chose a variety of resources, ranging from websites and brochures to mailing forms and tickets.

3.2.2. Short Analysis Report and Information Design Presentations

As I briefly mentioned in section 3.1, most students demonstrated a better understanding of rhetorical topics and made a stronger connection in their second. For example, one student analyzed the ZIP code system in America in her first report, and compared the Mini Cooper website with the Beetle website in her second. Her first report addressed the strength of visualization in relation to its geographical presentation in Ben Fry's Zipdecode, in contrast to a list of ZIP codes that were put into an Excel file. It seemed that she intended to compare and contrast two different ways of presentation that dealt with the same subject matter , but her analysis was limited to discussing only formal aspects of design system. For her second report, she compared the Mini Cooper website to the New Beetle website. This time, however , she moved on to discussing the effectiveness of design to the targeted user group as the following: *New Beetle is supposed to be targeted to either the young or females who does not know much about cars. However , using actual parts as icons is not for people who are not into cars, which could be interested to people who are into cars; that is, New Beetle's build your own car page does not deliver pathos well*. She began to recognize the way each website would appeal to needs and emotions of the targeted user group.

Discussion of the audience and the context was shown in another student's reports. In her first report, she compared functional aspects of three paper towel dispensers. Products could be categorized whether it was well or poorly designed, depending on if it actually worked or not, yet her analysis did not examine issues in-depth. In contrast, she chose to compare three Pepsi Cola magazine advertisements from different years for her second paper . Providing the historical background and the primary concern in that specific time, her second paper analyzed the design of each advertisement in relation to its targeted user . For example, 1953's campaign poster employed a slender and modern woman as a central character , which appealed to female consumers who were weight conscious. In contrast, 1994's Diet Pepsi advertisement was targeted to male consumers, by presenting the scene of watching sports until late at night while eating and drinking. Each advertisement was designed by appealing to the needs and desires of its targeted user group with a careful consideration of the respective historical and economical context.

There were also papers that demonstrated a solid understanding of specific themes or topics presented in class. For example, one of the papers was about the comparison of three baby naming websites, and this

student began the analysis: *I realized that the way the information is organized and presented could have an important impact in the decision making process.* By referring to Kinross, she further claimed, 'all this information and the way it is organized brings us back to information design perspective. The presentation of such websites proves that once a designer inputs his voice, the message is forever changed. Once designed, the information is now being presented using rhetorical means.' It was interesting to see that this student used the theme of information as perspective, as a basis for her analysis. This was also distinct in her final report when she chose different kind of examples for her analysis.

There was also another example of short analysis, which reflected a student's solid understanding of a specific topic. This student chose a set of images from image rich-email messages of trendy apparel for her analysis. Her analysis was done quite thoroughly by stating that all the choices were deliberately rhetoric, although they did not seem so. For example, Boden's email advertisement message can be interpreted 'as emphasizing a carefree, independent, youthful sprit; a reading that comes from the expressive, expansive movement of the child pictured (choice of image); the earthy, natural colors (color); and the childish scrawl in the upper left corner (typeface).' These choices were carefully made to represent the voice of Boden clothing and to reflect the lifestyle that this brand pursued. Then, she compared this example to another example from Urban Outfitters' advertisement email [figure 4]: *the ads that feature shoes, bags, and accessories shift tactics a bit, transferring the focus from a particular lifestyle and splitting it among key works that reflect the consumer's values and oversize images of the featured products.*

3.2.3. Final Analysis Report and Presentation

For the final analysis, students compared and contrasted a set of examples, which were different kinds of information design or kinds that appeared over time, by applying topics to examples in depth. Although selected examples varied greatly, ranging from toothpaste advertisements to the bank note, it was observed that there were some common topics that students used in their analysis: modes of persuasion (Aristotle) [11], five key terms of Dramatism (Kenneth Burke) [20], and five canons and four issues (Cicero) [9].

