

The Design University

University-level design education involves two great responsibilities. The first is to structure an effective learning process to educate tomorrow's designers. The second is contributing to the knowledge the field through basic, applied, and clinical research.

Design is a broad field of making and planning disciplines. These include industrial design, graphic design, textile design, furniture design, information design, process design, product design, interface design, transportation design, systems design, urban design, design leadership and design management and well as architecture, engineering, information technology, and computer science.

These fields focus on different subjects and objects. They have distinct traditions, methods, and vocabularies used by distinct and often different professional groups. While the traditions dividing these groups are also distinct, common boundaries that sometimes form a border also serve as meeting points where common concerns build bridges. The ten challenges of university-level design education form one set of common concerns.

Three performance challenges, four substantive challenges, and three contextual challenges bind the design disciplines and professions together in a common field.

The three performance challenges are that the design professions:

1. Act on the physical world.
2. Address human needs.
3. Generate the built environment.

In the past, these common attributes were not sufficient to transcend the boundaries of tradition. Today, objective changes in the larger world cause scholars, practitioners, and students to converge on common challenges. These challenges require frameworks of

theory and research to address contemporary problem areas and solve individual cases.

These problem areas involve four substantive challenges. These substantive challenges are:

1. Increasingly ambiguous boundaries between artifacts, structure, and process.
2. Increasingly large-scale social, economic, and industrial frames.
3. An increasingly complex environment of needs, requirements, and constraints.
4. Information content that often exceeds the value of physical substance.

They also involve three contextual challenges. These are:

1. A complex environment in which many projects or products cross the boundaries of several organizations, stakeholder, producer, and user groups.
2. Projects or products that must meet the expectations of many organizations, stakeholders, producers, and users.
3. Demands at every level of production, distribution, reception, and control.

These ten challenges require a qualitatively different approach to professional education than was the case in earlier times. Past environments were simpler. They made simpler demands. Individual experience and personal development were sufficient for depth and substance in professional practice. While experience and development are still necessary, they are no longer sufficient. Most of today's design challenges require analytic and synthetic planning skills that cannot be developed through practice alone.¹

Professional design practice today involves advanced knowledge. This knowledge is not a higher level of professional practice. It is a qualitatively different form of professional practice. It is emerging in

response to the demands of the information society and the knowledge economy to which it gives rise.

Research is vital if we are to meet these challenges. Consequently, design research has become a central framework for inquiry in design over the past decade. This fact has been a primary aspect of the shifting focus in design education from independent art and design schools to universities.

The research culture of the university requires far different habits of mind and behavior than the culture of studio practice around which art and design schools are built. The changes from one kind of culture to another are difficult, and the transition can often take decades.

A university that could build a design school from the foundation up would have an unparalleled opportunity to shape a new kind of design education. The planning process – and the learning process – would involve valuable lessons. These lessons could be put to good use by other university-level design schools, including those with strong traditions of their own.

When one of the world's great universities plans a major, new design school, the planning process is interesting and important. In this case, it is the University of California.

In the fall of 2000, the University of California at Irvine established a committee to develop a proposal "to create a school of design to foster inquiry into the nature of design and the design process. Its objective would be to advance the techniques of design, to train students in the technical and aesthetic dimensions of design at both the undergraduate and professional levels, and to investigate the deep intellectual and cultural issues associated with design in a rapidly changing world."²

Chaired by Professor Richard Taylor of information and computer science, the authors of the report include professors Kristen Day and Sanjoy Mazumdar of urban and regional planning, Michael

D'Zmura of cognitive sciences, Douglas Goheen of drama, Michael McCarthy of mechanical and aerospace engineering, Molly Schneider of design programs, and Alladi Venkatesh of management, as well as Michael Clark, professor of English and comparative literature and associate executive vice chancellor for academic planning.

The project has now taken three years from the initial commission, and the university has now begun the consultation process needed for a consensus on the immense investment required by a new school of design.³

As a high-level study on the needs and requirements of university-level design education, the proposal is a significant research document. It addresses five key dimensions of design education today: philosophical, intellectual, academic, professional, and economic.

The history of universities is long and distinguished. While modern universities began in the 8th century AD, the first institutions that resembled today's graduate schools and research centers date back to Athens in the 5th century BC. The schools and libraries of Alexandria came not long after. Professional schools go back even farther, and professional education now dates back nearly five thousand years. Despite their ancient lineage, these two kinds of education remained separate until just before the twentieth century. It was only at the end of the 19th century that professional schools began to find a home in the modern research university. One reason for this delay is the conflict between two sets of challenges inherent in the two kinds of education professional and civic.

