

R RARE  
Thes  
(

## RARE BOOKS LIB.



The University of Sydney

### Copyright and use of this thesis

This thesis must be used in accordance with the provisions of the Copyright Act 1968.

Reproduction of material protected by copyright may be an infringement of copyright and copyright owners may be entitled to take legal action against persons who infringe their copyright.

Section 51(2) of the Copyright Act permits an authorized officer of a university library or archives to provide a copy (by communication or otherwise) of an unpublished thesis kept in the library or archives, to a person who satisfies the authorized officer that he or she requires the reproduction for the purposes of research or study.

The Copyright Act grants the creator of a work a number of moral rights, specifically the right of attribution, the right against false attribution and the right of integrity.

You may infringe the author's moral rights if you:

- fail to acknowledge the author of this thesis if you quote sections from the work
- attribute this thesis to another author
- subject this thesis to derogatory treatment which may prejudice the author's reputation

For further information contact the University's **Director of Copyright Services**

Telephone: 02 9351 2991

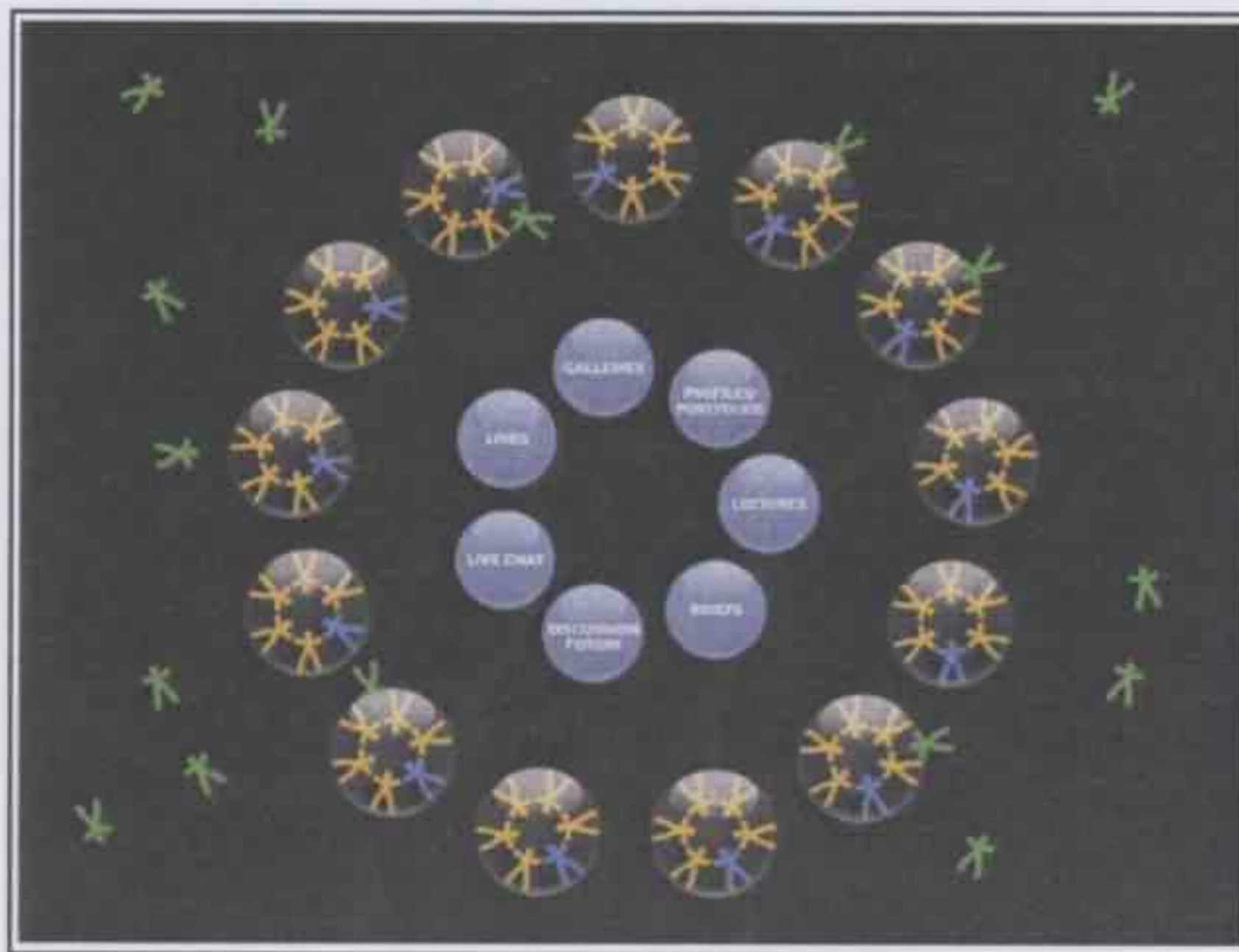
e-mail: [copyright@usyd.edu.au](mailto:copyright@usyd.edu.au)



**Sydney College of the Arts**  
The University of Sydney

DOCTOR OF PHILOSOPHY  
THESIS

**DRAWING ON THE VIRTUAL COLLECTIVE:**  
EXPLORING ONLINE COLLABORATIVE CREATIVITY



by

**RICK BENNETT**

November 2009

This volume is presented as a record of the work undertaken for the degree of  
Doctor of Philosophy

Theories of Art Practice at

Sydney College of the Arts,

The University of Sydney

***Drawing on the Virtual Collective:***  
***Exploring Online Collaborative Creativity***

---

**- ACKNOWLEDGEMENTS -**

*Personal Acknowledgements:*

*I would like express my personal thanks and formally acknowledge the help and support of the two University of Sydney academics that supervised me during particular stages of my PhD candidature:*

*Professor Ron Newman (2004-2007)*

*Dr Eril Baily (2007-2009)*

*I especially thank Dr Baily for her extreme patience and superb editing talent throughout the final year. Without her ongoing support and the extended time she spent reading chapter drafts, this thesis would not have been completed.*

*I would also like to express my thanks to the administration staff at Sydney College of the Arts for their courteous help and efficiency throughout my enrolment.*

*In addition, I wish to acknowledge and pay tribute to all the people who have been involved with the Omnium Research Group over the last decade. I thank them sincerely for their hard work and the many wonderful contributions they have made.*

*Academic Acknowledgements:*

*At certain points throughout this thesis, I have included excerpts and references from academic papers that I have co-written with some of my colleagues over the last five years. Despite citing the references appropriately within the text, I wish to formally acknowledge their contributions as well as thank them all personally for permission to include them in this thesis.*

*O. Broadfoot (UNSW)*

*A. Polaine (UNSW)*

*S. McIntyre (UNSW)*

*E. Dunphy (UNSW)*

*Dr Nataly Martini (University of Auckland)*

*Assoc. Professor L.K Chan (UNSW)*

*Dr Vince Dziekan (Monash University)*

## *A*bstract

The practice of artists and designers, and the way they work, is traditionally viewed as involving mainly individual creative processes. However, throughout the 1990s, widespread introduction of personal computer technologies, and the subsequent growth of the Internet, encouraged traditional methods of creative practice to evolve. Change was initially most evident in professional contexts; particularly those focussed on production of graphic art, digital media and interactive design. As a result, creative collaboration emerged as a popular and efficient approach to working, especially in companies that had multiple offices and studios in dispersed locations worldwide.

In light of such change, approaches to visual arts education began to be questioned. If the role of art and design colleges, in part, is to educate and prepare students for employment within creative industries, then how well were they embracing digital technology and the Internet to encourage students to engage in creative collaborations?

This thesis examines such a question by providing accounts of a series of online collaborative creative studios designed, produced and hosted between 1999 and 2009 through an Australian education initiative titled *Omnium*. By drawing on past theoretical research in the field of adult education, as well as theories of creativity and collaboration, *Omnium* initiated and implemented a two-part research framework, comprising an online creative process model and a web-based technical platform, that encourages online social networking and collaboration between artists and designers.

By examining *Omnium*'s early online art and design studios between 1999 and 2004, as well as detailed case-studies of two global *Omnium* creative studios hosted in 2005 and 2007, the aim of the thesis is to conclude whether *online collaborative creativity* is both feasible and worthwhile within educational settings, as well as the broader professional art and design community. If such an approach is deemed viable, then it may help educators, artists and designers to maintain an important interdependence between visual arts education and the latest working processes employed by professional creative industries.

***Drawing on the Virtual Collective:***  
***Exploring Online Collaborative Creativity***

---

**- TABLE OF CONTENTS -**

---

<i>Acknowledgments</i> .....	<i>i</i>
<i>Abstract</i> .....	<i>ii</i>
<i>Table of Contents</i> .....	<i>iii</i>
<i>List of Illustrations</i> .....	<i>vii</i>

**- INTRODUCTION -**

<i>Overview</i> .....	<i>1</i>
<i>The context of collaborative creativity</i> .....	<i>1</i>
<i>Thesis focus, questions and outcomes</i> .....	<i>8</i>
<i>Research methodology</i> .....	<i>12</i>
<i>Thesis structure</i> .....	<i>17</i>

**- CHAPTER ONE -**

**RECOGNISING A NEED FOR CHANGE:  
DISCONTENT IN THE STUDENT COHORT**

<i>Overview</i> .....	<i>24</i>
<i>Transition, orientation and motivation in visual arts higher education</i> .....	<i>33</i>
<i>Transition to first-year higher education programs</i> .....	<i>35</i>
<i>Transition summary</i> .....	<i>36</i>
<i>Orientation summary</i> .....	<i>37</i>
<i>Aspects and characteristics that affect motivation of first-year students</i> .....	<i>38</i>
<i>Motivation summary</i> .....	<i>39</i>
<i>Deferral and resignation from courses and programs</i> .....	<i>40</i>
<i>Action response to the 1998 five-point (TOM) survey</i> .....	<i>42</i>

- CHAPTER TWO -

RESPONDING TO THE NEED FOR CHANGE:  
OMNIUM'S INAUGURAL VIRTUAL STUDIO

<i>Omnium: researching online collaborative creativity</i> .....	44
<i>Om'nium virtual design studio [vds] '99: a process dialogue</i> .....	46
<i>Om'nium: [vds] '99 - the project realised</i> .....	48
<i>Participation and project structure</i> .....	49
<i>Omnium Software: the first user-interface</i> .....	50
<i>Omnium Software: features</i> .....	51
<i>Om'nium: [vds] '99 project brief - 'Small Red Car'</i> .....	53
<i>Omnium's five-stage creative process model for online collaborative creativity</i> .....	55
<i>Summary</i> .....	64

- CHAPTER THREE -

REFLECTIONS ON COLLABORATIVE CULTURE:  
EDUCATION AND PROFESSIONAL STUDIO PRACTICE

<i>Overview</i> .....	66
<i>Creative demands of a global society with increasingly pluralist needs</i> .....	67
<i>Identifying pluralist characteristics of practice in contemporary design professions</i> .....	70
<i>Design education's response to pluralistic practice and characteristics</i> .....	71
<i>Testing suggested and new pedagogical evolutions</i> .....	71
<i>Examining the results of a survey of 549 design students in the Sydney area</i> .....	73
<i>Summary</i> .....	76

- CHAPTER FOUR -

REAPPRAISING STUDIO PRACTICE:  
FROM THE TRADITIONAL TO THE VIRTUAL

<i>Overview</i> .....	77
<i>The traditional art and design studio</i> .....	77
<i>Traditional studios today</i> .....	81
<i>The modern online design studio</i> .....	82
<i>Kvan's theories for effective online design studios</i> .....	84
<i>Early online design studio initiatives</i> .....	86
<i>Summary</i> .....	94



- CHAPTER FIVE -

REVIEWING ACADEMIC CULTURE:  
MYTHS AND OPINIONS ABOUT ONLINE LEARNING

<i>Overview</i> .....	96
<i>Identifying and dispelling myths surrounding online learning and teaching</i> .....	96
<i>Setting an Australian context for online education in art and design</i> .....	98
<i>Issues to consider when examining online pedagogical approaches</i> .....	100
<i>Issues that cause concern for online education</i> .....	102
<i>A second developmental wave for online education</i> .....	111
<i>Summary</i> .....	94

- CHAPTER SIX -

RESEARCHING CREATIVE PROCESSES:  
REVISIONS TO OMNIUM'S FIVE-STAGE CREATIVE PROCESS MODEL

<i>Overview</i> .....	114
<i>Identifying influential references that informed its development and reiteration</i> .....	114
<i>Omnium's five-stage creative process model: Second iteration - (2005)</i> .....	123

- CHAPTER SEVEN -

CASE STUDY ONE  
CREATIVE WAVES: O3 > O4 > O5  
(2005)

<i>Overview</i> .....	127
<i>Aims and objectives of the Creative Waves: O3 &gt; O4 &gt; O5 project</i> .....	129
<i>Attracting and forming the online community of students, educators and professionals to explore online collaborative creativity</i> .....	132
<i>Omnium's online creative studio: providing the technical framework, course content and creative process</i> .....	135
<i>Creative Waves: project briefs and their alignment with Omnium's five-stage creative process model</i> .....	150
<i>Reflections on Omnium's research framework for online collaborative creativity</i> .....	160
<i>Quantitative evaluation of the Creative Waves O3&gt;O4&gt;O5 project</i> .....	163
<i>Conclusion</i> .....	171

- CHAPTER EIGHT -  
CASE STUDY TWO  
CREATIVE WAVES: VISUALISING ISSUES in PHARMACY (VIP)  
(2007)

<i>Overview</i> .....	175
<i>Recognising and acknowledging emerging online social and cultural change</i> .....	177
<i>Online social networks and communities</i> .....	178
<i>Collaboration, open-source and the rise of the pro-ams</i> .....	180
<i>Organisational change</i> .....	181
<i>Introduction to the Creative Waves (2007) online pharmacy and design project</i> .....	183
<i>Aims and objectives of the Creative Waves: VIP project</i> .....	184
<i>Location-specific representation to assist Creative Waves: VIP</i> .....	185
<i>Structure of Creative Waves 2007 - Visualising Issues in Pharmacy (VIP)</i> .....	187
<i>Participant selection and recruitment</i> .....	188
<i>Collaborative working teams</i> .....	192
<i>Omnium® Software and the Visualising Issues in Pharmacy (VIP) project</i> .....	195
<i>Refinement of Omnium’s five-stage creative process model and its alignment to the VIP project briefs</i> .....	208
<i>Presentation to production</i> .....	228
<i>Quantitative evaluation of the Creative Waves: VIP project</i> .....	232
<i>Conclusion to the Creative Waves - Visualising Issues in Pharmacy project</i> .....	238

- CHAPTER NINE -  
REALISING ONLINE COLLABORATIVE CREATIVITY:  
OMNIUM TODAY  
(2009)

<i>Omnium’s five-stage creative process model: Fourth iteration - (2008-2009)</i> .....	240
<i>Omnium’s web-based technical platform (software application)</i> .....	243
<i>Summary of Omnium Software (2009)</i> .....	262

- CONCLUSION -

<i>Conclusion</i> .....	264
-------------------------	-----

- LIST OF REFERENCES -

<i>List of references</i> .....	274
---------------------------------	-----

---

## - LIST OF ILLUSTRATIONS -

---

### - INTRODUCTION -

#### **Figures**

Figure 1. Omnium's two-part research framework to encourage effective Online Collaborative Creativity includes an Online Creative Process and Online Technical System.....	10
Figure 2. Omnium Software (2009) structural site map showing 'communal', 'individual user', 'team', and 'live' features.....	11
Figure 3. Omnium's five-stage creative process model (fourth iteration) including indicators of a reiterative process, and showing divergent phases (stages 1 & 2) and convergent phases (stages 4 & 5) throughout the creative process.....	11
Figure 4. Simplification of a Reflective Practice model suggested by Schon, Kolb and Boud. ....	15
Figure 5. Action Research model proposed by Kemmis (1983) .....	17

### - CHAPTER ONE -

#### **Tables**

Table 1. Most frequently cited responses to <i>Institutional</i> factors that caused anxiety to students regarding their <i>transition</i> to study at university level.....	35
Table 2. Most frequently cited responses to <i>Individual</i> factors that caused anxiety to students regarding their <i>transition</i> to study at university .....	36
Table 3. Most cited responses of orientation factors that caused <i>anxiety</i> to a first-year student entering the Bachelor of Design .....	37
Table 4. Most cited responses to <i>successful</i> orientation strategies according to first-year students entering the Bachelor of Design program .....	37
Table 5. Most cited responses regarding affects on <i>motivation</i> whilst a first-year student.....	39
Table 6. Responses to whether students had considered deferral or resignation during their first-year undergraduate design program .....	41
Table 7. Most cited responses to why students considered deferral or resignation in first year .....	42

### - CHAPTER TWO -

#### **Figures**

Figure 1. Omnium's five-stage creative process model (first iteration) used in the Omnium: [VDS] '99 project in 1999.....	55
---	----

#### **Galleries**

Gallery 1. Stage 1: Gathering stage .....	57
Gallery 2. Stage 3: Distilling stage .....	60
Gallery 3. Stage 4: Abstracting stage .....	62
Gallery 4. Stage 5: Resolving stage .....	63

### - CHAPTER THREE -

#### **Figures**

Figure 1. Student responses to the emphasis placed on performing individually in competition with others, compared to an individual in collaboration with others.....	73
Figure 2. Student preference to work on practical assignments in groups or individually .....	74
Figure 3. The Frequency that students are given the opportunity to collaborate with those from different disciplines.....	75

- CHAPTER FOUR -

**Figures**

Figure 1. Image of HKU and UBC models within the project: <i>Virtual Village: Kat Hing Wai</i> , 1993. ....	88
Figure 2. Live/work houseboat, <i>Live/Work Project</i> , 1995.....	89
Figure 3. The image is the final building design: <i>Olympic Exhibition Building: Homebush Bay</i> (Australian VDS 1995) - <a href="http://www2.arch.ubc.ca/research/vds/index.html">http://www2.arch.ubc.ca/research/vds/index.html</a> . ....	90
Figure 4. Images from Team B/Information Station: <i>MIT/XeroxPARC Studio</i> , 1997. ....	91
Figure 5. Screenshots of work produced during: <i>A Place2Wait</i> , 1998.....	93

- CHAPTER SIX -

**Figures**

Figure 1. Csikszentmihalyi models Creativity as the interrelation of a system made up of three elements (1997) .....	115
Figure 2. Rothenberg and Hausman's three foci for analysing creativity (1976) .....	116
Figure 3. Four-stage creative process for creative thinking suggested by Wallas (1926) .....	120
Figure 4. Four-stage creative process suggested by Wallas (1926) amended by Patrick (1937) .....	121
Figure 5. Five stages of a creative process suggested by Csikszentmihalyi .....	122
Figure 6. Salmon's five-stage model of teaching and learning through online networking (2000) .....	123
Figure 7. Omnium's five-stage creative process model (second iteration) - as applied during the first Omnium: Creative Waves project in 2005, including focuses in each stage .....	124
Figure 8. Omnium's five-stage creative process model (second iteration) - as applied during the first Omnium: Creative Waves project in 2005 .....	126

- CHAPTER SEVEN -

**Figures**

Figure 1. Omnium's two-part research framework to encourage effective Online Collaborative Creativity ....	131
Figure 2. The Creative Waves: 03>04>05 project promotional website: <a href="http://creativewaves.omnium.net.au/030405/outline">http://creativewaves.omnium.net.au/030405/outline</a> .....	133
Figure 3. The Creative Waves Welcome Page .....	136
Figure 4. A Creative Waves Team Homepage - <a href="http://creativewaves.omnium.net.au/030405/base/menu.php">http://creativewaves.omnium.net.au/030405/base/menu.php</a> .....	137
Figure 5. A Creative Waves Personal Profile .....	137
Figure 6. A Creative Waves Sketchpad .....	138
Figure 7. A Creative Waves Pin Up Wall .....	139
Figure 8. A Team Discussion & Feedback area .....	140
Figure 9. The Creative Waves Message Board .....	141
Figure 10. The Creative Waves Message Board .....	141
Figure 11. The Creative Waves Live Chat area.....	142
Figure 12. Live Whisper/Scribble area .....	143
Figure 13. Creative Waves Briefs & Readings.....	144
Figure 14. The first introductory Creative Waves Lecture .....	146
Figure 15. The fifth Creative Waves Lecture: Collaborative Design in a Small World (A. Polaine) .....	147
Figure 16. A Creative Waves Exposé Gallery: Graphic works provided by Stuart Alden .....	150
Figure 17. Omnium's proposed five-stage creative process model for online collaborative creativity as it was during the (2005) Creative Waves 03>04>05 project.....	151

**Galleries**

Gallery 1. Brief One .....	153
Gallery 2. Brief Two .....	154
Gallery 3. Brief Three .....	154
Gallery 4. Brief Four .....	156
Gallery 5. Brief Five .....	157
Gallery 6. Brief Six .....	158
Gallery 7. Brief Seven .....	160

**Graphs**

Graph 1. ....	164
Graph 2. ....	164
Graph 3. ....	165

Graph 4. ....	165
Graph 5. ....	166
Graph 6. ....	167
Graph 7. ....	167
Graph 8. ....	168
Graph 9. ....	169
Graph 10. ....	169
Graph 11. ....	170
Graph 12. ....	171

- CHAPTER EIGHT -

**Figures**

Figure 1. Summary of location specific representation from Kenya within the Creative Waves 2007 - Visualising Issues in Pharmacy (VIP) project .....	186
Figure 2. Creative Waves 2007 - Visualising Issues in Pharmacy (VIP) promotional website <a href="http://creativewaves.omnium.net.au/vip/outline">http://creativewaves.omnium.net.au/vip/outline</a> .....	189
Figure 3. Creative Waves 2007: Visualising Issues in Pharmacy (VIP) map indicating global locations of the 200+ participants .....	191
Figure 4. Sixty pharmacy students divided into twelve working teams with allocation of team coordinators to assist and support the activities and discussions within each team.....	192
Figure 5. Sixty pharmacy students divided into twelve research teams with each team allocated to research one of the six Assigned Health Issues (AHI) .....	193
Figure 6. Sixty pharmacy students (yellow) divided into twelve research teams are joined in weeks 7 and 8 by sixty design students (blue) divided into twelve creative teams together with the team coordinators to discuss the project together .....	194
Figure 7. Omnium Software v4 (2007): – Secure Log-In page with Feature Gallery feature.....	196
Figure 8. Omnium Software v4 (2007): – Welcome page (introducing main navigation panel).....	196
Figure 9. Omnium Software v4 (2007): – News page with email and RSS functionality .....	197
Figure 10. Omnium Software v4 (2007): an Individual Profile page.....	198
Figure 11. Omnium Software v4 (2007): Discussion Forum .....	200
Figure 12. Omnium Software v4 (2007): Discussion Forum threaded message showing main message and image of author, together with quoted section of previous author.....	201
Figure 13. Omnium Software v4 (2007): Galleries preview page. The Creative Waves: VIP project contained twelve complete galleries of process work as well as images provided to help the project by invited Special Guests .....	202
Figure 14. Omnium Software v4 (2007): Galleries detail page showing highlighted administration access to file details, blow-up images, and ‘drag and drop’ arrangement.....	203
Figure 15. Omnium Software v4 (2007): Galleries image ‘blow-up’ page showing options for viewing associated written description and downloading original larger file.....	203
Figure 16. Omnium Software v4 (2007): Team areas include a three-choice navigation panel giving access to Other Teams; Team features; and People (members of teams) .....	204
Figure 17. Omnium Software v4 (2007): Team Notices area showing project conveners and team coordinators notifying individual teams of important news relating to their team .....	204
Figure 18. Omnium Software v4 (2007): a File Sharing area progressive production of a word document by varied participants within a working team over a period of time.....	206
Figure 19. Omnium Software v4 (2007) – Live Chat Rooms gave participants the opportunity to meet online in real-time either as individuals talking together or via pre-arranged team meetings .....	207
Figure 20. Omnium Software v4 (2007) - Time Information & Comparison feature enabled each participant to compare the time in their own location with any other participant worldwide .....	207
Figure 21. Omnium’s five-stage creative process model (third iteration) model including indicators of diverging phases (stages 1 & 2) and converging phases (stages 4 & 5) throughout the creative process .....	211
Figure 22. Diagram of the two cohorts (pharmacists and designers) in the Creative Waves: Visualising Issues in Pharmacy (VIP) project coming together to discuss the hand-over .....	218
Figure 23. Diagram of the two phases (pharmacy and design) of the Creative Waves: Visualising Issues in Pharmacy (VIP) project. Weeks 6 & 7 being the overlapping finish of the pharmacy phase and the start of the design phase .....	219
Figure 24. Diagram showing the 3 Super-Teams of design students and a team coordinator formed to tackle creative proposals for each of the identified design outcomes.....	222

## **Galleries**

Gallery 1. Photographs provided by George Onyango (photo 2) to illustrate particular points in his lecture and set the scene in general for project participants about life in Winam .....	187
Gallery 2. General Visual Campaigns for Health Related Issues .....	214
Gallery 3. Individually selected existing graphic campaigns relating to the assigned health issues .....	215
Gallery 4. Existing graphic public awareness campaigns relating to the assigned health issues and aimed specifically at either Kenyan or more general African audiences.....	215
Gallery 5. A selection of early individual visualisations produced by creative team members for design ideas that related to the six assigned health issues .....	220
Gallery 6. A gallery of professional work by Germany based professional graphic design, Nick Kapica .....	223
Gallery 7. selection of process works showing the progression of designs for the soccer uniforms from early suggestions through to final designs for production .....	225
Gallery 8. selection of process works showing the progression of designs for the information stickers from early suggestions through to final designs for production .....	226
Gallery 9. selection of process works showing the progression of designs for the children's game from early suggestions through to final designs for production .....	226
Gallery 10. Images showing the final soccer uniforms designs being implemented in the village of Winam in Kenya .....	229
Gallery 11. Images showing the final children's game designs being implemented in the village of Winam in Kenya .....	230
Gallery 12. Images showing some of many health awareness stickers being implemented in the village of Winam in Kenya.....	231

## **Graphs**

Graphs 1 & 2 .....	232
Graphs 3 & 4 .....	233
Graphs 5 & 6 .....	233
Graphs 7 & 8 .....	234
Graphs 9 & 10 .....	234
Graphs 11 & 12 .....	235
Graphs 13 & 14 .....	236
Graph 15 & 16.....	237
Graph 17 .....	237

## **- CHAPTER NINE -**

## **Figures**

Figure 1. Omnium's five-stage creative process model (fourth iteration) including the most recent revisions and additions: 'orientation' (stage one) and 'reflection' (stage five).....	242
Figure 2. Omnium's five-stage creative process model (fourth iteration) including indicators of a reiterative process, and showing divergent phases (stages 1 & 2) and convergent phases (stages 4 & 5) throughout the creative process.....	243
Figure 3. Graph showing favourable student responses to a question about Omnium Software (2007) .....	244
Figure 4. Omnium Software (2009) structural site map showing 'communal', 'individual user', 'team', and 'live' features.....	246
Figure 5. Screenshot: Welcome page giving brief description of project or course.....	247
Figure 6. Screenshot: News & Announcements page .....	248
Figure 7. Screenshot: Discussion Forum (sometimes referred to and named 'Message Board' area) .....	249
Figure 8. Screenshot: Image Galleries showing a variety of file-types .....	250
Figure 9. Screenshot: A detail from Image Galleries .....	250
Figure 10. Screenshot: The interactive Calendar.....	251
Figure 11 and 12. Screenshots: Lectures and enlarged image window.....	253
Figure 13. Screenshot: Assignments area (also sometimes known as Briefs).....	253
Figure 14. Screenshot: Resources area (also known sometimes as Course Information). .....	253
Figure 15. Screenshot: Links page.....	253
Figure 16. Screenshot: Student List.....	254
Figure 17. Screenshot: Teaching Staff List .....	254
Figure 18. Screenshot: Profile page.....	255
Figure 19. Screenshot: Portfolio area .....	255
Figure 20. Screenshot: Resources area .....	256

Figure 21. Screenshot: Team Lists .....	258
Figure 22. Screenshot: Team Notices.....	258
Figure 23. Screenshot: Member Profiles .....	258
Figure 24. Screenshot: Team Pin-Up Walls .....	258
Figure 25. Screenshot: Team File Sharing .....	258
Figure 26. Screenshot: Team Talk & Feedback .....	258
Figure 27. Screenshot: Time Information & Comparison feature .....	260
Figure 28. Screenshot: Users Online displays a list of which users are currently online .....	260
Figure 29. Screenshot: Chat Information .....	260
Figure 30. Screenshot: Live Chat area.....	260
Figure 31. Screenshot: Omnium Software (2009) Administration area .....	262

# *Drawing on the Virtual Collective:*

## *Exploring Online Collaborative Creativity*

---

### - INTRODUCTION -

---

## **O** *verview*

This thesis gives an account of ten years of experimentation and research into *online collaborative creativity*. It documents the background and educational context that led me to develop what is increasingly recognised as one of the most contemporary, comprehensive and successful online collaborative creative learning environments: *Omnium*.

*Omnium is a collaboration tool or system with which learners can post their creative designs and ideas and receive feedback from others. Not surprisingly, it is also being promoted as a platform for fostering human creativity. In terms of creativity, Omnium attempts to teach students the creative problem-solving process so that they can be creative in their designs as well as their everyday lives. Unlike the dreary aspects of most course management systems and virtual learning environments, the visuals embedded in Omnium are impressive and highly engaging.*<sup>1</sup>

- Curt J. Bonk

## **T** *he context of collaborative creativity*

*Collaboration* is increasingly recognised and respected within visual arts and design as an effective method for enhancing creative processes in contemporary professional, educational and social environments.<sup>2</sup> Such a paradigm not only

---

<sup>1</sup> Bonk, C.J. & Zhang, K. (2008) *Empowering Online Learning*, Jossey-Bass, San Francisco, p 129.

<sup>2</sup> Scrivener, S., Ball, L. & Woodcock, A. (eds.) (2000) 'Collaborative Design', *Proceedings of CoDesigning*, Springer-Verlag, London/Berlin/Heidelberg.

Candy, L. & Edmonds, E. (2004) *Creative Expertise and Collaborative Technology Design*, <http://research.it.uts.edu.au/creative/COSTART/pdfFiles/APCHI.pdf> (accessed 12/02/09).



challenges the traditional notion of *creativity* as an individual endeavour, but also raises questions about creative ownership, new forms of production, and how to curate and exhibit collaboratively produced art and design outcomes.<sup>3</sup> In addition, rapid development of personal computers and information communication technologies (ICT's) that are increasingly available at affordable prices, has opened an area of potential growth for innovative approaches to creative practice.

It was only recently, in the latter half of the 1980s, that American graphic design guru and writer, the late Paul Rand,<sup>4</sup> described the process of designing as predominantly a personal endeavour. The idea of sharing a creative process with others was deemed to be detrimental and denied an individual a sense of personal accomplishment:

*Designing is a personal activity and springs from the creative impulse of an individual - collaboration is more likely to hinder than enhance an individual designer's thought process.*<sup>5</sup>

- Paul Rand

However, less than a decade later, John Warwicker, co-founder of the highly acclaimed UK-based creative collective, *Tomato*,<sup>6</sup> was already arguing the opposite. According to Warwicker, society had begun to operate in a more globalised context:

*Politics, economies and society have changed ... We are now in a new period of connectivity, relativity and pluralism ... there is a changed sense of the individual, with increased ease in interaction and the value of individuality is now seen within a collaborative context.*<sup>7</sup>

- John Warwicker

I argue that both viewpoints were relevant and accurate within their relative contexts at the time. Their apparent polarity illustrates the extent and accelerated rate of change in methodologies used by visual artists and designers during a period that was symptomatic of the widespread introduction of personal computer and Internet

---

<sup>3</sup> Bollier, D. (2001) *Artists, Technology, and Ownership of Content*.  
[http://www.bollier.org/pdf/ATORreport\\_All.pdf](http://www.bollier.org/pdf/ATORreport_All.pdf) (accessed 12/02/09).

<sup>4</sup> Paul Rand biography - [www.paul-rand.com/biography.shtml](http://www.paul-rand.com/biography.shtml) (accessed 17/07/09)

<sup>5</sup> Rand, P. (1993) *Design, Form and Chaos*, Yale University, New Haven and London, p 46.

<sup>6</sup> Tomato website - <http://www.tomato.co.uk> (accessed 10/07/07)

<sup>7</sup> Warwicker, J. (1999) 'A Virtual City in a Global Square', *Eye*, Vol. 9, No. 34, pp 38-44.

technologies between the late 1980s and start of the 21<sup>st</sup> century.

The opposing viewpoints of Rand and Warwicker provide differing foundations upon which to build explanations for the rapid change in creative processes affecting two specific contexts in recent times: the work practices of modern, professional, creative industries *and* the pedagogical approaches to teaching and learning within education institutions. I have been closely involved with both contexts over the last decade and have witnessed significant changes.

For example, throughout the late 1990s and early 2000s I was working with a variety of commercial agencies within the *new media*<sup>8</sup> industry that experienced the hyper-accelerated growth of the dot.com boom in the latter half of the 1990s, and subsequent contraction as the dot.com bubble burst in 2000 and 2001.<sup>9</sup> In the wake of this, it was fascinating to observe the many ways that staff within a new breed of media companies adopted the latest computing and web technologies in order to work with collective ease across national and international boundaries. Equipped with these new resources, working files could be passed between numerous people who each contributed to, and ultimately produced, final collaborative outcomes.

In parallel to this, I observed changes in the way many educators worldwide (in a range of disciplines) increasingly chose to adopt the use of similar technologies concurrent with, and in some cases instead of, more traditional approaches to education. Subsequent tensions between the traditional and new pedagogical approaches have resulted in new sets of challenges and complexities facing both blended<sup>10</sup> and exclusively online education. An example of such a dilemma is how new technologies are apparently often used simply because they are available and not because they are necessarily appropriate. In many cases, these complexities remain unresolved and still require ongoing discussion and negotiation within online learning and teaching, today.

I argue that education, in particular higher education, did not adapt to the availability of new computer technologies with the comparative ease and speed of professional

---

<sup>8</sup> 'New Media' is a term meant to encompass the emergence of digital, computerised, or networked information and communication technologies in the later part of the 20th century - Flew, T. (2002), *New Media: An Introduction*, Oxford University Press, UK, p 13.

