

WHY DESIGN EDUCATION SHOULD PAY ATTENTION TO TRENDS

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Twentieth-century principles of design

Most college-level design programs in the United States trace their curricular heritage and pedagogical practices to the Bauhaus and other modernist efforts to improve the function and appearance of messages, products, and environments. The typical location of design study in departments or colleges of art emphasized the visual qualities of objects, mastery of craft, and individual authorship as core values. And the trade-based history of design encouraged resistance to the development of theory and substantive study across disciplines for much of the twentieth century.

The principles guiding design practice in the decades following World War II were those of an industrial economy. Design was improved through a linear, causal process of incremental change that identified root causes of friction and eliminated problems one at a time. Constraints defining the scope of design work were known, mostly limited to physical objects and their production, and perceived to be consistent in their influence over time. A primary role for design was to reduce the number of interacting variables in the problem context; to simplify complexity, not only in form, but also among competing priorities that required resolution. The stopping point of the design process was “almost perfect.” The design of new editions or related objects repeated the development process for each variation. Strategically, design was at the cosmetic end of top-down decision-making and appearance differentiated companies in the marketplace. Communication strategists viewed people in broad demographic terms, targeting them as passive consumers of segmented marketing, not through substantive differences in the qualities of their experiences. Alistair Parvin describes design of this era as something done *to* and *for* people, not *with* or *by* people.

The content of design education mirrored these principles and the production technologies of the time. Students’ college introduction to design was typically through a series of abstract formal investigations, deferring discussions of audience and meaning until after mastering a limited visual vocabulary presumed to be universally appropriate to any message or context. Typographic competencies were built through carefully scaffolded assignments of ascending scale—from letter to word, paragraph to page, and finally to document. The study of typography was separated from the study of image, integrated only in later applications and rarely linked to investigations of language or changing demands on readers. College textbooks reinforced this simple-to-complex sequence of content, long after software asked designers for simultaneous decisions about typeface, point size, line spacing, margins, and column width and style before the designer could set a single letterform.

As technology expanded the repertoire of form, collapsed previously separated production tasks, and diversified people’s means for interacting with information, new content competed for curricular space with traditional coursework defined by printed communication. Schools assigned new media instruction to specialized classes, or in some cases, to independent curricula that left communication design programs bereft of instruction in emerging technologies for as much as a decade. At the same time, programs in computer science, psychology, and business took on content suggested by increasingly interactive technology and a knowledge economy. While design programs had little choice but to integrate production software with other studio content and to expand the communication domain from page to screen, most curricula still retain industrial-age, message-centered perspectives on the fundamental principles of design.

Future employment

The US Bureau of Labor Statistics tracks and predicts changes in the employment of Americans. The Bureau estimates 0-1% growth in traditional graphic design positions between 2014 and 2024, well below the anticipated 7% growth in all sectors of employment. At least 20% of current graphic design positions are held by self-employed freelancers,

suggesting that replacements will have to start from scratch in building new practices. By contrast, the Bureau expects design positions in networked communication to grow by 27% and the economy will add 186,600 positions in software development by 2024 (US Bureau of Labor Statistics Occupational Outlook Handbook).

Although there is no definitive source on all colleges and universities that offer communication design degree programs, multiple lists suggest there are more than 2500 programs nationally that provide some level of instruction in the field, with as many as 700 communication design majors in a number of these institutions.

No one discounts the functional and emotional connections we have with well-designed, well-crafted objects, which always reflect the most valued aspects of our culture. Yet, the mandate to colleges and universities is to prepare this burgeoning population of communication design students for a half-century of practice in the profession of the future, for defining their own contributions to a rich heritage of design.

Therefore, the questions for college and university design programs are:

- What principles underlie design practice and design education in the knowledge economy?
- How are these principles different from those of the industrial age?

It is these questions that **AIGA Designer 2025** seeks to answer. AIGA consulted trend analyses in a number of disciplines and thought leaders in design to describe the emerging context for professional practice. Although these advisors represent a variety of practices and philosophical perspectives, they were in agreement about many of the overarching principles that are shaping design.

AIGA Designer 2025

Unlike the past, today's designers recognize the complexity of contemporary problems. Design challenges exist at the level of systems and involve elements and forces in constantly changing relationships. Processes that address one element or constraint at a time conceal these interdependencies and the need for interdisciplinary collaboration. And traditional methods aimed at inventing and refining form (sketching, for example) fall short as a primary toolkit for fully addressing the dynamic nature of systems in which there is never-ending variety in the interactions between people and surrounding conditions. The end goal of design is "good enough for now."

