

# Action-based interprofessional learning and teaching: communication and consultancy skills for architecture

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**ABSTRACT:** The interprofessional Dentistry/Design-Project is an innovative method of teaching students the skills required for successful promotion of communication and consultancy in a public realm. It aims to enable students to develop evidence-based consultancy appropriate for a target audience. The paper presents the method and outcomes of thirty student groups that successfully developed an oral health promotion program of suitable quality for publication as evaluated by the two teaching faculties. The student groups were unanimous in their evaluation of the program as a valuable learning experience. The conclusion discusses how the interprofessional learning project is successful in enabling architectural students to understand and use communication and consultancy skills effectively for collaboration across disciplines and faculties.

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## INTRODUCTION

Historically, with little exposure to communication and consultancy skills during training, architects have been expected on graduation to be able to promote design using professional communication and consultancy skills. Usually consultancy experience within the Architecture curriculum comprises communication with colleagues who have a sophisticated understanding of the design process and ability to envisage design outcomes. However, in practice, architects are required to explain their designs to people who often have little or no architectural design sense or background, an experience very different from explaining a project to someone who is cognizant of the field (Cuff 1996; Nicol and Pilling 2000). The opportunities for consultation with clients about design in an authentic context are limited although some architectural schools provide opportunities to undertake design in live projects e.g. in impoverished communities overseas (Gampfer, Dobmeier, Hoppe & Haupt 2008) or other simulations of collaboration with clients, engineers or general public. Learning how to consult with clients who undertake design but who have a poor understanding of it remains a major gap in professional education.

## 1. CONSULTANCY

Communication involves pragmatic skills related to understanding and constructing meaning between individuals. In this sense architecture's need for communication skills is very similar to that of the health professions. Both need to work with an uneducated client where explanation involves basic re-education of that client and where acceptance of the design or the treatment is dependent upon the level of understanding achieved. There is a basic and sometimes irresolvable tension between architecture as art, where the development of an aesthetic, functional and sustainable design is paramount, and architecture as business, where the satisfaction of the need of the client is a prime concern (Adam, Buchanan, Cooke & Till 2008). To mediate the two is a very challenging task which cannot be achieved without excellent communication skills. Whilst most architectural schools have a focus on the social milieu of architectural practice and provide modules in practice management, specific training in interpersonal communication skills necessary for client interaction largely appears to be lacking.

### 1.1. Architects' Services

Architects need to realise an aim to provide service to the broad community supporting their education. The service ideal has to be achieved without limiting the market for services because of inadequate attention to the necessity for good business practice (Freidson 1986) The increasing marginalisation of architects in the workplace (Bennetts 2008) suggests that professional ideals and professional work are poorly aligned. Unlike the health professions, architects are trained in design excellence, a key tenet in the espoused theory of architecture, without development of a concomitant understanding that design excellence must take into account the economic and social context of clients and project teams. Architecture students thus have a huge amount to learn following graduation about managing and sustaining relationships with diverse community and professional groups.

This raises the question of what architects in professional practice require of new graduates entering employment with them. A qualitative analysis of person and job specifications for architects in Australia was undertaken for one month (April 2008) to identify advertising themes in online job classified advertisements. The results from the various websites (<http://www.mycareer.com.au>, <http://www.jobsearch.com.au>, <http://www.careerone.com.au> and <http://www.seek.com.au>) are presented in Table 1..

**Table 1:** Qualitative analysis of person and job specifications in architectural career advertisements (N = 52) in Sydney (April 2008)

Specified skills and characteristics	Frequency %
Design skills and technical expertise	98
Previous experience	96
Communication and consultancy skills	71
Team work	44
Managerial skills (planning, organising, motivating, controlling, persuading)	31
Presentation skills	21
Creativity	17
Personal skills (tenacity, flexibility, time management, attention to detail)	17
Leadership and mentoring skills	17
Evaluation skills (designs against briefs)	15
Business skills and understanding of business	13
Relationship building and client development	13
Initiative and independence	10

The majority of job advertisements specified communication skills as a key performance criterion in the job specification. Communication skills were cited more frequently than managerial, business or presentation skills. However, client communication skills are not formally trained within most architecture schools. Design communication and public presentation skills are taught well and practiced in the social context of peers and colleagues, but this does not address the need for community engagement required in professional practice. Most architectural schools teach a component of practice management in their Masters Degree courses and the Board of Architects requires competency in knowledge about practice management before registration is granted but, from an educational point of view, these courses do not comprise vertically integrated training throughout the degree to facilitate student acquisition of these skills.