<sup>9</sup> Buckman, R. (2000) *Who Caused the Dot-Com Crash?* The Wall Street Journal, March 05 2000, <http://www.infopoint.com/articles/dotcomcrash.html> (accessed 12/02/09).

<sup>10</sup> Bonk, C. J. (2006) *The Handbook of Blended Learning*. Pfeiffer, San Francisco, pp 3-7.

creative industries. In instances where technology *was* embraced by universities and colleges, often they chose technology solutions that were inappropriate for learning and teaching purposes. There are a number of possible factors that caused this situation, such as: the older demographic of educators in comparison to the characteristically young staff in professional creative companies; the costs involved in equipping large educational institutions with the latest technologies; and a stubbornness on behalf of educators in not supporting technology-based learning and teaching as a viable and sustainable, pedagogical vision of the future.

In understanding the relationship between new computer technologies and changing creative practices, Warwicker emphasises that 'new technology is not about replacement but addition' and attributes this phenomenon to an 'increasing complexity' in the many things we do in our lives.<sup>11</sup> This view reinforces my belief in *online collaborative creativity* - that any new methods that exploit the potentials of computer and web-based technologies should not dismiss or replace traditional face-to-face practices, but, rather complement them.

Changes in the demands of a society rapidly becoming globalised due to ease of communication, access to sheer quantity of diverse content, and a subsequent blending of cultures, have in turn placed new demands on creative practices. I argue that the strength of these forces provide an explanation for the opposing views described by Rand and Warwicker within such a relatively short period of time.

This thesis uses both arguments as philosophical bookends to a discussion about the viability and value of collaboration as a contemporary methodology employed by today's visual artists and designers. More specifically, I shall compare progressive ideas and changing working processes of today's professional creative industries, with the current educational context for learning and teaching within visual arts and design. As designers, artists, educators and policy-makers, such a comparison has the potential to equip us with new frameworks and models that we can use to contribute constructively to contemporary debates, and further creative outcomes in both education and professional environments.

By observing distinct shifts in approaches to creative practice over the last two decades, emphasised by the diverse viewpoints of Rand and Warwicker, it is clear that *working collaboratively* is an important new dimension and consideration for

---

<sup>11</sup> Warwicker, J. (1999) 'A Virtual City in a Global Square', *Eye*, Vol. 9, No. 34, p 43.

today's artists and designers. It is also clear that a divide has formed between professional practice and education, in terms of the new and collaborative methodologies that professional creative industries are increasingly adopting in contrast to traditional and individual approaches to learning and teaching that visual arts and design education still embrace. If education wishes to re-align with professional practice, then strategies and technical issues must be researched to help bridge the divide.

However, despite numerous isolated examples of innovative practical pedagogical projects taking place worldwide, there are still no proposed working models or technical platforms that are specifically aimed at assisting visual practitioners to work collaboratively through creative processes. This deficiency hinders artists and designers who chose to work together and use information communication technologies (ICTs) to assist their collaboration, because they do not physically reside in the same location or have the same time availabilities.

The research described within this thesis, aims to prove that there *is* a strong demand for online collaborative creativity. Through formal research questionnaires, literature review, examination of past online creative projects and case-studies from significant global online creative studios I have produced and hosted through *Omnium*, I examine and offer solutions in response to the following hypothesis:

*I propose that provision of a creative-process model and a tailor-made software application for online collaborative creativity, for use within education settings and the broader professional art and design community, are both feasible and worthwhile. In addition, I believe that they are not only feasible and worthwhile but also needed and are increasingly demanded from stakeholders within both communities.*

The massive global impact of the Internet over the last decade has been described as the *third revolution* in mass communication,<sup>12</sup> following the development of the Roman alphabet during the second and third centuries AD and the invention, by Johannes Gutenberg, of the first printing press in 1440. Within the specific context of creative disciplines, the information technology revolution has created the potential

---

<sup>12</sup> Crum, R. (1998) *The 'Third Revolution' Michael Dertouzos is MIT's Internet Visionary*. Boston Business Journal, <http://boston.bizjournals.com/boston/stories/1998/11/30/story3.html> (accessed 12/07/08)

for distanced individuals to collaborate and share working processes that allow them to form creative alliances with people they may not normally meet. Such potential resides within the Internet and its capacity to remove physical, spatial, temporal and cultural boundaries.

Recent literature reiterates the difference in views between Rand and Warwicker and confirms that the creative process has undergone a transformation over the last decade, from a predominantly singular activity to one that more recently encourages a notion of *the collective*<sup>13</sup> and collaborative working processes.<sup>14</sup> However, such a notion remains difficult to achieve, when collaboration is required to take place between multiple and geographically distanced partners.<sup>15</sup>

The phenomenon of online collaboration, creative or otherwise, is a direct outcome of the hyper-accelerated innovation and growth in computing and communication technologies. Therefore, as a foundation for research, it is crucial to account for a new social environment that the Internet has formed and that has already become a key communication tool for much of the developed world, as well as a *normal* environment for contemporary students.

A clear example is the highly influential *Facebook* social network – a technology that has extremely poor navigation, visual aesthetic and useability, yet satisfies an overwhelming demand by millions of users to socialise by communicating with people they know, meeting new friends, sharing photographs and increasingly taking part in collaborative games and quizzes.

*Facebook*, and other similar social networks, show that widespread and global use of the Internet over the last decade is not a result of technological and hardware developments alone, it is also the formation of new social environments, and what these allow users to do that is equally as important. The many social communities and networks that the Internet has enabled has, in effect, created an *online world*. This means it is necessary to identify key characteristics of the new online world in order to understand its similarities and differences from our face-to-face world or physical

---

<sup>13</sup> Hargadon, A. & Bechky, B. (2006) 'When Collections of Creatives Become Creative Collectives: A Field Study of Problem Solving at Work', *Organization Science*, Vol. 17, No. 4, pp 484-500.

<sup>14</sup> Jones, J. C. (1992) *Design Methods*. John Wiley and Sons, New York. p xxxiii.

<sup>15</sup> Kvan, T. (2000) 'Collaborative Design: What is it?', *Automation in Construction*, Vol. 9, No. 4, pp 409-415.

reality. I suggest that in the formative years of the Internet, its identity and recognition as an additional *real-world*, with unique and specific qualities and behavioural characteristics formed by its users, were issues too often ignored by web-developers.

The Internet has in the past been commonly termed or labelled a *cyber* or *virtual* world. The term *virtual* implies that the Internet mimics or provides a visual and experiential replica of the physical world, in a similar way to that of virtual-reality games and other VR technologies. I argue that such terms do not encourage or establish the uniqueness of the Internet as a *real* space in its own right. The Internet is not a reproduction or a copy of the more physical world in which we live, rather it creates a totally new series of genuine user-experiences and visual languages.

This understanding is one agreed by Dictionary.com which states the adjective *virtual* as:

*Applied to things that really exist and are created or carried on by means of computers. Virtual conversations are conversations that take place over computer networks, and virtual communities are genuine social groups that assemble around the use of e-mail, web-pages, and other networked resources.*<sup>16</sup>

It is with this revised definition that I choose to include the term within the title of the thesis and so acknowledge that it represents a new and real space available to society to use in a variety of ways.

If indeed the Internet is the *new-world* network for communication and information exchange, then what impact might this have on creative practices that are traditionally recognised as personal, individual and reflective processes. How, does such a new and real *online-world* influence the process and development of *collaborative creative thought* and the production and effectiveness of creative concepts and outcomes?

At the core of this thesis is an examination of the viability, effectiveness and potential of the Internet to facilitate creative collaborations between artists and designers. However, I also explore new techniques and creative processes generated as a result of collaborating online, and how they reflect more broadly on the decisions facing educational bodies when revising curricula to include online components. Since the

---

<sup>16</sup> <http://dictionary.reference.com/browse/virtual> (accessed 17/05/09)

late 1990s higher education institutions worldwide have been jostling to form new and revised pedagogical approaches through *e-learning* programs, in the hope of enrolling more students, saving on physical infrastructures, and in turn hoping to reap immense economic benefits in the harsh and competitive environment of 21<sup>st</sup> century higher education.

During what I have often termed the ‘e-learning gold-rush,’<sup>17</sup> it was apparent that simply using an abundance of available technology within teaching was not enough to help students and teachers adapt to their new online surroundings. Technology must be integrated into curricula by considering purpose, aesthetic, usability, theory, sociology and ergonomics to help the transition. As a result, many early flexible delivery programs were ineffective, unpopular and very costly.

## *T*hesis focus, questions and outcomes

Conscious of early set-backs experienced by many institutions when first establishing e-learning programs, this thesis unfolds some of the challenges faced by those charged with the task of designing learning experiences and choosing technical interfaces for online education. I intend to demonstrate that in both educational and professional contexts, rather than seeing new creative processes eroding traditional ones, collaborative work undertaken online in creative ventures extends the physical face-to-face world and adds new options that are equally real, but were not so developed or understood at the time.

I focus on two main characteristics of the Internet: the social and interactive potential that it enables; and the technological foundation on which it is based. I argue that the second, unfortunately, has too often governed the first, and even today much of what we do using the Internet is affected or governed by technical limitations of the hardware itself, or by language and knowledge bases required to utilise them. Technology is too often the driver in determining what we are able to do using the Internet and this remains an ongoing challenge for programmers, information

---

<sup>17</sup> Bennett, R. & McIntyre, S. (2004) ‘Post the eLearning Goldrush: Encouraging Quality and Purpose in Online Art and Design Education’, *ACUADS Conference Proceedings*, Australian National University, Canberra,  
<http://omnium.net.au/research/papers> (accessed on 15/10/07)

architects, and graphic designers who endeavour to develop innovative, functional, yet user-friendly web-based software applications.

Overall, this thesis is concerned with investigating and describing approaches to achieving online creative collaboration which are feasible, effective and rewarding for those individuals who wish to work with others in any location, regardless of time, place or cultural differences. The research aims to ascertain how effective the Internet can be in promoting creative collaborations between artists and designers in the new millennium. It is particularly structured to provide examination of the following two questions:

- *Can new creative approaches and working processes be developed to assist artists and designers when collaborating online?*
- *What kind of web-based technical framework needs to be designed and implemented to best encourage such creative and collaborative interaction?*

The research findings aim to contribute to an understanding of the types of adaptations that have occurred, and are continuing to occur, to creative practice in both professional and educational contexts. The relationship between visual arts education and professional creative practice is, I argue, vital to maintaining a healthy progression in the overall quality and theoretical reflection of students engaged in the visual arts.<sup>18</sup>

In 1998, I began research investigations by forming a project that I titled *Omnium*. I chose the name of the project as the word *Omnium* was derived from a Latin term meaning all, everything or everybody. This seemed an apt title for a project that was fundamentally about collaboration and collaborative working approaches.

I have based my entire research over the last decade on a fundamental view that to design effective and worthwhile online creative projects, one needs to propose a framework from which to build. In 1999, I established *Omnium's* own research framework as being focussed on investigating a two-part framework that included an online technical system and an online creative process (Figure 1). I believed that if, over time, I could (a) produce a robust, secure and intuitive technical system, and (b)

---

<sup>18</sup> Prentice, R. (2000) 'The Place of Practical Knowledge in Research in Art and Design Education', *Teaching in Higher Education*, Vol. 5, No. 4, pp 521-534.

Bryce, M. (1996) 'Sleeping With Gropius: and Learning to be a Designer', *DIA National Conference On Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 1-10.



an online creative process that understood and reflected the stages one could follow when using the technical system, then I could determine whether online creative collaboration had, indeed, the potential to be a worthwhile and effective option.

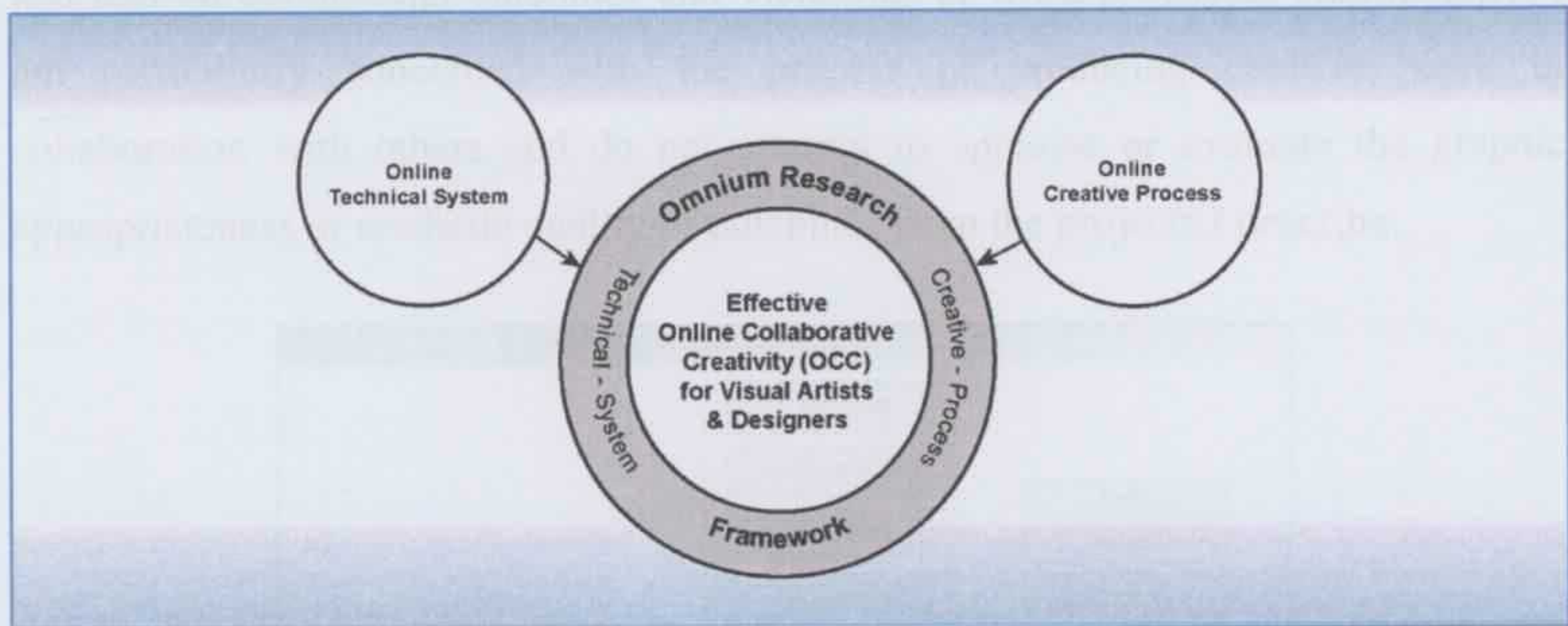


Figure 1 - Omnium's two-part research framework to encourage effective Online Collaborative Creativity includes an Online Creative Process and Online Technical System.

Throughout the thesis, I describe the reiterative process I undertook to develop *Omnium's Online Creative Process and Online Technical System*. The chapters not only describe theories, methods and models that previous researchers had proposed on a range of aspects that influenced and motivated my research, but also a series of online creative projects I offered which led me to adapt and revise my own proposed creative process and technical platform. Within the last Chapter, I offer a final proposal for *Omnium's* online technical system which today is available as fully serviced and free software product (Figure 2), as well as *Omnium's online creative process* which consists of a five-stage model for use when working online in creative projects in collaboration with others (Figure 3).

However, as a preface to any discussion surrounding creative processes, it is important to define the term *visual arts* and its usage in the subsequent chapters and case-studies of this thesis. The visual arts, as I understand them, relate and refer to studio-based art practices, as well as creative practices that occur within disciplines of design and architecture. The majority of the projects that I detail throughout the thesis, as part of my research, are based within the disciplines of graphic design and visual communication. Nevertheless, many of the creative processes that I explore are fundamentally the same as those followed within fine arts disciplines. My own influences are creative processes taught to me during my undergraduate study in Fine Arts, those I undertook as a professional working within the TV and Film industry

between 1985 and 1990, as well those I experienced working as an educator within art and design disciplines since 1993. I am particularly focused throughout my research on the theoretical, conceptual and experimental stages of a creative process and less on commercial outcomes and viabilities of work produced. Additionally, I am particularly concerned with the process of producing creative work in collaboration with others and do not attempt to appraise or evaluate the graphic appropriateness or aesthetic quality of outcomes from the projects I describe.

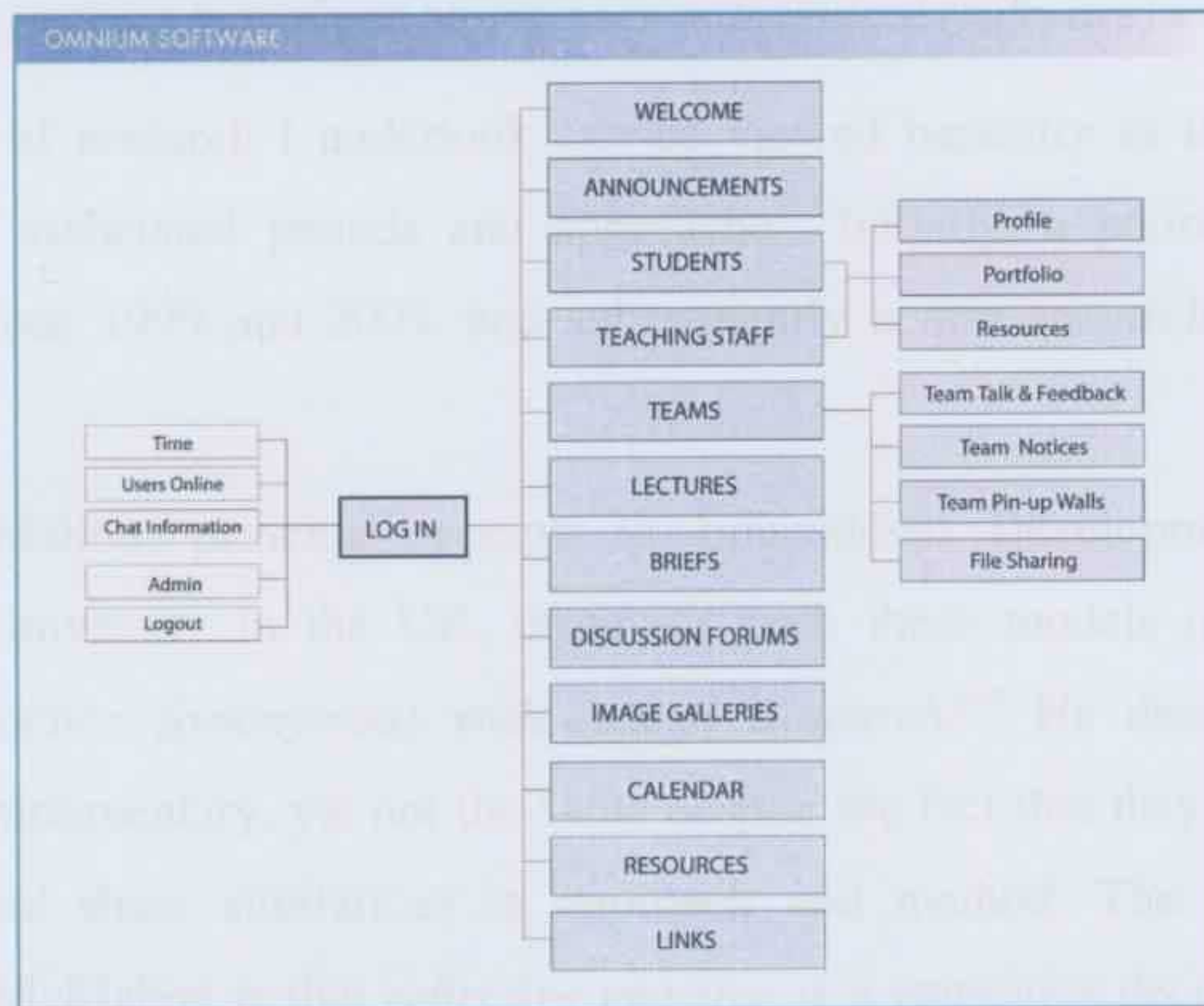


Figure 2 – Omnium Software (2009) structural site map showing ‘communal’, ‘individual user’, ‘team’, and ‘live’ features.



Figure 3 - Omnium’s five-stage creative process model (fourth iteration) including indicators of a reiterative process, and showing divergent phases (stages 1 & 2) and convergent phases (stages 4 & 5) throughout the creative process.

## *R*esearch methodology

Throughout this thesis I discuss my research between 1999 and 2009. It predominantly involves sequences and patterns of self-reflection and subsequent planning and action. I track the work I undertook over a decade by discussing and documenting theoretical and practical methodologies that informed the reiterative design of *Omnium's two-part research framework*; a framework including a *five-stage creative process model* and an *interactive technical (software) environment*.

The methods of research I undertook can be viewed basically as falling into two different, yet associated periods and approaches. Initially, a period of *reflective practice* between 1999 and 2004, and subsequently *action research* from 2004 to 2009.

Dr Tim McMahon, principal lecturer in Educational Development at Anglia Polytechnic University in the UK, discusses both these models in an article *Is Reflective Practice Synonymous with Action Research?*<sup>19</sup> He describes the two models as complimentary, yet not the same despite the fact that they are relevant to each other and share similarities in approach and method. The key difference according to McMahon is that *reflective practice* is a conscious decision to analyse one's own experiences in order to make immediate and on-the-spot changes in teaching and in turn student learning. *Action research*, however, involves a conscious effort to use findings from experiential reflection to make considered and strategic plans for future research that can be formally tested and acted upon.

Self-reflection on my own experiences, in terms of relating them to aspects of learning and teaching, played a vital role in helping me offer new approaches for art and design education through the formation of online communities. For example, initially I based the majority of my decisions on my own experiences of undertaking creative working processes across numerous disciplines; and my active involvement in collaborative processes which necessitated the use of then available technology and software.

In addition, I drew on my past face-to-face teaching experience and informal comments and suggestions of students that I taught in these classes. In terms of

---

<sup>19</sup> McMahon, T. (1999). 'Is reflective practice synonymous with action research?', *Educational Action Research*, Vol. 7, No. 1, pp 163-169.

developing my own face-to-face teaching practice, I had been influenced by the simplicity and clarity of explanations and discoveries made by Stephen D. Brookfield, professor of higher and adult education, in books such as *Understanding and Facilitating Adult Learning*<sup>20</sup> and *The Skillful Teacher*.<sup>21</sup> Both emphasised the importance of reflective practice and by surveying leading theorists of adult learning, Brookfield concluded that one opinion they all shared was the importance of recognising internal and personal influences and experiences.

During the 1980s, the importance of utilising one's own *experiences* in adult learning led Brookfield and other leading adult education theorists, such as Kolb<sup>22</sup> and Boud,<sup>23</sup> to develop criteria and models of what became termed *experiential learning*;<sup>24</sup> an approach to learning and teaching that is still widely respected and applied today. Their findings were based on earlier work undertaken by Professor Donald Schön who had earlier argued for the importance and value of realising and applying one's own experiences to educational practice.

In his seminal book; *The Reflective Practitioner*<sup>25</sup> Schön introduced the concept of *reflection-in-action*, also described as 'thinking on our feet', which involves looking immediately to one's own experiences, connecting with one's feelings, and attending to our theories in practical situations as they unfold.<sup>26</sup> I discuss Schön's *reflection-in-action* theory in more depth in Chapter Four, however, it is important to state that this process or methodology was fundamental to my own research in the earlier stages of developing *Omnium's two-part framework* for online collaborative creativity.

One particular quote from Schön's book *The Reflective Practitioner* acted as a foundation for my research and in some ways gave me the confidence to allow my own reflections and perceptions to act as a credible methodology to build my early

---

<sup>20</sup> Brookfield, S. D. (1986) *Understanding and Facilitating Adult Learning*, Open University Press, Milton Keynes, UK.

<sup>21</sup> Brookfield, S. D. (1990) *The Skillful Teacher*, Jossey Bass, San Francisco.

<sup>22</sup> Kolb, D. A. (1984) *Experiential Learning*, Prentice Hall, Englewood Cliffs.

<sup>23</sup> Boud, D. et al (eds.) (1985) *Reflection: Turning Experience Into Learning*, London, Kogan.

<sup>24</sup> Smith, M. K. (2001) *David A. Kolb on Experiential Learning*, The Encyclopedia of Informal Education, <http://www.infed.org/b-explrn.htm>. (accessed 15/09/09)

<sup>25</sup> Schön, D. A. (1983) *The Reflective Practitioner. How Professionals Think In Action*, Temple Smith, London.

<sup>26</sup> Smith, M. K. (2001) *Donald Schön: Learning, Reflection and Change*, The Encyclopedia of Informal Education, [www.infed.org/thinkers/et-schon.htm](http://www.infed.org/thinkers/et-schon.htm) (accessed 16/09/09).

research outcomes.

*“The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation.”*<sup>27</sup>

The main reason for aligning my early work with Schön’s *reflection-in-action* theory was because at the time there was little material from which to gain insights into developing online creative environments (apart from a selection of early virtual design studios – described in Chapter Four). Even more scarce, however, were readily available software applications designed to form online networks or communities, and certainly none that allowed the use of imagery and sharing of files for collaborative working processes. My own experiences and perceptions were therefore my main source of direction for the series of online creative studios I instigated between 1999 and 2004.

#### *Reflective practice (1999-2004)*

During the first five years of my research into online collaborative creativity I was able to apply a model of *reflective practice* (Figure 4) proposed by adult education theorists, such as Schön, Boud and Kolb, to my early online projects by determining what were potential strengths and weaknesses during each online studio and expand or reduce particular aspects before progressing to the next project. For example, during the first *Omnium* project in 1999, I was able to ascertain from student comments that the levels of social engagement were particularly high and valued, however, I also deduced that the lack of formal course content provided to students was an aspect I may need to pay particular attention to in future projects. In the following online creative studio I ran in 2002, a series of illustrated lectures were introduced which were aligned with the progressive stages of *Omnium’s five-stage creative process* as the project evolved.

---

<sup>27</sup> Schön, D. (1983) *The Reflective Practitioner. How Professionals Think In Action*, Temple Smith, London, p 68.

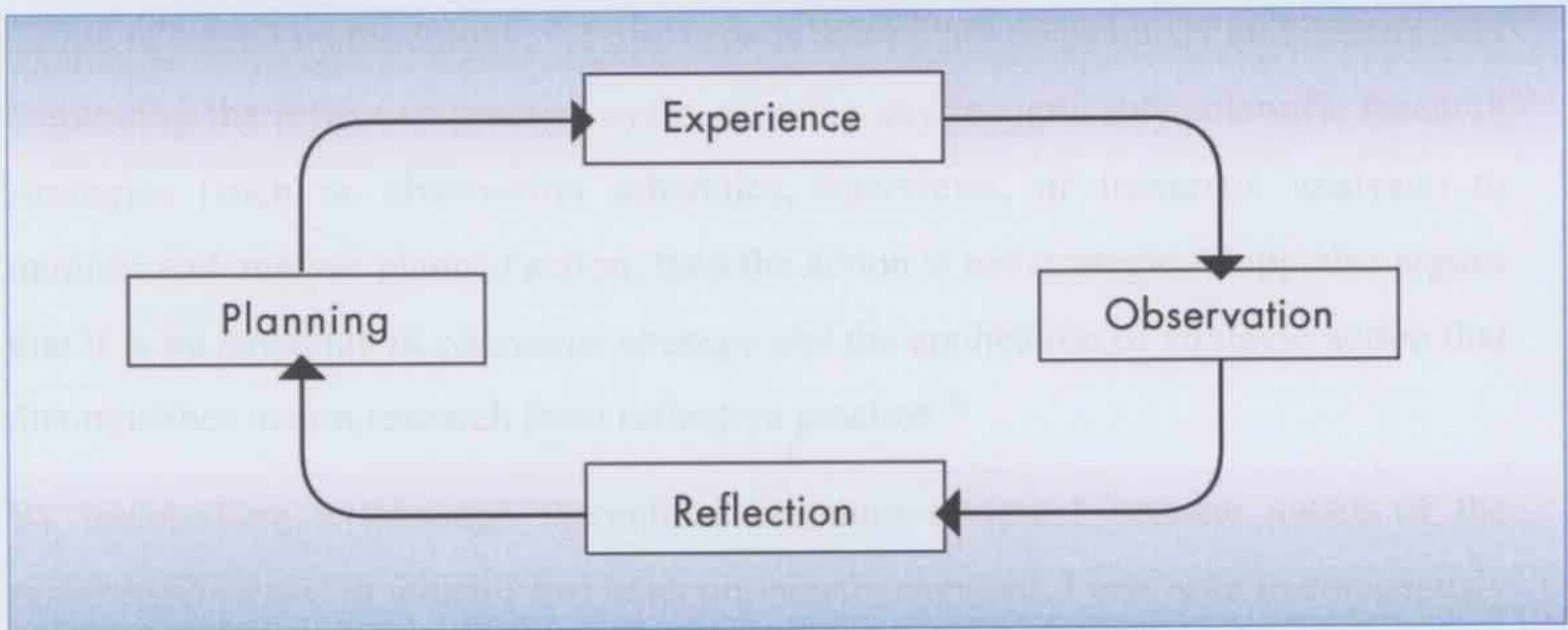


Figure 4 – Simplification of a Reflective Practice model suggested by Schon, Kolb and Boud.

In addition, I not only had to make decisions regarding the creative content and activity of each project as they took place, but also observe the technical environment that the participants were using. As technology improved, and more and more features became available, I also had to ascertain which technical features were useful and appropriate and which were a hindrance to the aims and objectives of a project.

Despite applying methods of what I later understood as *reflective practice*, I admit I based the majority of my early research studies on intuition, experience, common sense, informal student opinions, and more formal surveys such as the TOM questionnaire I issued in 1998 (see Chapter One). I also canvassed what had, and had not been successful in the limited number of previous virtual design studios that had been developed by other researchers in the field (see Chapter Four). Indeed, for the first five-year period I was, as Schön describes, in the main ‘thinking on my feet.’

#### *Action research (2004-2009)*

It was not until the research I undertook in the second half of the decade (2004-2009) as part of my Doctorate study that I consciously investigated theories to help me plan and develop more informed case-studies to develop *Omnium’s two part framework* for online collaborative creativity.

Previously, as noted, *reflective practice* and *action research* share many similarities and their cyclical processes overlap in approach and methodology. However, according to education theorist Dr David Tripp in his paper *Socially Critical Action Research* merely engaging in *reflective practice* and subconsciously following the cycle suggested by theorists Schön, Boud and Kolb does not equate to applying an

*action research* methodology.<sup>28</sup> Tripp argues that by not consciously and deliberately employing the reflective practice cycle, or using any recognisably scientific research strategies (such as observation schedules, interviews, or transcript analysis) to monitor and analyse planned action, then the action is *not* strategic. Tripp also argues that it is by engaging in *conscious strategy* and the application of strategic action that distinguishes action research from reflective practice.<sup>29</sup>

By undertaking a thorough theoretical literature review I became aware of the *reflective practice* in which I had been previously engaged. I was able to consciously draw upon the many findings and data I had collected from the online creative studios I offered between 1999 and 2004 and use them to plan the two subsequent *Creative Waves* online global studios that I hosted in 2005 and 2007 (see Chapters Six and Seven).

By being deliberately strategic, I was able to base my planning decisions for the structures of both *Creative Waves* online creative studios on results from student surveys, expressions of feedback from the hundreds of *Message Board* discussions that had emerged from my previous online studios, and analyse past online studios produced by other researchers in relation to theories suggested by education and visual arts theorists (see Chapter Four). In each case, I was able to revisit the processes, findings and creative outcomes of each online studio project I had previously produced to determine the potential strengths and weaknesses of the creative process and environment. I was also able to assess the ability and transparency of the technical platform (software) used by the participants who, in some cases, had little or no experience of working collaboratively online, or even navigating computer software.

Both *Creative Waves* studios benefited from consciously applying an *action research* methodology and model<sup>30</sup> proposed by Professor of Education, Stephen Kemmis from Deakin University, Australia, that involved cyclical stages of planning, acting, monitoring, evaluating and revising (Figure 5).

---

<sup>28</sup> Tripp, D. H. (1990) 'Socially Critical Action Research', *Theory into Practice*, Vol. 29, No. 3, pp 158-165.

<sup>29</sup> Ashcroft, K. & Foreman-Peck, L. (1994) *Managing Teaching and Learning in Further and Higher Education*, Falmer, London.

<sup>30</sup> Kemmis, S. (1983) 'Action Research', in Anderson D. S. & Blakers, C. (eds.), *Youth, Transition and Social Research*, Australian National University, Canberra.