People are no longer passive consumers of information in this complex social and technological landscape, but active participants in generating the content and quality of experiences. They value adaptive ecologies of information, products, environments, and services that foster meaningful engagement and grow organically with changes in their wants and needs. This human-centered focus, in contrast to message- or product-centered design approaches of the past, raises the importance of research. Research is not just information retrieval at the beginning of the design process but ongoing feedback and evaluation of the consequences of design action, including across the lifespan of messages, products, environments, and services.

Not surprisingly, technology plays an outsized role in the future of design. Although initially focused on replacing physical production tasks and expanding the visual repertoire, a second wave of technological influence increased public access to information anywhere at anytime. Most of these networked relationships were asymmetrical in the control of information content and form between sources and users. Systems today, however, are built on models of conversation in which power is shared and content develops collaboratively and organically. These systems are not well served by an education focused solely on designing screens, point-and-click interaction, and static information architecture. They require new platforms for communication, gesture and voice activated technologies that respond more naturally than the hyper-conscious visual interfaces of the past, and smart devices that read and learn from our behavior. Data-aware devices open new avenues of design research into patterns of human activity, while at the same time raising questions of privacy, transparency, and trust that designers must address. A design education for the

future, therefore, is not one in which technology is simply a tool for the design or display of information but a data-rich, data-aware landscape that is reading and responding to everything we do.

To bring clarity to this shifting paradigm for practice and its implications for the education of designers, **AIGA Designer 2025** describes a few trends with long arcs likely to continue into the future. The list is by no means inclusive and it merely hints at more transformative things to come. But by example, these trends signal that the message-centered design approaches of the past will struggle in keeping design relevant and that the field risks losing influence to other disciplines if colleges and universities do not reset their expectations of design curricula.

In service of that imperative, **AIGA Designer 2025** suggests learning outcomes appropriate for college and university programs and inventories competencies that inform the development of continuing professional education at national and chapter levels. AIGA has no position regarding how schools should teach new skills and knowledge—that is the purview of academic programs, their faculty, and institutional leadership—but it is clear that past practices of isolating discussion in a few new courses will not challenge an industrial-age paradigm that still underpins much of today's college design curricula. This transformation is not a matter of expanding the subject matter or clients for design, nor is it accomplished by simply shifting the medium of production or display.

AIGA is committed to broad discussion of these ideas and to helping professionals and students prepare for the future. In pursuit of that goal, the following are short descriptions of trends that are shaping professional practice. Each includes competencies for college-level design students and topical areas for professional continuing education.

TRENDS AND COMPETENCIES

TREND: **COMPLEXITY**

Problems are increasingly situated within larger systems that are characterized by interdependent relationships among elements or activities. Relationships are physical, psychological, social, cultural, technological, and economic in their effects, requiring interdisciplinary expertise. Constraints compete for priority and are unstable in their influence on the problem situation. Change in one relationship reconfigures others. Methods for working at this scale are different from those developed for solving simple problems and require collaboration among experts in different fields.

College design students should:

- Address design problems at various scales (at the level of components, products, systems, and communities);
- Identify and visually map the interdependent relationships among people, places, things, and activities in a complex system;
- Locate areas of friction and leverage points where small changes or external forces could produce big differences in the state of the system;
- Frame design investigations for enhancing the overall effectiveness of the system, not just individual components;
- Evaluate design solutions for their short- and long-term physical, social, cultural, technological, and economic effects; and
- Identify the nature of values and modes of inquiry in various disciplines that contribute to the successful solution of complex design problems.

Professional continuing education should address:

- Tools, methods, and processes for developing adaptive design solutions that account for continuous updating

- under constraints that change over time;
 - Tools, methods, and processes for negotiating among multiple stakeholder groups that have conflicting agendas;
 - Facilitation skills for co-creating desirable futures and pathways for transitioning from current to future conditions; and
 - Collaborative processes for managing interdisciplinary teams.
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TREND: **AGGREGATION and CURATION**

Third parties assemble and re-present messages, products, and services from different sources. In some cases, aggregation enhances experiences by bridging gaps between related information and activities. In other cases, filter bubbles limit exposure to a variety of ideas as algorithms selectively guess what information users would like to see on the basis of location, history, or some past behavior or preferences. Users trim aggregates based on needs and interests, often irrespective of original sources or information integrity. Diminished brand awareness and communication fragmentation occur as original sources lose control over the contexts in which their messages are seen and heard.

