

Omnium:

A Research Initiative Proposing Strategies for Quality, Collaborative On-Line Teaching and Learning

Choosing the world wide web as a setting for teaching and learning [Art & Design] without technology becoming the focus.

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Abstract

Despite the Internet being hailed as a wonderful and revolutionary communication tool, it □also carries with it a multitude of dangers and fears for those who ‘surf it’, design for it or interact with it. The ‘space with no boundaries’ is also a space with very few regulations or controls. As educators we should resist the opportunity to simply provide ‘immediate’ internet learning packages but instead carefully examine the methods students adopt when working on-line and design effective programs accordingly. It is crucial to understand how people interact with the Internet before designing and presenting □any kind of content.

This paper describes the production, facilitation and some outcomes of a pilot study for on-line tertiary education in the visual arts. **Om'nium 1.0: virtual design studio [vds] '99** brought together 50 design students from 11 countries (15 universities) across five continents for a uniquely collaborative learning process over a 10 week period.

Throughout the planning, production and duration of Om'nium 1.0, continued emphasis was placed on a collaborative, interactive, international and multi-cultural learning process rather than technology that allows this to take place. The project also encouraged participation from non-computer literate students, tutors and contributors. Om'nium 1.0 aimed to examine educational outcomes and experiences of learning and designing via the Internet, perhaps informing future plans for effective and appropriate Internet based ‘global classrooms’.

Om'nium projects’ website can be found at : www.omnium.unsw.edu.au

that allows such innovation, but use it as the tool that it merely is, to enable high quality learning experiences to take place in the new environment that it offers. Technology should remain the medium used, whilst 'on-line curriculum' designers closely analyze how users interact with its many permutations to enable a content-focussed approach to be produced.

Throughout this paper, I will describe and explain a ten week on-line 'design studio' project titled Om'nium 1.0 [vds]: virtual design studio '99, which endeavored to take some vital first steps into thoroughly examining how students react and behave within such a new 'on-line' teaching context. The project aimed to allow the technology involved in such a delivery mechanism to be universally usable and accessible to anybody.

The project purposely included students who were highly competent multimedia and newmedia practitioners together with a number of totally non-computer literate users. I should add within this introduction that as initiator and Director of this project, I too was extremely computer illiterate at the outset of the activity. I believe the term is, that I was by no means a 'geek' ... although it is since argued by friends and colleagues, that this is now changing ... perhaps computer technology is infectious after all!

Hopefully though, one of the things that has been proved by the activity, is that with confidence and a solid knowledge of ones own subject area (in this case, Art & Design), it is possible to exist comfortably with rapidly changing digital technologies without too much fear. For the sake of our students, we must as educators, embrace the computer as assistance for our teaching and not resist it simply because it is a tool that many of us fail to understand.

The above issue is precisely what Om'nium 1.0 aimed to encourage and believes this to be vitally important for educators into the new millennium. There is obviously no doubt that computers are an important part of our day to day lives and moreover an integral part of our students lives. The Internet *will* be used more and more to deliver and communicate educational contexts in the future, so we must prepare for this thoroughly, responsibly and above all without intimidation.

Part A

[A1.0] **The potential for education offered via the Internet (on-line)**

I have already described the Internet as a new environment and as such, an extremely exciting setting. It should also be emphasized that it differs from more traditional, physical and often regarded as 'real world' situations in which many of us are obviously far more familiar and comfortable. Before we even consider using the Internet as a serious option for teaching and learning, we must first learn how best to act and exist within this 'alternative space'. We must also ascertain exactly what is the extent of interest and relevance for such educational revolution and an alternative option. Only then can we begin to design responsible content to place within it.

[A1.1] **An Omnium Research Questionnaire**

Temasek Polytechnic, Singapore, School of Design – January 2000

A recent Om'nium Research questionnaire issued to design students at Temasek Polytechnic, Singapore, received 188 written responses. The results identified usage of the Internet by students mainly (88.8%) ranging between the 18 – 21 age group.