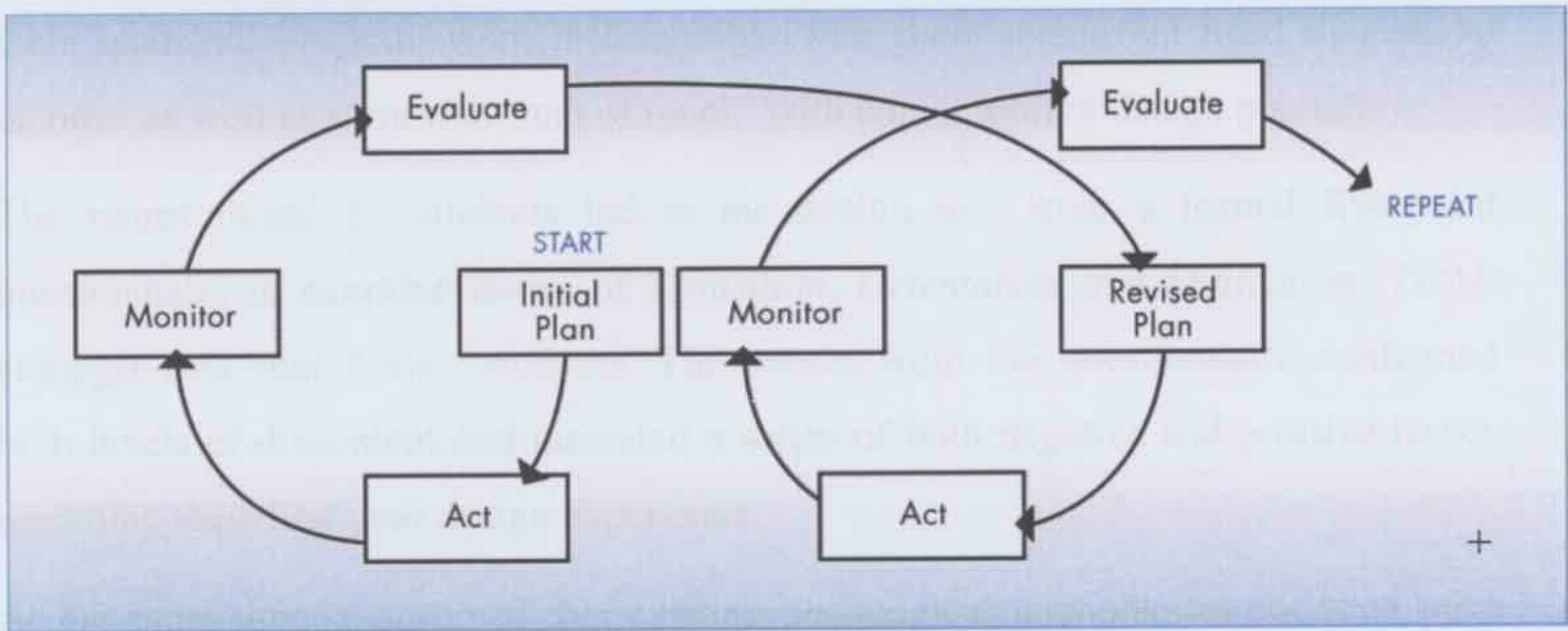


Figure 5 – Action Research model proposed by Kemmis (1983)

The repetitive spiral that Kemmis portrayed in his model for action research aligned perfectly with the reiterative process I undertook in planning and developing both *Omnium's five stage creative process* and *software platform* used in both *Creative Waves* projects in 2005 and 2007 (see Chapters Six and Seven). Indeed, although my own research applied approaches of both *self-reflection* and *action research*, it was the consciousness and rigor of the latter years of research that differentiated the two periods of my work. It was between 2004 and 2009 that I was able to achieve the depth and scale of creative aims and technical proficiency that are now evident in recent *Omnium* projects.

## *T*hesis structure

The thesis documents theoretical and practical influences that have informed the reiterative design of *Omnium's* two-part research framework; a framework that includes a *five-stage creative process model*, and a *technical infrastructure* that in combination encourage and enable *online collaborative creativity* for artists and designers. The nine chapters discuss the following issues:

*Chapter One - Recognising a need for change: discontent in the student cohort* – outlines the first research I undertook, in 1998, which initially led me to develop what I perceived was a much needed new methodology and practice for visual arts education. Informal conversations I had with students at the College of Fine Arts (UNSW), alerted me to an apparent student dissatisfaction with traditional methods of design education. The student comments expressed concern that the demands of



their academic program were incompatible with their concurrent need to earn an income, as well as somewhat 'out of touch' with contemporary design practice.

The issues raised by students led to me design and issue a formal five-point questionnaire to examine issues of *Transition, Orientation and Motivation (TOM)* amongst first-year design students. The results from the questionnaire confirmed high levels of discontent and indicated a series of both negative and positive issues regarding their first year design experience.

At the same time, I observed that existing pedagogical methods did not keep pace with changes that were occurring in professional creative working environments, particularly those emerging in areas of 'new media' and visual communication at the end of the 1990s. The education context was seemingly constrained by traditional methodologies and academic culture and slow to adopt new trends. Whereas, professional contexts were embracing collaborative working processes and rapidly adapting to, and benefiting from, new information and computer technologies.

The data I gathered from the *TOM* survey formed the basis for the first exclusively online collaborative and creative project that I conceived, produced and hosted, in 1999. The project was titled; *Om'nium: Virtual Design Studio [vds] '99* and offered collaborative and technology assisted learning and teaching methods to art and design students in 11 countries around the world. It was my first response to what I perceived was a need to align education in design with emerging collaborative practices in professional creative practice.

*Chapter Two - Responding to the need for change: Omnium's inaugural online design studio* – clarifies the way professional creative practitioners, in the late 1990s, were moving away from individual working methods (described by Paul Rand) to those of a more collaborative nature (described by John Warwicker), particularly in disciplines of new media, visual communication and graphic design. The chapter also refers to theorists who acknowledge *creative collaboration* as being the main challenge in the design process following the introduction of personal computerisation. However, in 1999, when the first *Omnium* project took place, there were no process models to structure online creative projects, and certainly no technical platforms, or software, available to use for online creative interaction.

The account of the first *Omnium* online design studio introduces the two key components of *Omnium's* two-part *research framework for online collaborative*

*creativity: a five-stage creative process model* and a tailor-made *technical platform*, which were trialed in the first *Omnium* online design studio project.

*Chapter Three – Reflections on collaborative culture: education and professional practice* – details the further research I undertook to examine the rise of a collaborative culture and the extent of its impact on art and design education. Again, in reference to Warwicker's claims that we exist in a global society that has pluralist needs, I wanted to know how art and design curricula were responding to this shift. And if collaborative approaches to working creatively were increasingly evident in professional creative activities, were these being reflected in art and design colleges' curricula?

To find out, I co-designed a second research questionnaire which was issued to over 500 design students in colleges around Sydney, to gauge the level of 'collaborative coursework' that they undertook within their formal studies. The findings reported that the majority of students surveyed felt too much emphasis was placed on singular, competitive achievement, as opposed to working effectively in collaboration with others. Pluralist demands of 'an inter-connected and increasingly global society' appeared to be primarily addressed through individual responses. If a strong and interdependent cycle of support between education and professional practice was to be maintained, to aid the ongoing development and richness of the broader art and design discipline, then the evidence was clear that visual arts and design education and professional creative practice were becoming dislocated and estranged. Whether *online collaborative creativity* could offer effective, valuable and additional options to existing curricula, in order to prepare students for their professional careers, needed to be further explored.

I needed to examine the traditional design studio, and its relationship to existing online (virtual) design studio initiatives, to inform strategies for future *Omnium* projects and the development of its creative process model and technical structure.

*Chapter Four – Rethinking studio practice: from the traditional to the virtual* - compares traditional studio models of teaching and learning with new virtual design studios that were becoming more prevalent between the late 1990s and the early years of the new millennium. It compares the views of two leading theorists, Professor Donald Schön and Professor Thomas Kvan, who were instrumental in analysing characteristics of interaction and approaches within traditional design

studios and more modern computer assisted and networked learning environments. A discussion about early online creative studios within education contexts illustrates how these informed the creative and technical structure of online creative studios that from 2005 onwards, I produced and hosted through my *Omnium Research Group*.

*Chapter Five – Reviewing academic culture: myths and opinions about online learning* - analyses the academic setting for new approaches for visual arts education, both in Australia and internationally. As I was about to embark on a series of extensive new online creative initiatives, it was important to realise and understand the educational context in which they would be embedded.

The Chapter describes some problems, in terms of recognition and understanding, for e-learning ventures that were evident in academia since the start of the new century. Most certainly, there existed some strong negative opinions about e-learning and some interesting myths had formed that did nothing to accelerate online learning and teaching as a recommended option within universities and colleges. Did such negative opinions and myths create pedagogical tensions that affected the way students learned and interacted with their university of college courses and programs? What were the factors that lead to such negativity amongst academics and how could these be overcome?

Efforts to improve the student experience and a more sustained focus on revised pedagogical methods saw the establishment of units and departments in many institutions to administer online learning programs. I describe this as the ‘e-learning goldrush’ in reference to the first decade of online education, that in the majority of cases saw poor standards of delivery and student experience. However, these were countered by the establishment of e-learning specialist departments in what was a more favourable and successful ‘second developmental wave’ for online education.

The production of *Omnium’s* creative process model and technical infrastructure have been ongoing developments and involved a reiterative process based on theoretical review and extensive practical experimentation. It has been important to work in such a way to improve *Omnium’s* two-part research framework and respond to constantly shifting landscapes in regard to many issues described in the first five chapters of the thesis.

*Chapter Six: Researching creative processes: revisions to Omnium’s five-stage model* – gives an account of revisions to *Omnium five-stage creative process model*

that would be used to structure a major *Omnium* project planned for 2005. Until 2004, it was only the experience of using *Omnium's creative process model* within the initial *Omnium: [vds] '99* project, and a series of subsequent smaller scale projects, that informed minor revisions.

Within this chapter, I identify two publications in particular that were most useful and influential in the further development and revision of *Omnium's five-stage creative process model*. *Creativity: Flow and the Psychology of Discovery and Invention*<sup>31</sup> and *The Creativity Question*.<sup>32</sup> Both extensively discuss issues relating to 'creativity' and were highly informative in confirming ideas I had already established, as well as revisions I was to later make. In addition, I reference an important model from the field of online education, devised by one of the pioneers of e-learning, Professor Gilly Salmon. Her insight into online education learning and teaching processes was influential in the decisions I made in revising *Omnium's* creative process model specifically for educational purposes.

#### *Chapters Seven and Eight (Case Studies)*

The Case-Studies are two significant online art and design projects that I produced and hosted through *Omnium* in 2005 and 2007. They formed the initial projects in a series titled: *Creative Waves*, and further explored in detail, issues concerning *online collaborative creativity* by linking hundreds of international students, teachers, professional practitioners and specially invited luminaries to collaborate in creative projects. As such, these Chapters are an account of the ongoing development and formation of *Omnium's five-stage creative process model* and *technical platform*.

Both Chapters give a full account of the activities within each project and the creative outcomes that resulted stage-by-stage throughout the events. Detailed student evaluations of both projects are included to show the responses of hundreds of participants who took part from over 40 countries. By detailing the two projects, as case-studies, it is intended that other researchers and teachers can gain insights into the formation of online creative studios and how to successfully engage a cohort of participants from varying backgrounds, cultures and locations. The two projects conclude the first decade of my research into *online collaborative creativity*.

---

<sup>31</sup> Csikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perennial, New York.

<sup>32</sup> Rothenberg, A. & Hausman, C. R., (eds) (1976) *The Creative Question*, Duke University Press, Durham, North Carolina, USA.

*Chapter Nine: Realising online collaborative creativity: Omnium today* – is the final chapter of the thesis and brings the progress and development of the *Omnium's* two-part research framework up to date. Following completion of the second *Creative Waves* project, in 2007, *Omnium's five-stage creative process model* and the *Omnium Software* platform underwent significant revision in 2008 and 2009.

The first revision related to the issue of student 'orientation' that I had been fascinated and interested in since the *TOM* survey in 1998. When working exclusively online, the early stages of a collaborative creative project are vital in terms of participants becoming comfortable and confident with the other people taking part *and* the technical environment that is used to support the activities.

The second revision concerned the final stages of the process model and activities that conclude an online creative project. Again, the revision refers back to issues I had been considering for several years and in particular the formal revision was influenced by the 'verification' and 'revision' stages of the creative process offered by theorists Graham Wallas (1926) and Catherine Patrick (1937) that were highlighted in Chapter Six.

In 2007, *Omnium* officially registered its code-base as a software product for collaborative learning and was granted an Australian trademark. Between 2007 and 2009, the *Omnium® Software* application was completely re-programmed to adopt a modular structure that would allow it to become scalable for external clients and offered as both hosted and open-source options.

The 'technical architecture' and each of the features of the *Omnium Software* (2009) version, as well as a fully revised 'back-end' administration area, now allows users to manage their own projects and determine the functionality and appearance of their own interface, as well as grant access (or not) to the variety of features available to those involved in a project. I argue that no other software is currently available which allows such freedom, flexibility and simplicity in displaying visual, sound and movie files. *Omnium's* many features, that enable online studio practice or learning and teaching activities to take place, can not be found in any other software package. Indeed, the uniqueness of the software is that it collects otherwise dispersed features needed for *online collaborative creativity*, especially in an e-learning context, into one coherent and easy-to-use interface.

It is the two outcomes, *Omnium five-stage creative process model* and the latest *Omnium Software (2009)* version, that conclude the thesis and are solutions for others who wish to engage in online creative projects: in particular, those who believe that collaborative working processes that computer technologies enable, are an important aspect of contemporary practice and crucial for the future in both professional and educational contexts.

*Conclusion* - The thesis responds to the hypothesis by providing refined proposals for *Omnium's five-stage creative process model* and the *Omnium Software* technical platform. Through use and formal evaluation they prove to be both feasible and effective. They are presented to help visual artists and designers, anywhere in the world, join together in effective and worthwhile online and creative interaction and collaboration.

In many ways this thesis tells a story; a 'story' about my initial interest and investigation into online creative collaboration from 1998, to the current development of *Omnium* as a creative process structure, a technical platform, and a research group made up of academics, designers, artists, writers and programmers. It was in 2004, that I realised I wanted to reflect on those beginnings and track future developments in a thesis. I also wanted to delve deeper into some earlier contexts and issues that I encountered in trying to establish an online studio, as well as formally research the creative process that I had initially implemented through 'hunch', observation and experimentation.

The thesis also tells the 'story' of the shift from individual creative practices defined by Paul Rand, to collaborative methodologies outlined by John Warwicker. Communication technology, and the alternative spaces and features it offers for collaboration (creative or otherwise) are now commonplace to students and professional practitioners and are symptomatic of our globalised culture in which geographical location is no longer a hindrance to common enterprises.

---

---

- CHAPTER ONE -  
RECOGNISING A NEED FOR CHANGE:  
DISCONTENT IN THE STUDENT COHORT

---

## *O*verview

I began my university teaching career in 1993 and within three years was appointed first-year coordinator of the Bachelor of Design (UNSW) program - a position and responsibility I held for four years. Throughout this period I worked in close collaboration with colleagues who were also involved with the first-year design program and together we revised and re-wrote the core *Design Studio* and *Design Seminar* courses. Our intention was to align the aims, objectives, content and assessment of the *Studio* and *Seminar* courses with supporting theoretical, practical and workshop curricula.

As coordinator of the first-year *Design Studio* and *Design Seminar* courses, I was in close proximity to the entire first-year cohort of undergraduate students (which during the mid to late 1990s enrolled approximately 120 students each year). It was through many informal discussions and listening to students talk about their experiences of the program that I began to notice an obvious desire for new options in the way the curriculum was structured and offered.

I was particularly interested to explore the reasons for such requests. I wanted to investigate attrition rates amongst first-years, issues that caused students to consider whether they had chosen the right program to study, and the extent to which they considered discontinuing their degree program. Was there really a need to rethink the way visual arts curricula were offered? If so, in what way could such new programs be structured?

Widespread interest in the growth of *New Media*<sup>33</sup>, which was fast shaping-up as a new discipline within the visual arts in 1998, was clearly reflected in discussions with students in our classrooms. This was apparent in the types of literature, magazines

---

<sup>33</sup> *New Media* has been defined as a family of creative genres that involve digital media - [http://newmedia.engl.iastate.edu/about/what\\_is\\_new\\_media](http://newmedia.engl.iastate.edu/about/what_is_new_media) (accessed 10/05/09)

and websites students were reading/browsing and the levels of attendance, by both students and professional designers, at major conferences such as IdN's *Fresh Conferences* between 2001 and 2002.<sup>34</sup>

The IdN *Fresh Conferences* were important and significant events of the time. They brought together a new breed of designers who worked with software designed specifically for the production of web content – in particular content that used Macromedia's *Flash*<sup>35</sup> application (since taken over by creative software giants Adobe). The speakers at the conferences, recognised as some of the world's most cutting-edge web designers, were rapidly gaining 'pop-star' status amongst a young generation of student and professional designers. In the majority of instances, the speakers who gave plenary addresses at the *Fresh Conferences* were billed on the conference program under their company's name or website and not their own names<sup>36</sup>. This was in striking contrast to the individual recognition of earlier generations of designers - such as those who were prominent in the time of Paul Rand's professional fame (see Introduction). This point alone emphasises the move to increased collaborative practice amongst professional design industries from more individual approaches adopted previously.

Over 30 speakers who presented throughout the three *Fresh Conferences* (Hong Kong 2001, Sydney 2001, and Singapore 2002) gave verbal and visual descriptions of their experimental programming and creative work using the Macromedia *Flash* software. The talks and demonstrations given at the three conferences undoubtedly inspired a generation of young designers to produce innovative content for the web and have been instrumental in web content development to this day.

I was honoured to be invited by the IdN *Fresh Conference* organisers to chair final summary sessions at each of the three events, as well as conduct recorded interviews

---

<sup>34</sup> IdN Fresh Conferences - Over a period of eighteen months between, 2001 and 2002, three Fresh Conferences were produced and hosted by IdN Magazine (International designers Network) in Hong Kong, Sydney and Singapore. Each attracted a predominantly young student and professional audience of over 3000 people.

<sup>35</sup> Macromedia *Flash* (now owned by Adobe) is a multimedia software application popular for adding animation and interactivity to web pages.

<sup>36</sup> These included: *Tomato Interactive* (represented by Tom Roope and Joel Baumann), *Futurefarmers.com* (represented by Amy Franceschini and Josh Ong), *Praystation.com* (represented by Joshua Davies), *Wireframe.com* (represented by Andreas Odendaal) and *Yugop.com* (represented by Yugo Nakamura).



with each of the speakers for a DVD production.<sup>37</sup> Such close involvement with the leading international New Media designers of the time gave me unparalleled opportunity to witness first-hand what was clearly becoming a change in creative practice through widespread use of new web technologies.

What I observed from this experience were several factors that I considered key to explaining why working processes were changing within professional practice and in particular 'new media' design agencies. These included:

- A new breed of professional creative companies that were more commonly made up of young staff (under 30) including the founders and directors of the companies.
- Staff within these new companies had no trouble adjusting to the rapidly changing computer technologies and software choices. In fact, many of the major creative software companies (such as Adobe and Macromedia) were being advised or having their software code written by employees within these companies.
- Professional creative projects were increasingly worked on by teams of contributors in collaboration: art directors, designers, illustrators, sound artists and programmers.
- A growth in companies who were establishing satellite offices in various locations around the world - made possible by vast wealth and resources within the industry.
- Companies with multiple international offices/studios often utilised their diverse worldwide locations and staff by using the Internet to transfer files, hold discussions (synchronous and asynchronous) and maximise the amount of input to a project over a 24 hour period.

From these observations, it appeared that there was a distinct *dislocation* forming between visual arts education and professional creative practice. Visual Arts education was still offered in traditional and often non-digital terms, through individual projects that included little or no collaborative opportunities. In addition,

---

<sup>37</sup> IdN Fresh Conference (Hong Kong) DVD Package (2000) *12 Interviews with International Flash Designers*, Systems Design Ltd, Hong Kong.

Courses were often supervised by staff who were unwilling, or even refused, to accept new computing technologies and the possibilities they held. Professional practice, on the other hand, worked far more collaboratively and used technology seamlessly and across many geographic, time and cultural boundaries. It was apparent to me that the time to investigate change in art and design education had arrived.

I believe that one of the primary responsibilities of educators is to prepare students for professional life after university and this meant that students needed to be equipped to work in the new ways that were becoming evident within professional practice.

These concerns were the basis of the research project I undertook to complete my Master in Higher Education degree: *Transition, Orientation and Motivation (TOM): Identifying Individual and Institutional Factors That Affect Successful Orientation and Adjustment of Design Students Entering Tertiary Education*.

My aim was to identify causes of anxiety experienced by first-year undergraduate design students that may lead to alienation, disenchantment and an ultimate wish to withdraw from their studies. I believed that, in addition, it may also identify factors that would explain the growing dislocation between education and the new ways professionals accommodated the widespread introduction and benefits of using computer technologies.

Over a period of one academic year (1997/98), I talked to individual design students, via structured and recorded interviews, as well as issuing a formal *Transition, Orientation and Motivation (TOM)* questionnaire. The survey questions asked about students' transition from secondary school to tertiary (university) education. How, for example, did they settle into their new design program? Could they identify issues, both *institutional* and *individual*, that affected their motivation to study?<sup>38</sup>

Before starting my investigations and forming the *TOM* survey, I researched existing educational theories to identify reasons and causes that explained why students generally experience difficulties adjusting to first year in higher education.<sup>39</sup>

---

<sup>38</sup> Bennett, R. (1998) 'Transition, Orientation & Motivation: Identifying Individual and Institutional Factors That Affect the Successful Orientation and Adjustment of Design Students Entering Tertiary Education', *First Year in Higher Education Conference Proceedings*, Vol. 1, Chapter 34, Auckland Institute of Technology (AIT).

<sup>39</sup> McInnis, C., James, R. & McNaught, C. (1995) *First Year on Campus: Diversity in the Initial Experiences of Australian Undergraduates*, Australian Government Publishing Service, Canberra.

I also researched theories of *transition* within society and discovered some interesting references within the field of anthropology. By far the most interesting, appropriate, and influential theory I found, that indirectly relates to students making their transition from school to higher education, was offered by the Dutch anthropologist, Arnold van Gennep (1873-1957).<sup>40</sup> He discussed the ascendancy of individuals from youth to adult status across varying societies and cultures and examined mechanisms that can promote social stability during times of change. Of particular importance and influence to me was his study of *rites of membership* in tribal African societies. Van Gennep divided rites of passage into three stages: *separation, transition* and *incorporation*.

*Separation* is described as a period characterised by a marked decline in association and interaction with members of the group that the individual has left. *Transition* is described as the period when an individual begins to interact and socialise with people associated with the new setting, as well as learning, understanding and comprehending the expectations of the new environment. Finally, *incorporation* involves gaining competencies that enable the individual to become a participant within a new group or setting and may include levels of responsibility and even awards or rewards to establish full membership. Van Gennep also notes that inclusion within any new group does not necessarily disallow any involvement with the previous social environment but interaction is from a new perspective.

There are many questions about a student's education experience that are prompted by Van Gennep's work and subsequent interpretations by theorists who have used Van Gennep's *rites of membership* to analyse changes faced by students in their move to first year studies at university.<sup>41</sup>

Do students who travel significant distances to and from college, because they prefer, decide, or are forced to remain in their previous environment, suffer compared to those who relocate and reside relatively close to the institution (the new environment)? Is there a correlation between students' academic performance and the level of disassociation between their former lives and their new lives?

The change from school to higher education is reported to include a change from

---

<sup>40</sup> Van Gennep, A. (1909) *The Rites of Passage*, trans. Vizedon, M. B. & Caffee, G. L. (1960), The University of Chicago Press, Chicago, p 11.

<sup>41</sup> Tinto, V. (1988) 'Stages of Student Departure: Reflections on the Longitudinal Character of Student Leaving', *Journal of Higher Education*, Vol. 59, No. 4, p 4.

relatively ordered, externally prescribed and monitored programs to those dependant upon self-motivation and self-discipline.<sup>42</sup> If this is the case, then issues of time-management and self-directed learning are often thrust upon the new student for the first time. These factors can cause immense problems for new students when other issues of transition are also concurrently being experienced. Researchers at UNSW's Faculty of the Built Environment (Department of Architecture) describe two stages in academic transition: *primary* transition is to university as a whole and *secondary* transition is into more specific disciplines.<sup>43</sup>

First-year study at university is a meeting-point for the curricula of schools, higher education preparatory courses and universities. The First Year Experience Questionnaire (FYEQ) in the publication *First Year on Campus*<sup>44</sup> was a valuable source of reference for my own research in the five-point *TOM* survey. When questioning students about preparation for the academic content of university courses, it reports about a third of students fail to see adequate preparation provided by schools.<sup>45</sup> Again, referring to Van Gennep's *Rights of Passage*<sup>46</sup> and in particular the transition theory, he states that structured mechanisms are needed to help the individual depart from the previous and assimilate with the new. In the case of universities this is most commonly recognised through orientation activities. Most universities now offer activities such as Orientation Day/Week or Freshers' Functions. But given that students need to adjust to academic demands at university, as well as social integration regarding the institution and it's society, how well do university's orientation activities address both these needs?

Oldham argues that an institution having accepted a student for enrolment has a moral and contractual responsibility to do all that is reasonable to ensure that he or

---

<sup>42</sup> Robey, M., von Kinsky, B. R., Ivins, J., Gribble, S. J. & Cooper, D. (2006) 'Student Self-Motivation: Lessons Learned from Teaching First Year Computing', *Proceedings of the Frontiers in Education Conference, 36th Annual Frontiers in Education Conference*, San Diego, pp 1-2.

<sup>43</sup> Quinlan, A., Murray, P. & Merton, M. (1995) 'Facilitating First Year Students Transition Into University and Disciplinary Cultures', in Hewson, L. & Toohey, S. (eds.), *UNSW Education '95 Conference Proceedings*, The University of New South Wales, Sydney.

<sup>44</sup> McInness, C., James, R. & McNaught, C. (1995) *First Year on Campus: Diversity in the Initial Experiences of Australian Undergraduates*, Australian Government Publishing Service, Canberra, p 20.

<sup>45</sup> Pascarella, E. T. & Terenzini, P. T. (1980) 'Predicting Freshman Persistence and Voluntary Dropout Decisions from a Theoretical Model', *Journal of Higher Education*, Vol. 51, No. 1, p 1.

<sup>46</sup> Van Gennep, A. (1909) *The Rites of Passage*, trans. Vizedon, M. B. & Caffee, G. L. (1960), The University of Chicago Press, Chicago, p 11.

she reaches the required standards for success.<sup>47</sup> However, in many programs new or less experienced academic staff is asked to teach in the first-year of a program because it is considered a lower level of study. This was certainly the case in the Bachelor of Design (UNSW) when I began my own teaching career in 1993. The courses that I initially taught, as an inexperienced teacher, were at first-year level. Frequently, there is a hierarchical association regarding teaching allocations within academic programs that sees senior staff being timetabled to teach senior students. This rationale can be challenged by arguing that the first impact of any new experience is generally recognised as a vital influence on subsequent events and therefore should be associated with more experienced teaching staff.<sup>48</sup> This is an approach I initiated when coordinating the first-year *Design Studio* course in the Bachelor of Design from 1996-2000 in which all six studio leaders were senior staff who had support from more junior (and often younger) tutors and workshop leaders.

A particularly frightening experience for any individual student is a feeling of insecurity or alienation in their study.<sup>49</sup> There may well be instances throughout the duration of a course or program where a student questions their commitment or sense of belonging, and to experience this feeling from the outset – with no mechanisms to help alleviate such anxiety – is detrimental and can lead to early resignation.<sup>50</sup>

It has been claimed that despite organising orientation programs, institutions still do far too little for their first year students in terms of making them feel settled. In general, it has been argued, that the *rites of passage* for a student entering higher education are typically managed by ignoring them.<sup>51</sup> Where orientation programs *are* in place, then their aims and subsequent competence should be examined. One and two-day orientation programs have been typically described as places to acquaint students with the administrative regulations and expected behaviours of the institution. However, it seems that pre-semester orientation activities often fail to

---

<sup>47</sup> Oldham, B. (1988) 'The First Year: Make or Break Year', *Journal of Further and Higher Education*, Vol. 12, No. 2, pp 5-11.

<sup>48</sup> Ibid. p 7.

<sup>49</sup> Williams, C. (1982) *The Early Experiences of Students On Australian University Campuses*, University of Sydney, Sydney.

<sup>50</sup> Hoffman, M., Richmond, J., Morrow, J. & Salomone, K. (2002) 'Investigating Sense Of Belonging in First-Year College Students', *Journal of College Student Retention: Research, Theory and Practice*, Vol. 4, No. 3, pp 227-256.

<sup>51</sup> Oldham, B.E. (1988) 'The First Year: Make or Break Year', *Journal of Further and Higher Education*, Vol. 12, No. 2, p 6.

equip students with preparatory information regarding the content and requirements of academic components of courses.<sup>52</sup> Programs that *are* in place to help student orientation into whole programs and individual courses have been classified into three different types of orientation mechanisms; *compensatory, foundation and enrichment* programs.<sup>53</sup>

- *Compensatory* programs attend to *deficiencies* of students entering particular subjects that may generally lack the skills and techniques required for study. They are essentially remedial programs and help students address a lack of preparation for university.
- *Foundation* programs are focused on addressing a student's lack of depth within particular study areas. This mechanism is most associated with transition programs in which a student may bridge the learning requirements of two differing levels of education. It can also be used as a focusing period for students who elect to specialise in particular areas of study when arriving at university. It is assumed that at this stage a student may not yet be sufficiently informed to make subsequent course and subject choices.
- *Enrichment* programs are aimed at encouraging students to work beyond the expectations of a subject or course. These can be accelerated or advanced programs that may benefit more talented students.

It has been suggested that the entire first year of a degree, or at very least the first semester, should be an orientation program.<sup>54</sup> This could be further expanded to include orientation to each year of study and address the institution's expectations of students studying at different levels. Transition does not only create difficulties when students enter first-year but every time a change occurs. Perhaps the first-year of any program should not only be a foundation study of a particular discipline's courses but also include a foundation component for studying at a university.

A research team based at the University of South Carolina pioneered a course that has since been frequently replicated within the US and Canada. Although the course,

---

<sup>52</sup> Pascarella, E. T., Terenzini, P. T. and Wolfle, L. M. (1986) 'Orientation to College and Freshman Year Persistence/Withdrawal Decisions', *Journal of Higher Education*, Vol. 57, No. 2, p 156.

<sup>53</sup> McInnis, C., James, R. & McNaught, C. (1995) *First Year on Campus: Diversity in the Initial Experiences of Australian Undergraduates*, Centre for the Study of Higher Education, University of Melbourne.

<sup>54</sup> Tinto, V. (1988) 'Stages of Student Departure: Reflections on the Longitudinal Character of Student Leaving', *Journal of Higher Education*, Vol. 59, No. 4, pp 438-455.

*University 101*, is a foundation course in higher education, it is more than just a series of tips for studying.<sup>55</sup> It offers students a chance to learn and understand the mechanisms and philosophies of tertiary institutions. A fuller description of the *University 101* course can be found within the work of Oldham.<sup>56</sup>

Although the issues identified within this chapter are common to many first-year students across a variety of programs and disciplines, the focus of my 1998 research was on visual arts programs, and, more specifically, design related disciplines such as architecture, landscape architecture, industrial design, graphic design, etc.,. When addressing the impact of issues such as *visual thinking* and *creative feelings* amongst students in visual arts education, findings are largely anecdotal, assumptions or presumptions, and riddled with perceived problems.<sup>57</sup>

Many design programs focus their studies within a practical setting commonly termed the *design studio*. This is the place where historical and theoretical viewpoints are integrated with acquired practical skills, to develop creative solutions to art and design problems. It can be argued that teaching visual arts is fraught with danger and sometimes recognised as an unpredictable arena. It is important to understand and recognise some scenarios associated with studio teaching can cause anxiety and be problematic for first-year students.

First-year art and design students are often faced in creative *studios* with teachers informing them that there are no right or wrong answers, only more appropriate or less appropriate ones; "... design is an open ended, holistic activity. There are few right or wrong answers and this uncertainty leads to unnerving and stressful situations."<sup>58</sup> Professor Kathryn Anthony, from the School of Architecture at University of Illinois, refers to her own findings re studio education (specifically in architecture) as sometimes involving teaching by *high-flying* designers, and how students are affected by the charisma of the teaching staff. Such staff can often

---

<sup>55</sup> Gardner, J. & Jeweler, A. (1985) *College is Only the Beginning*, Wadsworth Publishing, Belmont, California, p 30.

<sup>56</sup> Oldham, B. E. (1988) 'The First Year: Make or Break Year', *Journal of Further and Higher Education*, Vol. 12, No. 2, p 5-11.

<sup>57</sup> Thorne, R. (1994) 'Can the Deficiencies in the Education of Architects and Some Other Design Professionals Ever Be Overcome', in Ryan, G., Little, P. & Dunn, I. (eds.) *Research in Higher Education, HERDSA*, Vol. 16.

<sup>58</sup> Quinlan, A., Murray, P. & Merton, M. (1995) 'Facilitating First Year Students Transition Into University and Disciplinary Cultures', in Hewson, L. & Toohey, S. (eds.), *UNSW Education '95 Conference Proceedings*, The University of New South Wales, Sydney, p 263.

exhibit displays of authority, paternalism and even tyranny within the design studio setting. She describes a sense of *educational high-jacking* where the design teacher's unspoken mission is to ensure (their personal) taste values are not transmitted but imbibed by students.<sup>59</sup>

Studio teaching within the visual arts can also encourage the worst kind of individual competitiveness and is often facilitated by teachers who seem unable to be clear about their educational goals. Academic researcher, Dr Richard Lamb, argues that design studio teaching often appears to lack logical structure, performance goals, clearly enunciated objectives/outcomes and explicit assessment methods.<sup>60</sup> Lamb cites Thorne's survey of first-year architecture students in which 43.8% of students found the teaching of design to be *vague*.<sup>61</sup>

Both Quinlan<sup>62</sup> and Schön<sup>63</sup> reiterate this opinion by reminding us of the words of Plato;

*How will you look for something when you don't in the least know what it is?  
How on earth are you going to set up something you don't know as the object of  
your search? To put it another way, even if you come right up against it, how  
will you know that what you have found is the thing you didn't know?*

Issues relating to the transition into higher education, including the clear definition of educational goals, became of utmost to me. Surely mechanisms could be structured to help students move from their previous lives and assimilate with their new life at university and so help them with their own transition, orientation and motivation.

## ***T*ransition, orientation and motivation in visual arts higher education**

In light of my theory review, in 1998 I conducted a formal survey to gauge the

---

<sup>59</sup> Anthony, K. H. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*, Van Nostrand Reinhold, New York, p 107.

<sup>60</sup> Lamb, R. (1994) 'Psychological Type in First Year Architecture Students: Potential New Answers To Some Old Questions' in Ryan, G., Little, P & Dunn, I. (eds.) *Research in Higher Education*, HERDSA, Vol. 16, p 159-164.

<sup>61</sup> Thorne, R. (1994) *Can the Deficiencies in the Education of Architects and Some Other Design Professionals Ever Be Overcome*, in *Research in Higher Education* 16 (eds. Ryan, G., Little, P & Dunn, I.) Vol 16, HERDSA: Campbelltown, NSW, pp 191 – 196.