College design students should:

- Identify for consistency the role individual symbols and words play in public perceptions of a brand, even when separated from their original contexts and rules of application;
- Describe clustered experiences with information, products, and services in people's pursuit of specific goals;
- Analyze examples in which third-party aggregation isolates people from conflicting perceptions and affirms assumptions in the absence of critical thinking;
- Propose ways in which current curatorial behavior in digital environments might serve as a starting point for conversational approaches to interaction design and community-building;

Professional continuing education should address:

- Data-aware tools and methods that trace the online content preferences and behaviors of diverse user groups to identify meaningful clusters of related information, products, and services;
 - New branding strategies that account for message fragmentation and persistence in various media;
 - Robust ecologies that aggregate information, products, and services from different providers in response to the needs and interests of various user groups; and
 - Variety (breadth and depth) in the way technological systems respond to context.
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TREND: **BRIDGING PHYSICAL and DIGITAL EXPERIENCES**

People transition across devices, environments, and activities in continuous communication and service experiences. Users expect technology to provide seamless, unified experiences, even when moving among messages and services from different sources. New platforms amplify experiences in the physical world but also create gaps among devices and diversify the interactive behaviors required of users.

College design students should:

- Analyze people's needs, wants, values, and patterns of behavior, using a variety of human-centered research methods and media;
- Identify ecologies of related information, products, and services that support the achievement of people's goals;

- Describe, analyze, and propose the technologies and environments necessary to support various kinds of activities associated with the pursuit of a goal;
- Map peoples' journeys in their interactions with people, places, things, and/or services, as well as moments where system feedback confirms successful progress toward the completion of a task;
- Identify and design for important touch points or instances of friction where people change or lose support for continuous experiences.

Professional continuing education should address:

- Building responsive ecologies of information, products, and services through provider partnerships;
- Accommodating people's need to curate and customize a suite of products and services in the pursuit of goals; and
- Developing technological platforms in support of continuous experiences.

TREND: **RESILIENT ORGANIZATIONS**

Successful organizational structures respond flexibly to change and disruption through distributed responsibility for innovation. Innovation addresses how organizations are configured, the products and services they offer, the delivery channels they use, and how they represent themselves in touch points with various stakeholders. Work in today's successful organizations is built on agreement rather than deciding, stewardship rather than the ownership of ideas, continuous updating rather than editions, and a stopping condition that is "good enough for now." (Dubberly, *Design in the Age of Biology*) **New approaches to forecasting change, structuring strategic conversations, innovating business models, and making sense of research data comprise an essential toolkit for designers.**

College design students should:

- Describe primary business operations, stakeholders, and the functional relationships among them in bringing messages, products, and/or services to the public;
- Conduct research to determine a range of relevant user characteristics and experiences for the development of messages, products, environments, and services;
- Analyze the components of a marketing plan for clarity in describing the organization, its values, and its position in the marketplace, users for its products and services, short- and long-term goals, strategies and technological platforms for reaching users, budget, and measures and methods for monitoring results;
- Identify the value added by design and design research to traditional marketing strategies, especially in terms of the qualitative experiences of users;
- Construct a workflow plan that identifies tasks, time, and resources for the completion of a project; and
- Collaborate in teams using specific techniques for leadership, communication, and negotiation.

Professional continuing education should address:

- Reimagining and generating new business models that focus on the value added by design to user experiences;
 - Using new research tools to identify the emotional aspects and core meanings of user experiences;
 - Identifying economic forces and financial tools that shape business strategy;
 - Leading foresighting activities and strategic conversations in business;
 - Collaborating and communicating in interdisciplinary teams; and
 - Prototyping and evaluating new strategic approaches.
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TREND: **CORE VALUES MATTER**

Audiences evaluate organizations based on consistency between messages and the values expressed in its products, services, and/or social behavior. People connect emotionally with stories that are authentic reflections of an organizations' ethos and show loyalty over time when ethical and humanistic values drive all aspects of operations. Models of design practice diversify, with some aligning the interests of business with those of global society and meeting the highest standards environmental responsibility and public transparency. These models require new metrics for measuring impact and alternative economic models for sustaining work.