Architecture is also influenced by the pressures from external organisations. The final decision about design can be subject to input from corporations, builders and town planners, regulatory bodies and councils. Even funding organisations can have a voice (Cuff 1996). To be successful in practice, the profession requires the participation of the client and the acceptance of professional expertise by the client. However, clients have pre-existing concepts and beliefs about what products or services are acceptable. Architects feel the constraints of participatory communication because this must be cost effective to be acceptable to them. Further, to complete the process, the meaning constructed between the professional and the client must be similar but also must be communicated to other members of the team whose position it is to actually implement it (for example, project managers, constructionists, engineers etc). The opportunity to practice interpersonal skills with members of other professional communities offers architecture students a means of developing confidence and competence in professional engagement and teamwork.

### 1.2. Community Engagements

Not only do architects have to develop interpersonal skills, they also need competence in community education. A significant factor informing professional relationships with clients in the health sector is the growing awareness of the importance of literacy in determining client understanding of health information (Neilsen-Bohlman, Panzer & Kindig 2004) The prime reason for failure of the community to understand, accept or act upon health information is its low level of literacy, not just in the sense of ability to read text, but in the more specific sense of ability to understand health concepts (health literacy). Similarly, the community has a low level of design literacy (poor understanding of basic principles of design) which impedes acceptance and pursuit of aesthetics and elegance of function in all forms of design, including architecture. This has been described by many authors, most notably in Australia, Boyd (1963) and more recently Hollier (2008). In the same way that health professionals must take responsibility for the education of the community in hygiene and disease prevention, design professionals must take responsibility for education of the community in the basic elements and principles of good design. This means that teaching communication skills in undergraduate architecture programs must include action-based projects in consultancy and community engagement.

### 1.3. Design literacy

Design literacy is critical for the production of functional and aesthetic environments. It is a crucial part of communication skills training for other professions wishing to avoid rejection in communication with their client communities. The situation where architecture students create designs from briefs manufactured by non-existent clients which are evaluated by like minded people, peers or colleagues, means that architects are trained to respond to challenges from peers but not from those of lay people who may be misguided, prejudiced or uninformed (Cuff,1996). The situation is similar in other professions. In Dentistry, patients arriving in an under-resourced, overcrowded public health system, have little power to accept or reject treatment, since most treatment is provided in emergency conditions. Thus the student has only to satisfy the instructor with the quality of the work. Rejection is usually only experienced when the patient has more pressing reasons to reject it, e.g. phobia. In Architecture courses, students may also experience rejection by their colleagues. However, rejection of a good design is rare in this context. In the practice context, rejection of good designs by uneducated clients for inexplicable reasons comes as a surprise for which their education, with few exceptions, has usually left them unprepared.

It was for these reasons that we developed for architecture students an authentic project that utilised real clients. These clients were not asking for building design, they were asking for design in community service promotion, one which required a clear understanding of communication principles in visual design and engagement with the vagaries of disparate community groups.

## 2. THE INTERPROFESSIONAL DESIGN/DENTISTRY PROJECT

The interprofessional Design/Dentistry Project (Schnabel and Howe 2008) is an innovative method of teaching students the skills required for successful consultancy and professional promotion in the public realm, based on the Aristotelian concept of *phronesis* or practical wisdom (learning to judge when and where to put skill or knowledge into action) and drawing upon the arts to facilitate acquisition of knowledge (Dahlman 2007).

In order to develop skill in health promotion, the Dentistry students require an understanding of communication in visual media and how design can alter the efficacy of message transmission (Evans, Dennison, Pakdamen & Howe 2008; Katz, Kripalani & Weiss 2006). The quality of materials produced for use in public health education clearly shows failure to grasp basic graphic design skills (Figure 1). Dental students require assistance from genuine design consultants to develop an understanding of how to communicate these vital messages to the public, applying trained standards of design aesthetics and elegance to facilitate professional engagement with the community. Architecture students require genuine clients, who can consult with them, bring preconceived ideas to the table, question and challenge them as real clients do. To provide an exposure to an authentic client-expert relationship for each Architecture student was a dilemma that was resolved by collaboration with Dentistry students. Both students are learning together about the challenges of persuasive communication and community engagement.