<sup>62</sup> Quinlan, A., Murray, P. & Merton, M. (1995) 'Facilitating First Year Students Transition Into University and Disciplinary Cultures', in Hewson, L. & Toohey, S. (eds.), *UNSW Education '95 Conference Proceedings*, The University of New South Wales, Sydney, p 263.

<sup>63</sup> Plato in Schon, D. (1987) *Educating the Reflective Practitioner*, Jossey Bass, San Francisco, p 83.



student perspective within the Bachelor of Design at the College of Fine Arts, University of New South Wales in Sydney. Because it would have been problematic to question students who were still in their first-year study, as they would not yet have experienced their entire first-year program, I decided to survey all design students at the start of their second-year program so they could reflect on their overall first-year experience. The *Transition, Orientation and Motivation survey (TOM)* comprised a detailed study of over 100 second-year design students, who were asked to reflect on the first year of their formal design education in higher education. It was this study that confirmed my conviction in the need to revise curricula for visual arts education to include collaborative and online initiatives and thus, mend the divide that was forming between visual arts education and professional creative industries.

My aim was to understand the *transition* of a student entering university and to identify issues that should be considered by academics when designing new learning experiences and curricula. Ultimately, a first-year student's success, in terms of transition, will be based on their competence in handling academic interactions in combination with social integration<sup>64</sup>. If *academic integration* is primarily dependent on the student's academic performance and level of intellectual development, and *social integration* is dependent on peer interactions and the student's relationship and participation within the faculty, it can then be argued that a level of commitment to a study program will be governed by the degree of success in these two areas. Students were issued the five-point *TOM* survey based on my literature review and the informal discussions I had had with many of them previously. The *TOM* survey asked students to consider the following five issues:

- Their own *social* transition to university.
- Their own *academic* and *institutional* transition to university.
- *Social, academic* and *institutional* orientation offered by Faculty.
- *Individual* and *institutional* issues that affected their own motivation to study.
- Considerations for *deferral* or ultimate *resignation* from their course (B. Des).

Students were allowed time within a tutorial session to reflect individually on the questions. Apart from verbally explaining the definition of *institutional* and *individual* in the context of the questions, no other verbal instructions were offered.

---

<sup>64</sup> Pascarella, E. T. & Terenzini, P. T. (1980) 'Predicting Freshman Persistence and Voluntary Dropout Decisions from a Theoretical Model', *Journal of Higher Education*, Vol. 51, No. 1, pp 60-75.

Of interest was the enthusiasm and willingness on the part of students to participate in the anonymous survey. Out of a possible 98 students, I received 80 completed surveys, all containing several paragraphs of written responses relating to each of the five issues. This obvious commitment to the survey immediately flagged that there were concerns amongst the student cohort.

## *T*ransition to first-year higher education programs

Tables 1 and 2 show the most frequently cited factors as a percentage of the total response (80) from the *TOM* survey concerning institutional and individual issues, affecting the transition experience of the 1997 first year cohort of students studying the Bachelor of Design.<sup>65</sup>

*Table 1. Most frequently cited responses to Institutional factors that caused anxiety to students regarding their transition to study at university level.*

Ref.	Issues	/80	%
1	Very heavy (even unmanageable) workload causing stress	54	67.5
2	Concern regarding the amount of feedback on coursework	36	45
3	The amount of individual time available with teaching staff	32	40
4	Difficulties with terminology used within design subjects	30	37.5
5	The difference in type of projects between school and university	30	37.5
6	Frustration with teachers discouraging the use of computers	28	35
7	The cost of the program in terms of fees and materials required	28	35
8	Lack of encouragement received from teaching staff	24	30
9	Timetabling issues regarding classes and project submission dates	24	30
10	Too large a variety of subjects within the first year curriculum	22	27.5
11	The number of students enrolled in the course	20	25
12	The extent and questionable teaching ability of part-time tutors	18	22.5
13	Problems of self confidence affecting whether students considered themselves 'good enough' to belong on the course	16	20
14	Some classes being facilitated like school subjects. ie. - attendance	16	20

<sup>65</sup> It should be reiterated that the factors cited in the tables were all offered and contained within the written responses from students and not a result of direct questioning about each issue.

Table 2. Most frequently cited responses to **Individual** factors that caused anxiety to students regarding their transition to study at university level.

Ref.	Issues	/80	%
1	Missing out on social interaction with friends or partners due to university workload commitments	46	57.5
2	The need for employment and the effect on study time	38	47.5
3	Travel implications to attend lectures and studio classes	36	45
4	Age - intimidation effect of older or younger students	18	22.5
5	Adjustment to receiving lower marks than previously accustomed	14	17.5
6	Problems with experiencing new language and culture	10	12.5

## *T*ransition summary

Students explicitly noted that there existed a considerable difference between the way (visual art) subjects were offered at secondary level compared to the requirements and expectations of a first-year university program. In the case of the design students, a problem with initial understanding of the terminology used within courses was important to note and appeared widespread not only with international students but also with a large proportion of the Australian first year intake. There was also an issue about the level of academic performance that was reflected in the different marking levels at universities compared to high schools.

Some anxieties *can* be directly eased by universities and tertiary education institutions through the design of their programs and courses whilst others factors are perhaps more indirectly influential and are not the responsibility of educational institutions. It is the responsibility of institutions, curriculum designers and teachers to be aware of the variety of such contextual factors, for example, the two most cited issues that my students reported - the need students have for employment to support their studies and the extensive travel commitments that are endured by many in getting to college.

As my five-point *TOM* survey demonstrates, the cause of most anxiety amongst students was the issue of heavy workload. Pressure of deadlines for project submissions undoubtedly appeared to cause much discomfort and stress. However, one of the most interesting series of responses described a maturity-building

phenomenon that was a direct result of such pressure. Having endured a heavy workload in their first-year, by second-year there was a definite culture of *design confidence* apparent in the way students approached their work. Student respondents described an evolving *appreciation* and *realisation* of the need to adjust to the demands of the design profession that requires the ability to work to a deadline, often one that seems at times unrealistic.

The design students did, however, express the opinion that it would be beneficial at an early stage of their program to hear former students talk about their experiences of first-year studies.

## *O*rientation summary

The aim of my literature review about issues regarding orientation for students when entering higher education was to focus my five-point *TOM* survey on my own students' orientation into the Bachelor of Design program. Tables 3 and 4 show responses to issues that either caused anxiety or were viewed as successful.

*Table 3. Most cited responses of orientation factors that caused anxiety to a first-year student entering the Bachelor of Design program*

Ref.	Issues	/80	%
1	Lack of social orientation events held by the faculty	31	38.75
2	More time needed for social, academic & institutional orientation	30	36.25
3	Lack of academic orientation	25	31.25
4	School did not prepare students for university	18	22.5
5	Access to details via the Internet was difficult	14	18.25

*Table 4. Most cited responses to successful orientation strategies according to first-year students entering the Bachelor of Design program*

Ref.	Issues	/80	%
1	Specific ice-breaking exercises held in first two weeks of 'studios'	23	28.75
2	Open-day activities	17	21.25
3	Socialisation opportunities of the <i>Orientation Camp</i> <sup>66</sup>	15	18.75
4	Showing the graduating students' end of course exhibition	12	15

<sup>66</sup> Each year, many new first-year students took advantage of the opportunity to go on a one-week camping trip (optional) to rural parts of New South Wales.

## *Aspects and characteristics that affect motivation of first-year students*

When defining aspects and characteristics that affect motivation of first-year students, two commonly used terms in educational literature are *surface* and *deep* approaches to learning.<sup>67</sup> Each have an impact on student motivation to learn.

*Surface approaches* to learning are adopted by students who wish to merely pass through a subject or course, obtaining a satisfactory grade at the expense of thorough knowledge or understanding. Such an approach to learning can lead to negative attitudes towards studying and to questioning the worthwhile nature of their studies. Surface approaches may rely on memorising and recalling facts at a later stage, perhaps in examinations. Research into students who exhibit such learning approaches report feelings of resentment, depression, anxiety and tedious and unrewarding study activity. Such students seem to lack motivation to their studies.<sup>68</sup>

*Deep approaches* to learning are more often associated with thorough understanding of subject matter and the ability of students to apply knowledge to relevant circumstances. A deep approach to learning will involve students with conceptual theories and relate ideas in one subject to those in another. Students adopting deep approaches to their learning often have an intrinsic interest in their studies and strive to understand concepts so they may relate these to 'real-life' situations. As these students learn they reflect upon previously experienced material that they now see in a different light and tend to undertake research in their own time as well as time allocated for study by the subject requirements. Surveys of students exhibiting deep approaches to their study describe characteristics that include involvement, challenge, achievement, fulfilment and pleasure.<sup>69</sup>

In addition, regarding their *motivation* to study, more specific factors can be observed from the responses of students who completed the five-point *TOM* survey (Table 5).

---

<sup>67</sup> Entwistle, N., Marton, F. & Hounsell, D. (1984) *The Experience of Learning*, The Scottish Academic Press, Edinburgh, p 19.

<sup>68</sup> Ibid. p 10.

<sup>69</sup> Ramsden, P. (1992) *Learning to Teach in Higher Education*, Routledge, London and New York, p 58.

Table 5. Most cited responses regarding affects on motivation whilst a first-year student

Ref.	Issues	/80	%
1	Tendency of teachers to give predominantly negative feedback	33	41.25
2	Lack of individual feedback from teachers	18	22.5
3	The determination to work as a designer	17	21.25
4	Detrimental nature of competitiveness and comparison between students	17	21.75
5	Continuous heavy workload	16	20
6	A desire for interaction between first-year students and those from higher years and design practitioners	14	17.5
7	Need for support from family and friends	13	16.25
8	Difficulty in adjusting to first year marks and grades	13	16.25

By combining findings and suggestions about factors that affect motivation from existing literature and the student responses received from the *TOM* survey, I produced a *Motivation Table* that included qualities and characteristics that should be exhibited by both student and teacher when aiming to enhance motivation.

*Motivation Table: Motivational qualities and characteristics of teachers and students that encourage deep learning approaches to first-year (visual arts) students*

#### Teachers

Enthusiasm & passion  
 Subject knowledge  
 Facilitation of quality & timely feedback  
 Approachability  
 Enthusiasm  
 Clear articulation of course aims  
 Professional and teaching experience

#### Students

Enjoyment  
 Participation  
 Challenge  
 Intrinsic subject interest  
 Time management  
 Goals, standards & objectives  
 Reflective ability  
 Analytical skills  
 Confidence  
 Choices

## *M*otivation summary

Issues of workload and problems associated with the amount of individual feedback from teaching staff appeared frequently in the students' responses. A tendency of teaching staff to be over critical and negative in their approach to feedback caused resentment in students who were under pressure to cope with the on-going

demanding workload during their transition year between their previous environments and the new context of higher education. In regard to studying individually amongst fellow first-year students, there appeared a detrimental competitiveness that had an adverse affect upon some students' motivation.

In comparison, two motivational issues were commonly cited that produced positive attitudes in the students. The support from families and friends (both inside and outside college) was important, as well as integration and discussion with students from higher years and guest tutors from professional industries. In other comments about affects upon motivation, an important issue raised was that of students setting their own career and learning goals and the desire and determination to become quality, thinking designers. Students referred to the motivational benefit of setting their aim to conclude their undergraduate studies with a reputable design degree that would lead them to the kind of creative career they strived for.

For educators and curriculum designers it is important to understand that each student is an individual and that each will have a different level of coping with the anxieties and stress brought about by the university climate. Some will quite simply not be ready to adjust to the requirements of the courses they have chosen.

### ***D*** *eferral and resignation from courses and programs*

In light of the all the concerns and insecurities expressed by students reflecting on their first-year program, I believe an important quality that teachers should strive to achieve between themselves and their students (especially at first-year level) is a high level and sense of *trust*. Students should be able to rely on their teachers, and the institution they have enrolled into, to help them through all stages of their course to achieve completion. If this can't be achieved, then a student may feel overwhelmed, insecure and isolated. In this instance, it is not surprising that a student may begin to question their own value, ability and endurance in the program in which they have enrolled. Ultimately, they may begin to consider more drastic options of deferral or resignations from a course or program of study. The following pages and Tables 6 and 7 refer to responses from the *TOM* survey of students regarding deferral or resignation and reasons why this may have been a consideration.

It is reported that the first six-months of university study are an especially important period in student persistence and that completing the first-year is more than half the

battle to completing a degree.<sup>70</sup> The final question in the five-point *TOM* survey asked the design students to reflect on their first-year experience and determine whether they had, at any stage within their first-year program, considered deferring or even resigning. If this was the case, then students were also asked to briefly state the over-riding reasons why this may have been the case. Table 6 shows responses to the question of whether students had considered deferral or resignation at any time during their first-year undergraduate design program, whilst Table 7 offers the most cited reasons for doing so.

*Table 6. Responses to whether students had considered deferral or resignation during their first-year undergraduate design program*

Ref.	Issues	/80	%
1	Yes, deferral or resignation was seriously considered	56	70
2	No, deferral or resignation was not considered	24	30

Results show 70% of these students *did* consider deferring or resigning as a serious option at some point throughout their first-year of study. This figure is notably higher than the results within the FYEQ study that reported about a third of students declared deferral or resignation as a consideration in first-year programs.<sup>71</sup> Although none of the respondents of the *TOM* did actually defer or resign from their program,<sup>72</sup> 25 of the original 145 design student intake did not continue to the second-year of the undergraduate design degree program. Only 6 of these students were asked to repeat the first-year due to insufficient marks and grades.

<sup>70</sup> Tinto, V. (1988) 'Stages of Student Departure: Reflections on the Longitudinal Character of Student Leaving', *Journal of Higher Education*, Vol. 59, No. 4, pp 438-455.

<sup>71</sup> McInnis, C., James, R. & McNaught, C. (1995) *First Year on Campus: Diversity in the Initial Experiences of Australian Undergraduates*, Committee for the Advancement of University Teaching at the Centre for the Study of Higher Education, University of Melbourne, 1. 1.

<sup>72</sup> This was because the *TOM* survey respondents were already second year students when they completed the questionnaire and therefore the 25 students who had already left the program in first-year were not available to sample.



*Table 7. Most cited responses to why students considered deferral or resignation in the first-year of their program.*

Ref.	Issues	/80	%
1	The workload being too demanding	24	30
2	Doubt as to being on the 'right course'	22	27.5
3	Financial demands of the course (including fees)	16	20
4	Parental or family pressure	13	16.25
5	Feeling of insecurity regarding aspects of the course	13	16.25
6	The lack of relevance of the subjects being studied	8	10

An overwhelmingly problematic issue reported consistently throughout the five-point *TOM* survey was the issue of intense and heavy student workloads. In hindsight, I do not believe that the workload itself was the cause of concern, but the organisation and planning of the workload. As a result, the integration of all courses included within the first-year program had to be analysed thoroughly to ensure every assessment task was relevant, timely, considerate of other courses within the program and strictly applicable to the individual objectives of each course.

### ***A***ction response to the 1998 five-point (*TOM*) survey

The findings from my research into the transition, orientation and motivation of students arriving at university were written into an academic format for international publication to complete my Master of Higher Education degree. I also submitted the paper for inclusion in the 3<sup>rd</sup> Pacific Rim First-Year in Higher Education Conference '99 in Auckland, New Zealand. Presenting the paper at the conference was to have a profound effect on the research I have undertaken ever since and forms the main content of this thesis.

For, if truth be known, my experience of attending the conference was one of frustration. I sat through numerous presentations of which few actually proposed any innovative or dynamic approaches to education for a new generation of students. I was convinced that the views expressed by my own students through the *TOM* survey could not be isolated to one institution, and I did not understand why more educators were not questioning the current learning and teaching approaches they were choosing in the light of comments contemporary students were clearly voicing.

It was on the plane journey home to Australia from the conference that I had my epiphany: to attempt a radical new approach; to use the growth and popularity of the Internet to explore new options for visual arts curricula in higher education. Upon return, I began to explore the potential for what I naively believed was a new and unique idea. I was curious to know the part the Internet could play in offering online education and in particular how it could be adapted specifically to visual arts education.

After initial exploration, it was apparent I had been well and truly beaten to this idea - and not by one or two researchers but by many in a variety of institutions worldwide. However they gave me a wonderful platform on which to base my own ideas and strategies to explore online learning and teaching throughout the next decade.

---

---

- CHAPTER TWO -

RESPONDING TO THE NEED FOR CHANGE:  
OMNIUM'S INAUGURAL VIRTUAL STUDIO

---

***O****mnium: researching online collaborative creativity*

In 1998 I founded *Omnium*. It was a research project based on my knowledge of then contemporary commercial design studios and what I perceived was a growing dislocation between art and design education <sup>73</sup> and creative professional practice.

Professional art and design companies and collectives such as *Antirrom*, <sup>74</sup> *Futurefarmers*, <sup>75</sup> *AustralianINfront*, <sup>76</sup> and in particular *Tomato* <sup>77</sup> were extremely influential, both practically and philosophically, in the original formation and structure of *Omnium*. I regard awareness of, and contact with, trends in both visual arts and design education and creative professional practice to be vital to the role of an educator, and also crucial in any attempt to narrow the dislocation I believed was apparent between the two contexts. As both designer and educator, I wished to help maintain a 'cycle of support' between two interdependent domains. <sup>78</sup>

---

<sup>73</sup> Particularly in specific design disciplines such as graphic design and interactive media.

<sup>74</sup> *Antirrom* were an innovative collective of interactive new media designers in the UK between 1994 and 1998 who explored new ways of forming interactive content and presenting visual narrative for web and CDROM media. Co founder, Andy Polaine, was one of four professional special guests to join the first *Omnium* project in 1999.

<sup>75</sup> *FutureFarmers* are a group of graphic, interactive designers and programmers based in San Francisco. Their founder, Amy Franceschini, became a leading female design identity in the late 1990s and the collective of designers that she led began a movement of design concerned with environmental and ecological issues.

<sup>76</sup> *AustralianINfront* are one of the first online social communities of artists and designers and introduced a unique series of online interactions that saw designers work on each others digital files to produce collaborative graphic works in a series called 'Design Wars.'

<sup>77</sup> *Tomato* formed in the early 1990s in London as an arts collective of video artists, furniture makers, musicians, graphic designers, and writers. Their work was of a conceptual nature and formed the basis of much graphic and typographical work worldwide throughout the late 1990s and into the new century.

<sup>78</sup> Bryce, M. (1996) 'Sleeping With Gropius: and Learning to be a Designer', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 1-10.

*Omnium* was also formed by observing the responses to the *TOM* survey which identified a range of issues that students thought would improve their design education subjects and program (see Chapter One).

Collaborative approaches to designing that were proving to be effective, appropriate and necessary ways of working for professional artists and designers appeared to echo the views of the design students I surveyed and the way they wished to study.

*Omnium's* research into *online collaborative creativity* was originally formed to investigate existing methods, propose new strategies, and evaluate the effectiveness of two central issues:

- An *online creative process model* that focused on exploring the generation of visual ideas and concepts - collaboratively, digitally and across distance via the Internet.
- A *web-based technical platform* that reflected the *online creative working process model*: providing an online user-interface with features that assist users in undertaking collaborative and creative work using the Internet as their classrooms or studios.

In his discussion of design methods, Welsh writer and designer, John Chris Jones, identifies 'creative collaboration' as the main challenge since the introduction of computerisation in the design process, and that collaboration and joint decision-making processes can provide the main strength in new design methods. He defines designing collaboratively as 'the interaction of what everyone is noticing with what everyone is doing.'<sup>79</sup>

The progression of designing, from an individual activity, described by Paul Rand, to a far more collaborative process, described by John Warwicker, (see Introduction) particularly in disciplines of new media, visual communication and graphic design, has created what Laiserin describes as a 'notable market demand for online technical systems to support such interaction.'<sup>80</sup> Despite widespread implementation and promotion of a variety of online tools for generic interactive communication,

---

<sup>79</sup> Jones, J. C. (1991) *Designing Designing*. Architecture, Design and Technology Press, London, p 215.

<sup>80</sup> Laiserin, J. (2000) *The Pre-History of Internet Collaboration*, in Cadence: December <http://www.highbeam.com/doc/1G1-68924417.html> - (accessed 21/05/07)

particularly for educative purposes, no software had previously been available to conduct online collaboration specifically for visual arts practice.

In addition, strong anecdotal concern existed from end-users regarding usability and appropriateness of the generic online tools when applied to specific discipline-based contexts (such as visual arts). *Omnium* sought to address the observations of Jones and Laiserin by providing a framework that allowed an efficient collaborative and interactive design process between distanced partners undertaking creative collaboration online. The first step in addressing these observations was the launch of *Omnium's* inaugural online global project, in 1999, titled - *Om'nium virtual design studio: [vds]'99 - a process dialogue*.

### ***O*** *m'nium virtual design studio [vds] '99: a process dialogue*

Complementing Jones' argument for collaborative design, the first global *Omnium* online art and design project, hosted in 1999, treated online collaboration in visual design practice, first and foremost, as a socially interactive process. The purpose of the project, titled; *Om'nium: [vds] '99: a process dialogue*, was to explore future possibilities for art and design studio education made possible by technological advances in Internet communication. It mapped viable modes of online collaborative design, informed by the Internet and online technology, whilst interlinking principles of visual communication design. In turn, the project aimed to provide a new paradigm for online collaboration in graphic and visual communication. Ultimately, it aimed to be radical, alternative and innovative and to promote a revised understanding of the design studio as an educational setting.

The *Om'nium: [vds]'99* project, was one of the first and largest fully international, interactive and collaborative online global classrooms (especially within the visual arts).<sup>81</sup> The project involved 50 students from geographically distanced university art and design faculties who worked collaboratively through a creative process to produce highly developed and cross-disciplinary creative solutions using the Internet as their only communication tool.

---

<sup>81</sup> Bennett, R (2000) 'Om'nium [vds]: Presenting an On-Line Future for Tertiary [Design] Education', *Outline 9*, Winter Issue 9, University of Brighton Press, CTIAD, Brighton, pp 17-24.

The qualities that the Internet offered which I felt would enhance the project included: the anonymous nature of its use, a fast and efficient method of communication, and an up-to-date and exciting place to explore new media. I believed that using the Internet to host the project would break down existing boundaries and restrictions that faced student designers - technically, socially, culturally and physically.

At the time, in 1999, design education was predominantly based on Bauhaus principles and methodologies. As later elaborated in Chapter Four, one of the reasons for much of the success of Bauhaus' workshops was the collaboration between master craftsman and teacher. The *Om'nium: [vds] '99* project adopted similar roles between academic staff, computer technicians/programmers, professional designers and students in which all four groups were vital players. There existed no hierarchy between them - which interestingly aligns with the theories of 'organisational change' that developed years later (see Chapter Eight). The project was designed to recognise the importance each group would have in contributing to a combined outcome.

*Om'nium: [vds] '99* also tried to identify the kind of online learning environment that would best suit contemporary students, whilst at the same time draw together elements of online collaborative creative practice that would best equip design students for future professional practice. It was always envisaged as a 'pilot study' to test the effectiveness of using online technologies to create an online classroom environment and to analyse the protocols and methods that groups of students adopted in working together, creatively, in such an unusual design space.

The entire *Om'nium: [vds] '99* project focused on dialogue between participants within small working teams and the collective participants as a whole. As an investigation into developing a creative process for distanced individuals working collaboratively and solely online, some relevant considerations needed to be recognised – issues that were consistent with the most commonly cited comments made by students who completed the *TOM* survey.

The following considerations were important as core aims of the *Om'nium: [vds] '99* project:

- to be purposely un-prescribed and un-predetermined
- to involve strong dialogue and interactive components

- to contain a cross-disciplinary approach to designing
- to encourage collaboration rather than individual competitiveness
- to be internationally, geographically and culturally diverse
- to include a blend between design education and professional practice

## *O*m'nium: [vds] '99 - the project realised

In 1998, I began a simple marketing campaign aimed at gaining the interest of art and design students, their teachers, and professional designers from around the world in a totally new and collaborative online creative project.

I marketed the project using a promotional CD-Rom and a graphic 'bookmark' which I produced and subsequently posted to as many heads of art and design colleges worldwide as I could find addresses. It was difficult to receive any responses to the marketing, yet alone positive ones, from institutions and individual senior academics that I had sent material to. I have found through subsequent *Omnium* projects that any responses from institutional representatives are generally supportive in regard to the project itself, but negative in their belief that we will attract any of their students. When I do actually succeed in getting information about *Omnium* projects to the students themselves, their responses are totally different and generally highly positive and express keenness to be involved.

According to institutions, the major hindrance to the *Omnium: [vds] '99* project was the time of year. It was planned to be held in September which conflicted with many term dates in the Northern hemisphere. Other reasons suggested were that students already had a committed workload, or they were too busy preparing for examinations or assessments. In reality, my experience has generally been that students are only too keen to work on non-assessed projects as long as they are relevant, interesting, fun or for a good cause, such as environmental or social/community outreach initiatives.

In hindsight, the marketing was an interesting and illuminating exercise and gave me useful information for the future in terms of how to attract participants to similar global projects. When I later asked the participants who actually took part in the project whether they had ever seen either the bookmarks or CD-Rom, sadly all said they had not! The majority had found out about the project from a variety of design

information websites that I had contacted and who had promoted our project as an interesting online and cross-cultural design initiative.

The rich cultural variety of participants was a factor that participants regularly referred to as a motivation to join the project, and later on reflection, was one of the main advantages declared by those who took part.

*Working collaboratively with international students, from different cultures, during a creative process was such a valuable experience. It was so interesting to see what different people contributed in terms of style, techniques and ideas.*

S. R., University of New Brunswick, Canada

## ***P*** *articipation and project structure*

The application process asked student participants to write (in English) a short written paragraph explaining why they wanted to take part. They were also queried about any technical, Internet, and time restrictions that they perceived may affect their involvement. The questions were devised to ensure that participants would not be hindered through issues of technical access, lack of time to devote to the collaborative project or suffer through lack of language skills as the project would be delivered in English in terms of content and the technical platform.

From the applications I received from around the world, fifty students were selected to take part in the *Om'nium: [vds] '99* project. They were formed into ten working teams that each contained five students with differing experience and background: country, culture, discipline study area, gender, study year, computer knowledge, etc. The teams were named after star constellations to recognise that these differences were coming together in a new setting that was not grounded in our *real-world* but, in another new and evolving space ... cyberspace!

In collaboration, the ten groups of students interrogated the same conceptual brief for a seven-week period via a specifically designed and constructed website; a virtual classroom/studio environment from where the students worked.

Based upon my belief that education should remain in close contact with the realities of professional practice, I personally invited four internationally renown art and



design practitioners to join the project. The four practitioners who took part and acted as Special Guest Tutors to the fifty participating students were:

<b>Susan Cohn</b> (Art/Jewellery)	Workshop 3000	Australia
<b>Tom Kovac</b> (Architecture)	Kovac Malone	Australia
<b>Andy Polaine</b> (Interactive Design)	Antirom	UK
<b>John Warwicker</b> (New Media)	Tomato	UK

They gave feedback via the online interface on the work the students presented in each stage of the brief at weekly intervals. They also interacted with students by answering specific questions. The motivational benefit to students from the involvement of the four special guests was immense and for students to be able to wake up and log-in to the project to find feedback directed to them from leading practitioners was later cited by students as influential and highly motivating.

In addition to the four invited special guests, nine teachers from various international art and design colleges worldwide, who had made applications to also take part prior to the project commencing, were also accepted to join the project to provide additional feedback and participation at various stages. Their involvement in this first *Omnium* project was of an informal nature and they were encouraged to visit the ten working groups to offer help where they could. However, in some of *Omnium's* more recent online global projects, the role of the volunteer teacher has progressed to be more formal, and is akin to a tutor or mentor within the small creative groups.

## ***O***mnium Software: the first user-interface

The major difference between *Om'nium: [vds] '99* and its virtual design studio predecessors (see Chapter Four) was the development and provision of a specific online environment in which participants worked together. The custom-built online environment designed for *Om'nium: [vds] '99* emphasised one of the main aims of all *Omnium* projects to date: to reduce focus on *technical* issues to a minimum, thereby allowing participants and facilitators to concentrate on their online *creative* processes.

As 'architect' of the navigation design, and inventor of the features that the interface offered, I have always been particularly keen to ensure that the technical provision must understand and reflect the creative process that participants undergo. For

instance, the *Om'nium: [vds] '99* interface was designed and built specifically to allow students who were geographically distanced to work and interact within small teams. A student needed to be able to work in three different ways: individually (and sometimes privately) within their own team; as a collaborative member of a team where digital files could be exchanged and worked on collectively; as well as interacting and participating in discussions and critique with students from other teams working within the project.

*The Omnium: [vds] '99 project interface gave my computer four additional personalities.*

A. T, Rhode Island School of Design, USA

In hindsight, the very first *Omnium* user-interface (*Omnium* version 1.0) was amazing in that it even worked at all. It was 'cobbled' together from free and off-the-shelf software components, such as databases and message forum applications that were later programmed and combined to connect to a relatively basic and simple database. It allowed participants to communicate through text messages asynchronously as well as swap shared image files that they could work on individually and then replace in the database for others to subsequently work on.

## **O***mnium Software: features*

The first *Om'nium: [vds] '99* user-interface provided the following online features:

**Easels** – These were a feature provided to each student to individually work on concepts, and for storing digital working files they had created. They were places where participants had an element of privacy as they could chose which digital files were accessible by their tutors and fellow participants. Metaphorically, the easels were designed to replace the way a student would work from home in a face-to-face context, or elsewhere in private, and later show only what they felt comfortable with for critique and feedback. Most importantly, and still a structural feature of the *Omnium® Software* today, the *Easels* (later called *Individual Portfolios*) were the 'doorway' for bringing digital files from one's own personal computer into the online environment.

**Pin-Up Walls** – Once a user was happy with images or documents within their own *Easel* area and wanted to make them available for viewing or downloaded by others

in their team, the project coordinators and guests, they could copy any file to the *Pin-Up Wall* area within their own team.<sup>82</sup> One of the main functions of the *Pin-Up Walls* was to act as a viewing gallery for each of the team members to offer feedback on works in progress and for the project coordinators and special guests to also offer their advice and suggestions.

**Message Boards** – All of the communication between participants throughout the *Om'nium: [vds]'99* project took place as asynchronous (non-live) conversations. The *Message Boards* were highly structured and became the central point for discussion for the entire cohort of participants. To this day, within all projects that use the *Omnium® Software* as their interface, the *Message Boards* (sometimes named *Discussion Forums*) provide the hub of all activity and interactivity.

The idea of message boards or forums now seems commonplace. However, in 1999, the technology involved was still relatively new. Even more innovative was the feature that automatically placed an image of the participant next to their comments in the Message Board. I have always considered this an important socialising protocol that helps make the interface a more humane place.

*Omnium gathered people together and gave them a new area to create in. We were given a unique space with no physical walls or boundaries, and within it we set our own society.*

M. M, The University of New South Wales, Australia

**Technical Help Forum** - An interesting adjunct to the *Om'nium: [vds]'99* project was the inclusion of a *Technical Help Forum* (THF) for users to submit technical queries to our system administrator, or to read through anticipated queries within a *Technical FAQ* (frequently asked questions) area. The technical capacity of the THF area allowed a maximum of 24 questions to be posted each day and for the first two weeks of the project the allocation was utilised fully. However, 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 self-initiated an elaborate peer-assisted mechanism to solve each others technical problems.

---

<sup>82</sup> In later versions there has become far more flexibility in all features, either to make material available to others or to have them remain individually private to specific users.

## *O*m'nium: [vds] '99 project brief - 'Small Red Car'

Akin to the abstract nature of the material-study exercises found within the foundation year at the Bauhaus (see Chapter Four), a similarly conceptual approach to work was encouraged throughout the *Om'nium: [vds] '99* project. When writing the brief, I deliberately included a shift away from considering final outcomes too early in the process. Instead, I encouraged participants to discuss *why* they were making the creative choices they did to avoid them becoming overly concerned with aesthetic appearances of *what* final graphic works may look like or whether they were commercially viable.<sup>83</sup>

The decision to write such a brief was one of the most important decisions I made throughout the planning of the project and was a decision for which I sought numerous opinions. My choices were to either write a brief that would probably be more comfortable and familiar to students and more aligned to projects they normally received at the colleges in which they were studying; or to write a brief that may create unease, confusion and controversy but, hopefully, lead to more meaningful discussion and dialogue. The pivotal moment in my decision making process occurred in my meeting with John Warwicker (special guest) when I invited him to join the project. In my conversation with him he stated clearly that “if the brief does not confuse and challenge the group creatively, then it really isn’t worth doing anyway.”<sup>84</sup>

I was also influenced in my choice of such a brief by some interesting graphic design publications that were emerging at the time, such as; *Process*,<sup>85</sup> the first book produced by the leading UK art collective *Tomato*. Many publications generating from design companies seemed to be simply filled with glossy images of their work with little discussion, critique or explanation of the creative process involved. *Process*, however, included creative discussion of the sort I aimed to encourage and illicit from participants in the *Om'nium: [vds]'99* project.

---

<sup>83</sup> The project aimed to allow creative work to flourish at a conceptual level and allow participants to discuss creative decisions by deliberately not being too prescribed and restricting. However, at the same time it was important that the brief was not confusing or overly ambiguous as a result.

<sup>84</sup> This comment was made in a meeting conversation with John Warwicker in Melbourne, 1999.

<sup>85</sup> Baker, S. (1996) *Process: A Tomato Project*, Thames & Hudson, London.

So I designed and constructed what I termed an *unraveling* brief. The brief was issued in weekly episodes and was enhanced by a series of supporting text lectures written by contributors from a variety of locations both in Australia and overseas. The issues within each lecture paralleled the stage of the creative process that the brief had reached. This was, and is, consistent with one of the two main aims of my ongoing *Omnium* research into online collaborative creativity: To explore what a creative process may look like for people working solely online and how they work collaboratively without meeting each other.

