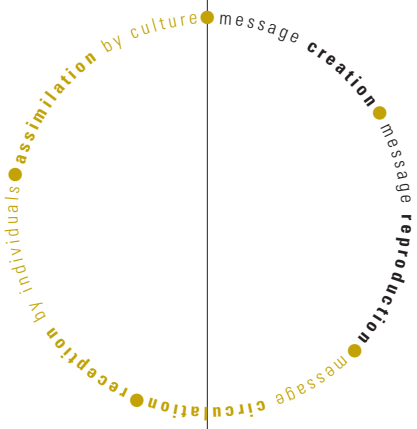
The study of graphic design in American colleges and universities is a relatively young enterprise when compared to more established "professions" and "disciplines", such as architecture and art history. Graphic design arose from the trades of printing and typesetting and, until recently, its practitioners were educated in working apprenticeships or vocational programs that focused almost entirely on the technical and formal issues necessary to bring image and text to print. Encouraged by the information age and growth of the knowledge economy, the field of graphic design developed new aspects and behaviors that more fully express its status as a profession and as a discipline for academic study: a code of ethics and standards of fair practice; documented history; components of practice devoted exclusively to criticism and research; and the publication of substantive literature, including theoretical and critical discourse.

How does the professional education of graphic designers prepare young practitioners for the consideration of issues that are not about form and technique and for the evolving work of contemporary design practice? What role do general education courses play in preparing undergraduate students for the expanding domain of graphic design?



At the same time, the rapid growth of technology continues to democratize the means of production; design software makes it possible for people who are not trained in design to typeset and publish from their desktop computers. While many clients continue to hire design professionals primarily for their ability to invent form, the perceived value of design has shifted from one of technical mastery and formal innovation to include the development of communication strategy. Once at the end of a decision making chain, graphic designers now engage with interdisciplinary teams in the front-end development of strategy that addresses the varied and long-term relationships among audiences, products and services, and the larger social and cultural contexts for design.

The education of the graphic designer, however, has been slow to catch up to this shift in the content of the discipline and the work of the practice. If we view the communication cycle as one of message creation, reproduction, circulation, reception by individuals, and assimilation by culture, the recent content of graphic design education has focused almost entirely on the first two steps of this cycle: message creation and reproduction. Except in the most forward-thinking schools that occasionally push the profession, the majority of coursework in undergraduate graphic design programs, regardless of degree type, deals with aesthetic form and the means by which it is mass-produced. Issues of audience and context may be embedded in faculty-defined project briefs, but are less frequently identified or negotiated as explicit content to be mastered by students.

GENERAL EDUCATION COURSEWORK: PROXIMITY VERSUS INTEGRATION

FROM THE NASAD STANDARDS FOR GRAPHIC DESIGN

Essential competencies:

The ability to solve communication problems, including the skills of problem identification, research and information gathering, analysis, generation of alternative solutions, prototyping and user testing, and evaluation of outcomes.

The ability to describe and respond to the audiences and contexts which communication solutions must address, including recognition of the physical, cognitive, cultural, and social human factors that shape design decisions.

The ability to create and develop visual form in response to communication problems, including an understanding of principles of visual organization/composition, information hierarchy, symbolic representation, typography, aesthetics, and the construction of meaningful images.

An understanding of tools and technology, including their roles in the creation, reproduction, and distribution of visual messages.

An understanding of design history, theory, and criticism from a variety of perspectives, including those of art history, communication and information theory, technology, and the social and cultural use of design objects.

An understanding of basic business practices, including the ability to organize design projects and to work productively as a member of teams.

Recommendations for general studies:

Curriculum requirements and strong advising should direct students to general studies that support their study in design. Appropriate areas of study for all graphic design majors include communication theory, writing, psychology, sociology, anthropology, and business, as well as the humanities. Professional degree programs with a specific focus (example: advertising, design planning/management, interactive media) should require or strongly recommend study in relevant areas, such as marketing, economics, organizational psychology, human factors, systems theory, or computer science. Coursework in the major should make use of concepts and skills acquired through study in areas other than design.

The relationship between professional design and general education courses in college and university design curricula may be described as one of *proximity* or one of *integration.*

In *proximity* relationships, students elect general education courses from a broadly-defined array of sciences, humanities, and social sciences. Study in these offerings is concurrent with study in design, however, design faculty provide no particular perspective, expertise, or instruction in the non-design content. In single discipline schools focused only on art and design, designated liberal arts faculty frequently deliver instruction to classes composed entirely of majors in visual fields; coursework may be customized for the interests of this population and their characteristic learning preferences. In universities, the breadth of offerings is usually greater and involves a diverse student population in each class; special accommodation for learning style or the later application of course content to the work of the major is less likely. What constitutes a "general education" in these multipurpose institutions is also likely to have been negotiated by a diverse faculty.

