

A Curriculum Approach to Embedding Inquiry Practices in Architecture Design Studio Courses

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Course name and number

10 core courses in the Design Stream of the Bachelor of Architecture program:
BENV1101(Architecture): ARCH.I1102, 1201, 1202, 1301, 1302, 1401, 1402, 1501, 1502.

Abstract

This paper outlines an investigative approach to learning and teaching that focuses on positioning the emerging curriculum of design studio courses as a holistic enterprise within the UNSW Bachelor of Architecture degree. As a work in progress, the project is concerned with embedding inquiry practices that will support resilient student learning and capabilities for their future social contributions as professionals. It is framed by a stance that encourages speculation, reflective practice, and a deliberative approach to course content, staffing, and assessment. The purpose of this approach is not only to advance the educational experiences of students but also to contribute to our understanding of design and its conceptual field within the discipline and practice of Architecture. This study demonstrates how our project challenges a passive intellectual culture and educational ethos often found in research-intensive universities, an ethos that rewards inquiry and learning approaches that emphasise atomistic knowledge production and dissemination rather than ecological and holistic understanding and action.

Summary of the research-teaching nexus

This project

- comprises research on learning and teaching
- draws on current research for course content and delivery
- uses learning activities designed around research activities
- exposes students to or involves them in the School's research projects
- infuses teaching with research values
- encourages independence of thought within prescribed institutional and educational values and demands cogent explanation and accountability for decision-taking

Description of project or activity



Issues in student learning that the project was designed to address

- Development of a student community aware of the social capital of architecture involving professional values, discretion, ethics, and trust
- Development of confidence in students regarding their own creative ability and the value to society of a designed, sustainable, skilfully organised built environment

Research issues that the project was designed to address

- The significance and impact of a student's own values and world view when undertaking any inquiry by design, especially own-culture consciousness
- The provisional nature of objective information and the influence of a student's own attitudes when designing
- The interpretive nature of both inquiry and designing

Strategies used to address these issues

- Recognition of the significance of one's own cultural, social, and economic context and that of others through projects involving self-declaration
- Exposure to values attending other cultures, societies, and economies through involvement in national and international design projects
- Direct involvement with people of varying age, disability, ethnicity, and socio-economic status via investigative design projects

Issues or challenges faced

- Overcoming entrenched attitudes and value systems in students
- Smoothing sociocultural differences between students and those they are designing for within communities

Key positive outcomes

- Palpable maturation in students through the design phases, especially by graduation
- Capability of students to eventually give good accounts of their work
- Continuing recognition through professional accreditation and awards of the quality of student work

Discussion

The task of generating uncertainty: that is the university's research function. The task of managing uncertainty, of enabling individuals to live with uncertainty: that is the university's teaching – or, rather, its educational – function.

(Barnett 2000, p.143)

Teaching produces the capacity of the students themselves to contribute to supercomplexity. It gives them the capacity to be inventive, courage to be iconoclastic and daring to be bold in their formulations of ideas.

(Barnett 2000, p. 162)

The re-organisation of the 10 core design courses into the Design stream arose from the 1998–1999 reconfiguration of the program in response to the restructure of the Faculty. This paper reflects on the experience of the last two and half years, acknowledging the foundational contributions of Dr Michael Tawa and anticipating future contributions.

The focus of the courses of the Design stream is designing – a dynamic and speculative mode of inquiry with directed outcome generation. It is applied, creative research. As a complex, metacognitive field of learning in action, the holistic knowledge base of design – and its educational setting, design studio – challenges conventional and well-rewarded modes of knowledge production and dissemination. In creating an educational setting appropriate to design, we have focused on

- building and cultivating a community of independent, self-directed learners who are willing and able to engage in discursive, creative, and speculative inquiry
- conceptualising, structuring, and reflecting on a curriculum that is required to demonstrate professional competence as well as to develop design as a conceptual field – this has led to improved course outlines, learning outcomes, feedback and assessment practices, electronic resources, and exhibition opportunities (see www.fbe.unsw.edu.au/courses)
- continually questioning “what is important for students to know and what might be the best ways for them to learn it” (Toohey 1999, p.25) – this has led to the revision of course content, introduction of precedent and case-study resources, and experiential and experimental design projects
- maintaining a sense of humour and being resilient, innovative, and inventive while coping with critical constraints, such as access to studio spaces, no workshops, large classes, staff casualisation, a diverse student community, and heavy workloads

There are 750 students enrolled in the B.Arch program. As the largest stream in the program, the Design curriculum accounts for nearly 50 percent of students' core program load. Across the five years of the program, the curriculum framework is structured around three interconnected phases.

Phase 1 – Design Workshop courses (BENV1101, ARCH1102, 1201, 1202) in years 1 and 2

In this phase, focussed and reiterative design projects allow students to develop capabilities in visual literacy, inquiry, and social and craft practices through the understanding and innovation of key design concepts, processes, and representations.

Phase 2 – Design Studios (ARCH1301, 1302, 1401, 1402) in years 3 and 4

This phase commences in Year 3 with a studio that frames discursive relationships between aspects of Architecture in a design project informed by a social context. It progresses to studio courses that provide a suite of student-selected design projects so that students can pursue their own inquiry interests and specialisations and consolidate their professional capabilities.

Phase 3 – Year 5, the Graduation Year (ARCH1501, 1502)

This phase provides a capstone student design research experience of inquiry, discovery, consolidation, and representation, in which students investigate a self-selected set of themes as the basis for an architectural project.