The *Om'nium: [vds]'99* project asked each team of five students to make design proposals for their interpretation of a brief titled: *Small Red Car*. This was basically a title for their entire working process from day 1 to day 49. The process began by conceptually exploring three simple words: 'red', 'small' and 'car.' It asked students to make graphic representations of associations and understandings that related to these words. The three words were purposely selected to represent three areas of design practice:

**small** - three dimensional environmental and spatial/architectural areas

**red** - two dimensional graphic, textual and new media domains of design

**car** – industrial, object and product design based disciplines

Hence, the *Small Red Car* brief was structured to creatively explore an abstraction and combination of ideas from these areas and not depict the physical representation of a particular object. The brief unfolded week-by-week and it was not until the final stage of the brief was made available to students that the full title of the brief '*Small Red Car*' was revealed. Within each team, students were asked to document their creative process and deliver it as a final collaborative submission with *Small Red Car* being the title. Not surprisingly, some of the teams had worked out the conceptual nature of the brief before the final stage was issued, however, there were also several teams whose initial studies, after receiving the final brief, *did* begin by quite literally producing imagery of small, red cars.

What was important, interesting and highly impressive was how the majority of the participants who *did* understand and realise that the title was just that – a title – soon corrected those who had become too literal. They explained through written discussions that what they were actually exploring, and being asked to visualise, was

their combined creative processes over the previous six weeks. The element of mystery about the brief became a lively talking point amongst the students and added to the excitement of the project.

*The Omnium brief for me was without a doubt exciting and inspiring, mostly due to the sense of support, creative energy and the community among students it involved.*

S. D, The University of New South Wales, Australia

## **O**mnium's five-stage creative process model for online collaborative creativity

From the outset of my research into *online collaborative creativity*, in 1998, I realised that if such a methodology was to be possible, effective, motivating and perhaps a future way of educating art and design students, then I would need to offer a suggested model for approaching such interaction. The model began its formation by aligning with the unraveling nature of the *Om'nium: [vds] '99* project brief that aimed to encourage *written dialogue* between students about their creative processes.

I intended to formulate a creative process model that I could use to guide students, from a diversity of global locations, through the seven-week duration of the project. I predicted that without the benefit of face-to-face meetings it was especially important to have a clear and simple foundation on which to structure the project's activities and to help students understand the various stages in the their creative processes.

I began forming my original model by reflecting on my own creative practice and experiences both within professional and educational contexts. The creative process I proposed, in 1999, was the first *Omnium five-stage creative process model*.

The following pages explain the various stages of the *five-stage creative process model* and activities within each stage that progressed a student from initial individual contributions through to engaging in shared working practices for *online collaborative creativity* (Figure 1).

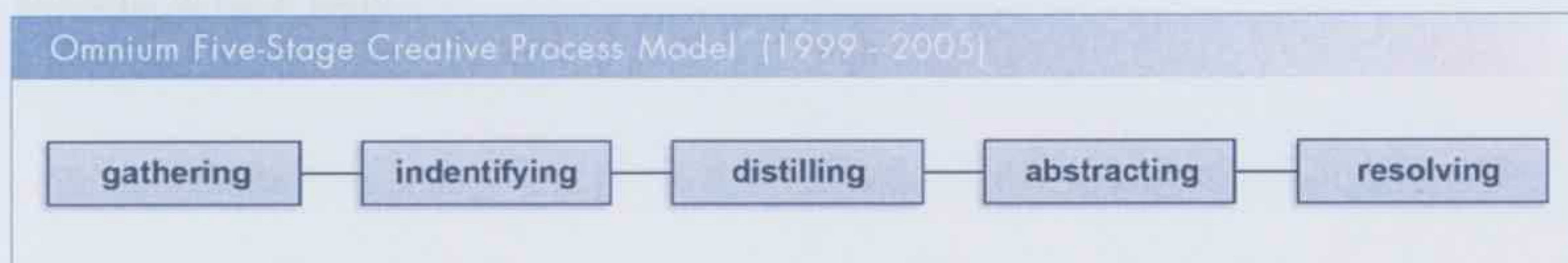


Figure. 1 - Omnium's five-stage creative process model (first iteration) used in the *Omnium: [vds] '99* project in 1999.

## **Stage One - *Gathering***

Through construction of a series of tasks requested by project facilitators, and the project briefs, participants *gather* visual materials and other information that they can later use in subsequent stages. Simultaneously, they are asked to complete tasks that require them to navigate the user-interface and thereby are introduced indirectly to the technicalities of the online environment without the need for formalities of technical *how-to-use* guides.

*Om'nium: [vds] '99 - Stage One: Gathering (Two Weeks)*

*Initial conceptual investigations of three words (small, red, and car)*

This section of the brief was designed to allow several things to take place simultaneously:

- To introduce the members of each team to each other (socialising).
- To allow the students to become familiar with the technical interface's features and the structure of the project (technical and academic orientation).
- To encourage individual involvement from all 50 participants in the project whilst at the same time develop work that would ultimately add a rich mixture of cultural and personal backgrounds to the program. I envisaged that the project would be hindered if group work started immediately as collaborative teamwork was not usual practice for the students. I wanted everyone to feel they had contributed and each acquire an early ownership of the project. I also felt that 'stronger' students may intimidate 'weaker' students if we began with group work too early in the process.
- To collect resource material from the cohort on which the rest of the project would later depend.

The brief for this first stage asked each student to produce and submit one conceptual graphic study for each of the three words (*small, red, and car*). By the end of this initial *gathering* stage each team had accumulated 15 pieces of work from which to begin the second stage, that is, three pieces of graphic work from each of the five students in each team.



*Gallery 1 – Stage 1: Gathering stage - Initial conceptual investigations of three words (Small, Red and Car) over a period of two weeks*

### **Stage Two - Identifying**

Following a predominantly individual-focused *Gathering* stage, *Omnium* projects progress to collaborative stages in which small creative teams are formed and team members recognise, via discussion and dialogue, points of contact, commonality, difference and overlapping interests. Individually produced graphic images from the *Gathering* stage are also introduced to the teams. As requested by a project brief or by a posed problem, the small teams begin to ‘identify’ their collective creative aims.

#### *Om'nium: [vds] '99 - Stage Two: Identifying (One Week)*

*Identifying and deciding as a group a collective interpretation of the main brief*

The second *Identifying* stage of the five-stage creative process began unifying individual members within each team by requiring teams to collect all the graphic works submitted by each team member in response to the words *small*, *red* and *car* and present them in their *Team Pin-Up Wall* area (*PUW*). Assuming each team had five members, collectively they should by this time have accumulated 15 images in



their PUW area. Each team was next requested to select and retain five team images and discard the remaining 10 images within their own team. The reason for doing so was to encourage teams to collectively critique their own collection of works and decide which were 'stronger' and which were deemed 'weaker' images. Such a process ensured that within teams, the members each gave individual opinions and discussed them together in order to make a collective decision about which works to retain and which they were prepared to discard. This activity raised the question of individual and collective ownership of works.

Having identified which images each team had chosen to 'discard' I reallocated the remaining 100 *discarded* images (10 images from each of the 10 teams) randomly, but evenly, throughout the teams. This meant that each team again had 15 images within their PUW area and in later stages of the project, teams would be required to work with some images that originally were made within their own team and others that had derived from members of other teams. When working successfully in collaboration it is important that feelings of individual ownership are eradicated and works that are made in collaboration are seen as team efforts and owned by all members of a team.

The Identifying stage was important for the following reasons:

- It formed individuals into collective working units that allowed both social and creative collaboration.
- By asking each team to identify their own understanding of the project briefs so far, students began their collaborative creative processes and exchanged thoughts, ideas and opinions.
- It broadened the project to become 10 aligned projects (one from each team) held together by the unfolding project brief.
- It identified and clarified to all student participants and project facilitators (and invited special guests) what each team was aiming to communicate visually in response to the brief.

By the end of the *Identifying* stage, each creative team had 15 pieces of graphic work with which to begin the next stage.

### **Stage Three - *Distilling***

During the third *Distilling* stage, each creative team continues to discuss their intended creative direction and establish their collaborative working processes. The

*distilling* stage is also intended to be a time to critique and revise ideas about the works produced from the preceding *gathering* and *identifying* stages. By simplifying and culling their collective works that are assembled in online team-galleries, team members develop their collaborative ability to critically assess their combined creative outcomes.

*Om'nium: [vds] '99 - Stage Three: Distilling (One Week)*

*Clarifying ideas and refining meaning from the creative works previously produced.*

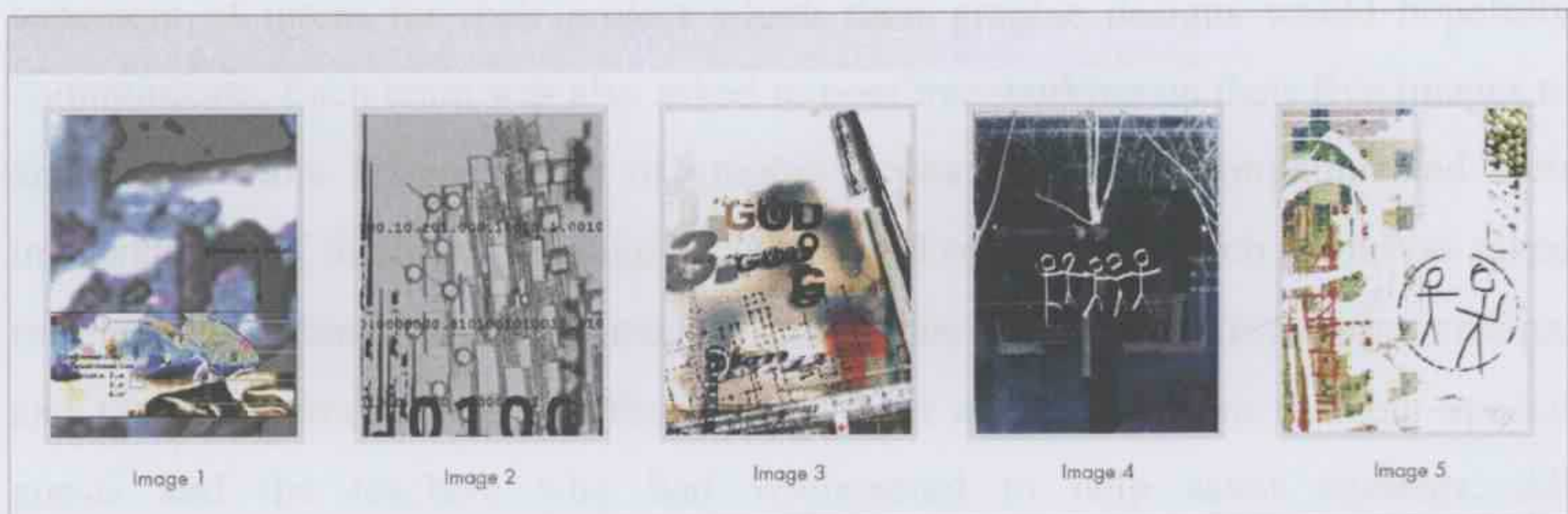
In the third *Distilling* stage, a reflective process initially took place in which each team critically examined the 15 graphic works they possessed: Five works that had been produced by members of their own team, as well as the 10 works produced by students from other teams. The *Distilling* stage was the point in the project where the first graphic work took place as a collaborative effort and saw team-members work on each other's digital files (in all cases using *Adobe Photoshop*) by downloading them, working on them for a specified amount of time, and then uploading them to their own *Easels* before submitting them back to their *Team Pin-Up Wall*. As the *Distilling* stage was only one-week in duration, each student was advised to work on the files for one 24-hour period.

What I hoped to achieve throughout this stage of the creative process was a replication of the way I had observed professional new media companies work collaboratively between distanced offices in various parts of the world. The differing time-zones of the participants in each team enhanced the production process by taking full advantage of the 24 hour cycle - while some students slept at night, others could continue the process.

Before the end of the third *Distilling* stage, each team was asked to arrange on their *Pin-Up Wall* the 15 new graphics images they now had within their group - images they had all had the chance to work on collaboratively. They were then asked to distill their 15 images down to only 5 that they would take through to Stage Four of *Omnium's five-stage creative process model*. Again, collective discussions took place to decide which graphics they wished to pursue further - and which they would now abandon. It was interesting to note that it was becoming apparent to most teams that the brief was ultimately about their own processes and that they were gradually working their way down from 15 images to one final piece.

The importance to the project of the third *Distilling* stage was that it:

- Requested that students critically assess their team's collective creative process to date.
- Examined the graphic works that students shared in their teams and asked them to collaboratively identify and discuss visual and conceptual elements of the images.
- Created more refined works by re-using and/or editing visual elements they had identified in their previous selection of images.
- Began narrowing down their choices of work and aligning them to their own team's intention regarding the direction of the main project brief.
- Was the first time where graphic works were required to be 'passed' online between all five team members for additions, edits and refinements to be made.
- Encouraged lively creative dialogue to take place between team members via the visual communication of their graphic designs *and* their written discussions posted on the project's main *Message Board* and in the *Team Forums*.
- Asked that students within each small team collectively discard more of their own works in their team's *Pin Up Wall*.



*Gallery 2 – Stage 3: Distilling stage – Over the period of one week, this stage was about clarifying ideas and refining meaning from the creative works previously produced*

#### **Stage Four - Abstracting**

The penultimate *abstracting* stage requires teams to extend the *distilling* stage, by further culling and refining their visual works in an effort to attain a much clearer and more concise communication of their creative concepts. Throughout the *abstracting* stage, teams are encouraged to reconsider the *essence* of what they intend to produce as their collective visual response to the project brief. To refine their visual work further, team members exchange digital files via the online

interface and work on each other's images. In doing so, this activity leads to collaborative team submissions that all team members have had an opportunity to contribute to and edit.

*Om'nium: [vds] '99 - Stage Four: Abstracting (Two Weeks)*

*Further refinement of graphic images produced during the Distilling stage*

I wrote a supporting essay/lecture that discussed the word *abstraction* and gave proposed definitions in relation to an art and design process. Having read my essay, team members discussed their own interpretation of the word and then offered a short written paragraph of their own team's definition to the entire project community by posting it on the main *Message Board* area. Generally, it was agreed that instead of the word 'abstraction' often being perceived as pertaining to something weird, complicated or confusing, the word should instead denote *simplification* and *clarity* when applied to visual communication or graphic design.

Having agreed on their interpretation of the term *abstraction*, teams proceeded to pass the remaining five works they possessed between each team member. The brief for this *abstracting* stage not only asked each team to clarify the conceptual interpretation they had made of the 'Small Red Car' but also to write a short statement of intent for their project which their graphic designs would hopefully communicate. Each team was also asked to continue working on their five images to arrive at a more refined series of graphic works that better communicated their interpretation of the brief. In addition, by the end of this stage each team was asked to select and submit only three images to their *Pin-Up Wall* area for further critique and feedback, from me as the Project Convener as well as from the four special guests and the teachers who had volunteered to help assist students. All communication in terms of feedback and critique was written as comments in the main project *Message Board* area or as direct feedback to individual teams in teams' own *Discussion Forums*.

The aims of the fourth *Abstracting* stage were:

- For each team to clearly and collectively identify the graphic intention of their creative process.
- For all five team members to work on each of the five graphic files at least once (and sometimes twice) before selecting and submitting three final images in response to the brief for Stage Four.

- That teams adapted their work according to feedback and critique from the project convener, the volunteer teachers and the invited special guests.
- To develop time-management skills to allow each graphic work to be amended by each team member and allow time for team self-critique as well as advice, comments and feedback from the project convener, volunteer teachers and the invited special guests.
- For students to engage in further self-critique of their team's collaborative creative work through a necessity to submit only three works to their *Pin-Up Wall*.

By the end of the *Abstracting* stage, each team had three pieces of graphic work in their *Pin Up Wall* area from which to begin the final *Resolving* stage.



*Gallery 3 – Stage 4: Abstracting stage – Further refinement of graphic images produced during the Distilling stage, taking place over a period of two weeks*

### **Stage Five - Resolving** - (one week)

The final *resolving* stage leads to the production of collaborative visual and/or written submissions from each team. The execution and presentation of final creative works not only provides an opportunity for participants to reflect upon the entirety of their creative process, from individual contributions at the beginning of a project to final collaborative and collectively produced outcomes, but also to reflect on the experience of working collaboratively online through informal discussions and formal online evaluations.

*Om'nium: [vds] '99 - Stage Five: Resolving (One Week)*

*Collaborative refinement of one graphic image for final presentation.*

As students progressed into the final *Resolving* stage of the project with only 3 graphic images within their teams, the final brief asked teams to rework any of the elements from their three images into one final graphic submission. The final

submission was to be titled *Small Red Car* and represent a visual conclusion to their online collaborative creative process. By resolving their works into 1 final image, students had collaboratively completed a journey that had lasted seven weeks. Their final submission aimed to communicate an account of their project experience, together with the *process dialogue* that had taken place within their team throughout the project and, ultimately, form a collective response to the combined project brief, titled *Small Red Car*.

It should be noted that by this point, as the creative process had progressed week by week, teams had begun to not only identify the strengths and weaknesses of their work, but also those of their team-mates. Not surprisingly, some students were more graphically competent than others, but it was encouraged that other responsibilities, such as team-management, peer-critique and motivation were just as important when working collaboratively within a team environment. Over time, it was not uncommon to find teams allocating specific tasks to each member. For instance, to ensure that teams kept strictly to submission deadlines for each stage, each team was requested to identify and nominate a *Wall Manager* who would collate and curate their team's graphic works and prepare them for formal submission at the end of each stage of the creative process.

The social aspect of the community, that had existed solely online for seven weeks, had grown so strong that friendships had grown, and many teams did not want the process, or the project, to conclude. As Project Coordinator I responded to this situation by extending the project by three weeks to allow each team to submit an 'exhibition' visual documentation of their team's complete seven-week process and dialogue.



*Gallery 4 – Stage 5: Resolving stage – A weeklong collaborative refinement of one graphic image for final presentation.*

*Omnium was truly a totally new and enriching experience for me. Working in a design collaboration across continents and across different design fields brought us together, and designing into the 21<sup>st</sup> century.*

HT. L, National University of Singapore

## **S**ummary

The *Om'nium: [vds] '99* project produced significant results from a personal perspective, whilst also attracting great interest from those who saw it presented at numerous design and education conferences/seminars over the months and years following its conclusion in September 1999. However, it was the effect upon the student participants that was most rewarding and gratifying as the project clearly had an immediate creative and educational impact. It also provided a lasting effect on the participants in producing long-lasting friendships and communications that still exist today.

For example, in 1999, Australia was host to the Sydney Design '99 Expo. I was asked to stage an exhibition of creative works that were produced during the project and with sponsorship from Apple Computer Inc., I designed and produced the exhibition of *Om'nium: [vds]'99* creative work at a gallery in The Rocks area of Sydney.

Unbeknown to me, many of the participating students had been in private communication online about attending the opening night of *their* work. In September 1999, many of them arrived (unannounced and self-funded) from overseas to meet each other and celebrate their project and experience. This was the highlight of the exhibition and proved beyond doubt the impact and importance of the online studio in which they had participated.

*Omnium* proved that more adventurous ways of educating students were possible and that I could extend the initial *Omnium* project by starting to introduce aspects of the experience into new ways of delivering visual arts and design courses and programs. Nevertheless, I understood that what had been achieved was only a pilot study. For instance, the project offered little course content in terms of associated readings or lectures, and the technical platform was custom built to only accommodate one small group of students. In addition, no formal evaluations took part aside from asking participants to write reflective comments about their experience.

It was clear that far more research in this area needed to take place before educators could seriously offer courses online as an accredited part of a degree or diploma program. Educators need to further identify how students use the Internet as a communication tool and observe over an extended period of time their behavioral tendencies while collaborating with others in an online creative process. It is also important that educators do not simply import into an online context what is traditionally understood in terms of methods of creative education - by *copying and pasting* the same material to the Web.

The two case-studies described later in this thesis (Chapters Seven and Eight) illustrate more recent and large scale online creative projects that I have organised and produced through *Omnium* since 2005, and discoveries I have since made about 'online collaborative creativity' from creative, pedagogical *and* technical perspectives.

*Omnium was the rock thrown into a stagnant pool. It was not just the rock that was important but the ripples that continued after it had disappeared.*

A. F, The University of New South Wales, Australia

---



---

- CHAPTER THREE -

REFLECTIONS ON COLLABORATIVE CULTURE:  
EDUCATION AND PROFESSIONAL STUDIO PRACTICE

---

## *O*verview

Chapter One gave an account of my response to students increasingly voicing opinions, through the *TOM* survey, that they wished to have options to study in new and more technology associated ways throughout their visual arts (design) subjects. The results of the study helped me to define and structure aims of the first global online design studio that I set up for the start of my *Omnium* research in 1999 and subsequent projects of a similar nature.

One such project was an academic research study that I carried out in 2003 with one of my design (honours) students, Emma Dunphy.<sup>86</sup> I have included extracts of an academic paper that we co-wrote and subsequently published that describes the study. We presented the full paper at the FutureGround International Design Education Conference held at Monash University in Melbourne, Australia in 2004.<sup>87</sup>

I have already argued that I believe educators have a responsibility to their students to prepare them, as best they can, for future professional practice. In my own field, this would be professional creative industries that increasingly adopt collaboration and teamwork as the norm in the way creative projects are undertaken.

The intention of the research study I will describe in this Chapter was to ascertain the level to which collaboration was being addressed, in 2003, within creative curricula throughout a variety of art and design schools in the Sydney area. Was the growing *dislocation* between (design) education and professional practice that I had perceived as a result of my earlier *TOM* survey actually a worrying reality?

---

<sup>86</sup> Emma Dunphy was at the time a 4<sup>th</sup> year Bachelor of Design (UNSW) student undertaking her honours project under my academic supervision.

<sup>87</sup> Bennett, R. & Dunphy, E. (2004) 'Meeting Pluralist Demands With A Pluralist Response - The Omnium Project: Offering an Online Collaborative Design Response to an Increasingly Diversified, Interconnected and Pluralist World', *FutureGround International Design Research Conference Proceedings*, Monash University, Melbourne, p 29.

## **C**reative demands of a global society with increasingly pluralist needs

It is generally accepted that, ideally, design education and professional design practice should co-exist as a greater whole: reciprocally supporting each other in the 'preservation of quality and innovative progression of the broader discipline'.<sup>88</sup> However, within a current global context described by Warwicker as one that includes 'increased interconnectivity and multiplicity in ideas, cultures and practices',<sup>89</sup> it can be questioned whether a diversification and complication of the role of the contemporary designer has occurred? Are the consequences of increasing complexities actually being recognised by *both* design education and professional design practice? If not, is a new pressure mounting on the two distinct yet interdependent areas of creative practice?

From a personal viewpoint, in the late 1990s I became aware of the emergence of creative collectives forming within the professional digital and new media areas of design and art, such as *Tomato*, the UK based arts collective co-founded by John Warwicker, and *Antikom* - the pioneers of interactive media co-founded by Andy Polaine. To clarify this observation, it is necessary to understand the concept and practice of a *creative collective* and the emerging trend of such new working and creative environments at the time.

A *collective* environment allows for a practice in which individuals can further their ideas and abilities through discussion and cooperation. It is an amalgamation of varying perspectives where the dimensions of contemporary design briefs can be more accurately addressed. Michael Spiccia, former member of international new media agency *The Attik*, described pluralistic modes of working collectively as though one has been infected by a *creative virus* - 'new trains of thought,

---

<sup>88</sup> Newman, R. (1996) 'Seamless Paradigms: A Crisis in Design Education', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 11-25.

Stephens, H. (1996) 'Design for the Real Person', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 42-47.

Wild, L. (1996) 'That Was Then, This Is Now: But What Is Next?' *Émigré*, No. 39, Republished in Beirut, M, Drenttel, W & Heller, S. (2002), *Looking Closer 4: Critical Writings on Graphic Design*, Allworth Press, in association with the American Institute of Graphic Arts, New York, pp 136-150.

<sup>89</sup> Warwicker, J. (1999) 'A Virtual City in a Global Square', *Eye*, Vol. 9, No. 34, pp 38-44.

experimentations with media, and a greater drive to improve and grow as a designer contracted from the responsive environment of collaborating individuals.’<sup>90</sup>

Undoubtedly, a study of visual arts history and theory reveals that collaborative design processes are by no means new approaches to working. Many design projects, particularly in industrial, engineering and architectural design, claim to have engaged in collaborative creative activity and production for decades and even centuries (eg, the building of a cathedral, or the production of a car). However, it can be contested that the majority of these examples are not true collective or collaborative design processes, but an assembly of completed components already having undergone their own creative process, using individual and traditional face-to-face methods.

With new demands clearly arising from an increasingly interconnected and pluralist global context, design practice has had to evolve to accommodate a broad range of responsibilities. Through my *Omnium* research I believe that by identifying and defining such evolutions, starting points for new educational approaches and methodologies can be better established. In addition, together through a cyclical relationship, within the broader design discipline, students and practitioners can support each other to promote a ‘seamless progression of the field’<sup>91</sup> - one that is considerate of the ‘contemporary and future needs of society.’<sup>92</sup>

Through ever-evolving technological communication networks, the development of increasingly globalised economies and a worldwide growth in multicultural societies, access has been granted to a diversity of choices in the way we go about living our lives. ‘Knowledge is less defined. Existence is less objective. Answers aren’t always right or wrong: they are more or less appropriate.’<sup>93</sup> Value is now placed on the ‘importance of multiple perspectives, pluralism and indeterminacy.’<sup>94</sup> As a society, we are continually developing new interconnections between actions, information

---

<sup>90</sup> Ionescu, L. (2003) ‘Michael Spiccia’, *Refill Magazine*, Vol. 1, No. 1, pp 106-111.

<sup>91</sup> Bryce, M. (1996) ‘Sleeping With Gropius: and Learning to be a Designer’, *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 1-10.

<sup>92</sup> Newman, R. (1996) ‘Seamless Paradigms: A Crisis in Design Education’, *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 11-25.

<sup>93</sup> Bassett, P (1996) ‘Design Education: For Whom the Bell Tolls?’, *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 48-53.

<sup>94</sup> Danvers, J. (2003) ‘Towards a Radical Pedagogy: Provisional Notes on Learning and Teaching in Art and Design’, *International Journal of Art and Design Education*, Vol. 22, No. 1, pp 47-57.

and beliefs, hence adding to the complexity of our world. Again, according to theorist and design practitioner, John Warwicker, we now exist in a time where “change is the only constant. There is a changed sense of the individual, an increased ease in interaction – the value of individuality is now seen within a collaborative context.”<sup>95</sup>

Taking these observations into consideration, in our *FutureGround* conference paper Dunphy and I suggested “in our present creative culture or climate, one designer [singular] cannot always accommodate for everything that is required [plural]. However, surely such extended expectations [plural] can be met by combining the efforts of many designers [plural].”<sup>96</sup>

The research study we undertook aimed to test the observations and opinions made by Paul Rand (singular approach) and John Warwicker (collaborative approach) that were described in the Introduction to this thesis as theoretical *bookends* to my research in regard to new and changing approaches to creative processes. We looked at the extent to which a variety of design schools in Sydney (across a range of disciplines) included, or encouraged, creative collaboration within their design curricula. The section headings focus on some of the key points and findings from our study which played an important role in focusing *Omnium's* ongoing development of its *five-stage creative process model* as well as its *technical platform* (software) to host online creative projects.

We began by researching contemporary design practice to try to verify whether society's increasingly pluralist and changing demands on design professions were being answered with collaborative design responses. We observed that design practice *was* becoming increasingly collective within and across disciplines, in both commercial and experimental projects,<sup>97</sup> in an attempt to accommodate society's changing needs.<sup>98</sup>

---

<sup>95</sup> Warwicker, J. (1999) 'A Virtual City in a Global Square', *Eye*, Vol. 9, No. 34, p 39.

<sup>96</sup> Bennett, R. & Dunphy, E. (2004) 'Meeting Pluralist Demands With A Pluralist Response - The Omnium Project: offering an online collaborative design response to an increasingly diversified, interconnected and pluralist world', *FutureGround International Design Research Conference Proceedings*, Monash University, Melbourne, p 29.

<sup>97</sup> Sclater, M. (2001) 'Freedom to Create: Computer Supported Collaborative Learning in Art and Design Education', in *Proceedings of the CADE (Computers in Art and Design Education) Conference*, Glasgow School of Art.

<sup>98</sup> Holt, S. (2000) 'Beauty and the Blob: Product Culture Now', in Albrecht, Lupton & Holt (eds),

## *Identifying pluralist characteristics of practice in contemporary design professions*

By observing collaborative working processes evident within professional settings in 2003, together with more formal references from a variety of academic papers presented at design and education conferences, in our paper Dunphy and I were able to identify a set of *pluralist characteristics of creative practice*.

Pluralist characteristics of creative practice include:

- Internalisation through the increased functions of technology used to facilitate communication between designers and designers from differing disciplines.<sup>99</sup>
- Willingness to let go of individual ownership of ideas and egotistical reverence in favour of multiple perspectives and a more holistic approach to the brief.<sup>100</sup>
- A generation and amalgamation of multiple perspectives through intense group brainstorming.<sup>101</sup>
- A flattening of work structures into non-hierarchical domains where each member is valued equally for their contribution to the practice.<sup>102</sup>
- An extended focus on the needs of projects, by using teams of designers to accommodate for specific requirements in the fulfillment of a greater cause, rather than sufficing with segregated or generic, pre-determined work structures.<sup>103</sup>

---

*Design Culture Now*, King Publishers, in association with the Smithsonian Institute, New York, pp 21-24.

<sup>99</sup> Thompson, P.W. (2003) *Preface*, in Lupton, E., Albrecht, S., Yelavich, S. & Owens, M. (eds), *Inside Design Now*, Princeton Architectural Press, in association with Smithsonian Institute, New York, p 17.

<sup>100</sup> Glesta, A. (1997) 'Interdisciplinary Art Practice', *Proceedings of the Emergent Paradigms in Design Education: Sustainability, Collaboration & Community Conference*, Faculty of the Built Environment, University of New South Wales, Sydney, p 7.

<sup>101</sup> *Ibid.* p 7.

<sup>102</sup> Polaine, A. (2003) 'The Erosion of Process: Difficulties in Digital Media Education', *Desktop Magazine*, No. 185, p 62.

<sup>103</sup> Cami, A. (1991) 'On The Multidisciplinary Myth', *Design Magazine*, No. 510, p 5.

## *D*esign education's response to pluralistic practice and characteristics

In a time of visual *saturation and overflow*, the same question that challenges professional design practitioners, how to be anything and everything, translates to the preparatory grounds of design education.<sup>104</sup> To preserve the idea of an interdependent cycle of support, design education claims to have recognised a need to move along parallel paths.<sup>105</sup> By adapting collective and integrative methods of professional practice into modes of learning,<sup>106</sup> outcomes more suitable for both the present and the future are thought to result.<sup>107</sup> Such pedagogical evolutions described in design curricula and recent design education conferences claim a wish to promote:

108

- Education as a speculative ground for experimentation
- The favouring of collective brainstorming and group work
- The integration of influential external factors
- The understanding of design across disciplines
- The provision of a life-long learning culture

Although the above evolutions or revisions claim to be making a positive influence in the development of young designers, without testing their effectiveness these changes remain speculative ideas and not confirmed by evidence.

## *T*esting suggested and new pedagogical evolutions

Throughout the literature research for our paper, Dunphy and I observed that the experiences and opinions of education's most effective and direct observers, design

---

<sup>104</sup> Lupton, E. (2000) 'Fluid Mechanics: Typographic Culture Now', in Lupton, E., Albrecht, S., Yelavich, S. & Owens, M. (eds), *Inside Design Now*, Princeton Architectural Press, in association with Smithsonian Institute, New York, p 16-20.

<sup>105</sup> Bryce, M. (1996) 'Sleeping With Gropius: and Learning to be a Designer', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 1-10.

<sup>106</sup> Buchanan, R. in Niederhelman, M. (2001) 'Education Through Design: A Review of the Re-Inventing Design Education Conference', *Design Issues*, Vol. 17, No. 3, p 83.

<sup>107</sup> Danvers, J. (2003) 'Towards a Radical Pedagogy: Provisional Notes on Learning and Teaching in Art and Design', *International Journal of Art and Design Education*, Vol. 22, No. 1, pp 47-57.

<sup>108</sup> *The DIA National Conference on Design Education* (University of South Australia, 1996); *Emergent Paradigms in Design Education: Sustainability, Collaboration & Community* (Faculty of the Built Environment, University of New South Wales, 1997); *Re-Inventing Design Education in the University* (Curtin University of Technology School of Design, 2000)

students, were largely under-represented.<sup>109</sup> In her review of *Re-inventing Design Education*, Niederhelman pre-empts this observation, labeling it a massive oversight and declaring students to be “the best gauge for what is working and what isn’t.”<sup>110</sup>

During 2003 we distributed a questionnaire to 549 students studying design at undergraduate level in the Sydney area. The survey was issued in response to claims that the student is the primary beneficiary of the educational experience,<sup>111</sup> and also in response to the need to connect with student aspirations.<sup>112</sup> The sample included respondents from five design institutions, including a private design college, a TAFE<sup>113</sup> (technical college) and three university design courses. The survey sampled students representing six years of study and a variety of curricula including architecture, multi-disciplinary design, industrial design, interior design, fashion design, and graphic design.

Our aim was to compile experiences and opinions regarding evidence for, and effectiveness of, pedagogical change towards collaborative creative education. When results were analysed in relation to the demands of contemporary culture and practice, proposed improvement and direction for current and future development in design education became apparent.

The student sample revealed that despite a strong emphasis placed on issues such as the importance of speculation and experimentation, collective brainstorming, and provision of a life-long learning culture, key factors of integration and collaboration that would reflect professional practice still appeared to be lacking and not effectively implemented in the design curricula.

---

<sup>109</sup> Seldin, P. (1980) *Successful Faculty Evaluation Programs: a Practical Guide to Improve Faculty Performance and Promotion/Tenure Decisions*, Coventry Press, New York, p 36.

<sup>110</sup> Niederhelman, M. (2001) ‘Education Through Design: A Review of the Re-Inventing Design Education Conference’, *Design Issues*, Vol. 17, No. 3, p 86.

<sup>111</sup> Swann, C. (1996) ‘Life After Graduation: Do Australian Designers Continue to Develop’, *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, p 28.