Students were asked when they had last used the Internet for purposes other than merely sending e-mail.

within the last 12 hours	92	49 %
within the last 24 hours	39	21 %
within the last 48 hours	49	26.1 %
had not used within last 48 hours	8	3.9 %
	<hr/>	<hr/>
	188	100 %

*Students were also asked to identify and prioritize features of the internet which most appealed to them and which encouraged them to use the Internet as a communication or research medium (their responses are reported later in this paper). Finally, they were asked to respond to whether they would be interested in taking all or part of their (Design) course via an 'on-line' delivery mode similar to Om'nium 1.0 [vds]. The results were as follows:

very interested	98	52.1%
mildly interested	73	38.8%
not at all interested	19	9.1%
	<hr/>	<hr/>
	188	100%

It would be naïve and perhaps economic suicide for education, (whether at primary, secondary or tertiary level) to ignore figures such as these, considering the potential or necessity of offering either entire courses or single subjects on-line.

[A2.0] **Working with the Internet**

An appropriate analytical process for beginning to design on-line subjects and courses may include the following:

- who are our 'contemporary students' and to what extent do they use the internet ?
- why do they use the internet, how do they interact with it and what is its appeal?

- how have previous on-line education programs been facilitated?

As I have previously stated, the Internet *must* be seen as a totally different space to that in which many of us have existed for many years. Over the last few years, I have personally grown more and more aware of this difference. Whenever we talk about the Internet and its relationship with a variety of contexts, two common phrases are often adopted: '*virtual*' or '*cyber*'. If we think about these generalizations, perhaps what is really being described is a paranoid fear of comprehending what the Internet actually is. For example, what does the Internet look like, or perhaps even how would you draw it?

It was only 2 years ago that I named my research project Om'nium: virtual design studio '99. I now realize that my use of the word '*virtual*' is most inappropriate. I believe that usage of the description '*virtual*' when referring to anything associated with the Internet probably stems from a common usage of the term 'virtual reality' which seems generally acceptable and moreover understandable. I would argue on reflection that this acceptance is both misplaced and wrong,

'Virtual reality' implies that something is 'almost' like the real thing', or more accurately 'our real world'. What is essential when designing visuals or content for the Internet, is an appreciation that we should not be trying to recreate what currently exists in our 'real world', just so we can import this directly to screen for access from any internet 'browser'.

It is argued however that 'virtual reality is a simulated environment. The simulation may represent a real environment or it may be purely imaginary.' (*Loeffler and Anderson, 1994*). I believe this begins to further cloud the issue of definition and vocabulary and further mystify instead of clarify what we are beginning to understand as the Internet.

I believe now that the Internet is also a 'real' space: simply an alternate space parallel to the physical space we are more accustomed to. Once we grow familiar with, and further understand this newer space, the quality in terms of surface and depth of its content will improve greatly. For this reason I will in future refer to the Internet as an '*on-line*' and not a '*virtual*' space.

At the 1999 IdN (International designers Network) Conference held at the Sydney Convention Centre, Mr John Frostell, President of the Australian Graphic Design Association (AGDA) was invited to be one of a panel of judges evaluating graphic and multimedia work submitted to the 1999 IdN Design Awards. When commenting on the general standard of submissions within the Interactive Media category he complained that "too many graphic designers treat 'the website' as just another electronic brochure, translating the process of print onto screen in a very linear way." He felt that "designers needed to grasp the potential of the media – that which makes it different – before they can begin to create truly great work."

[A2.1] Who are our 'contemporary students' and to what extent do they use the Internet?

Perhaps the first question I am asked about Om'nium Research work undertaken to date, particularly the 1.0 [vds] '99 project, is what originally prompted me to begin developing such an initiative? An answer I generally offer is ... frustration!