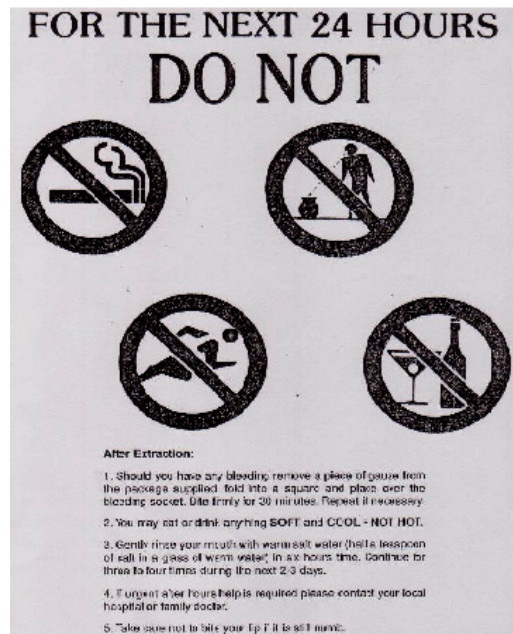


Figure 1: Post-operative instructions for wound care at a Sydney teaching hospital

## 3. METHOD

Students in the Faculties of Architecture, Design and Planning (N=122) and Dentistry (N=165) collaborated in one of two types of consultancy: a project for a community audience or a project for a professional audience.

### 3.1 Community project

The objective was to develop an oral health promotion program and products for caries prevention around the message: tooth decay can be stopped, reversed and prevented. The students were provided with lectures and electronic resources before being assigned to a supervised small work-group comprising three dental students and two architectural students, to develop a promotion for one of six target audiences (infants, school children, teenagers, older adults or an ethnic or indigenous community of choice). They reviewed literature about caries prevention, target audience characteristics and design concepts likely to appeal to the audience, then collaborated in developing five products: a booklet for health educators working with the target group containing the evidence base, two promotional products (poster, brochure, web-site, DVD, T-shirt, etc.), a reflective portfolio of conceptual development and an audio-visual presentation for peers. The products were assessed for research quality by the Faculty of Dentistry and quality of design communication by the Faculty of Architecture and submitted for use in oral health promotions during National Australian Oral Health Week and the University of Sydney Oral Health Research Day.

### 3.2 Professional project

Final year Dentistry students require a performance portfolio and resume for use in finding employment after their imminent graduation. In this consultancy the Architecture students engaged with their Dentistry student clients on a

very personal level in design of a presentation to best display their strengths, skills, achievements, values and character to future possible employers and mentors among the professional communities of dentists practicing in private practice, the Armed Forces, the area health services or overseas institutions. Both groups of students completed the VIA Signature Strengths Questionnaire (Peterson & Seligman 2002) to identify key strengths to be featured and illustrated in the portfolio. The Architecture students created a reflective portfolio detailing the progress of the consultancy, design development and elegant solutions to problems. Both types of portfolio were assessed by the respective Faculties.

In each project the student groups presented their work in peer-teaching seminars and evaluated the program as a learning experience using the Unit of Study Evaluation Questionnaire (Institute of Teaching & Learning 2008). Students also provided evaluative feedback to each other about consultancy and teamwork skills using a protocol derived from Lurie et al (2007)

## **4. RESULTS**

### **4.1. Product development**

All student teams developed products and portfolios meeting the requirements for each project program. Student groups successfully developed 29 research-based, well designed oral health promotion programs of a quality suitable for publication, commercial development or use in public campaigns as evaluated by the two teaching Faculties. Professional performance resume portfolios were successfully designed by 28 student teams for the 75 senior dental students and are currently in use to showcase the students' achievements, character and interests in career interviews.