<sup>112</sup> Luekenhausen, H. (1996) ‘Plenary Session’, *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, p 141.

<sup>113</sup> In Australia, TAFE (Technical and Further Education) Colleges provide a wide range of predominantly vocational tertiary education courses. TAFE colleges are owned, operated and financed by the various State and Territory Governments.

The students sampled reported that in general they:

- Still felt pressured to perform individually in competition with others, rather than as individuals in collaboration with their peers (Figure 1)
- Continued to be encouraged to work individually on projects, instead of within collaborative working groups (Figure 2)
- Were rarely given the opportunity to collaborate within their education with students across other design disciplines (Figure 3)

## *E*xamining the results of a survey of 549 design students in the Sydney area

### *1. Pressure to perform individually in competition with others:*

The majority of the students surveyed felt that a great emphasis was still placed on singular competitive achievement, as opposed to working effectively in collaboration with others. Perhaps most alarming were the responses of those closest to transition into the professions, with over 60 percent affirming this opinion (Figure 1).

Not only were these results a contradiction of projected aims identified for contemporary design education, they also illustrate an inadequate reflection of the change in practice in which John Warwicker describes a ‘changed sense of the individual.’<sup>114</sup> This is the view that designers are now often valued for how they contribute to a greater whole – ‘rather than being a sole creative genius, a sense of altruism is the favoured attribute.’<sup>115</sup>

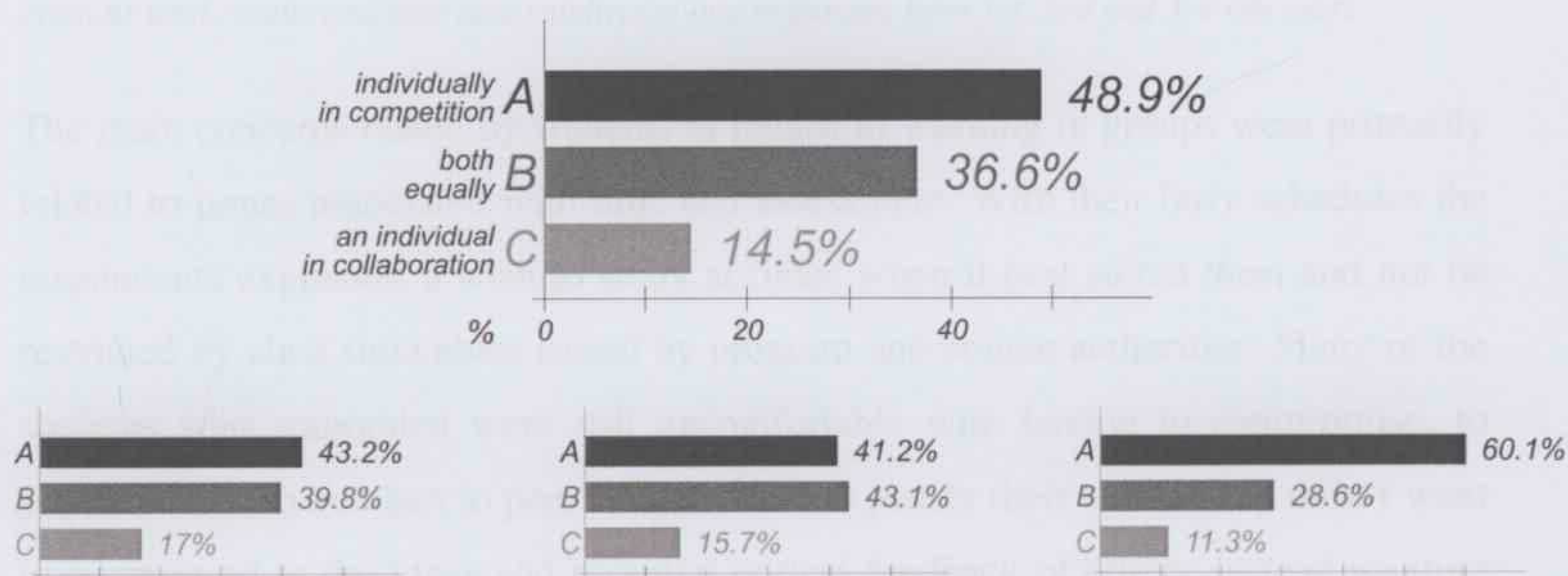


Figure 1- Student responses to the emphasis placed on performing individually in competition with others, compared to an individual in collaboration with others. Results are given as total results and then also subdivided into responses from 1st, 2nd and 3rd-6th years.

<sup>114</sup> Warwicker, J. (1999) ‘A Virtual City in a Global Square’, *Eye*, Vol. 9, No. 34, pp 38-44.

<sup>115</sup> Polaine, A. (2003) ‘The Erosion of Process: Difficulties in Digital Media Education’, *Desktop Magazine*, No. 185, p 62.



## 2. Resistance within design curricula towards encouraging group work

In contradiction to Paul Rand's view and his quote at the beginning of this thesis, that collaboration is more likely to hinder than enhance an individual designer's thought process,<sup>116</sup> a significant number of students recognised the benefits of being able to work both individually *and* collaboratively in response to a creative brief. However, it was surprising to observe that working alone was still declared as the preferred working approach for students (Figure 2) that supported an emphasis still placed by design curricula on individual success through existing assessment methods. This is a worrying observation as students are not preparing themselves for the kind of work practice they will be asked to undertake in later professional situations.

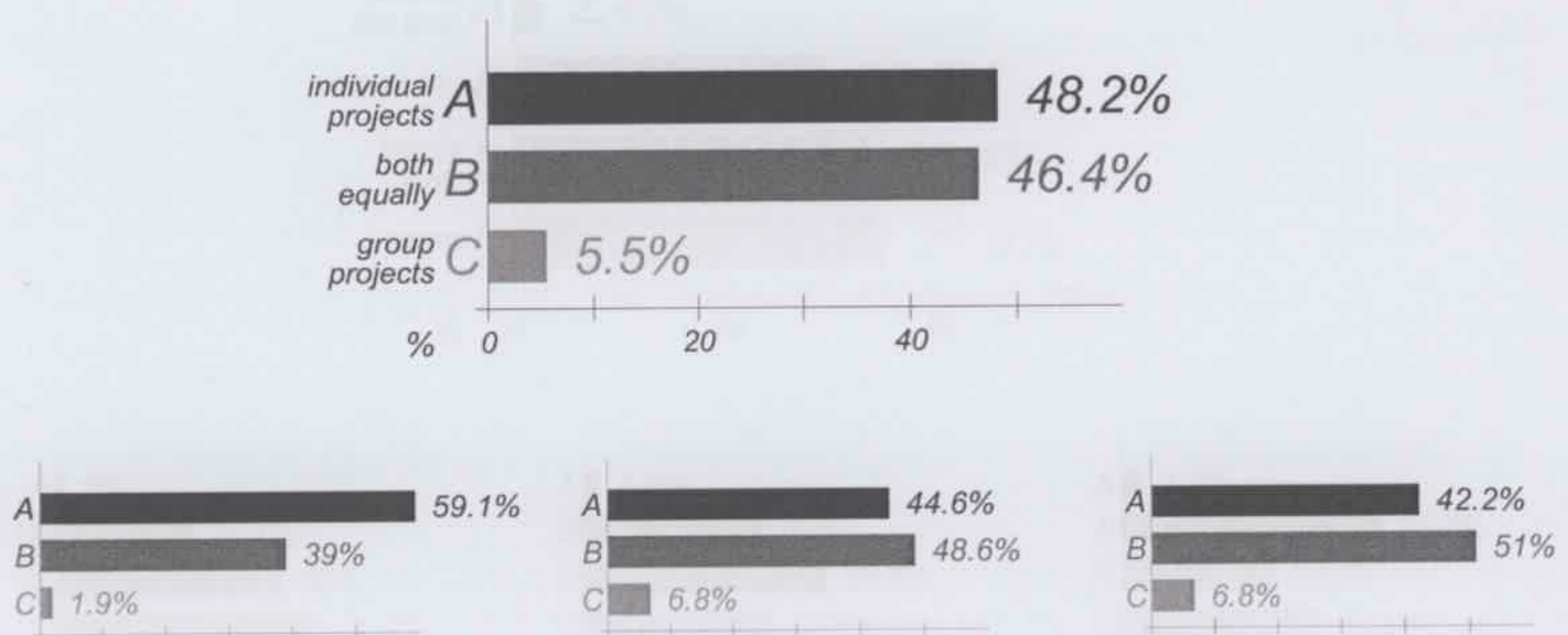


Figure 2 - Student preference to work on practical assignments in groups or individually. Results are given as total results and then also subdivided into responses from 1st, 2nd and 3rd-6th years.

The main concerns raised by students in regard to working in groups were primarily related to issues associated with time and assessment. With their busy schedules the respondents expressed a wish to study at times when it best suited *them* and not be restricted by class timetables issued by program and course authorities. Many of the students who responded were still uncomfortable with having to compromise, to please others, to be open to peer criticism and to justify their work. They didn't want to be exposed to the ideas and potential critical feedback of others, instead wanting the freedom to only please themselves – so they could feel more in control of the individually focused marks they would receive via the individually-focused assessment methods in place.

<sup>116</sup> Rand, P. (1993) *Design, Form and Chaos*. New Haven and London: Yale University, p 46.

### 3. Isolation between and across design disciplines

Since collaboration seemed an unwelcome practice within the curricula of isolated disciplines, when asked how frequently students were given the opportunity to collaborate across different design disciplines, the majority of responses fell in the 'hardly ever' to 'never' categories. Breaking the results down into different years (stages) of study, perhaps the most disconcerting response was from those who have experienced their education for the longest: 36 percent claiming they had 'hardly ever' collaborated across disciplines and over 40 percent claiming to have *never* done so (Figure 3).

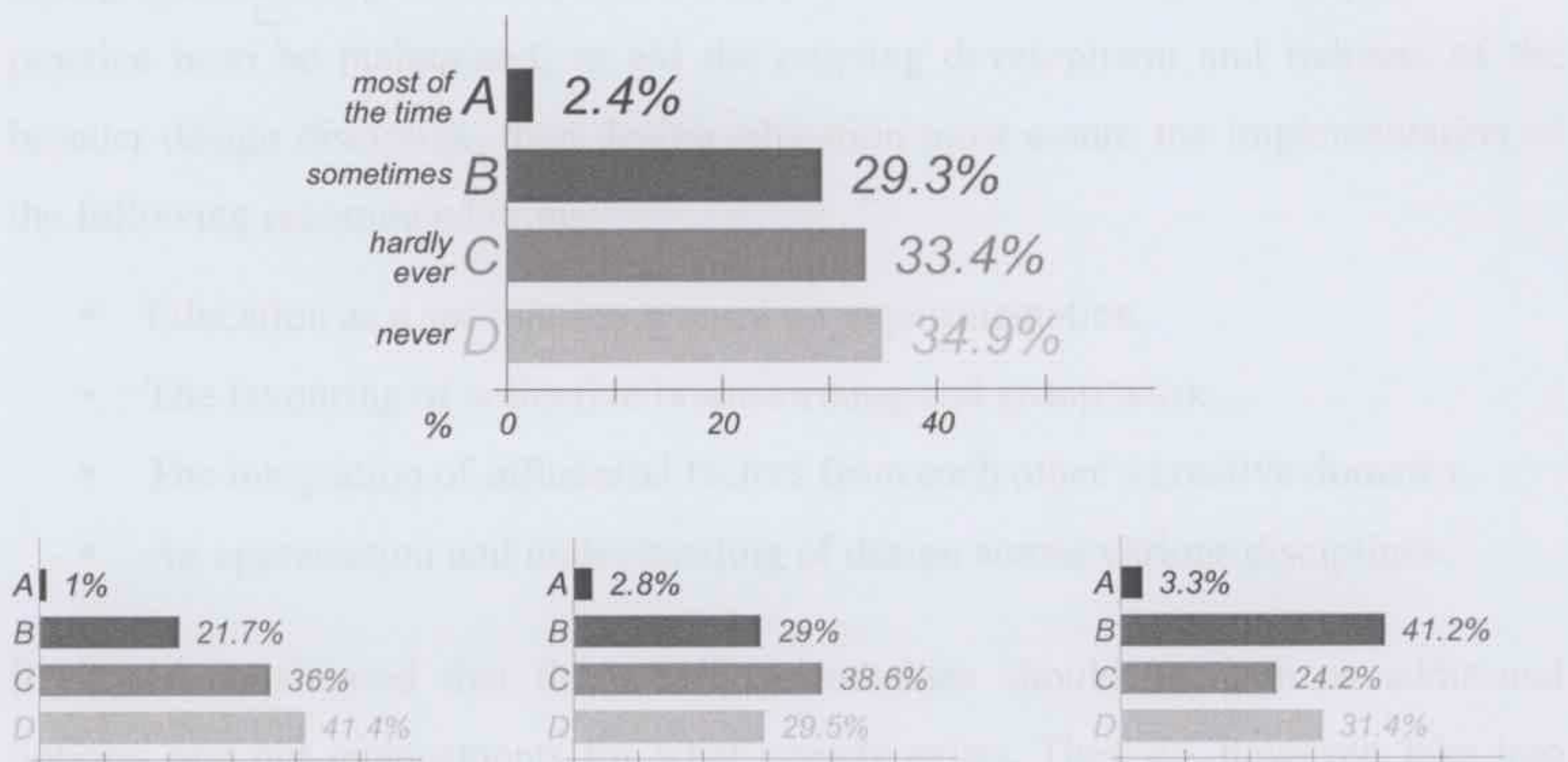


Figure 3 - Frequency that students are given the opportunity to collaborate with those from different disciplines. Results are given as total results and then also subdivided into responses from 1st, 2nd and 3rd-6th years.

When filtered through to design education, responses to the more pluralist demands of an inter-connected and increasingly global society still appear to be primarily encouraged with individual or singular responses. However, if better ways of implementing collaboration as part of design curricula were more thoroughly researched then perhaps the separatist and possessive mentality of many of the students surveyed would lessen and allow for a greater focus on what can be achieved through design and not on the designers who undertake it.

## Summary

I have included this chapter within the thesis to illustrate the state of relationship between contemporary design education *and* professional design practice regarding approaches to collaborative designing as it was in 2003.

If we observe the views of the main stakeholders in higher education (students), the collective response of over 600 design students (through the *TOM* survey in 1999, and the questionnaire Dunphy and I issued in 2003) appear to support a movement towards a greater emphasis on collaborative and cross-disciplinary activity. If a strong and interdependent cycle of support between education and professional practice is to be maintained, to aid the ongoing development and richness of the broader design discipline, then design education must assure the implementation of the following recommendations:

- Education as a speculative ground for experimentation.
- The favouring of collective brainstorming and group work.
- The integration of influential factors from each other's creative domains.
- An appreciation and understanding of design across various disciplines.

It should be stressed that these recommendations should be seen as additional options, and not replacements for what already exists. They do, however, take into consideration a much required need to reinterpret the way design education is practiced in both contemporary and future settings.

Renowned design theorist, Professor William J. Mitchell, from MIT, argues that *contemporary design* is not just contingently, but fundamentally, a collaborative, interdisciplinary, geographically distributed and multimedia activity.<sup>117</sup> The established face-to-face design process, seen as 'an individual's reflective dialogue with their work,'<sup>118</sup> clearly no longer seems solely applicable in contemporary design practice and education.

---

<sup>117</sup> Mitchell, W. J. (1990) 'The Design Studio of the Future', in McCullough, M., Mitchell, W. J. and Purcell, P. (eds.) *The Electronic Design Studio: Architectural Knowledge and Media in the Computer Era*, The MIT Press, Cambridge, pp 479-494.

<sup>118</sup> Schön, D. (1985). *The Design Studio: An Exploration of its Traditions & Potential*. RIBA Publications Limited, London, p 66.

---

- CHAPTER FOUR -  
REAPPRAISING STUDIO PRACTICE:  
FROM THE TRADITIONAL TO THE VIRTUAL

---

## *O*verview

The term *studio* in the context of creative practice has inherited two commonly used definitions when applied to art and design: on the one hand the *studio* can be seen as the actual physical space or building where art or design occurs; on the other hand it can also mean the conceptual and practical process of making art or design. The latter is one that also sometimes incorporates a method of teaching and learning centred on the activity of 'learning by doing'<sup>119</sup> and for the purposes of this Chapter it is in this sense that I refer to as *studio*.

Growth of the Internet as a tool for mass communication over the last decade has given rise to the opportunity for both educational and professional art and design studios to exist online. Since the mid 1990s, what were referred to as *virtual design studios (VDS)*<sup>120</sup> have proliferated. In many ways, online or 'virtual' studios are akin to traditional studios in the way they require students to solve creative problems in combination with their peers and through consultations with teaching and technical staff. However, important differences can also be observed in the transition from more familiar face-to-face methods to those required for e-learning initiatives.

## *T*he traditional art and design studio

In order to understand the art and design *studio* as it exists today, it is useful to consider historical models that have led to its current form and future possibilities. Two influential examples of traditional studio education, *L'Ecole Des Beaux Arts* and *The Bauhaus*, provide an interesting background to visual arts studio practice.

---

<sup>119</sup> Anthony, K. H. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*. Van Nostrand Reinhold, New York, p 9.

<sup>120</sup> This term was coined by William J Mitchell in his talk at the MIT media lab in 1993 - referenced by Wojtowicz, J. (ed) (1995) *Virtual Design Studio*: Hong Kong University Press, Hong Kong

### *L'Ecole Des Beaux-Arts (1819-1914)*

L'Ecole Des Beaux-Arts dates back to 1648 when a group of young French artists formed a new art school with a democratic and social foundation considered revolutionary at the time - including free tuition and being open to students from any social background.<sup>121</sup> Originally called the *Academie Royale de Peinture et de Sculpture*, its curriculum was based on the aesthetics of: simplicity, grandeur, cleanness and harmony.<sup>122</sup> In 1816, the school was relocated to its current location in Paris and was officially named *L'Ecole des Beaux-Arts* by Napoleon III.

Known as *ateliers*, the studios at L' Ecole Des Beaux-Arts provided the basis for a pedagogical method that has since become the core model of most art, design and architectural curricula that remain predominant today.

At the Beaux-Arts, as in most cases today, solving the creative problem through methods of *learning by doing* superseded the lecture as the primary method of teaching art, design and architecture. Divided into different specialised *ateliers*, pupils were formally led by a patron (tutor) although it was commonplace practice for older students (*anciens*) to also help younger pupils. Within their *studios* many traditions evolved that still drive contemporary art and design education. These include the use of the *esquisse* (initial sketch solution to a problem that would be further developed) and the teaching of design by practicing professionals. The school also offered monthly architectural competitions (*concours mensuels d'emulation*) in which students were required to enter, at least twice a year, or face the risk of being expelled. The final evaluation of student work was performed by jury review.<sup>123</sup>

Within the schools' ateliers the term *charette* was coined, which literally means 'a cart'. It referred to the practice of architecture students pulling a cart between the ateliers, collecting all the finished works for the design juries to review (the term is

---

<sup>121</sup> Ministry of Culture and Communication, Republic of France, *History of l'Ecole Nationale Supérieure des Baeux-Arts*: <http://www.culture.gouv.fr/ENSBA/founding.html> - (accessed 15/03/08)

<sup>122</sup> Ibid.

<sup>123</sup> Jacques, A. (1982) 'The Programmes of the Architectural Section of the Ecole Des Beaux Arts, 1819-1914', in Middleton, R. (ed.) *The Beaux Arts and 19th Century French Architecture*, Thames & Hudson, London. p 59.

still sometimes referred to today in design studio education although with a revised meaning that refers to a design exercise with extremely tight time constraints).<sup>124</sup>

*Design juries* were the formal method of assessment in which students were interviewed about their work by a panel of senior students, teachers and professionals and were private closed-door affairs (unlike today's more open critiques). Students would usually receive their results with no mention of how their mark was reached.<sup>125</sup>

The practice of art and design juries is becoming less common these days although still evident in some colleges. In more progressive institutions, the notion of peer-review is more commonplace with students sitting in on their class-mates assessment sessions. Previously, the opinions and comments of *experts in the field* (teachers and professionals) on formal panels was considered paramount and not to be contested. Now, however, the value of including peer-review is seen as more valuable and integral to a student's own learning process.

From a positive vantage, if students are included and able to contribute to review and assessment sessions of their peers, through reflection on the work of others, they can later apply their own comments, as well as those of others, to their own work. From the viewpoint of the teacher, it is often beneficial to make comments to groups of students rather than make the same comments repeatedly to individual students. In general, through peer involvement, the assessment process is also seen as an important learning process and the clarity of the process can help students in future presentations. It is important, however, that any peer involvement in the assessment or review process is both well structured and facilitated. The most common argument against peer-review is that students may lead their peers down incorrect pathways through their lack of understanding or experience of course material.

### *The Bauhaus, Germany 1919-1932*

The concept of the art and design *studio* was further developed in Germany, after the first world-war, at The Bauhaus School founded by architect Walter Gropius in 1919.

---

<sup>124</sup> One of the earliest virtual design studios used this term in its title for a one-month online project titled *Remote Collaborative Design: The Lisbon Charette*. The 1997 project was a collaboration between the Massachusetts Institute of Technology, the Porto School of Architecture, and the Lisbon Institute of Technology. Geographically dispersed teams worked collaboratively to redesign an urban area in Lisbon, Portugal - <http://web.mit.edu/4.199/www/class> (accessed 21/03/09)

<sup>125</sup> Anthony, K. H. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*, Van Nostrand Reinhold, New York, p 8.

According to many sources, 'the Bauhaus catapulted into international prominence and soon became the single most important force in the design world during the period between the world wars.'<sup>126</sup> The Bauhaus created a pedagogical approach that formed 'a new academism'<sup>127</sup> that is still widely accepted.

In the early years of the Bauhaus, emphasis was placed on craftsmanship rather than machine production and the creation of an ideal collaborative community.<sup>128</sup> As a result, the teaching program aimed to develop students' personalities as well as their technical and creative skills. With such an aim, it was clear that the Bauhaus curriculum was concerned with social aspects of the creative individual as well as the creative process they undertook.<sup>129</sup>

What differentiated the Bauhaus from previous models of visual arts education, such as the Beaux-Arts, was a tandem-system of workshop teaching<sup>130</sup> that equated craft with art and equipped graduates with as much technical expertise as it did theoretical and creative proficiency. Apprentices were co-instructed by Masters of each particular craft (*Workshop Masters*) as well as by practicing fine artists (*Masters of Form*).<sup>131</sup>

A major innovative facet of Bauhaus education, that is still an essential part of art and design education today, was the introduction of the *foundation course*. Initiated by Johannes Itten to prepare new apprentices for the regular work in the Bauhaus workshops,<sup>132</sup> the foundation course focused on the study of materials to develop an understanding of their qualities and potential. The entire course was designed to bring to life students' hidden creative abilities.<sup>133</sup>

---

<sup>126</sup> Anthony, K. H. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*, Van Nostrand Reinhold, New York, p 11.

<sup>127</sup> Franciscono, M. (1971) *Walter Gropius and the Creation of the Bauhaus in Weimar: The Ideals and Artistic Theories of its Founding Years*, University of Illinois Press, London, p 3.

<sup>128</sup> Note that this is in startling contrast to the ideals behind the Bauhaus after 1922 (Franciscono, p 13), when the machine was seen as the modern medium of design and modern architecture was to rely on mass production and modern technology.

<sup>129</sup> This is an important reference for my own online creative endeavours and teaching. I am very interested in not only achieving a positive social interaction between students but also writing projects that expand the social collaboration as well as the individual personality of students taking part.

<sup>130</sup> Whitford F. (1984) *Bauhaus*, Thames & Hudson, London, p 30.

<sup>131</sup> Wingler, H. M. (1969) *Bauhaus*, MIT Press, Massachusetts, p 4.

<sup>132</sup> Franciscono, M. (1971) *Walter Gropius and the Creation of the Bauhaus in Weimar: The Ideals and Artistic Theories of its Founding Years*, University of Illinois Press, London, p 173.

<sup>133</sup> Wingler, H. M. (1969) *Bauhaus*, MIT Press, Massachusetts, p 4.

The continuing influence of the Bauhaus in art and design education takes the form of a belief in the efficacy of foundation courses and in carefully designed projects to spur a student's creativity.<sup>134</sup>

## *T*raditional studios today

The central method of teaching art and design today has in most instances not changed substantially from these historical models. The *studio* is now well established as both a practical model for creative practice *and* a unique pedagogical method/approach to creative education. Studios are usually problem-solving settings where educators who are experienced in the act of art and design practice tutor students individually or in groups. Because there is no definitive design methodology, studio learning is inherently dynamic and adapts to changing problems and situations. Due to such a dynamic nature, studio approaches and professional practice tend to elude prescriptive models.

The *Studio* method of practicing art and design (in both professional and education settings) has been significantly analysed and formalised over the last thirty years, most notably by the late Donald Schön, former Professor of Urban Affairs and Education at Massachusetts Institute of Technology (MIT). Schön's formulation of the *Studio* method, through what he termed *reflection-in-action*, has since permeated the teaching of many creative professions.<sup>135</sup>

Schön wrote extensively about *reflection-in-action*, a concept he believed was the basis of any design process. The starting condition of reflection-in-action is 'knowing-in-action - the know-how we reveal in intelligent action.'<sup>136</sup> Knowing-in-action is tacit, spontaneous and professional knowledge that cannot be learnt from a book, nor described with much success. Schön saw it as *dynamic knowledge*, in contrast to facts, rules, procedures and theories that are *static*. Knowing-in-action consists of strategies of action, understanding of phenomena and ways of framing problematic situations encountered in day-to-day experience.<sup>137</sup>

---

<sup>134</sup> Whitford, F. (1984) *Bauhaus*, Thames & Hudson, London, p 197.

<sup>135</sup> Schön, D.A. (1988) *Educating the Reflective Practitioner*, Jossey-Bass Publishers, London, p 24.

<sup>136</sup> *Ibid*, p 25.

<sup>137</sup> *Ibid*, p 25.



*Reflection-in-action* builds upon *knowing-in-action*. It is the process of questioning and challenging problematic situations in practice – a reflective dialogue with the designer’s own knowing-in-action. Schön argued that this kind of tacit knowledge inherent in designing, and its refinement as conscious strategies, could only be learnt in the unique environment of the design studio.

In the context of contemporary design studios, these processes are often organised around the concept Schön described as *learning-by-doing*. Within the design studio, problems are set for the students that he described as *wicked* - at least in part, ill-defined, uncertain or incoherent.<sup>138</sup> An immediate and defined answer to the design problem is usually unclear and often alters in the process of searching for a resolved outcome. Schön argued that the fundamental concepts of designing could only be grasped in the context of *the doing* and only through the experience of actually designing. However, for the new student, this can pose a problem in that they are seeking to learn things they can’t perhaps immediately understand without going through the design process itself.

Within traditional education studios there are ideally regular consultations between a student and master (tutor). It is through demonstration of, and reflection upon, the master’s own knowing-in-action that they convey their own tacit knowledge to the student. Working in tandem, the teacher demonstrates how to explore and act a dialogue of reciprocal reflection-in-action between coach and student. This concept of a dialogue is important in the studio environment, for the nature of the design studio is often described as *conversant* - a dialogue between student and instructor, between student and the emerging design, between student and materials, among students, as well as between the student and the societal context to which the design is addressed.<sup>139</sup>

## *T*he modern online design studio

Online education initiatives take advantage of the unique capability of the Internet to facilitate fast, accessible exchange of information across distance. WebCT is one example of a software application designed to enable courses, or parts thereof, to be

---

<sup>138</sup> Schön, D. A. (1988) *Educating the Reflective Practitioner*, Jossey-Bass Publishers, London, p 1.

<sup>139</sup> Design Studio and Pedagogy, in Wojtowicz, J., Seebohm, T. & Wright, R. (2001) *Project 3E: Computational Support Mechanisms for Spatial Literacy in Education: Evaluating Computer-Assisted Spatial Literacy Learning Environments* - [http://n-rhino.ald.utoronto.ca/vds\\_site](http://n-rhino.ald.utoronto.ca/vds_site) (accessed 12/06/06)

taught online in particular disciplines. Originally developed at the University of British Columbia, Vancouver, Canada (UBC), WebCT is presently used by numerous universities and colleges worldwide.

In the same way that the traditional design studio is arguably unique as a form of educational delivery compared to many other disciplines, the *online-studio* also needs to be structured differently to other courses offered online by education institutions. The online, or *virtual design studio* (VDS)<sup>140</sup> as it is often termed, ideally involves an online *community* rather than isolated one-on-one communication and refers to a networked studio distributed across space and time.<sup>141</sup> Conducting studio-based creative practice online is a challenge in that it aspires to facilitate the creative process within a web-based environment based on relatively loosely structured modes of teaching and learning.

Students are situated in various locations and their communications and design processes are computer mediated and supported to allow designers to participate in social interaction as well as individual and collaborative creative problem solving. Collaboration is a key concept and implies that the members of the design team share a common goal. This can be differentiated from cooperation, which although similar, suggests that the design team work together on separated components rather than actually share the creative process in unison.<sup>142</sup> There have been many varied formats in the relatively short history of online design studios. The major differences often manifest themselves in the areas of communication and collaboration.

Communication in the online design studio can be broadly classified in two ways; *asynchronous* and *synchronous*. Asynchronous communication refers to designers working at different times, possibly on different parts of the design brief, without the simultaneous presence of other team members in the same time frame. Basic technology that facilitates asynchronous communication includes email, online forums and FTP (file transfer protocol). Conversely, synchronous communication implies the simultaneous presence and participation of all designers in the online

---

<sup>140</sup> This term was first used by William J Mitchell in his talk at the MIT Media Lab in 1993 (Referenced by Wojtowicz, 1995)

<sup>141</sup> Maher, M. L., Simoff, S. & Cicognani, A. (1996) 'The Potential and Current Limitations in a Virtual Design Studio', University of Sydney, <http://www.arch.usyd.edu.au/~mary/VDSjournal#pote> (accessed 19/03/02)

<sup>142</sup> Maher, M. L., Simoff, S., & Cicognani, A. (2000) *Understanding Virtual Design Studios*, Springer-Verlag, London, p 73.

design studio supported by high-bandwidth technology such as video conferencing, shared electronic whiteboards and live chat-rooms. Most online studios have tended to rely on a mixture of both methods of communication.

Collaboration in the online design studio, according to a study by Maher, Simoff and Cicognani<sup>143</sup>, can be divided into two opposite ways of sharing design tasks. *Single task collaboration* means that each designer contributes his/her own view over the entire problem. The design outcome is a product of a continued attempt to create a shared conception of and solution to the design task. *Multiple task collaboration* means the design problem is divided up amongst the participants in such a way that each person is responsible for a certain part of the overall design.

Online design studios rarely stick to just one of these methods; rather, as defined by Wojtowicz, Seebohm and Wright<sup>144</sup>, they include:

- Collaborative asynchronous environments with shared goals.
- Students communicating with clients/organisations.
- Students from two or more institutions working collaboratively on a single design.
- Individual designs within a group being chosen for collaborative work
- Virtual study abroad, where students work on sites in each other's countries and communication is about the site and culture of the partner's location.

## ***K***van's theories for effective online design studios

Professor Thomas Kvan, former Dean of Hong Kong University's Department of Architecture, is one of the most prominent contemporary advocates of the online studio method and has published widely through papers such as *The Problem in Studio Teaching*<sup>145</sup> and *The Pedagogy of Virtual Design Studios*.<sup>146</sup> His theories are

---

<sup>143</sup> Maher, M. L., Simoff, S. & Cicognani, A. (1996) 'The Potential and Current Limitations in a Virtual Design Studio', University of Sydney, p 1.  
<http://www.arch.usyd.edu.au/~mary/VDSjournal#pote> (accessed 19/03/05)

<sup>144</sup> Wojtowicz, J. Seebohm, T & Wright, R. (2001) *Project 3E - Computational Support Mechanisms for Spatial Literacy in Education: Evaluating Computer-Assisted Spatial Literacy Learning Environments*,  
[http://n-rhino.ald.utoronto.ca/vds\\_site](http://n-rhino.ald.utoronto.ca/vds_site) (accessed 28/05/05)

<sup>145</sup> Kvan, T. (2001) 'The Problem in Studio Teaching – Revisiting the Pedagogy of Studio Teaching, Architectural Education for the Asian Century', *Proceedings of the 1st ACAE Conference on Architectural Education*, Milton Tan (ed), Centre for Advanced Studies in Architecture, National University of Singapore, pp 95-105.

grounded in experiential knowledge and based on both face-to-face and online design studio initiatives he was involved with through his department. His research on, and personal involvement with, online studios led him to make a number of recommendations that he believes contribute to effective online studio practice.

One of Kvan's major propositions is that a focus on *process* is essential in design education. He argues that the design process in the contemporary face-to-face studio is missing an essential step. This step he calls *deliberation* and refers to taking a critical distance to the process (after the event of designing) and examine what took place. This process of deliberation is essential for reaching the level of *knowing-in-action* described by Schön. Kvan hypothesised that deliberation is most often absent in face-to-face studios due to the inordinate emphasis placed on the end product and final verdict. He states, "the student remembers only the battering they received in the review of the product, not the journey of getting there and the lessons learned. To overcome this, we need to introduce deliberation and build it in to our teaching."<sup>147</sup>

A second major proposition made by Kvan and many other contemporary academics is that *collaboration* is an essential part of designing. The goal of a studio, whether face-to-face or online, should be "a collaborative learning experience, one that brings students to understand how to explore and learn together in design without the ego of any individual dominating."<sup>148</sup>

Kvan advises that simply placing people in teams does not necessarily constitute effective collaboration as peer-learning is dependent on trust between the group members. As Nancy Yen-Wen Cheng from the University of Oregon noted in *Place, Time and the Virtual Design Studio*<sup>149</sup> "isn't trust, which leads to rapport, very critical in the germinating stages of a project when directions are being formulated?"<sup>150</sup> Time also seems to be an essential factor in allowing students to get

---

<sup>146</sup> Kvan, T. (2001) 'The Pedagogy of Virtual Design Studios', *Automation in Construction*, Vol. 10, No. 3, pp 345-353.