In 1998 I conducted a questionnaire/survey to sample the [Design] student experience at first year level at university: in particular issues relating to *transition* (from school to university) and *motivation* to study. Initial results appeared alarming and led me to further investigate issues both *social* and *institutional* which affected students ability to study. I soon observed that the [Australian] tertiary education system was becoming considerable out of touch with its students, especially in the area of the visual arts, so I looked for a way to offer an alternative option (not a replacement), one that perhaps better suited many contemporary students

[A2.1.1] **The contemporary [design] student**

Before I could structure and produce any kind of alternative delivery option for design subjects: in particular, practical 'design studio' subjects, I conducted the above survey to gauge a perspective from all second year Bachelor of Design students at the College of Fine Arts, UNSW. (Bennett, R. 1998)

Recurring responses indicated some dissatisfaction with the educational service being provided. In most instances, this was a reflection of recent changes to the curriculum necessitated by Australian government funding cuts and the 'knock-on' effect these had on staff teaching loads, increased student fees and other subject specific details. Reduced provision of consumable materials now needing to be supplied by students themselves featured strongly among these responses.

The questionnaire results provided a clearer perspective of the contemporary student: one who often has to combine study with full-time or nearly full-time employment to finance university, travel considerable distance to attend lectures/classes and who is often returning to college following lengthy periods away from study. This introduces the insecurity of being a 'mature-age' student amongst a majority of school leavers. In the case of Design students, there is the added burden of affording expensive materials for their work (in particular their presentations at assessment time) added to the increased demand for them to own sophisticated computer equipment and software applications at their homes.

[A2.1.2] **Motivation**

Before Om'nium 1.0 [vds]'99 took place, I was often asked about my proposed framework for the project. Unfortunately, the majority of questions centred around my imminent choices regarding software and hardware. I cannot deny that these issues *were* a consideration during production, but they were secondary compared to what the students would be asked to do and how the design brief would be facilitated in order to give them a quality on-line learning experience.

The project aimed to create an environment of social interaction, conversation, dialogue, process and critique. A key to achieving this aim, would be to recognise student motivation. The survey to the COFA design students also specifically asked questions about issues affecting their motivation to study, especially within the often unstable setting of a first year or foundation year at university.

Motivation was generally provided by a desire to eventually become designers but some enlightening responses were also aired . The student responses described:

- ∑ the need for more interaction between first year students and those from more senior years, graduates and design practitioners
- ∑ the detrimental nature of competitiveness and comparison between students
- ∑ the lack of individual and quality feedback from tutors

These responses were particularly noted and in light of these findings, Om'nium 1.0 [vds]'99 set out to be a collaborative and interactive experience which fostered a sense of working together instead of in competition. Afterall, the world wide web (WWW) is aptly named as a place where disperse settings can be linked together and support each other instead of operating apart.

[A2.2] Why do students use the Internet and what are its appealing features ?

With some fundamental concepts established about what an alternative educational offering may aim to be, I considered it vital to establish some features of the Internet which make it an attractive proposition for students to use.

Following extensive canvassing of students from undergraduate and post graduate levels of design education, specifically about qualities and characteristics of the Internet, the following 'top ten' features make the internet a popular choice for students.

Om'nium's 'top ten' identified characteristics that make the Internet a popular interactive space:
(not in any hierarchical sequence)

- 1 anonymity / removal of inhibitions
- 2 speed of communication - email / ICQ ('I seek you') chat rooms
- 3 flexibility to avoid restrictions of time/place etc...
- 4 multi call facility (the internet is never engaged)
- 5 ability to work in real time and stored time (synchronous / asynchronous)
- 6 never ending exploration potential (data base)
- 7 option to work in a variety of formats (text / movies / still images / sound)
- 8 the entertaining / enjoyable context

- 9 economical and sustainable to the environment
- 10 the excitement of working with innovation and the anticipation of what is still to come

I believe that one of the most frequent mistakes or oversights of some existing Internet based teaching and learning developments, is a preoccupation for 'real time' experience. Added to this is a further disregard for the medium by insisting that web cameras are used so participants can see each other. Often the only apparent reason for such a choice appears to be that technology now allows this. From the responses above, it is clear that students are not at all interested in seeing who they are interacting with ... it is simply not what the Internet is about!