In some circumstances under proximity relationships, non-design content may enter the design curriculum as the subject matter of project texts and/or images. For example, an assignment to design posters on scientific phenomena may require students to research theories of evolution or what makes a firefly glow. In authoring the text for the poster, students also exercise writing skills. In such projects, however, the information on evolution or fireflies is not integral to the students' mastery of a design principle, nor is it fundamental to the development of a problem-solving strategy that is generalizable to other contexts; such content is rarely discussed as representative of a class of concepts that places particular interpretive demands on audiences or changes the surrounding information context. Design faculty rarely check content accuracy or debate the student's selection of concepts from a larger body of information about the subject. The appropriateness of content has more to do with its affordances for designing particular types of communicative form (ex. diagrams, explanations of invisible processes, relationships of descriptive text to image, etc.) than with general applicability to design theory or communication strategy focused on audiences and contexts. Alternative content, a battle from the Civil War, for example, could be equally effective in achieving the outcomes of the assignment.

In relationships of *integration,* however, design faculty refer to general education content specifically for its relevance to the outcomes of design and issues that transcend individual projects or formats. The role of design faculty is to make explicit how such information from other disciplines informs design strategy and decision-making. In these classrooms, form is frequently evaluated in terms of its responsiveness and consequences in larger systems that are not visual and spatial. For example, an assignment to design a website for an online bookstore requires students to think of the site as one part of the user's much larger experiences with books and buying, as a component of more complex cultural and economic systems and their associated attitudes and behaviors. Under integrated relationships, content from outside the discipline of design informs students' understanding of the nature of inquiry, audiences or users, and contexts in which design solutions must perform.

The nature of inquiry: Every discipline has characteristic modes of inquiry and methods for conducting the work of the discipline and its related practice. Design researcher Nigel Cross explains that "the sciences are about truth, objectivity and rationality; the humanities are about justice, subjectivity, and intuition." He goes on to say that design shares aspects of science and art but also has its own ways of knowing and things to know. The making of a design artifact holds a special place in the work of discipline; its physical form embodies values, shapes opinions and behaviors, and invites discourse.

Because graphic design is practiced increasingly in interdisciplinary teams to addresses complex problems, designers cannot assume that the research and inquiry strategies of designers are interchangeable with those of other partners; such strategies must be negotiated within teams and with full understanding of their nature and likely outcomes. For students to invent, select, or hold perspectives about various approaches to inquiry, however, discussion of the very nature of inquiry and the contexts in which it is relevant must be explicit. Design instruction must build connections

between design and the content of general education offerings and/or engage faculty from outside the discipline to involve students in meaningful investigations that encourage integration.

While much is to be gained by participating in the inquiry of other disciplines, students also benefit from questioning the traditional inquiry methods in art and design. Design history, for example, is interpreted largely through the art historical canon of famous works and the equally famous people who made them. Under this perspective, anonymous works rarely surface and comparisons are made mostly between works of design and fine art, not between design and other products or conditions of mass culture. When students expand their inquiry to ask questions *of* design history, rather than just *about* design history, alternate perspectives and applications emerge. For instance, "What do objects from design history reveal about their intended audiences?"; "How are design responses today shaped by the clients for design in the past?"; or "What have various forms of communication technology meant to the spread of social or political ideas?" These questions, and others like them, hold relevance for how students view the problem space of design in their own studio practices; the scope of problem dimensions students view as relevant to the design task.

The nature of audiences: *Mass* communication is no longer always the preferred approach for reaching contemporary audiences; increasingly narrow definitions of audiences now shape the nature of messages and the means for their distribution. Recent research, for example, shows declining circulation rates for general interest magazines, while many special interest publications exhibit 200-300% annual increases in readership. Computer software and internet communications are customizable in ways that allow the user to determine features and performances. Such tailored approaches hold designers accountable for understanding the ways in which various audiences are both alike and different.

Marketing provides one view of audiences, usually defined by broad demographic descriptions that influence short-term purchasing choices or receptivity to persuasive ideas. Designers, on the other hand, must consider a wider array of audience interactions with communication and the long-term cultural consequences of messages placed in circulation.

If designers are to determine the appropriateness of various design solutions in business and culture, they must be knowledgeable about alternative and meaningful ways in which people differ in: their perception and processing of information (**cognitive and social psychology** and **linguistics**); groups through which they organize their activities and world views (**sociology** and **cultural studies**); and ways in which their artifacts shape and reflect culture (**anthropology** and **history**.) Likewise, they must understand how the introduction of **new technologies** reconfigure social expectations, economic opportunities, and public access to information. An understanding of narrative and rhetoric (**literature, communication theory,** and **language arts**) enables students to structure information appropriately for audience use. In order to argue successfully with people in business and marketing, students must understand how to conduct, interpret, and make use of research findings (**science**.) These insights may be acquired through a variety of observation and research methods and represented in various forms, including in statistical summaries, scenarios, trend analyses, descriptive surveys, diagrams, etc. More recently, design research firms have adapted the strategies of well-established research disciplines to the specific needs of designers and interdisciplinary teams with design responsibility.