### **4.2. Student evaluation of the learning experience**

Only 26% of students reported dissatisfaction with the way in which the project enabled development of graduate attributes (communication skills and professionalism) and fostered creative development (23%). The majority of students found the project had relevance for their professional career (68%) and that Faculty resources were adequate to develop it (63%) although many pointed out that the Architecture resources were more extensive and appropriate for the project than those in Dentistry. Most students were satisfied with staff responsiveness to student needs and queries (87%) and with the feedback they had received up until that time (61%). The issue most impacting student satisfaction was the delivery of information and resources in the e-learning format. Students reported impatience with the site structure and many failed to access available resources because of this. Since project outcomes had been linked to website resources for each of the different product categories, some students did not access useful information about learning objectives and their stated preference for more extensive face-to-face teaching in delivery of information reflects these difficulties. These perceptions also affected their overall level of satisfaction with the learning experience. The students provided encouraging and detailed feedback about ways in which the delivery of the e-learning resources could be improved and these changes are now being made in consultation with student focus groups.

### **4.3. Student reflective portfolios**

Students' reflections on their learning experiences during the project revealed that the project had facilitated development of communication skills relevant to professional practice.

### **4.4. Organisation and time-management**

Because flexible time in the curricula of two professional Faculties is limited, students had to develop efficient ways of communicating with each other, holding team meetings and delegating individual responsibilities. Resources had been provided to assist understanding of meeting procedures and students documented, in their portfolios, their application of strategies for team organization, role delegation, meeting minutes and individual research contributions

In order to meet the perceived expectations of their peers in the other Faculty, students worked very hard in research of the evidence base and mastery of core skills. Dentistry students completed extensive research into the project topic whilst Architecture students, recognizing the requirement to educate their dental clients in graphic design principles and publishing software, ensured their own proficiency in these things.

### **4.5. Teamwork**

After the introductory lectures, learning was largely self-directed by the teams of 4-5 students. Expertise and experience of the team members varied and the students quickly discovered each other's strengths and how these could be used to advantage.

The most frequent negative feature of student team projects is the inequitable division of labour, where some students coast as 'passengers' on the effort of other team members. In this study, the contribution of each team member was assessed by all other members of the team as well as by supervising academic staff. Student peer evaluation was rigorous, honest, diplomatic, constructive and informed, this last quality being one often not open to academic staff assessing student work. Any student not performing satisfactorily received clear feedback to this effect from team peers while those who were involved received affirming recognition of their commitment.

X "has poor organization skills and at times repeats himself and forgets what he told the group. He showed lack of respect for other group members since he did not complete his section of the educator booklet on time. He neglected to inform the people who were dependent on him that he was unable to meet the deadline."

Y “was a terrific team member and I look forward to any opportunities in the future to work with her. She was always pleasant and even under stress she was sensitive to others’ needs and ideas. Y was extremely creative and really thought outside the box, to come up with useful things to get our target audience actively involved.”

Equitable sharing of workload was further encouraged by making each student responsible for completion and delivery of one product.

#### **4.6 Communication with other professions**

The requirement that students understand each other’s professional background needs and skills resulted in their recognition of the value of interprofessional collaboration. Dental students developed a better grasp of why they needed to understand principles of design in order to develop effective health promotion materials. Architecture students were surprised by the difficulties encountered in dealing with clients, often with limited experience of design but strong opinions about what they wanted.

Architecture student:

“I not only improved my own technical skills in design, but I understood that an architect not only has to be good in designing, construction and rendering. I also need to be a good communicator, manager and diplomat. I realized that other people’s views are actually also valuable. But most of all, I realized that I engage and deal with humans for humans and not just abstract concepts.

Dentistry student:

“Initially I thought why do I have to do design. If I am a dentist, I just hire a designer. But now I can see that I have to know what designing means in order to ask for the right things and be able to judge the outcome that is presented to me. This project offered me not only insights into other professions, but I also gained new perspectives on what a dentist has to know.

## **CONCLUSION**

The interprofessional learning project moved both Faculties from sequestered autonomy into a greatly enriching, deep learning experience in communication for both cohorts of students. Subsequently this initiative has enabled development of a strong link, not only between two professional disciplines, but also between two Faculties usually perceived as having little in common. The project engages both students and academic staff in learning about professionalism, communication, collaboration and community engagement.

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