[A2.3] **How can previous on-line design courses guide future plans?**

When reviewing previous examples of on-line courses, it is interesting to observe their structure, facilitation methods and the responses of students who took part. In the case of 'design studio' subjects, we find some of the earliest examples go back to 1992 (University of Oregon). It is apparent that most or nearly all of the examples to date of virtual design studios, have derived from faculties or departments of architecture. I have outlined below a selection of the many references for such on-line design activity:

In 1994 (28 Nov.-5 Dec. 1994), a collaborative design project linked students from the Swiss Federal Institute of Technology, Zürich and the School of Architecture, National University of Singapore. The project was a collaborative project to design an exhibition pavilion.

VDS 95, linked students and staff from Cornell University., ETH-Zurich, MIT, University of British Columbia, University of Singapore and the University of Sydney in a project to collaboratively design a residence. http://arch-d3.architecture.ubc.ca/vds_95.htm

VDS 1996 saw students from Zurich and TU Delft, Switzerland act as clients for each other in a project which in this instance did not have a time factor as an issue.

I believe one of the more stimulating on-line design projects was carried out within VDS 1998: Multiplying Time II. This event linked the Department of Architecture, University of Hong Kong, Bauhaus University, Weimar, Germany and the School of Architecture, University of British Columbia, Vancouver, Canada.

<http://arch.hku.hk/~cgraph/98/vds/description.html>

Multiplying Time II, was a design activity which strove to take advantage of various time zones by having students produce work and then pass their work on to groups in other countries for

refinement and change. Through a time-tabled working week, maximum hours were able to be spent on the project, utilizing each hour of each day. What particularly attracted me to the project was the nature of the brief. The aim of this project to maximize hours available in a day is now commonly used by design consultants who have offices in more than one country.

An interesting outcome of the Department of Architecture at the University of Oregon, USA was to identify goals and benefits for students studying within an on-line framework. The Department has been facilitating a variety of projects each year from 1992 and publishes the following for students teaming up from different schools to work on the same design project.

Research Goals

Optimizing the use of new media for remote design collaboration

Understanding how to facilitate groups using telecommunication tools

Teaching Goals

Design: Sharing and comparing design methods

Technology: Working together to make the tools perform

Culture: Opening eyes to different ways of working together.

Learning Benefits

Motivation of mysterious foreign partners

New role for students as readers, editors

Fairness of more tutors, anonymous presentation, peer feedback

<http://darkwing.uoregon.edu/~nywc/vdstalk.html> --

- Department of Architecture, University of Oregon, USA

Om'nium [vds] '99 was able to benefit from the precedents that were available. In particular, it was able to detect many aspects from previous projects that it believed were not appropriate to the kind of design based learning experience it was striving to create.

Part B

[B1.0] **Om'nium 1.0 [vds] virtual design studio '99**

The word '*om'nium*' is defined in the Concise Oxford Dictionary as meaning 'all' and goes on to describe 'a strange assemblage of persons or things; a party to which everyone is invited'. This seemed highly appropriate when naming this project, which set out to be a design collaborative: an entity in which all who worked or visited become a part.

From July through to September, Om'nium [vds]: virtual design studio '99 linked 50 design students from 11 countries (15 universities), situated across 5 continents by placing them in working groups where each member of a group was geographically distanced. Ten groups challenged the same conceptual brief for a seven week period (plus a further 3 week presentation period), on-line and in collaboration, via a specifically designed and constructed website. The project included as a unique feature, the provision of a 'user interface': an on-line classroom/studio environment where students worked.

The archived project website is located at: www.omnium.unsw.edu.au

Om'nium [vds] in essence, concerned two issues:

- 'design process and dialogue': an exploration into the generation of ideas and concepts collaboratively and digitally across distance.
- a possible future education option: applying such process within a 'revolutionary framework' using *cyberspace* to host its classrooms or studios.