<sup>147</sup> Kvan, T. (2001) 'The Problem in Studio Teaching – Revisiting the Pedagogy of Studio Teaching, Architectural Education for the Asian Century', *Proceedings of the 1st ACAE Conference on Architectural Education*, Milton Tan (ed), Centre for Advanced Studies in Architecture, National University of Singapore, pp 98.

<sup>148</sup> *Ibid*, p 101.

<sup>149</sup> Cheng, N., Wojtowicz, J. & Kvan, T. (1994) 'Place, Time and The Virtual Design Studio', in *Re-connecting: Proceedings of Association for Computer Aided Design in Architecture (ACADIA 94)*, St. Louis.

<sup>150</sup> *Ibid*, p 119.

to know each other online. Cheng has been involved in several well-documented early online studios, some in collaboration with Professor Kvan. One observation she made was that, “students felt that they were just barely getting to know their partners when the project finished.”<sup>151</sup> This is certainly a phenomenon that I have also encountered numerous times through the global design projects I have hosted as part of *Omnium’s* research over the last decade.

In terms of effective communication, Kvan agrees with Schön’s theory that somehow the *tacit* knowledge associated with the profession must be conveyed. This requires regular reviews between student and educator. But, when reviews are not face-to-face new conventions need to be developed. Exposure to the tacit can be easily lost when proximity changes and synchronous communication is replaced with asynchronous. The answer is not necessarily simulation of presence through high-bandwidth tools as one of Kvan’s aims is success despite any bandwidth. He suggests that it is possible to overcome many problems of remote presence by developing conventions such as “acknowledging receipt of a communication and periodic announcements of attention (such as an email saying ‘still here’), etc.”<sup>152</sup> Another observation Kvan makes is that to enable effective communication there is an added responsibility for the tutor to help the students understand the new medium that in some cases can be unreliable, difficult and cumbersome.<sup>153</sup>

## *E*arly online design studio initiatives

Online studios within visual arts (specifically design) education have a relatively short but exciting history. Between 1995 and 1997, virtual design studios (online design studios) began to flourish and publications about the experiences appeared from many studios. The period has been described as a “watershed of VDS evolution”.<sup>154</sup> Explored and implemented by numerous universities and design schools worldwide, their different configurations are numerous.

---

<sup>151</sup> Ibid, p 10.

<sup>152</sup> Kvan, T. (2001) ‘The Pedagogy of Virtual Design Studios’, *Automation in Construction*, Vol. 10, No. 3, p 349.

<sup>153</sup> Ibid, p 349.

<sup>154</sup> Laiserin, J. (2002) *Digital Architect: From Atelier to E-telier: Virtual Design Studios*, Architectural Record, New York, January, p 141.

Although experimentation in remote collaboration can be traced back to 1988,<sup>155</sup> the first recognised virtual design studio (VDS) took place in 1992 entitled: *Distanced Collaboration*.<sup>156</sup> Students and tutors from The University of British Columbia (Canada) and Harvard, (Cambridge, USA) collaborated to design a small, prefabricated warehouse. There were a large number of collaborators with communication between them mainly facilitated asynchronously using email and FTP (file transfer protocol). This project was an experimental predecessor to a more major collaborative online design initiative titled *The Virtual Village* project, which took place in 1993.<sup>157</sup>

Documented extensively, the *Virtual Village* project ran for three weeks between 54 students and tutors of architecture from the Massachusetts Institute of Technology, USA (MIT), Harvard (Cambridge), Hong Kong University (HKU), UBC and Washington University (Figure 1). The design brief asked participants to collectively design the modernisation of a traditional Chinese walled village. It was the first project to use a digital pinup board - an online storage and display database directly analogous to pin-up presentations used in conventional studio practice. Despite bandwidth limitations, the project was considered one of the first successful activities to demonstrate online collaborative design and communication. Students described ease in communication between the varied locations and a high level of social engagement.

---

<sup>155</sup> The *Rococo* project, run by Steven Scrivener between 1988-1992, was a study into pairs of students involved in collaborative design online. In the first stage, students were located face-to-face, but in the second stage subjects were located remotely from each other and connected by audio and video links, plus a computer mediated shared drawing surface (Garner, 2001).

<sup>156</sup> Wojtowicz, J., Davidson, J., & Mitchell, W. J., (1992), 'Design as Correspondence', *ACADIA '92 Conference*, The Association of Computer Aided Design in Architecture, pp 114-119.

<sup>157</sup> Wojtowicz, J. (1995) *The Virtual Design Studio*, Hong Kong University Press, pp 1-15.



Figure 1 – Image of HKU and UBC models by Lee Wai Keung, Alpha, Tony Leung, Mak Kiu Yan, Wayne, Wong Lai Wah, Winnie, Yeung Chi Hung, Wallace within the project: *Virtual Village: Kat Hing Wai*, February 1993.

Following the earliest VDS initiatives, many more universities began to experiment with similar online design studios. In 1994, the *Li Long Housing* project broke new ground by including the largest number of participating universities.<sup>158</sup> Again, architecturally focused, the brief was to design modern, medium density housing for Shanghai, and involved teams from HKU (Hong Kong), ETSAB (Barcelona, Spain), MIT, Cornell University, Washington University (USA) and UBC (Canada).

Two similarly large-scale collaborative VDS projects took place the following year in 1995. The first was the *VDS Live/Work* project<sup>159</sup> in which four international design schools (ETH Zurich, MIT, UBC, University of Sydney) participated in a shared design program, however, there appeared not to have been collaborative work between the schools. The project brief asked participants to design a house/residence in which an architect could live in a remote area but remain connected to the larger world of design and industry through new technologies (Figure 2).

<sup>158</sup> Cheng, N., Wojtowicz, J. & Kvan, T. (1994) 'Place, Time and The Virtual Design Studio', in *Re-connecting: Proceedings of Association for Computer Aided Design in Architecture (ACADIA 94)*, St. Louis, p 119.

<sup>159</sup> VDS 1995 | (Live/Work Project <http://www2.arch.ubc.ca/research/vds/liveworkproject.html> (accessed 09/05/08))



Figure 2 – Live/work houseboat by Gordon Martyshuk, Susan Ockwell, and Gordon Sung (Group 4, UBC). Live/Work Project, 18 April - June 1995, ETHZ, UBC, Sydney, MIT.

The second project in 1995 was the *Australian VDS* project, between the Universities of Sydney, Brisbane, and Tasmania.<sup>160</sup> The objective of the project was to design a small pavilion for the Sydney 2000 Olympic site, at Homebush Bay, to accommodate an exhibition of the planning and development of Olympic buildings (Figure 3). The building aimed to meet the environmentally sustainable development (E.S.D.) criteria of the Olympic games.

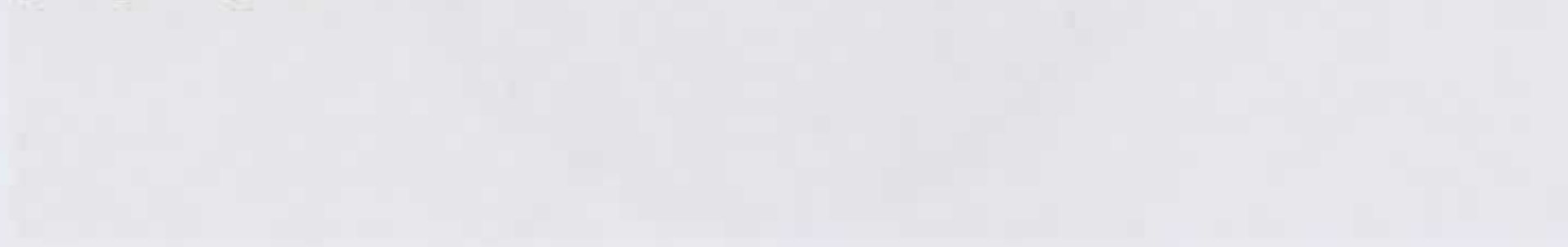


Figure 3 – The pavilion at VDS Research. The pavilion is a small building designed to accommodate an exhibition of the planning and development of Olympic buildings. The pavilion is located at Homebush Bay, Sydney, Australia. The pavilion is a small building designed to accommodate an exhibition of the planning and development of Olympic buildings.

The pavilion was designed to be a small building that could accommodate an exhibition of the planning and development of Olympic buildings. The pavilion was designed to be a small building that could accommodate an exhibition of the planning and development of Olympic buildings. The pavilion was designed to be a small building that could accommodate an exhibition of the planning and development of Olympic buildings.

The pavilion was designed to be a small building that could accommodate an exhibition of the planning and development of Olympic buildings. The pavilion was designed to be a small building that could accommodate an exhibition of the planning and development of Olympic buildings. The pavilion was designed to be a small building that could accommodate an exhibition of the planning and development of Olympic buildings.

<sup>160</sup> <http://www2.arch.ubc.ca/research/vds/homebushbay.html> (accessed 09/05/08)



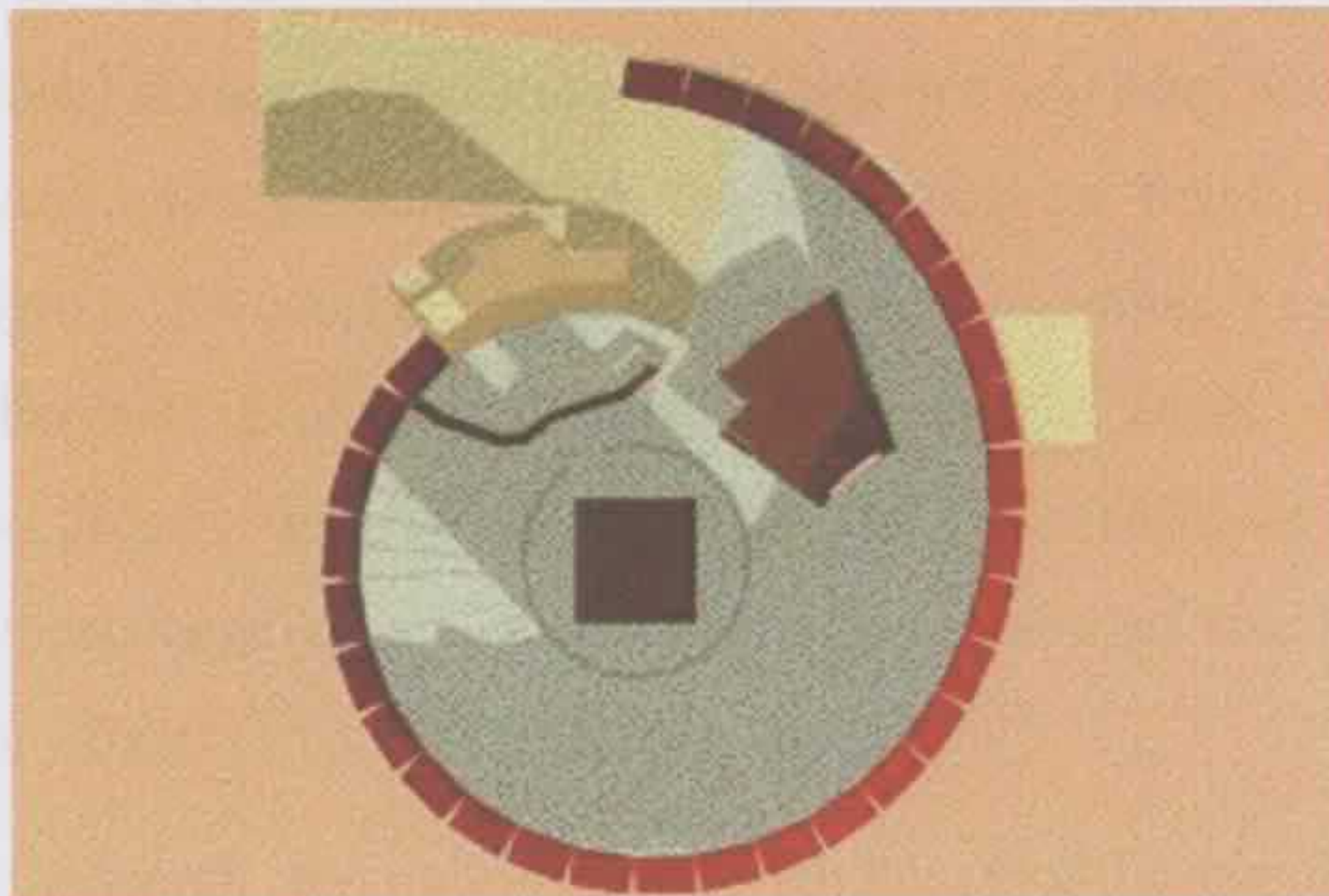
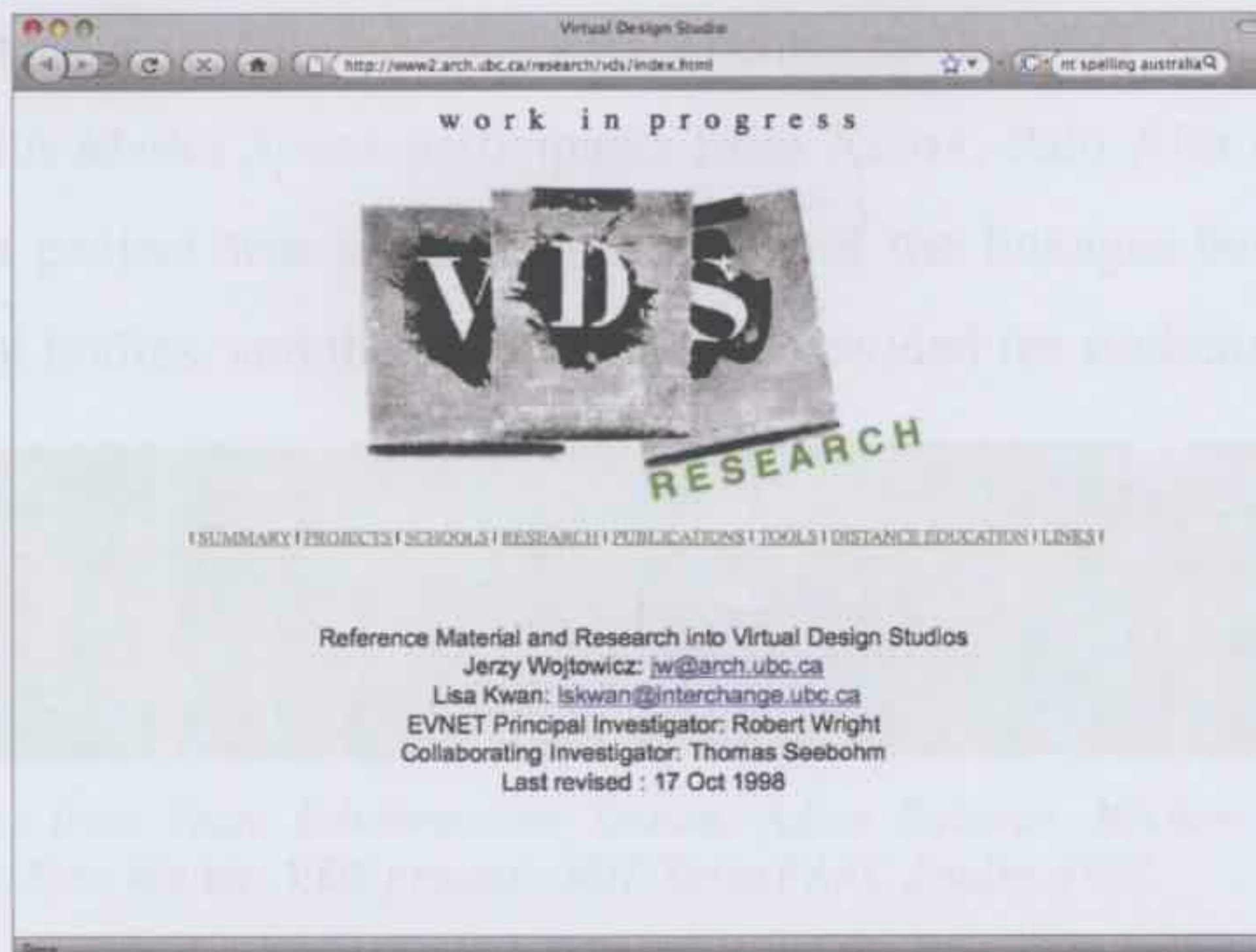


Figure 3 – Screenshot of VDS Research. The image is the final building design as developed by Sydney students Saul Deane, Matt Elkan, Maria Pizzinga, David Priddle, Mark Privett, David Simpson, Lydia Tiutiunnik as a part of the Olympic Exhibition Building: Homebush Bay (Australian VDS 1995) - <http://www2.arch.ubc.ca/research/vds/index.html>

Each student initially developed individual concept designs and following a critique session one concept design was selected to be developed further. The chosen design was then collaboratively progressed by students from the three universities. The project was relatively short in duration and designs outcomes were not implemented. It existed as a conceptual project only, however, was significant in the way students initially took part as individuals before later collaborating and working on a project they had peer-assessed.

In 1997, PARC Xerox and an MIT design studio took advantage of almost unlimited bandwidth by using video-conferencing in an attempt to integrate information technologies with physical space to produce a ‘*new urbanism*’.<sup>161</sup> This studio was an

<sup>161</sup> *New Urbanism* is an urban design movement, which promotes *walkable* neighborhoods (how friendly an area is to walking) that contain a range of housing and job types. It arose in the United States in the early 1980s and continues to reform many aspects of real estate development and urban planning.

example of students communicating with clients, as the MIT students had online consultation with *Media Space* participants from Xerox, Palo Alto Research Centre (PARC).<sup>162</sup> The project was significant in terms of the linkages between education and professional bodies, and the experience this provided for students (Figure 4).



Figure 4 – Images from Team B/Information Station: Adam Balaban, Michael Kilkelly, Benjamin Kou, Kristin Little, Eric Walter: VDS project - MIT/XeroxPARC Studio, 1997.

Concurrently, Sue Gollifer, lecturer at the University of Brighton developed one of the first educational online art studios, titled; *Presence and Imagination*. The project involved first year undergraduates from the University of Brighton and the Basel School of Design in Switzerland and was inspired by limited examples of online collaborations between professional artists; for example, *Insite* was a seven-day intensive online project with artists based in the UK, Australia and Norway. It facilitated an interchange of art images through the use of the Internet and file transfer protocol - FTP).<sup>163</sup>

In her extensive research into online creative studios, Gollifer concluded that online collaboration could be beneficial to fine arts practice, a discipline traditionally considered an individual pursuit. A significant finding from the project was how the online collaboration between participants reduced students' sense of ownership over their work. The main benefits were the transferable skills gained by the students from project experience and the opportunities presented by collective artistic authorship ... "as we explore collaborative art and image exchange further, new and evolving digital technologies will ultimately bring a better understanding of the visual creative process."<sup>164</sup>

---

Katz, P. (1994) *The New Urbanism: Toward an Architecture of Community*, McGraw-Hill, New York, p xi.

<sup>162</sup> Bento, J. (2004) *Collaborative Design and Learning: Competence Building for Innovation*, Greenwood Publishing, Westport, p 357.

<sup>163</sup> Gollifer, S. (2002) 'Bits & Bytes: Collaborating Together in Fine Art Printmaking', *Online Conferencing in the Arts and Humanities*, hosted by HANS, De Mountford University, Milton Keynes, UK, p 5.

<sup>164</sup> *Ibid*, pp 16-23.

This was one of the first VDS examples in which participants had not only worked together in art and design collaboration, but had specifically shared their artistic expression and intentions.

Also of interest was the 1997 *ICON* project which explored the feasibility of online collaborative product design.<sup>165</sup> This virtual studio was conducted between Glasgow School of Art and Strathclyde University, involving teams of product designers. A shared workspace facility was utilised which allowed the user to upload graphics, text and other documents to shared storage areas that could be accessed by other invited team members. Students could not only upload work for their peers to view, but that they could also download the work and rework the files before replacing them into the project.

One of the most influential VDS' was held in 1998 involving collaboration between ETH Zurich, Hong Kong University (HKU), University of Washington, University of British Columbia (UBC), and the Bauhaus University Weimar (BUW). The project titled: *A Place2Wait*, focussed on exploiting time differences between remote collaborating schools. Termed the *24-hour design cycle*, groups of students in time zones approximately 8 hours apart would work an 8-hour shift each 24-hour day. After each working period of 8 hours, students in one location would then pass the design onto the next time-zone. Design was therefore continuous around the clock, and iteration, self-criticism and peer criticism cycles occurred at a rapid pace (Figure 5).<sup>166</sup>

---

<sup>165</sup> Sclater, M., Sclater, N., & Campbell, L. (1997) 'ICON: Evaluating Collaborative Technologies', *Active Learning*, Vol. 7, pp 41-46.

<http://cvu.strath.ac.uk/courseware/cvds2/visitors/icon1.html>

<sup>166</sup> VDS Structure Project in Wojtowicz et al (2001)

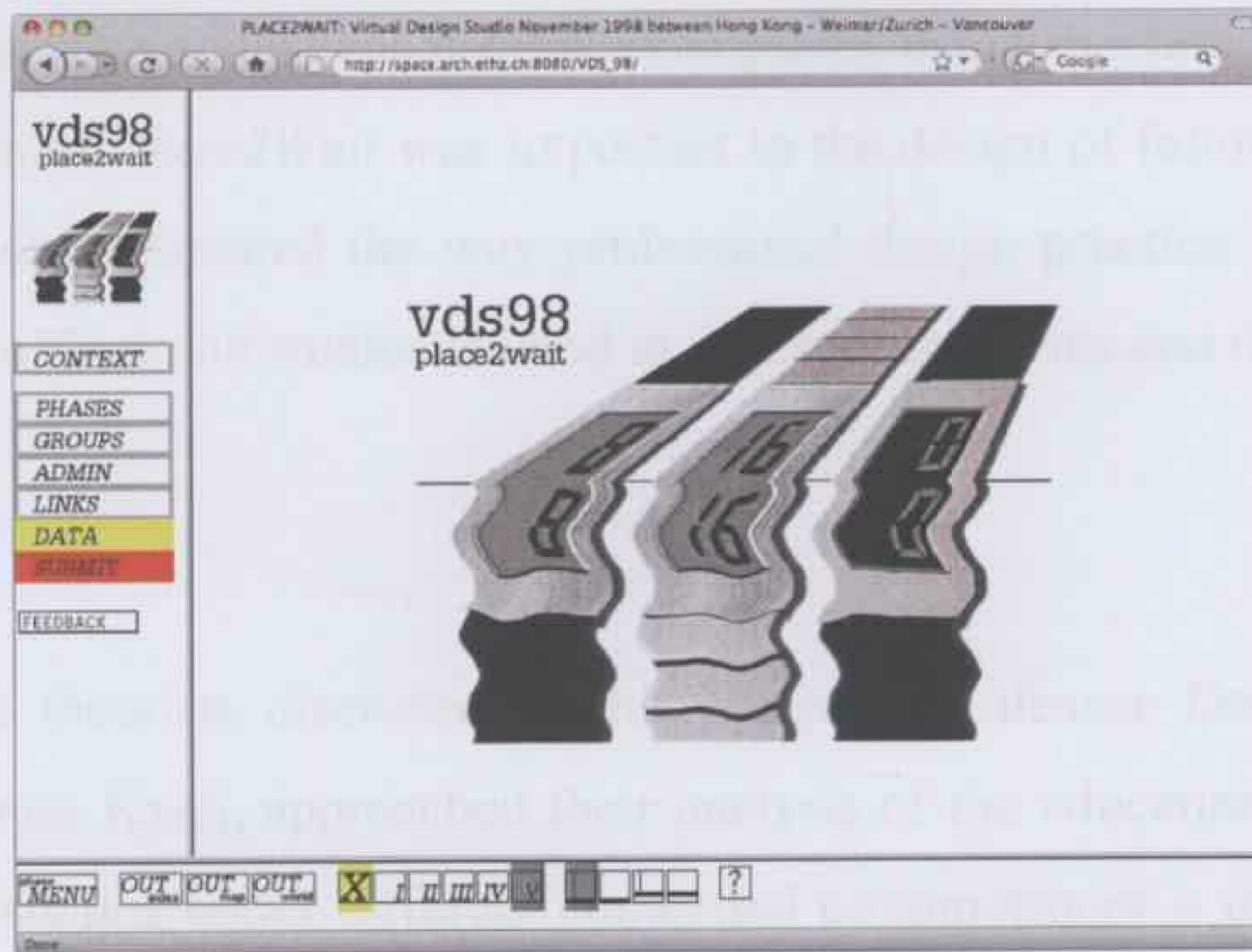


Figure 5 – Screenshots of work produced in 1998 during A Place2Wait, an online studio between HKU, ETH Zurich (Switzerland), University of Washington (USA), UBC (Canada) and BUW (Germany) - [http://space.arch.ethz.ch:8080/VDS\\_98](http://space.arch.ethz.ch:8080/VDS_98)

Working across time-zones was a clear example of using the Internet to one of its best advantages. *A Place2Wait* was important to the design of future online creative projects because it mirrored the way professional design practice was undertaking work between offices and studios located in different countries and time-zones.

## **S**ummary

The two main theorists discussed in this Chapter, Professor Donald Schön and Professor Thomas Kvan, approached their analysis of the education of the designer within design studios under different contextual circumstances – the former within face-to-face instances whilst the latter explored the notion of the virtual (online) design studio. By integrating Professor Donald Schön's theories of the traditional design studio with Professor Thomas Kvan's more contemporary re-evaluation of design studio education through the online studio, a theoretical set of criteria can be produced which is appropriate to effective online (or face-to-face) design studios. I have identified the following four conditions that enhance effective online visual arts studio education:

### *Four conditions suggested for online visual arts studio education*

1. *Learning-by-doing* should be a central concept to the studio, as the fundamental concepts of design can only be grasped in the context of *doing*. Ideally, this is a process in defining a problem that is in part uncertain, complex, undefined or incoherent. The student is encouraged to construct and impose coherence upon the problem - a positive process in identifying and researching a problem before attempting to solve it.

2. *One-to-one dialogue* between teacher and student is considered crucial. This dialogue is in the context of the student's attempts to solve the design problem and may take the form of regular reviews during the design process. Both Schön and Kvan uphold that *one-on-one* communication is essential for exposure to the *tacit* knowledge inherent in designing (whether this is face-to-face or remote).

3. A *collaborative context* for teaching and learning is another important element for effective design studios and identified by many contemporary academics. Both Kvan and Cheng noted that in an online environment, real collaboration, which entails students sharing their work on a creative problem, rather than individuals working

independently within a team, is based, in part, on the development of *trust* between the team members.

4. *Process-focus* is a central concept to an effective design studio. This concept proposes less emphasis on the final evaluation of the outcome and foregrounds deliberation and reflection as part of the design process.

In retrospect, it can be noted that most of the online design studio initiatives described throughout this chapter do not embrace all four of the suggested criteria.

---

631

Thesis

---

- CHAPTER FIVE -  
REVIEWING ACADEMIC CULTURE:  
MYTHS AND OPINIONS ABOUT ONLINE LEARNING

---

## **O**verview

Arguments, opinions and myths regarding online education have remained prevalent since the latter years of the 1990s and throughout the early years of the new millennium. The real battles or challenges to achieving success and effective online education (in any discipline) are not solely those regarding pedagogical and structural issues, but also those concerning political and social conditions that exist within universities and colleges at tertiary or higher education level.

In 2003 I co-wrote a paper titled; *The Future has Already Happened: Dispelling Some Myths of Online Education* <sup>167</sup> with two of my colleagues, Senior Lecturer Andy Polaine and Associate Professor Leong Chan (UNSW). Both have contributed significant research over the last decade and some parts of this Chapter include extracts from the paper and refer to issues we collectively addressed. In particular, I refer to issues that analyse the context of introducing online education to what is now an established yet surprisingly conservative field of visual arts and design education.

## **I**dentifying and dispelling myths surrounding online learning and teaching

Globally, the majority of early responses to growing requests for online learning and teaching tended to embrace and implement new technologies with little thought to why they should be used in the first place or what it might mean to work with them in such a way. In *Effectiveness and Cost-Effectiveness of Online Education: A Review of the Literature*, <sup>168</sup> its authors undertook a major study based on a wide review of the literature and case-studies that investigated the effectiveness and cost-

---

<sup>167</sup> Bennett, R. Polaine, A. & Chan, L. (2003) 'The Future Has Already Happened: Dispelling Some Myths of Online Education Australian Council of University Art and Design Schools (ACUADS)', *National Conference Proceedings*, Australian National University, Canberra.  
[http://omnium.net.au/assets/downloads/papers/2004\\_acuads\\_future.pdf](http://omnium.net.au/assets/downloads/papers/2004_acuads_future.pdf) (accessed 01/05/09)

<sup>168</sup> Jung, I. & Rha, I. (2000) 'Effectiveness and Cost-Effectiveness of Online Education: A Review of the Literature', *Educational Technology*, Vol. 40, No. 4, pp 57-60.



effectiveness of online education. It identified three major variables that contribute to success in online learning: instructional design, social matters, and students' personal factors. During the period of initial interest in e-learning during the late 1990s, we argued in our paper that these important considerations were more often overlooked.

In terms of time and cost savings, the benefits of new technologies are somewhat questionable and need to be viewed in the context of the quality assurance (QA) of universities and their learning and teaching activities.<sup>169</sup> In addition, it is argued that for online learning to become part of mainstream practice, it needs to sit comfortably with teachers and students and therefore be easy to use and maintain. Teacher expertise and student readiness must be supported by an adequate technology infrastructure for a successful online learning environment to exist.<sup>170</sup>

In our 2003 ACUADS paper, my colleagues and I stated our belief that two main influences were largely responsible for the poor start and reputation of online or e-learning. When examining the 'lay of the land' worldwide regarding online education at the beginning of 2001, it was not difficult to observe two key drivers which led to a rapid growth of activity in economics and technology. Under-funded education institutions and greedy software companies had metaphorically flattened the pedagogical landscape in a scramble to quickly establish their online presence. In general, what resulted were more often hastily planned and low quality online courses and programs. Unfortunately, this reinforced a common belief that online education was a poor substitute for face-to-face learning and teaching.<sup>171</sup> To reinforce our belief, it was observed at the time that 'many commentators and analysts are making dramatic claims about the growth in the markets for online learning, though it is hard to find such claims being made by people who do not have a vested economic interest.'<sup>172</sup>

---

<sup>169</sup> Biggs, J. (2001) 'The Reflective Institution: Assuring and Enhancing the Quality of Teaching and Learning', *Higher Education*, Vol. 41, No. 3, pp 221-238.  
<http://www.springerlink.com/content/m2472106v357t754/fulltext.pdf?page=1> (accessed 02/05/09)

<sup>170</sup> Oliver, R. (2001) 'Assuring the Quality of Online Learning in Australian Higher Education', in Wallace, M., Ellis, A., & Newton, D. (eds.) *Proceedings of Moving Online II Conference*, Southern Cross University, Lismore,  
<http://elrond.scam.ecu.edu.au/oliver/2001/mocpaper.pdf> (accessed 11/04/09)

<sup>171</sup> Conlon, T. (1997) 'The Internet Is Not a Panacea', *Scottish Educational Review*, Vol. 29, No. 1, p 30-38.

<sup>172</sup> Goodyear, P., Salmon, G., Spector, J. M., Steeples, C. & Tickner, S. (2001) 'Competences For Online Teaching: A Special Report', *Educational Technology, Research and Development*, Vol. 49, No. 1, p 65.

## *Setting an Australian context for online education in art and design*

Despite government funding for Australian higher education being reduced significantly throughout the last decade (mainly through policies of the federal Liberal government from 1996-2007), student enrolments continued to increase causing a strain on the 'supply and demand' relationship between institutions, students and professional industries. For example, between 1995 and 2004, expenditure on higher education in Australia *did* increase at a rate of 32% per year (compared to an average of 55 % for OECD countries), however, this was mainly due to private investment as government funding over the same period actually decreased by 4% in real terms.<sup>173</sup>

The drop in federal government funding in Australia meant that universities and higher education institutions had to be managed far more like commercial business than ever before. Anyone attending an education marketing event in south-east Asia over the last ten to fifteen years, and more recently those in India, China and Europe, can see how international alliances and attracting international students has become significantly more financially important for Australian universities. No doubt, this situation contributed to the reasons why online delivery of learning and teaching in the 21<sup>st</sup> century was heralded as a desirable direction and aim of the future.<sup>174</sup>

Similarly, Australian art and design education has also been affected by the contrast between funding cuts and increased student demand for places. As funding for higher education in general continues to cause universities concern, art and design faculties have had to look at strategies to overcome the shortfall by increasing student numbers and extending international alliances and networks.<sup>175</sup> Typical scenarios experienced in visual arts studio education include increased staff-student ratios, the

---

<http://www.eurolinguaict.net/downloads/Barcelona/Modulo01/Competences+for+online+teaching.pdf>  
(accessed 21/04/09)

<sup>173</sup> Macbean, N. (2008) "'Feel Good" University Funding Breeds Mediocrity', ABC News,  
<http://www.abc.net.au/news/stories/2008/10/29/2404752.htm>, (accessed 28/5/09)

<sup>174</sup> Marginson, S. (2002) 'Education in the Global Market: Lessons From Australia', *Academe Online*,  
May-June Issue,  
<http://www.aaup.org/AAUP/pubsres/academe/2002/MJ/Feat/Marg.htm>, (accessed 28/05/09)

<sup>175</sup> Mazzarol, T., Soutar, G. & Seng, M. (2003) 'The Third Wave: Future Trends in International Education', *International Journal of Educational Management*, Vol. 17, No. 3, pp 90-99.

reduction of timetabled lecture, studio and workshop hours and the substitution of small group studio sessions with mass lectures.

Despite initial engagements in online delivery of courses and programs by many education institutions that were commonly defended on premises of improving teaching and learning, more often, economic necessities and perceived financial savings appeared the primary impetus for growth in the area. And it is true, there *are* a number of economic advantages that *do* make online education an attractive option.