Studio projects that consistently use designers, artists, college students, or "general" audiences as the recipients of messages do little to acquaint design students with the demand for deep understanding of audience attitudes and behaviors or the methods for determining them. Strong design curricula expose students to a range of audience profiles and challenge them to justify solutions in terms of specific audience characteristics. Some encourage formative research strategies that employ users as co-creators or involve audience groups in the critique of finished work. These schools have worked hard with social scientists to develop meaningful methods for design; their instruction does not merely have the appearance of research but makes genuine contributions to project outcomes and students' lifetime attitudes toward accountability.

BEST PRACTICES FOR THE INTEGRATIVE USE OF GENERAL EDUCATION IN PROFESSIONAL UNDERGRADUATE DESIGN CURRICULA

While the specific coursework and faculty in each institution shape the approach for integrating general education with professional design curricula, there are shared best practices that increase the likelihood that student will develop cross-disciplinary understanding . These best practices include:

- **Challenging traditional assumptions that form can be taught best in isolation from meaning;**
- **Development of design studio assignments that include robust definitions of audience and context in addition to the more traditional formal and technical constraints governing design responses;**
- **Project variety across the curriculum which is calculated to expose students to a range of inquiry strategies and problem contexts;**
- **Engagement of students in concept diagramming that locates the design assignment within larger physical, social, cultural, economic, and technological systems;**
- **Involvement of students in research teams which identify and analyze issues related to audience and context prior to the generation of form;**
- **Active participation of students in the development of project evaluation criteria that account for audience and context;**
- **Invitation to faculty in other disciplines to participate in project introductions and critiques;**
- **Team teaching between design faculty and faculty in other fields; and**
- **Project collaboration within interdisciplinary student teams.**

The nature of context(s): Design is a social practice. It is the response to a "situated" problem, a setting with particular conditions or forces at work. The dimensions of context are physical, psychological, social, cultural, economic, and technological. Consider, for example, the differences in possible communication responses to the following contexts:

- HIV prevention education for teenagers.
- HIV prevention education for 15-17 year old girls.
- HIV prevention education for 15-17 year old girls who have dropped out of school.
- HIV prevention education for 15-17 year old girls who have dropped out of school and live on the streets.
- HIV prevention education for 15-17 year old girls who have dropped out of school, live on the streets, and cannot read.

As the definition of audience becomes more specific, the settings and conditions under which the audience is likely to receive the message narrow. In some contexts, graphic design is a less likely means for achieving the communication goal than one-on-one counseling. Framing a student design problem from a contextual point of view is very different from framing it in terms of content and format alone; simply asking students to design a poster on HIV prevention fails to hold them accountable for the types of knowledge that determine success or failure in the real world.

The contexts for design in the twenty-first century are enormously complex. Most contemporary design problems exist at the levels of systems and communities (interrelated systems), rather than as isolated products and components. Systems level problems are not merely a collection of visually-related components (as in a graphic identity system composed of logo, typeface, style manual, etc.) but involve intricate webs of interdependencies and relationships among people, places, things, and events. Designing at the systems level involves the following activities which can be informed by study in general education coursework:

- Identifying the full range of components/dimensions of the system. For example, how the design of an online clothing store's website relates to other shopping experiences, user's technological access and aptitude, emotional aspects of buying clothing related to personal identity, product distribution strategies, other company communication, public perceptions of credibility and security, etc.
- Analyzing values that drive choice-making within the system. For example, whether the experience of an exhibition must be linear or non-narrative or whether a software interface accommodates beginning or advanced users.
- Understanding how a design response relates to parts of the system for which the designer has no action-oriented responsibility. For example, how magazine design structures the economics of advertising sales or how easily votes can be tabulated from a ballot design.
- Thinking about the audience/user experiences and perceptions within the system. For example, how cumulative experiences with magazines shape young women's perceptions of "accomplishment" or how well the design of a textbook addresses the variety of teaching and learning styles in a typical classroom.
- Accounting for how change in the system impacts other systems. For example, how the "rules" governing an online chat environment influence social behavior or how the cultural meaning of "authorship" and "research" are redefined by the presence of digital technology.
- Evaluating design decisions with the lifespan of the system or community in mind. For example, the ecological impact of offset-printed ephemera or the long-term viability of a website that fails to "learn" from cumulative user interactions.

The complexity of contexts for many contemporary design problems makes it unlikely that they will be solved by designers alone. Increasingly, designers participate as members of interdisciplinary teams, frequently assuming responsibility for visualizing relationships among different aspects of the problem context or different perspectives held by the team members. It is often the designer who functions as the "generalist", facilitating discussion through diagramming and modeling as well as advocating the viewpoint of the user among professional specialists. Such work requires designers to be quick learners of content other than design and from perspectives other than their own. These are skills developed in general education coursework as well as through the demands of context-rich design studio projects.

The challenges for graphic design faculty are to complement professional coursework with study that broadens and deepens students' ability to identify, understand, and solve problems and to make meaningful use of students' general education within design courses. If the profession of graphic design is to transform itself in the face of continual and substantive change in audiences and their contexts, students must be equipped to address such change through more than formal gymnastics. Such work will require leadership and persistence on the part of schools, even when practitiones don't ask for such skills in new hires. The obligation is to the student and the audience for design in the future.

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