Building a professional school within a university involves four great challenges. These challenges are:

1. Creating new knowledge,
2. Preserving existing knowledge,
3. Training specialists, and
4. Educating citizens.

¹ Friedman 2000.

² UC Irvine Ad Hoc Committee on Design 2000.

³ UC Irvine School of Design Committee 2002.

Professional schools tend to preserve existing knowledge for specialist training anchored within the practices of existing professions. In some ways, this also reflects the cultural ethos of the craft guilds, another form of specialization.

Universities exist to create new knowledge and to educate citizens.

There is an inevitable amount of overlap between these two kinds of schools. Professional schools require new knowledge, and research universities must preserve old knowledge. Nevertheless, the cultures of these two educations differ in their customary approach to learning. Professional schools are anchored in tradition, and students are trained by working under the supervision of masters. Universities are anchored in the tradition of reasoned inquiry and skeptical debate.

These contrasting challenges involve an inherent tension that makes it difficult to develop a new professional school by starting on the foundation of an existing school or department. This, in fact, has been one of the continuing dilemmas in design education. Design education was never part of the university tradition nor was it part of the first professional schools. Instead, design education was rooted in the crafts guilds. This foundation still flavors design education and the professorial practice of design.⁴

The UCI design school proposal is philosophically important because it has been conceived as a purpose-built professional design school in the university context. The committee has addressed the issues and concerns of such a school and the proposal balances challenges and solutions in an intelligent and sophisticated way.

The philosophical importance of the choices and decisions reflected in the UCI model is simple. We live in a demanding world sometimes labeled as a knowledge economy. This world demands new forms of higher education. To meet the needs of professional practice today, professional education must be located within universities.

While there is wide agreement that we must develop new ways of learning and working, the traditions, customs, and practices of existing schools and disciplines make it difficult to bring new approaches into being. As a purpose-built school with a new faculty hired and brought together to realize a new vision, the UCI design school can become an important testing ground for education, for knowledge development, and for research. Solving the challenges that will face one school will yield important lessons to other schools and to other universities.

Because of this, the UCI design school promises to make an important philosophical contribution to education in the twenty-first century.

The intellectual challenges are equally important. The UCI proposal offers new models for design education that integrate teaching and research, learning and doing. Most design schools have been built on the foundation of existing programs. This means that they begin out of balance. Programs lodged in prior traditions lean too far in one direction or another to form the foundation of a new approach, and such schools start staffed by faculty partisans urging that every tradition be maintained. A new school will start with no such handicap. As a result, the UCI School of Design can make an intellectual contribution of a kind that has never before been seen in design education.

Because it is purpose-built, the UCI design school will be a model that challenges other design schools to rise to a new level. It will do so for many reasons. First, it will compete with other schools for the best faculty and the best students. Other schools will have to improve to remain attractive to their staff and students. Second, it will become a rich center of resources, supporting its competitors at the same time that it challenges them. Third, it will be an important center of teaching and learning for those who come to UCI to study or to teach.

Together with teaching and learning, research activities will make such a school the center of a new approach to professional design. This will establish its contribution to the profession. On a fundamental

⁴ Byrne & Sands 2002; Friedman 1997.

level, training designers to meet the needs of a growing economy is a vital professional contribution. On a higher level, the role this school can play as a resource center and model will make a powerful contribution, reaching beyond Irvine and beyond California to affect the larger global design profession.

The final contribution is economic. If California were an independent nation, it would rank as the world's fifth or sixth largest economy, just ahead of France or slightly behind, depending on the exchange rate. The school will offer important resources to the huge regional economy within which it is embedded, and this, too, should generate models for design schools around the world.

In 1940, the Australian economist Colin Clark identified three classes of economic sector: primary, secondary, and tertiary. The primary sector extracts wealth from nature. This includes agriculture, livestock, farming, hunting and trapping, fishing and forestry. Secondary industries transform extracted material through manufacturing, building, construction, mining, and power production. Tertiary industries are organized around services, including commerce and distribution, transport, public administration, personal and professional services.⁵

Daniel Bell rebuilt Clark's structure to describe what became known as the post-industrial society, refining Clark's concept of service industries into three distinct sectors, a tertiary sector including transportation and utilities, a quaternary sector including trading and finance, and a quinary sector including health, education, research, and recreation.⁶

The most visible aspect of today's global knowledge economy is the fact that the greatest value is added to products and services through human activity. For this reason, the competitive strategy of corporations – and of regions or nations – involves finding ways to develop industries that add the greatest value to national economies. In a world where design represents an opportunity to add value to products and services at a relatively low marginal cost, design is

a central tool for creating competitive advantage. In this sense, a leading-edge design school can become an instrument for economic growth.

The birth of the great public universities helped to bring about America's transition from a growing industrial power at the end of the nineteenth century to a central world power at the dawn of the twenty-first century.