Single or team course convenors lead each design course. They consult with the stream leaders, research and devise the design projects to meet the objectives of each course, and organise the session's program of lecture and studio activities in association with the employed design tutors. The small group setting of the design studio involves 12–15 students working with a design tutor for six hours a week across a 14-week session. A course community usually involves six to eight studio groups with the elective design project courses (years 3 and 4) involving up to 20 design studio groups and tutors. Each design studio student group elects a studio representative who represents them in discussions with the stream leaders twice a session. In these ways, the curriculum community of leaders, teachers, and students is a pro-active, responsive, discursive learning network concerned with inquiry and practice.

Our “learning network” builds on Boyer's four conceptions of scholarship and focuses each of the Architectural Design courses in our curriculum. Boyer's 1998 report, *Reinventing Undergraduate Education: A Blueprint for America's Research Universities*, also informs the way that learning experiences in the three phases interact with inquiry and research:

- learning experiences in year 1 reinterpret self, place, space, and region through the study of western and eastern spatial representations, Pacific Rim precedents, and the public construction of design projects
- structured and reiterative learning experiences in year 2 use precedents and case studies for design innovation, projection, and skill development
- learning experiences in year 3 encourage students to be reflective about their practices as they engage with the critical process of figuring relationships among multiple aspects of architectural design such as research, imagination, creativity, analysis, and legal requirements
- experiences in year 4 offer opportunities for students to focus their developing aesthetic and theoretical attitudes toward architecture by selecting more specialised architectural design tasks relating to broader urban, historic, and environmental issues and relationships
- year 5 consolidates the previous four years of academic growth and prepares students for life as beginning practitioners by allowing students to initiate, research, and develop their own architectural projects

In reviewing and redesigning the curriculum to incorporate a discursive learning network and to recognise both the prescriptive expectations and competency-based knowledge field of architectural design, we have drawn on Susan Toohey's discussion of curriculum design in *Designing*

Courses for Higher Education (1999). We found that her notion of a “competency-structured curriculum” offered advantages including

- a focus on performance of professional skills and transmission of established knowledge
- opportunities for students to see the connection between what they are studying and professional capabilities and roles
- careful sequencing of modular units of prerequisite knowledge and skills

We have noted some disadvantages, however, including

- inflexibility
- a weak discipline base
- poor identification with modes of discourse and investigation
- little opportunity to critique and evaluate existing professional roles

Toohy (1999) also proposes the idea of a “cognitively structured curriculum.” This concept has allowed us to

- organise course content and activities around key concepts or themes of disciplinary knowledge
- frame questions for research investigation
- create disciplinary or interdisciplinary focus
- encourage critical thinking

We now conceptualise our curriculum as structured by projects, problems, and inquiry and as characterised by

- integration of disciplinary knowledge and practical application
- the use of professional practice project “problems” to stimulate students to discover and explore key disciplinary concepts and skills
- the integration of conceptual, tacit, procedural, episodic knowledge and practices
- small-group work for students
- the use of an experiential learning approach to motivate students
- the facilitation of learning through modelling design thinking processes
- a focus on abilities rather than a “well structured knowledge base”
- a workload involved in planning and preparation of resources

We would propose that designing and the educational setting of the design studio lie at the nexus of teaching and research. Designing is necessarily interpretive, and design studio is properly a place of verifiable competency, of creative transformation, of adaptation to evidence and context, of risk-taking and experiment, of insightful and abductive logic, of applied and generated understanding, and of higher-order intellectual development that vivifies the individual, whether student or staff. These are all qualities and experiences germane to tertiary research, to inquiry, and to scholarship.

Evaluation of project

Our three-year appointments as leaders of the Design stream conclude in December 2003, and we are now consolidating our academic work on the experience. We have systematically evaluated every course each year and now have a wealth of data: standard student course evaluations, comprehensive results, minutes of meetings with students, and documented visual images of student work produced over three years.

We have received the following constructive feedback about the changes we have effected:

- positive responses from the students in formal meetings, studio settings, exhibition nights, by e-mail, and through course and teacher evaluations
- positive feedback from the yearly and five-yearly National Visiting Panel (NVP) for professional accreditation
- increased applications from respected practitioners to work in our Studio settings
- positive feedback from employers who are working with our students
- improved graduate ratings of the Architecture program as measured by the CEQ
- student graduation project work twice selected as among the best 50 in the world in the Archiprix International Competition
- joint winner and two commendations in the prestigious national BHP/RAIA Biennale Design Competition
- student winners of the 2003 Year 3 and Graduation Design projects in the competitive RAIA state student design awards
- five successful public graduation exhibitions, each attracting over 500 guests, and four successful internal exhibitions
- over 3700 hits on the Design stream web site for Session 1, 2003

Future directions

At this stage, we are not in a position to describe changes we would make as a result of an evaluation process.

Future directions for this curriculum project may include

- further developing the suite of year 4 design studios to support student interests and organisation of the Year 5 capstone experience
- developing and communicating parameters for academic excellence in design studio
- enhancing the assessment and feedback process
- developing and consolidating web-based resources – for example, precedent studies, a design lexicon to assist with student understanding and comprehension, and feedback and analysis of academic course performance
- developing orientation sessions for part-time staff and design leaders

At the core of these proposed directions is inquiry into design. Our inquiry aims first to understand and articulate understanding of the field of architectural design at the intersection of design scholarship and the grounded experiences of students and part-time and academic staff. Second, we aim to use our capability as architects to enhance the design curriculum courses and the experiences of students. Finally, we aim to demonstrate that, as a work in progress, dealing with uncertainty is a public enterprise shared within a community.

References

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