

Information Architecture: An Emerging 21<sup>st</sup> Century Profession  
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## CHAPTER 21

### IA: Educating Information Architects

*"The educational structure supporting such an activity [a design-oriented approach to information architecture] would not only include the general problem-solving skills provided for by a design education, but also the specific development of design skills for information architecture. The challenge is to develop interdisciplinary languages and skills for design practice while also developing the methods and skills appropriate to information architecture."*

*Keith Belton*

#### **Demand for A New Information Professional**

"Information architecture is headed straight toward the heart of business strategy and competitive advantage." (Morville, 2001) The needs of a networked economy are driving the demand for a professional who can manage the design, development, and implementation of highly complex information environments that are easy to use yet provide satisfying experiences for users. The primary goal in building such products is generally the commercial success of the business or organization sponsoring the development activity. However, business interactions are not the only type of interaction with sophisticated electronic information environments. Such information environments are also increasingly being used increasingly to support work, learning, and recreational activities.

#### **Meeting a Demand**

To meet the demands of information-intensive organizations in an information-intensive society, educational institutions are recognizing the need for the preparation of a new breed of multi-disciplinary information professional. The demand for this new type of professional is being "facilitated by the emergence and explosion of digital information and electronic networks." (Kent State, 2001) Courses, and in some instances entire multi-disciplinary degree programs, are being developed and organized by universities and colleges within and across a broad range of disciplines: Communications, Library Science, Information Studies, Computer Science, and Visual Design. In most cases these courses and programs are offered by graduate Library and Information Science programs under the rubric of Information Architecture.

#### **Trends in IA Curricula Development**

Building upon existing core courses currently offered in their programs, Library and Information Science programs are also developing new courses as well as collaborating with other departments in their institutions to satisfy the corporate world's requirements for educating a multi-disciplinary information professional.

When evaluating current IA curricula for the purpose of developing their own curriculum, the Graduate School of Library and Information Science at the University of Texas at Austin (GSIS-UTA), examined the core requirements of six prominent universities offering masters-level specializations in IA: Drexel, Kent State, San Jose State, Indiana, UC Berkeley, and Michigan. They found that "there are seven visible trends in the core requirements from program to program," and "although each program seems to

employ its own nomenclature, most of the classes seek to impart the same knowledge to the student.” The seven trends in core courses identified for a specialization in IA fell within the following subject areas:

- \* Information Systems/Management/Organization
- \* Information Searching/Retrieval
- \* Database Management
- \* Research Methodology/Statistics
- \* Human-Computer Interaction
- \* Networking
- \* Project Management/Problem Solving

The University of Austin at Texas also examined the elective courses offered among the six universities mention above and two universities that did not require core courses: Florida State and the University of Illinois. A number of trends were apparent in the types of courses offered as electives:

- \* Cognitive Psychology/Human Behavior
- \* Software Engineering/User Interface Design/HCI
- \* Database Management
- \* Programming
- \* Classification/Indexing/Cataloging
- \* Networking
- \* Public Policy
- \* Management/Administration
- \* Search Behavior/User Needs
- \* System Analysis

### **Learning Objectives of An IA Curriculum**

Based upon their research into corporate requirements for IA's and the curricula of the universities mentioned above, the University of Texas School of Library and Information Science developed the following learning objectives:

- \* Understand and apply theories of information organization and retrieval as they relate to managing electronic resources.
- \* Have a basic knowledge of a Web programming language and the software design process.
- \* Design, implement, and analyze data from social research projects.
- \* Understand and apply the concepts of user-centered design and Web site usability.
- \* Research, plan, and manage IA projects.
- \* Be familiar with key aspects of the application of electronic information resources in educational and/or business environments.
- \* Develop and practice the soft skills of working in a team environment, critical thinking, and problem solving.
- \* Effectively communicate ideas and concepts (both orally and in writing) on many different levels of understanding, from end users to clients to corporate sponsors.