The Om'nium project adopted the Internet as the communication tool to facilitate both these focuses. The qualities which the Internet now offers and which it was felt would enhance the project included the anonymous nature of its use, being progressively faster technically and the excitement of being able to explore new media and break down existing technical, social, cultural and physical boundaries.

[B1.1] **Issue #1 On-line collaborative design process**

The entire Om'nium 1.0 [vds] project was a process, a dialogue, an investigation into developing such an on-line design process. Some relevant considerations needed to be recognized. To encourage focus on 'process and dialogue', the work within the project:

- was un-prescribed and un-predetermined (yet not briefed to be confusingly ambiguous)
- involved a strong dialogue and interactive component
- contained a cross disciplinary approach to designing
- encouraged collaboration rather than competition
- and was internationally and culturally diverse

A conceptual approach to working was encouraged with less preoccupation at early stages on finished or commercially viable resolutions.

[B1.2] **Issue #2 On-line collaborative design education**

A second area addressed within the Om'nium project, was the apparent widening gap between contemporary Australian and international Design and the often traditional, economical and lack lustre design programs that students face. I believe *design practice* and *design education* are becoming 'dislocated' and contemporary students now need an alternative option to more traditional university [design] education.

For example, design education constantly submits students to Bauhausian principles and methodologies yet are we not seventy years on, having already entered the digital age and the new millennium? This comment in no way detracts from the notion of the Bauhaus (1919 – 1933) being an excellent forum for the teaching of art & design. However, surely it is time to move on and push the boundaries of design education to meet those being established and challenged in the professional environment

[2.0] **Om'nium 1.0 [vds] project structure**

Ten groups were formed to 'house' the 50 students who were selected from applications to take part in this on-line design project. To tackle the projects brief, each groups membership included five students from different settings: country, culture, discipline study area, gender, study year, computer experience, etc.

[B2.1] **Om'nium [vds] 'user interface'**

A major difference between Om'nium 1.0 and its on-line educational predecessors was the offering to student participants of a virtual environment in which they existed and worked together. Om'nium 1.0 supplied as its backbone and strength, a 'user interface' for its activities to take place. The 'user interface' provided the environment which replaced the physical studio/classroom. This provision complimented one of the original and lasting aims of the project: to reduce the focus on technical issues to a minimum, thus allowing students and facilitators to concentrate on the creative potential of designing collaboratively via the Internet.

The Om'nium 1.0 'interface' was designed and built specifically to allow students to work and interact within their groups. Students could interact and work privately within their own group or participate in discussions and critique with students from other groups working within the project. The interface allowed this to occur through a series of:

'easels' - the individual place for working on concepts and visuals/sound

'walls' - for 'pinning up' work with colleagues, for critique by peers, tutors and public

'chat rooms' – for synchronous conversations with group colleagues, peers and tutors

'message boards' - for asynchronous conversations with peers, tutors and public

'exhibition areas' – for display of final resolved concepts accessible to anyone via the world wide web

[B2.2] **Om'nium 1.0 'virtual studio rooms' (VSR's)**

Each of the working groups had all the above features offered to them within a series of *'virtual studio rooms'* (VSR's) which ranged from totally private working areas (VSR1), tutor consultation areas (VSR2), peer review forums (VSR3) through to general world wide web access locations (VSR's 4 & 5).

An interesting anecdote to the project notes that within the project we also provided a *'technical help forum'* (THF) area which consisted of chat rooms, message boards and

'frequently asked questions' (FAQ). The primitive technical structure of the THF area allowed a maximum of 24 questions to be 'posted' each day. For the first two weeks, this allocation was completely utilised but as the project progressed, the THF was used less and less. From week three of the project to its conclusion, no technical assistance was required within the THF. The students had initiated an elaborate peer assistance mechanism to solve each others technical problems. It should again be emphasised, that this project included some students who had never worked using computers before.