Overall, modes of persuasion were addressed the most in papers. Unlike in the short analysis reports in which most students just began to address basic terminology, some of final papers clearly demonstrated that students had a solid understanding of topics. For example, one student compared the design of three environmental products by analyzing the use of different approaches towards enticing the user to use green products. She illustrated why Method became the most successful product in the green products market by analyzing the use of ethos, logos, and pathos in the design language and campaign of Method products. She stated that: *logos was to tell their audience about the environmental benefits and characteristics, ethos was to create a desirable character and personality of product, and pathos was to appeal to the emotion of the audience using their motto, "people against dirty."*

Another student chose toothpaste advertisements for her analysis. Her paper focused on analyzing the different tactics that each brand used to appeal to the audience by illustrating the way each brand emphasized one or two aspects out of ethos, logos and pathos. Her analysis was thoroughly done not only by comparing the advertisements of different brands, but also by comparing the advertisements of today to ads of the 1950s and 1960s. She concluded her paper by pointing out an implication of applying the topics by stating, 'the ability to choose out of ethos, logos, and pathos and use it well in the appropriate situation can greatly enhance a voice of

brand or a product.'

Advertisements and product design are obvious ways of persuading consumers to make a purchase. Yet some students chose unusual examples that did not look persuasive at first glance, such as money or public bathrooms. One student chose money as her subject matter, and compared the design of U.S. dollar to that of Euro. Examining the choice of design elements that appeared in different bank notes based on Burke's five terms of dramatism, she claimed the U.S. bank note could be considered a very strong argument for monetary value and also historic value. In addition, she compared the ethos of U.S. dollar and Euro in terms of its color and image. In the U.S. dollar, the monotone and the portraits of historical figures in the bank notes created more serious and convincing character that embodied the voice of government. On the contrary, in the Euro, colors and the images that represented different architectural periods of Europe characterized a theme of connectedness and symbolized the evolution of architecture among all of these countries.

Lastly, there was another paper on the analysis of Baseball Project, which I found interesting. Baseball Project was a project that designer Hugh Dubberly gave his students to design various ways of presenting baseball rules to the audience, using texts, images, diagrams, etc. What was distinguishable in this paper from others was that this student used Cicero's 5 canons to discuss the design process of this project. For example, she made a connection between *invention* and identifying various problems of communication, *arrangement* and creating hierarchy and priority of information by emphasizing important information and excluding unimportant information, and *expression* and using texts and fonts that appeal to novices.

4. Conclusions

4.1. Reflections

Overall, students' analytical and thinking skills have been greatly improved by the end of the course. They were demonstrated by students' engagement with topics as well as by their short and long analysis reports. Students were also able to see the relations between information design and rhetoric that I wanted them to find throughout this course. It was observed mostly in students' final papers, where students made comments such as 'rhetoric is to persuade people through speech, and information design is to persuade people through texts, diagrams, illustrations, and pictures' or 'based on how well the advertisement tactics are used, a product can succeed or fail and thus rhetoric is important when advertising.'

The Students' end-of-term course evaluations rated my teaching experience highly, yet I discovered that there are a few things that would further improve this course. First, more sessions are needed, particularly to discuss examples in-depth in class after covering each theme. The amount of readings that were chosen for each theme was appropriate. However, it would have been better if at least one session for each theme was wholly devoted to discussions of examples so that students would be able to have more experience to draw on when applying course materials to examples.

Second, one of the course assignments, information design collection, was not well received and integrated into the course compared to analysis reports. The goal of this assignment was to provide more chances for students to develop thinking skills outside the course. However, students did not have enough chances to share these examples in class except two informal talks that were done by each student in class. In addition, this assignment would be improved by providing a specific guideline so that students can focus and do this assignment in a systematic and guided manner.

4.2. Implications and Future Work

Teaching a course like this would be beneficial to design educators, as well as design practitioners. First, this model will provide a good roadmap for design educators to develop and teach a topic or seminar course in design in that it enables students to develop thinking and analysis skills by learning the basics of rhetoric. Many design educators do not see the significance of teaching a seminar course. However , the goal of seminar courses is not to just give factual knowledge or theory but to provide practical knowledge that will broaden a student's understanding of the field and will develop their thinking and creative capacity. In this respect, teaching a seminar course is significant to advance design education.

Second, four themes that were presented in this course will be useful for the practicing designer , to help him or her develop critical thinking, which will influence and impact the way they design. Information design is not about creating information graphics by arranging and visualizing formal aspects of design. Rather , it should be understood as a way of creating a persuasive and effective argument by considering all the issues that are relevant in designing an information design artifact. Having a better understanding of the field and its relation to other fields is critical for designers of today and in the future, especially when designers are facing more complex design problems than ever . In that respect, studying topics in information design and rhetoric can lead designers to identify problems, analyze findings, and integrate them to create effective communication in a systematic way.

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