Currently, most information architecture courses and curricula are being offered by library and information science programs (LIS). Many of them acknowledge that the IA process is informed by several disciplines and attempt to structure their programs accordingly. However, quite naturally, their IA curricula emphasize the strengths of their own LIS programs, and the end product is typically an IA spe-

cialization wrapped around LIS core. The descriptions below of existing graduate-level IA curricula, and one proposed curriculum, were taken from the following institutions:

- \* Illinois Institute of Technology Institute of Design
- \* Indiana University School of Library and Information Science
- \* Kent State University School of Library and Information Science
- \* University of Michigan School of Information
- \* State University of New York (Buffalo) School of Information Studies
- \* University of Texas, Austin, Graduate School of Library and Information Studies

### **Information Architecture Degree Programs and Program Descriptions**

Several IA graduate level degrees are currently being offered. Among them are:

- \* Master of Design (human-centered-product and communication design tracks)
- \* Master of Science in Information (specialization in human-computer interaction)
- \* Master of Information Science (specialization in information architecture),
- \* Master of Interaction Design and Information Architecture,
- \* Master of Arts in Information and Communication (information architecture track),
- \* Master of Science in Information Architecture and Knowledge Management (IAKM),
- \* Master of Science in IAKM (information architecture concentration),
- \* Master of Science in IAKM (Information use concentration), and a
- \* Master of Science in IAKM (knowledge management concentration).

**Institution:** Illinois Institute of Technology Institute of Design

**Degree:** Master of Design (human-centered-product and communication design tracks)

**Description:** “The Master of Design (M. Des.) program is a two-year, 64-credit-hour degree program. It is intended for those who wish to achieve mastery at the highest levels of product design, communication design, or design planning.”

“The human-centered product and communication design tracks focus on user-centered methods of designing messages, products, services, systems, environments, and software. Course draw upon analytic methods from the social sciences and methods developed at the Institute of Design and other design organizations. The goals are to understand how people comprehend and use the built environment, to evaluate their expressed and unexpressed needs, and to add value to their lives.”

**Institution:** Indiana University School of Library and Information Science

**Degree:** Master of Information Science Programs

**Description:** “Our MIS program helps to educate a distinctive and rare kind of professional whose expertise assists them in understanding the human side of information and information technologies and in applying this understanding to practical problems. Our new curriculum has been designed to provide both a sound conceptual foundation for developing leadership-oriented careers and to enable students to develop expertise in one or more specific areas.”

One of the areas is Information Architecture and Design. “It is the user-centered approach to Information Science at Indiana University that makes IU and Information Architecture such a good fit. While taking courses from this area, you will investigate information architecture as a social and technological phenomenon, focusing on the ways in which organizations are making use of electronic information networking and the impacts that networking is having on communication activities, productivity, and information seeking behavior.”

**Institution:** Indiana University School of Library and Information Science

**Degree:** Master of Science in Interaction Design and Information Architecture

**Description:** “Students pursuing this degree will become proficient in specific applications of significant information technologies, well-versed in methods for understanding and structuring human interactions with those technologies, and critically aware of social and cultural implications arising from technological developments. Graduates of the program will be able to:

- \* Develop structures of information directly related to specific audiences;
- \* Describe the content and interactive features of computer-mediated communication systems;
- \* Define the organization, navigation, and labeling systems;
- \* Apply the principles of user-centered and iterative design to the development process;
- \* Plan for change and growth over time;
- \* Understand social and cultural effects of information systems and their implementations; and
- \* Develop new media genres.

**Institution:** Kent State University School of Library and Information Science

**Degree:** Master of Science in Information Architecture and Knowledge Management (IAKM)

**Description:** The M.S. in IAKM is administered by the School of Library and Information Science, but Communication Studies, Journalism and Mass Communication, Management and Information Systems, Mathematics and Computer Science, and Visual Design are all major participants in this program. “With the rapid evolution of the information society, facilitated by the emergence of digital information and electronic networks, there has been tremendous growth in the information-related disciplines. At the same time, there has been a convergence of the activities of these disciplines in electronic information and a need for information professionals who span many fields or who are establishing new roles in information-intensive organizations.”

“Kent State University recognizes this growth within and across disciplines. It is the latter need for trans-disciplinary and multi-disciplinary information professionals that led to the creation of the M.S. in IAKM. . . This degree program is designed to be nimble and flexible but rigorous: nimble and flexible through the program’s continually keeping abreast of current and emerging information skills, technologies and education, yet rigorous so that graduates are equipped to assume important positions in an organization.”