[B2.2] **Om'nium 1.0 project brief** - *'the small red car': a process dialogue*

Om'nium 1.0 [vds] developed a brief for its project which encouraged emphasis on 'process'. It designed and constructed an 'unraveling' brief which was the result of canvassing and listening to opinions and theories of both professional and student designers regarding the validity and effectiveness of a variety of briefs they had experienced.

The eventual project brief which 'unraveled' weekly (seven weeks) was enhanced and supported by a series of 'assisting lectures' written by a combination of design practitioners, recent graduates and academics from a variety of locations both in Australia and overseas. The issues within each lecture accompanied the stage at which the brief had reached. The Om'nium 1.0 [vds] brief asked each group to make proposals for their interpretation for designs of 'the small red car'. This was in essence simply a title for their entire working process from day 1 to day 49: a process which was intended to explore each groups dialogue whether verbal, textual, visual or experiential. As is explained below, the project began by conceptually exploring three words: *red*, *small* and *car*. These words were selected as representing three areas of design practice.

red - two and four dimensional graphic/ textual and new media domains of design

small - three dimensional environmental and spatial/architectural areas

car – industrial, object and product design based disciplines

Hence the 'small red car' brief was a collaboration and abstraction of ideas and notations from these studies and not the physical representation of any particular object or thing. The *'small red car'* was the documented 'process' of taking part in Om'nium 1.0 [vds]; virtual design studio '99.

The unraveling nature of the Om'nium [vds] brief encouraged the 'process dialogue' by identifying five stages over a seven week period:

[B2.2.1] **Gathering** (two weeks)

initial personal and conceptual investigations of three words (red, small, a car)

Stage one of the brief was designed to allow several things to take place simultaneously.

- introduce the members of each group to each other
- allow the students to become familiar with the technical interface and structure of the project
- encourage initial individual involvement from all 50 members of the project and at the same time develop work which would ultimately add a rich mixture of cultural and personal backgrounds to the project. the project would be hindered if group work started immediately as stronger students may intimidate weaker students.
- begin collecting resource material from which the project would later depend

Images 1 - 6

[B2.2.2] **Identifying** (one week)

deciding as a group a specific interpretation of the main brief

The second stage began the process of unifying the individual members of each group. This stage collected all the 'gathering' works together and re-arranged the works from group to group. Students were able to select to retain (5 images) or discard (10 images) work previously submitted in their own group. This stage was important as it:

- brought individuals into a working unit that allowed social and physical collaboration
- began an initial working process and passing of ideas by asking each group to reinterpret their own understanding of the brief
- broadened the project to become 10 aligned projects held together by the concept of 'the small red car'
- clarified to group members and project facilitators and tutors what each project was aiming to communicate

Images 7 & 8

[B2.2.3] **Distilling** (one week)

breaking down ideas from the works produced in the gathering stage

This was a valuable stage as it:

- requested students critically assess their process to date
- asked that they discard some of their own works
- examined the works they now had and break them into physical and conceptual elements
- re-used the elements they identified to progress new works
- began narrowing down their 'palettes' of work whilst still considering their own groups intention regarding the main brief
- was the first time where work was physically required to be passed through all five group members and additions and proposals suggested as a dialogue both within the work and in group chat rooms

Images 9 & 10

[B2.2.4] **Abstracting** (two weeks)

further selecting and rejecting elements from the distilling stage

This penultimate stage in the process required students/groups to extend the distilling stage to simplify images to attain an *essence* and a clearer communication of their own brief. Again the students would pass the work through the on-line environment of their new learning space and finally submit work that all members of the group had an opportunity to contribute to. Considerations at this stage for the collective membership of each group were:

- to begin identifying the likely nature of their resolved process
- engage in further self critique encouraged by the necessity to submit three works by five people
- develop critical time management skills to allow each work to journey through five countries at least once and sometimes twice
- adapt their work according to the critique of both the project facilitator and the guest tutors

Images 11 & 12

[B2.2.5] **Resolving** - (one week)

further abstraction and refinement to a point of final presentation.