To protect and nurture its role as the world's "sixth largest economy," California must invest in its university sector. Here, the proposal represents one of several choices. The University of California can and will grow, as all great universities do, and advanced industrial democracies depend on universities for their survival as well as for their growth. The question is which investment among competing alternatives will best serve the needs of the university and the citizens it serves.

This report makes a compelling case for the design as a promising area for investment, linked to a rich and increasingly important range of California-based industries. While the university must invest heavily to launch the school, the school will later attract funding and resources to the university in ways that cannot be imagined today.

Together with several colleagues, I recently had the opportunity to study the design sector in one of the candidate nations applying for membership in the European Union. We found that the transition from a comparatively primitive economy to a sophisticated and robust economy involves a steady progression upward along what we labeled the design maturity scale. The journey involves a transition from subcontracted production by foreign firms to production for locally owned businesses, from domestic sales of general goods and services to export sales of goods and services, from manufacturing simple parts to manufacturing whole products, from anonymous products to branded products, and from production oriented business to market oriented business. In some cases, it also involves a transition that includes growth from material to immaterial products,

⁵ Clark 1940

⁶ Bell 1976; 1999.

from products to services, and from services to experiences.⁷

One factor that makes the UCI School of Design so interesting is that it proposes four specializations covering the comprehensive range of issues in the design maturity scale. Interaction design, product design, and spatial design, together with design studies makes a rich approach that brings all levels of research and all areas of inquiry together in one proposal.

The proposal for the School of Design at the University of California, Irvine, describes a promising venture. I believe that it will prove to be a profitable investment for the university in economic and academic terms while contributing to human knowledge and to the design profession.

Building a design school from the foundation up offers an unparalleled opportunity to shape a new kind of design education. The planning process – and the learning process – involve valuable lessons that can be put to good use by other university-level design schools, including those with strong traditions of their own.

One aspect of this project that makes the process of wide interest to the field is that fact that the proposal itself is available on-line to the entire university community – and to the wider communities of design research and design education. The report⁸ is available for free download in PDF format at URL: <<http://www.evc.uci.edu/growth/design/SoD-proposal.pdf>>

This report offers design schools a chance to benefit from the three-year process of research and development that will – one hopes – lead to a School of design at the University of California, Irvine. To complete their work, the authors reviewed the state of professional design education today around the world, along with design research and design research training in the world's leading universities.

In today's economic climate, few universities – and fewer design schools – will have the budgetary

resources to build (or rebuild) design education on the level of a new purpose-built school. What this report offers to existing schools is an opportunity to learn from improvements and changes implemented elsewhere, adapting them to local needs and opportunities. In planning a design school for the 21st century, the authors of this report have written a research and development study on which other schools can build as they shape their programs for the future.

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⁷ Mollerup, Friedman, Korvenmaa & Landerholm 2003.

⁸ UC Irvine School of Design Committee 2002.

REFERENCES

- Bell, D. 1976, *The Coming of Post-industrial Society*, Penguin, Harmondsworth.
- Bell, D. 1999, *The Coming of Post-industrial Society, A Venture in Social Forecasting*, Basic Books, New York, p. lxxxv.
- Byrne, B. & Sands E. 2002, 'Designing Collaborative Corporate Cultures', in: Bryan Byrne and Susan E. Squires (eds.) *Creating Breakthrough Ideas*, Westport, Bergin and Garvey, Connecticut, pp. 47–69.
- Clark, C. 1940, *Conditions of Economic Progress*, Macmillan and Co., London, p. 338.
- Friedman, K. 1997, 'Design Science and Design Education', in: McGroarty, P. (ed.) *The Challenge of Complexity*, University of Art and Design Helsinki, Helsinki, pp. 54–72.
- Friedman, K. 2000, 'Design knowledge: context, content and continuity', in: Durling, D. & Friedman, K. (eds.) *Doctoral Education in Design. Foundations for the Future. Proceedings of the La Clusaz Conference*, July 8–12, 2000, Staffordshire University Press, Staffordshire, UK, pp. 5–16.
- Mollerup, P., Friedman K., Korvenmaa, P. & Landerholm, J. 2003, *Establishing the basis for the elaboration of the Estonian design policy measures. Final Report*, Ministry of Economic Affairs and Communications, Tallinn.
- UC Irvine Ad Hoc Committee on Design, 2000, *Report of the Ad Hoc Committee on Design*, University of California, Irvine, p. 1.
- UC Irvine School of Design Committee, 2002, *Proposal for a School of Design at the University of California, Irvine*, November 2002, University of California, Irvine, available at: <http://www.evc.uci.edu/growth/design/SoD-proposal.pdf> [Accessed 2 May 2003].