“Three concentrations offer flexibility for students to tailor-make a course of study to suit their interests or career objectives. This flexibility is essential to the nature of the program because of the trans-disciplinary character of information; the emerging and evolving roles for informational professionals; and the rapid and dynamic growth of information technologies, products, systems, services and networks.” The concentrations are Information Architecture, Information Use, and Knowledge Management.

**Institution:** University of Michigan

**Degree:** Master of Science in Information (specialization in human-computer interaction)

**Description:** “The School of Information offers a 48-credit-hour Master of Science in Information. The program introduces students to the foundations of the information disciplines in a new, exciting, and integrated way; offers a variety of advanced courses that prepare students for existing or newly formed specializations; and gives students venues in which to exercise their knowledge in several practical engagements.

“[The School of Information] is seeking a rich variety of multidisciplinary students. In the HCI area this includes students with a computer science background who are interested in building new systems in the networked, socially rich, multimedia world; technically adept social science students interested in understanding and designing information technology for better impact on individuals, organizations, and

society; and technologically able humanities students interested in how information age resources can best serve the humanities.”

**Institution:** State University of New York (Buffalo) School of Information Studies

**Degree:** Master of Arts in Information and Communication, Information Architecture Track

**Description:** “The Master of Information and Communication will be a 36-credit-hour degree preparing students for entry into knowledge-intensive organizations. The program emphasizes a concern with competencies in communication, team building, critical thinking, organizational culture, and organizational strategy. These will be in addition to, not a substitute for, technical skills. Practical experience will be emphasized along with theory.

Required courses include:

- \* Survey of Information Science/Services;
- \* Telecommunications Infrastructure, Products, and Services;
- \* Organizational Communication;
- \* Policy and Legal Issues;
- \* Information Architecture and Management; and
- \* Information Design.

**Institution:** University of Texas, Austin, Graduate School of Library and Information Studies

**Degree:** Master of Science in Library and Information Science

**Description:** (Proposed curriculum) “One important consideration for an IA curriculum is to realized IA as a process that involves the contributions of many disciplines. An LIS based curriculum in IA will provide an awareness of the practice and study of IA while allowing the specialization in organization and retrieval of information. The LIS IA curriculum will introduce the importance of the multidisciplinary team and provide the necessary skills to successfully practice IA. Students will have an appreciation for research methods and the theoretical underpinnings of IA. They will also gain a practical knowledge of using IA in real world settings.”

“Graduates of the IA curriculum will be able to:

- \* Understand and apply theories of information organization and retrieval as they relate to managing electronic information resources.
- \* Have a basic knowledge of a web programming language and the software design process.
- \* Design, implement, and analyze data from social science research projects.
- \* Understand and apply the concepts of user-centered design and Web site usability.
- \* Research, plan, and manage IA projects.
- \* [Understand] the key aspects of the application of electronic information resources in educational and/or business environments.
- \* Develop and practice the soft skills of working in a team environment, critical thinking, and problem solving.
- \* Effectively communicate ideas and concepts (both verbally and in writing) on many different levels of understanding, from end-users to clients to corporate sponsors.”

### **The Future of IA Education**

It is logical and practical that IA curricula are being built upon the foundations of existing programs. However, like the practice of IA and the IA profession that are still in formative stages, so are IA educational practices and theory. One information science educator, at Florida State University’s School of Information Studies, Keith Belton, proposes that IA should be approached as a design discipline and

that a “design-oriented approach to IA adds a new core discipline to Information Science as a whole.”

### **IA Education Theory: A Design Approach**

“Design does not add value in this economy—design creates value.” (Advance for Design, 2002)  
Many IA practitioners view the IA’s primary role as that of “designer and coordinator of a process that leads to the product, deliverable, or structure, as well as the creative tasks of design per se.” (Belton, 2001) This is a role very much like architects traditionally play in the built environment. In the interest of “developing coherent approaches to the theory and practice of IA and the professional needs of practitioners” (as opposed to the current ad hoc methods), some educators are proposing that a design approach to IA education would be most beneficial to students, educators, and the profession. In the following chapter, Chapter 22, “IA: Education Theory,” Dr. Belton proposes that such an approach would situate IA among the design professions and would be helpful in providing models for IA pedagogy.