College design students should:

- Describe various models of professional practice and the worldviews they represent regarding the role of design;
- Identify the social and ethical responsibilities of designers and clients in addressing design challenges, even in cases where the primary purpose of the organization is not social innovation;
- Distinguish and resolve competing priorities among stakeholders and between stakeholders and society;
- Evaluate design solutions in terms of their social, cultural, technological, economic, and environmental impact.

Professional continuing education should address:

- Clarifying organizational and stakeholder values and envisioning socially and environmentally responsible futures;
- Developing pathways to transition organizations from current practices to aspirational futures;
- Reflecting design concern for the lifecycle of products and services, from the identification of people's needs to when they discard the object, abandon the environment, or discontinue the service;
- Designing messages that connect values with products and services; and
- Developing economically viable models of social practice.

TREND: **NEW FORMS OF SENSEMAKING**

People seek meaning and clarity in an environment oversaturated with data and images. They need tools for finding patterns in big data, discerning underlying stories, and customizing information searches based on qualitative criteria. Information migrates across devices and displays, demanding continuity in representation.

Accelerating technological change diversifies people's communication experiences, expanding designers' responsibilities for data-aware research methods and systems. There is a shift from asymmetrical, one-directional relationships between users and information to communication strategies built on models of conversation, participation, and community. Connected smart products, cloud processing, and machine intelligence play increasing roles in an evolving "datafication" of everyday activities.

College design students should:

- Employ multiple strategies for representing data, identifying meaningful differences in the formal languages on which they depend and the patterns they do or do not reveal;
- Describe and design for an information-rich, conversation-enabled environment in which ubiquitous

- computing challenges traditional notions of screens and visual interfaces;
- Identify the ways in which computing systems are and are not transparent in exposing biases in the algorithms through which they function and strategies through which they represent data;
- Discuss the differences between systems based on designer control versus designer stewardship in supporting evolving relationships among people, activities, and information; and
- Model conversational design approaches that recognize users' diverse motives for participation, desire for multiple forms of engagement, and concern for issues of privacy and trust.

Professional continuing education should address:

- Data-aware research tools, methods, and technologies for identifying and analyzing patterns in human behavior;
- New design principles in an era of smart products, expanded modes of interaction (gestures, voice, conversation), cloud processing, and machine learning;
- Processes for designing complex adaptive systems and information-product-service ecologies that respond to ongoing social, economic, and technological change; and
- Ways of prototyping these systems.

TREND: ACCOUNTABILITY FOR PREDICTING OUTCOMES OF DESIGN ACTION

Research informs practice and is an essential service in many offices. As a strategic voice in product development, communications, and marketing, evidence-based design research has been asked to conform to rigorous standards and be measured by the same metrics as other primary business activities. Designers must justify research in terms of its continuing value, not purely on 'see what we found!'

(Robinson) **They must adapt methods borrowed from other disciplines to design problems and define acceptable evidence for practical applications in practice.**

Undergraduate students should:

- Interpret, summarize, and apply relevant research findings from a variety of fields in design investigations;
- Recognize different theoretical perspectives in the research writing of others;
- Apply a range of human-centered research methods at various stages of the design process, including in the identification of problems, analysis of design constraints and opportunities, evaluation of prototypes, and interpretation of effects; and
- Summarize research in written and visual form, addressing the audience and medium for dissemination.

Graduate students should:

- Author critical literature reviews that identify seminal research in design or relevant fields and articulate the connections to their own research investigations;
- Identify researchable questions that are appropriately scaled to time, resources, and student expertise;
- Adopt and describe a perspective on design research from an array of theoretical possibilities about the nature of design knowledge and the mediating influence of design on people, settings, and activities;
- Apply research methods and quality standards that are consistent with academic investigations or the constraints of professional practice, recognizing norms that are appropriate to each context; and
- Author coherent and convincing research proposals and summaries that are appropriate for dissemination to particular audiences.

Professional continuing education should address:

- Futurecasting, foresighting, and speculative design as ways of anticipating changes in practice and co-creating client futures;
- Qualitative research methods that inform various stages of the design process, including those that identify for negotiation any conflicts among stakeholders' beliefs, values, assumptions, and cultural norms;
- Data-aware research tools and methods that use technology to detect and analyze patterns in human behavior;
- Negotiating metrics for evaluating the quality of research and what counts as "compelling evidence" among potential partners in interdisciplinary investigations; and
- Building research capabilities in professional design offices versus contracting research support.