Beginning with the three works in each group, the last stage was to resolve these into one final submission. This final piece would be titled 'the small red car' and be a resolved end of the process. By resolving their works into one final piece they would complete a journey which had lasted seven weeks and the work would no doubt contain and communicate much of this experience.

[Images 13 & 14](#)

Finally to end the process the students were asked to submit over three more weeks, an 'exhibition' documentation of their groups process dialogue. This then appeared as an archive on the projects website, as well as being able to be shown in the physical exhibition context.

[B2.3] **Guest tutors**

Another important feature of the project was the tutoring and feedback throughout the process. Om'nium 1.0 [vds] was greatly aided by enthusiastic support from four internationally acclaimed design practitioners who generously acted as guest tutors for the 50 participating students. They gave feedback at weekly intervals throughout the project, to work the students were presenting at each stage. The designers also represented a variety of design disciplines and each working student group received feedback from all four designers at least once throughout the seven week process. The designers who gave their time voluntarily to the project were:

Susan Cohn	Workshop 3000	Australia	
Tom Kovac	Kovac Malone Architecture	Australia	Links
Andy Polaine	Antirom	UK	Links
John Warwicker	Tomato	UK	Links

The tutors who joined me in giving regular feedback, also existed within an on-line group from where they too could interact, view works and offer critique.

[1] **Conclusion**

The Om'nium 1.0 [vds] project *did* give student participants an innovative social and educative experience using the Internet. The formal feedback that has been provided by

all those who took part has been incredibly positive and describes the experience of sharing concepts across cultures and distances as the most rewarding aspect of the experience.

Many of the student's usual study of design at their universities, focused on one discipline rather than design as a multi-disciplinary activity. It appears that those students benefited from being able to 'work more freely'. At the outset, this freedom and lack of prescription of the task was perhaps difficult for them to adjust to. However, with the support of their group members, regular on-line tutor feedback and being able to immediately see the work of those students more used to working through a conceptual approach, they did not take long to adjust.

It is interesting to observe and receive the reactions of a cross section of people who now view the project either via our website, CD Rom archive or at conference and seminar presentations. It is apparent that one of the most important and reassuring factors for them, is the ability for non-computer literate participants to be involved, whether this is at teacher, student, or the public access level.

Perhaps the most surprising discovery resulting from the project, was the ability for students to develop strong social bonds with their distanced colleagues. The argument that physically not being able interact with their 'classmates' would always create a barrier is unfounded. Many of the participants continue to remain friends from their experiences during the project, and at an exhibition of the student work in Sydney in October 1999, 21 of the non-Australian participants flew (unfunded and unplanned) to Sydney to be at the opening of their exhibition. The social bond from such an experience is arguably just as strong if not stronger than any traditional classroom setting.

The project has now attracted interest from other educators who are considering or have already experienced offering courses via on-line mode. Professor Thomas Kvan, Dean of Architecture at Hong Kong University, is currently researching some of the new pedagogical issues that such a process and project have illuminated.

Perhaps the most understandable downside arising from such a project is the continued difficulties experienced by students taking part, concerning the technical interaction. The responses regarding difficulties that students faced, for example, adjusting to the 'user

interface' has however, enabled us to amend the old structure and develop a more streamlined and user friendly version of the project: Omnium 2.0.

Omnium 2.0 is currently being produced and will be tested for a two week period in October 2000 before being revised to house the first official on-line fee paying subject offered by the University of New South Wales. The second Omnium Cd-Rom has been produced to archive and describe the Omnium 1.0 project and contains experiential accounts from all 50 students who took part as well as documenting all the visual responses produced from the project.

A copy of the OmniRom v1.1 archive can be obtained by contacting Omnium Director, Rick Bennett via email.