Using the Internet as a basis for education *can* increase the potential for additional enrolments, whilst delivering subjects online *can* lighten the demand on institutional resources. In addition, with international linkages between institutions increasingly encouraged, the Internet *can* offer the perfect context for such engagements to be realised.<sup>176</sup> However, there is no doubt that university and faculty administrators believed that by an increased use of technology, and specifically teaching via the Internet, academic staff would be able to teach more students and in turn provide better service in terms of providing online notes and resources and in a shorter amount of time.

However, it has rarely been mine or my co-authors experience that new technologies, in particular e-learning software options, actually give teachers more time to pursue other activities - such as academic research. Many teachers now spend many hours a week responding to e-mail communications, editing coursework documents for online delivery, learning new software applications for both academic and administrative purposes and even fielding work calls on mobile phones outside traditional working hours.

Another influential driver for online education has been the readiness to embrace advances in computer technology by universities and colleges. Perhaps, such an agenda makes them feel they are 'modern', 'up to date,' and 'in touch' with industry. Unfortunately, there is widespread belief that technology, itself, provides a valuable 'tool-set' that allows important pedagogical structures and issues to be implemented. *Omnium's* research argues that this is *not* the case in many online programs that have

---

<sup>176</sup> Bonk, C. J. & Kim, K. (2002) 'Cross Cultural Comparisons of Online Collaboration', *Journal of Computer-Mediated Communication*, Indiana University, <http://jcmc.indiana.edu/vol8/issue1/kimandbonk.html> (accessed 07/05/09)

been observed, as technical factors and poor software choices more often dictate and restrict content and delivery of online courses rather than enhance it.

Online education has, no doubt, been strongly influenced by the availability of the latest computer technology, but in many instances colleges and universities now find themselves locked into expensive licensing contracts for software that, after using them, neither seem comfortable or effective for subject delivery or use by students, academics or administrators. Notably, this is particularly the case in areas of online education relating to visual arts and design. An interesting study produced by academics from Cumbria Institute of the Arts recognised an extensive list of software applications that were useful in supporting isolated aspects of e-learning in the visual arts, but none were identified as complete *virtual learning environments* (VLE) that could conduct and manage learning online in areas of art, design and media.<sup>177</sup>

In July 2003, the city of Busan in South Korea hosted the first *Seminar for the International Distance Education Network*. Representatives from twelve Asia-Pacific rim countries agreed that in general a poor quality and under-researched standard of online education existed, worldwide. The seminar delegates agreed that in many instances, what had eventuated as a result of the first-decade of online education was merely an updated version of some fairly un-engaging distance learning.

In summary, online education should not be seen as:

- A cost cutting approach to learning and teaching
- A time-saving approach to learning and teaching
- A replacement for face-to-face learning
- The latest interpretation of distance-learning
- A place where students can teach themselves (disguised as peer-learning)

### *I*ssues to consider when examining online pedagogical approaches

Fortunately, in recent years, more credible education institutions have realised that achieving quality in terms of content delivery and the student and teacher experience

---

<sup>177</sup> Logan, C., Allan, S., Kurien, A. & Flint, D. (2007) 'Distributed E-learning in Art, Design, Media: An Investigation Into Current Practice', *Art Design Media Subject Centre – Higher Education Academy (ADM-HEA)*, p 6.  
[www.adm.heacademy.ac.uk/library/files/adm-hea-projects/del-1/4-findings-from-survey-research.pdf](http://www.adm.heacademy.ac.uk/library/files/adm-hea-projects/del-1/4-findings-from-survey-research.pdf)  
(accessed 17/4/08)

must be the key component and driver of any online education agenda. It became apparent that to achieve purposeful online subjects/courses, educators needed to look past an immediate return and view more long-term solutions.<sup>178</sup>

Before discussing specific issues which encourage *quality* within any online delivery of courses and programs, let alone those in art and design disciplines, one should first seriously question the online pedagogical approaches within today's educational context:

1. Is there any need for online education?

“Changes in both the levels of funding and the profiles of students have led to an increasing emphasis on the use of flexible methods of course delivery in higher education and as part of that trend there is increasing interest in the use of communication and information technologies.”<sup>179</sup>

2. If such a need exists, what can ultimately be achieved or even gained?

“Among the benefits of online education include the permanence of online text, the availability of online mentors, and the fostering of student idea generation.”<sup>180</sup>

Despite previously criticising *economics* and *technology* as factors that have caused problems for online education, there are other more important considerations when planning any online education initiatives.

It is necessary, for example, to acquire an understanding of the Internet as it is the context that we expect students to learn within and therefore we need to appreciate and understand the nature of interaction that they encounter. Far too often, design for the Internet, especially relating to education, is based on face-to-face scenarios.<sup>181</sup>

An online classroom is *not* the same as an on-campus classroom. Online teaching

---

<sup>178</sup> Oliver, R. (2001) ‘Assuring the Quality of Online Learning in Australian Higher Education’, in Wallace, M., Ellis, A., & Newton, D. (eds.) *Proceedings of Moving Online II Conference*, Southern Cross University, Lismore, pp 222-231.

<http://elrond.scam.edu.au/oliver/2001/mocpaper.pdf> (accessed 11/04/09)

<sup>179</sup> Curtis, D. & Lawson, M. (2001) ‘Exploring Collaborative Online Learning’, *JALN*, Vol. 5, No. 1, p 21.

<sup>180</sup> Roberts, T. S., (2004) *Online Collaborative Learning: Theory and Practice*, Idea Group Inc, Hershey, PA, p 54.

<sup>181</sup> Legutko, R. S. (2007) ‘Face-to-Face or Cyberspace: Analysis of Course Delivery in a Graduate Educational Research Course’, *MERLOT Journal of Online Learning and Teaching*, Vol. 3, No. 3, <http://jolt.merlot.org/vol3no3/legutko.htm> (accessed 07/05/09)

and learning is a different practice to that which most students and teachers are accustomed in more traditional classrooms.<sup>182</sup>

If differences between face-to-face and online settings are acknowledged as potential advantages rather than obstacles, exciting and valuable experiences and events can take place. It is my observation that the first decade of e-learning did not adequately consider the differences, or in some instances consider them at all. It is for these reasons that online education has often been considered a *lesser* option compared to face-to-face teaching and learning.<sup>183</sup> It is important to realise that online education offers additional options; it is not a replacement of or in competition with traditional face-to-face approaches. This point reinforces Warwicker's claims when he states that *new technology is not about replacement but addition*.<sup>184</sup> For example, technology now offers opportunities for more collaborative forms of distance learning; it reduces travel time/costs for students; and it supports both synchronous and asynchronous learning in multiple formats ranging from text to voice and audio communications. As Anderson argues, technology is not inherently good or bad for teaching – it is the way it is used that matters.<sup>185</sup>

## *I*ssues that cause concern for online education

The existence of deep-rooted and negative opinions regarding the quality of online learning experiences, and concerns that technology will replace the teacher, need to be addressed. *Omnium* has identified specific issues that appear to generate concern amongst many within educational settings regarding online education:

### *1. Isolated learning*

It is easy to believe that online teaching and learning can be an isolated experience because, in the majority of cases, the student is physically on their own when accessing their online course. The Internet arguably does offer a narrower bandwidth of social interaction as it is mainly text-based, but this does not necessarily lead to an isolated learning experience.

---

<sup>182</sup> Ibid.

<sup>183</sup> Conlon, T. (1997) 'The Internet is not a Panacea', *Scottish Educational Review*, Vol. 29, No.1, pp 30-38.

<sup>184</sup> Warwicker, J. (1999) 'A Virtual City in a Global Square', *Eye*, Vol. 9, No. 34, pp 38-44.

<sup>185</sup> Anderson, T. (2003) *E-learning in the 21<sup>st</sup> Century: A Framework for Research and Practice* RoutledgeFalmer, London, pp 5-6.

With well thought through activities, such as online group collaboration and discussion forums, my experience through *Omnium's* research has been that students often engage in increased participation and discussions than they would in face-to-face classes. As Moore argues; "when fewer affective communication channels are available to transmit immediacy via conventional vocal and non-vocal cues, participants in mediated communications will increase their verbal immediacy behaviours to the extent needed to preserve a sense of presence."<sup>186</sup>

*I think working online is a great way of learning and interacting with others. Communication is essential with this online project and has encouraged me to be more interactive and outspoken than I would be in a normal classroom. The fact that you can express yourself and communicate online at any time is so convenient and gives you the opportunity to really think about certain questions, ideas, concepts and answers. It makes the whole exercise a lot easier and enjoyable.*

*A.H. (student, 2007)*

Message boards and discussion forums also allow for a form of communication that does not privilege the loudest voice or the most outgoing character as it sometimes does in a face-to-face setting. Any student can make their voice known and timid students can take time to consider what they want to say before 'posting' without missing out on the moment as they might do in class. We have found that many students, especially those whose first language is not English, relish the chance to be able to check and reflect on the message they are about to post before doing so. The fact that the messages remain permanent is also a consideration as this gives rise to more thoughtful discussion and postings.

*I have to agree regarding the nature of the online learning experience. I believe I have been able to much better express myself through online communication and am less shy in giving opinions than I would be face to face. I think the ability to reflect on things in your own time is important in graphics especially in order to consider all aspects of the meaning and interpretation of an image and it's ideas.*

*J.S. (student, 2007)*

---

<sup>186</sup> Moore, J. C. (2003) *Elements of Quality Online Education: Practice and Direction*, Needham, MA, p 27.

No doubt, the majority of teachers consider real-time communication as the most normal and sociable form of interaction. Communicating asynchronously, however, can be equally rewarding. Contemporary students enjoy rich and engaging discussions and conversations via e-mail, online forums and by instant-messenger tools (IM) and mobile phone 'texting' (SMS) in their day-to-day lives. These conversations often last much longer than real-time conversations and there is the added benefit of a textual record to refer back to - something that is incredibly useful in a teaching and learning environment. As Anderson claims when discussing e-learning; "its compelling educational advantage is its capacity to support reflective text-based interaction, independent of the pressures of time and the constraints of distance."<sup>187</sup>

When I first began my online collaborative creative projects in 1999, I was often told, by some of my more sceptical colleagues, that I would never be able to capture the same social interaction that was possible in face-to-face classrooms. They were quite right in some ways, however, what I *was* able to achieve were high levels of social interactions, albeit different ones. From evaluations, over a decade, of students who have taken part in online courses and projects *Omnium* has hosted, the most frequent response is their experience of high-level social interaction – often at a level and intensity that they had not experienced before in face-to-face classes or studios.

*Well, well done everyone. I didn't get to know any of you personally, but I feel as though we are family ... some bizarre online family, but a family none the less. We have worked together, struggled with the same briefs together and we have designed together. This is where I think the strong part of the project is.*

*R.H. (student, 2007)*

## *2. Assuming online and face-to-face contexts are the same*

Another common myth is that online learning and teaching is a simple matter of transferring face-to-face course content directly to new media. It fails to consider the need for a complete re-think of activities that will engage and support the learner. This raises issues for designing and managing all learning programmes – face-to-face

---

<sup>187</sup> Anderson, T. (2003) *E-learning in the 21<sup>st</sup> Century: A Framework for Research and Practice* RoutledgeFalmer, London, p 6.



*Young people are adopting a lifestyle rather than a technology perspective: they want technology to add value to their lifestyles, satisfy their social and leisure needs and reinforce their group identity. They assess technology according to their needs rather than as a task-oriented artifact.*<sup>191</sup>

One of the most prolific growths in contemporary online interaction that has significantly shaped online culture (i.e. that of our students' generation), is the rise in popularity of social networking sites (SNSs). Sites such as *Friendster*, *CyWorld*, and *MySpace* allow individuals to present themselves, articulate their own social networks and establish or maintain connections with others. These sites are generally oriented towards work-related contexts (for example *LinkedIn*), romantic relationships (the original goal of *Friendster.com*), those with shared interests such as music or politics (for example *MySpace*), or the college student population (the original intention of *Facebook*). *Facebook* enables its users to present themselves through online profiles, accumulate friends who can post comments on each other's pages and view each other's profiles. Through its online profiles *Facebook* members can also join virtual groups based on common interests, see what classes they have in common, and learn each other's hobbies, interests, musical tastes, and romantic relationship status.<sup>192</sup>

One of the factors that I have always considered vitally important through my own online projects, whether creative projects or those with a base in education, is that of aligning the user-experience with the online experiences they encounter in their social life outside college (as described above). However, I have heard examples of e-learning managers actually restricting students to only using software features that they consider 'serious' and thus do not allow informal social interaction in areas such as chat rooms. This frustrates and alienates students and deters them from engaging in socially interactive exchanges they already use.

---

<sup>191</sup> Carroll, J., Howard, S., Vetere, F., Peck, J. & Murphy, J., (2002) 'Just What Do The Youth Of Today Want? Technology Appropriation By Young People', *Proceedings of the 35th Hawaii International Conference on System Sciences*, [http://www.hicss.hawaii.edu/HICSS\\_35/HICSSpapers/PDFdocuments/ETMIRO2.pdf](http://www.hicss.hawaii.edu/HICSS_35/HICSSpapers/PDFdocuments/ETMIRO2.pdf) (accessed 17/05/09)

<sup>192</sup> Ellison, N. B., Steinfield, C. & Lampe, C. (2007) 'The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites', *Journal of Computer-Mediated Communication*, Vol. 12, No. 4, <http://jcmc.indiana.edu/vol12/issue4/ellison.html> (accessed 22/05/09)

Understanding not just *what* our students learn but *how* they learn and *how* they live their lives is fundamental to teaching.<sup>193</sup> But, different social generations do not always change as quickly as technology and technologies that many teaching in higher education may still find novel are as everyday to our students as the telephone or television. The Internet has been part of mainstream culture for at least 10 to 15 years<sup>194</sup> and means that current school leavers may well have experienced interaction with computers for most of their lifetime. Certainly, most secondary schools now have a considerable component of computer-based work in their curriculum and school children will regularly browse the 'web' to research their homework as well as use it to communicate with each other outside school hours.<sup>195</sup>

Our students not only have an ever increasing understanding of how to interact, work and collaborate online, but also an expectation that this should form part of their learning experience. This comes as no surprise to those teachers who have used e-mail, message boards and live-chat forums. These new modes of communication have become so aligned with our workday experience and that they become less noticeable. Aligning a student's education to the realities and needs of their everyday life is, of course, a key feature to teaching and learning.<sup>196</sup> It reflects a pivotal comment made to me by *Omnium* colleague and researcher, Andy Polaine, who observed that the question increasingly asked by students was not *why* more and more of their subjects were offered online, but *why were they not* offered online?

To understand the online context in which students will study and learn is as highly important as a preparation of the course content and learning activities for online learning. It requires as much attention to pedagogy as does face-to-face learning. In fact, I would argue that it requires *more* attention as it is a new teaching environment. It requires careful planning and evaluation because there is less historical experience to draw upon. The act of devising online learning activities forces the teacher to think through the pedagogical flow of the material in a manner that is sometimes not present in lectures where it is possible to speak about a topic

---

<sup>193</sup> Brookfield, S. D. (1995) *Becoming a Critically Reflective Teacher*, Jossey-Bass, San Francisco, p 43.

<sup>194</sup> Johnson, S. (1997) *Interface Culture: How New Technology Transforms The Way We Create and Communicate*, HarperEdge, San Francisco, p 139.

<sup>195</sup> Tapscott, D. (1998) *Growing up Digital: The Rise of the Net Generation*, McGraw-Hill, New York and London, p 7.

<sup>196</sup> Karten, T. (2007) *More Inclusion Strategies That Work!: Aligning Student Strengths With Standards*, Corwin Press, California, p 126.

'off-the-cuff'. Not so surprisingly, underlying suspicion towards online teaching and learning often results in new online courses being far more rigorously analysed by education committees than many face-to-face courses.

### *3. Over-emphasis and dependence on technology and software*

As with all software and computer technology, online teaching and learning tools can either be a great success or extremely problematic. Traditional software development (including many existing and popular educational technologies) has an economic imperative to sell upgrades by developing and integrating new features. This prioritises technology over experience and it is easy to be swayed by software features whilst being blind to their usefulness. It is often frustrating to see large amounts of money spent on technologies that initially appear fascinating, but are not useful when applied to actual day-to-day scenarios.

In her book, *Computers as Theatre*, Brenda Laurel examines this issue in terms of interface design:

*Action is indeed the primary component of human-computer activity – not environments, interfaces, or objects. But environments, interfaces, and objects are traditionally much easier to conceive of, and represent, than a quality that is fundamentally invisible.*<sup>197</sup>

In essence, it is easier to view a product in terms of what it can visibly do, as opposed to the experience one may gain from actually engaging with it.

By turning the usual process around, Laurel exposes a new way of thinking which is as pertinent to teaching and learning with technology as it is to information retrieval. She continues: “What if we were to define the action of information retrieval, not as looking for something but examining or experiencing it? This seemingly innocuous shift in point of view puts the emphasis in an entirely different domain: the action involved in perceiving, interpreting, and experiencing information.”<sup>198</sup>

*Experiencing, examining and interpreting* are all crucial elements of a successful learning experience.<sup>199</sup> The focus on technology is a natural response to this new modality of teaching, but overlooks the real issue of the quality of teaching and

---

<sup>197</sup> Laurel, B. (1993). *Computers as Theatre*, Addison-Wesley, Reading, Mass, pp 14-23.

<sup>198</sup> Ibid.

<sup>199</sup> Biggs, J. (1999) *Teaching for Quality Learning at University: What the Student Does*, Open University Press, Buckingham.

learning. Peers more often ask *Omnium* about the technology we use than the content and structure of our courses. Yet, for our students, technology is no longer a novelty. The key we have found to successful online teaching and learning is to try to make the technology as transparent or invisible to the learner as possible. Instead, the central focus is on teaching strategies and the user-experience to gain maximum impact on the quality of learning and teaching.<sup>200</sup>

#### 4. *Negative social and interactive implications*

Traditional distance-learning, where an individual student is linked at distance with one, or several representatives of an education institution, is notorious for creating a sense of isolation or disengagement in students.<sup>201</sup> This is despite the fact that technological advances over the last fifty-years such as audio-cassettes (1970s), video-cassettes (1980s) and CD-Roms (1990s) have been integrated into a variety of distance learning offerings. However, none of these methods linked students together in collaborative and social communities in the way the Internet has since 2000. As Roberts argues, “online collaborative learning is an idea whose time has come. The educational changes necessitated by the new computing and communication technologies are profound.”<sup>202</sup>

Unfortunately comparisons between online and face-to-face learning and teaching have often tended to focus on negative social implications of the ‘absent teacher’ and the students who will be left to ‘teach themselves’ in isolated online environments. This can be coupled with a worrying concern that online teaching is simply a case of putting course notes on the web. I argue a clue to this misunderstanding is in the language used. Online teaching is an *active* process, whilst placing notes online is *passive*. In the same way that software alone, no matter how effective it is, will not teach a class, similarly providing online notes for students does not constitute teaching, it merely facilitates easier access to materials.

---

<sup>200</sup> Kimball, L. (2002) ‘Managing Distance Learning: New Challenges For Faculty’, in Hazemi, R. & Hailes, S. (eds.) *The Digital University – Building a Learning Community*, Springer, London, pp 27-40.

<sup>201</sup> Quinsee, S. & Hurst, J (2005) ‘Blurring the Boundaries? Supporting Students and Staff within an Online Learning Environment’, *Turkish Online Journal of Distance Education-TOJDE*, Vol. 6, No. 1, pp 1-8.

<sup>202</sup> Roberts, T. S. (2004) *Online Collaborative Learning: Theory and Practice*, Idea Group Inc, Hershey, PA, p vi.

Furthermore, criticism of online education ignores the fact that with information and communication technologies, the distinctions between distance, time and mainstream education are blurring, and that learning networks provide opportunities for multiple interactions by removing barriers such as location and time.<sup>203</sup> Similarly, new technologies allow for additional and effective ways to support current models of education, as well as new methods of student-student, student-teacher and teacher-teacher collaboration in the educational process.<sup>204</sup>

However, it should be noted that these social experiences are of a different nature to social experiences normally encountered through traditional face-to-face classes. As Curtis and Lawson argue, the medium does influence the interactions that are possible and that student familiarity with the medium and the ease of use of the interface are important factors. Instruction for students in the use of the software and better preparation for the challenges of collaborative learning, especially negotiation and other group skills, produce a more effective learning system.<sup>205</sup>

#### *5. An economical cost cutting measure*

As previously mentioned, online education is too often perceived as a cost-cutting exercise with little regard to pedagogical concerns.<sup>206</sup> Initial reports on the real costs of online delivery are varied in their methodology and focus, given that such analyses need to include project start-up costs, staff training, development of new courses, processing of enrolments, course and technical support, and provision of university infrastructure including academic and administrative staff, space and information and communication technologies.<sup>207</sup>

In practice, the costs of online learning and teaching are comparatively high in their early stages, although it is estimated that costs decrease and flatten as more courses

---

<sup>203</sup> Jones, C. & Asensio, M. (2002) 'Designs for Networked Learning in Higher Education: A Phenomenographic Investigation of Practitioners' Accounts of Design', in Dutton, W. & Loader, B. (eds.) *Digital Academe: The New Media and Institutions of Higher Education and Learning*, Routledge, London and New York.

<sup>204</sup> Norman, K. (1998) 'Collaborative Interactions in Support of Learning: Models, Metaphors and Management', in Hazemi, R. & Hailes, S. (eds.) *The Digital University – Building a Learning Community*, Springer, London, pp 39-53.

<sup>205</sup> Curtis, D. & Lawson, M. (2001) 'Exploring Collaborative Online Learning', *JALN*, Vol. 5, No. 1, p 32.

<sup>206</sup> Jung, I. & Rha, I. (2000) 'Effectiveness and Cost-Effectiveness of Online Education: A Review of the Literature', *Educational Technology*, Vol. 40, No. 4, pp 57-60.

<sup>207</sup> Ash, C. & Bacsich, P. (2002) 'The Costs of Networked Learning', in C. Steeples and C. Jones (eds.) *Networked Learning: Perspectives and Issues*, Springer, London, pp 27-48.

share and utilise the resources and technologies already set up for course delivery. In my own experience, the value in terms of cost effectiveness of online courses is evident after a course has been written and offered several times. The actual extra costs of online learning come in the initial writing of the course and the technical provision of the course. Once the course content and materials are complete, the time for additional preparation for each offering of a course becomes minimal, whilst the student demand (and in turn course fee return) remains extremely high and therefore profitable.<sup>208</sup>

## **A** *second developmental wave for online education*

As referred previously, we now exist in a time where ‘change is the only constant’.<sup>209</sup> Such change has also been observed as a ‘retribalizing of the world’.<sup>210</sup> Increased access to information and acceleration of communication rates between individuals and groups in different locations to different ideas and actions are characteristic of the way we now live our lives. This is particularly pertinent to educational technology because education has a constant influx of new generations, often with a very different understanding of the world to that of their teachers.

Through ever-evolving technological communication networks, the development of increasingly globalised economies and a worldwide growth in multicultural societies, we can now access a diversity of choices in the way we go about living our lives. Value is now placed on the importance of multiple perspectives, pluralism and indeterminacy<sup>211</sup> and the Y-generation is continually developing new

---

<sup>208</sup> In 1998, the Australian Department of Education, Training and Youth Affairs (DETYA) issued a report on a broad-based approach to identifying appropriate methodologies for evaluating online learning and teaching in Australia (in consultation and cooperation with interested universities). It recommended an activity-based approach to cost management.

- Eiggins, H. (2000) *Costing Technology-Based Education: Research Studies From the UK, Canada, the European Community, and Australia*, in Finkelstein, M. et al (eds.) *Dollars, Distance, and Online Education*, American Council on Education and Oryx Press, Phoenix, pp 63-81.

<sup>209</sup> Warwicker, J. (1999) ‘A Virtual City in a Global Square’, *Eye*, Vol. 9, No. 34, pp 38-44.

<sup>210</sup> Wojtowicz, J. (1995) *Introduction to the Virtual Village*, in *Virtual Design Studio* (ed), Hong Kong University Press, Hong Kong, p 1.

<sup>211</sup> Danvers, J. (2003) ‘Towards a Radical Pedagogy: Provisional Notes On Learning and Teaching in Art and Design’, *International Journal of Art and Design Education*, Vol. 22, No. 1, pp 47-57.

interconnections between actions, information and beliefs, adding to the complexity of our world.

As positive and significant responses to such observations, and to problems I have also addressed, many educational institutions have now established academic and technical departments that specifically focus on Internet assisted education. *Flexible delivery* and e-learning experts are increasingly commonplace in universities and colleges. However, a significant body of critical online education theory is still yet to be established. While some of this theory has been produced in isolated experiments undertaken by architecture schools (see Chapter Four), reports and findings derived from ongoing practical online educational initiatives, particularly those in areas of art and design, remain scarce.

A strange situation currently exists where a 'quasi' online educational theory has emerged, based either on established face-to-face teaching and learning principles or on predictions of what will most likely occur when teaching and learning takes place online. In an unusual turn of events, specific theory relating to online education seems to have preceded a significant body of demonstrated practice. However, in time, through the work and publications from new departments and units specialising in online education, this will no doubt change.

The last few years have already seen dramatically different approaches take place toward online education. A second developmental wave of online education, or e-learning, has begun and is adopting a far more cautious and considered approach than before. One influential example of online education departments and programs is UCLA's *Extension Program*.<sup>212</sup> Worldwide, it has one of the leading and most significant online education profiles and I particularly admired their philosophical approach to online teaching and learning across a broad range of disciplines and their integration with the existing functions of the University. What I found most admirable was the success they achieved in quashing negative opinions about online learning that existed within their own institution by not only formalising a program for academic training for online teaching, but also by employing professional practitioners from outside their own faculty as online teachers.

---

<sup>212</sup> <http://www.uclaextension.edu/> (accessed 09/10/08)

Visual arts education is well placed to lead in the ever-evolving online education arena, having long utilised a mentoring, studio-based mode of teaching as opposed to the conventional model of teachers transferring knowledge to students in lecture formats. By exploring how online technologies are used in daily life outside the realms of education, we can reconfigure what has been termed *multi-modal* approaches to learning.<sup>213</sup> This suggests that learning is realised through the interaction between *visual*, *actional* and *linguistic* communication (that is, learning is most effective when it engages more than one method of computer interaction) and involves the transformation of information across different communicative systems ('modes') for example, from speech to image. It demonstrates that learning is a process of selection, adaptation and transformation motivated by the interests of students and the context of learning.

If the result of the first decade of online education, the *e-learning goldrush era*, was that it formed a series of myths, insecurities and negative opinions about online learning, it must be the aim of the next decade to dispel them as misconceived. As Raschke argues, the third knowledge revolution and the advent of the hyper-university are inevitable; "computers will no longer be *add-ons* and technological systems will no longer function as tools but will simply constitute the environment."<sup>214</sup>

---

---

<sup>213</sup> Kress, G., Jewitt, C., Ogborn, J. & Tsatsarelis, C. (2001) 'Exploring Learning Through Visual, Actional and Linguistic Communication: The Multimodal Environment of a Science Classroom', *Educational Review*, Vol. 53, No. 1, pp 5-18.

<sup>214</sup> Raschke, C. (2003) *The Digital Revolution and the Coming of the Post-modern University*, RoutledgeFalmer, London and New York, pp 24-25.



---

- CHAPTER SIX -  
RESEARCHING CREATIVE PROCESSES:  
REVISIONS TO OMNIUM'S FIVE-STAGE CREATIVE PROCESS MODEL

---

## *O*verview

Until 2004, it was only my experience of using *Omnium's five-stage creative process model* for online collaborative creativity through a series of large and small-scale projects that informed any minor revisions. Having no knowledge prior to this date of any past creative process models, I was to learn during the research I undertook during my candidature that the first iteration of my own creative process model did, in fact, conform to other models of creativity. Before discussing the development of later iterations of the *Omnium model*, it is important to examine definitions of the word *creative* and some of the frameworks that describe its context. If existing systems, patterns, processes or issues could be identified, potentially they could act as foundations to help formalise ways of encouraging online collaboration and strategies for creative practice.

## *I*dentifying influential references that informed its development and reiteration

I identified two publications in particular as most useful to the further development of *Omnium's five-stage creative process model*.

In *Creativity: Flow and the Psychology of Discovery and Invention*, Hungarian psychologist Professor Mihaly Csikszentmihalyi (Figure 1), claims that *creativity* is, in essence, an inherently human activity; one that plays a central role in providing meaning in our lives. Uniquely human characteristics such as; “language, values, artistic expression, scientific understanding and technology, are all results of individual ingenuity and innovation that have been recognised, accepted, honoured and passed on through time by means of educative processes.”<sup>215</sup>

---

<sup>215</sup> Csikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perrenial, New York, p 2.

He refines such a broad statement by further observing that *creativity* is in fact “the interrelations of a system made up of three elements: the domain; the field; and creative individuals.”<sup>216</sup> To summarise his observations, Csikszentmihalyi claims:

*Creativity is any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one. The definition of a creative person is: someone whose thoughts or actions change a domain, or establish a new domain. It is important to remember, however, that a domain cannot be changed without the explicit or implicit consent of a field responsible for it.*<sup>217</sup>

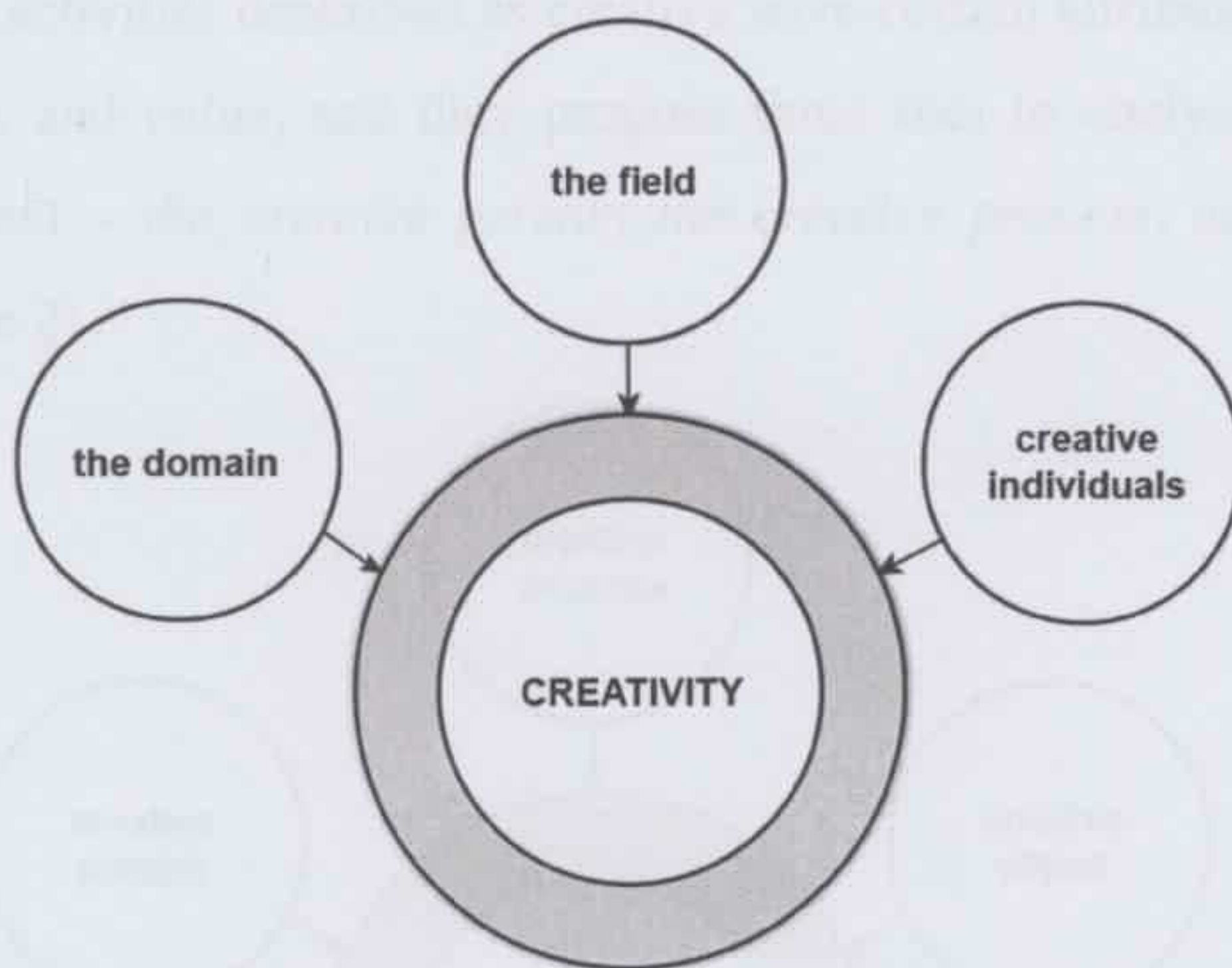


Figure 1 - Csikszentmihalyi models Creativity as the interrelation of a system made up of three elements (1997)

The *domain* of a discipline can be interpreted as a set of established rules, systems and procedures of a practice, whereas the *field* consists of individuals or groups (both past and present) who act as ‘gatekeepers’ to the domain, for example those involved in peer-review and validating research.<sup>218</sup> *Creative individuals* can apply and practice a variety of permutations and approaches that exist within a domain to later present them to the field, and if accepted, have their outcomes included within the domain. In doing so, they progress and expand the field for a future generation of creative individuals, and in turn, reinforce a cyclical interdependence between all three elements.

<sup>216</sup> Csikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perrenial, New York, p 53-54.

<sup>217</sup> Ibid. p 28.

<sup>218</sup> Ibid. pp 27-28.

The second publication that raised numerous issues for consideration in the re-development of *Omnium's five-stage creative process model* is a collection of essays titled: *The Creativity Question*.<sup>219</sup> In Rothenberg and Hausman's introduction, they describe creativity as "a capacity of especially talented human beings who contribute positively to society and life."<sup>220</sup> Such an observation expands the definition offered by Csikszentmihalyi from actions and outcomes that benefit and change a particular domain, to those that benefit society in general, and contribute to the well being of its members.

They argue that activities described as creative have certain attributes in common, namely *newness* and *value*, and they propose three foci to analyse any creative content or context – *the creative person*; *the creative process*; and *the created object*<sup>221</sup> (Figure 2).

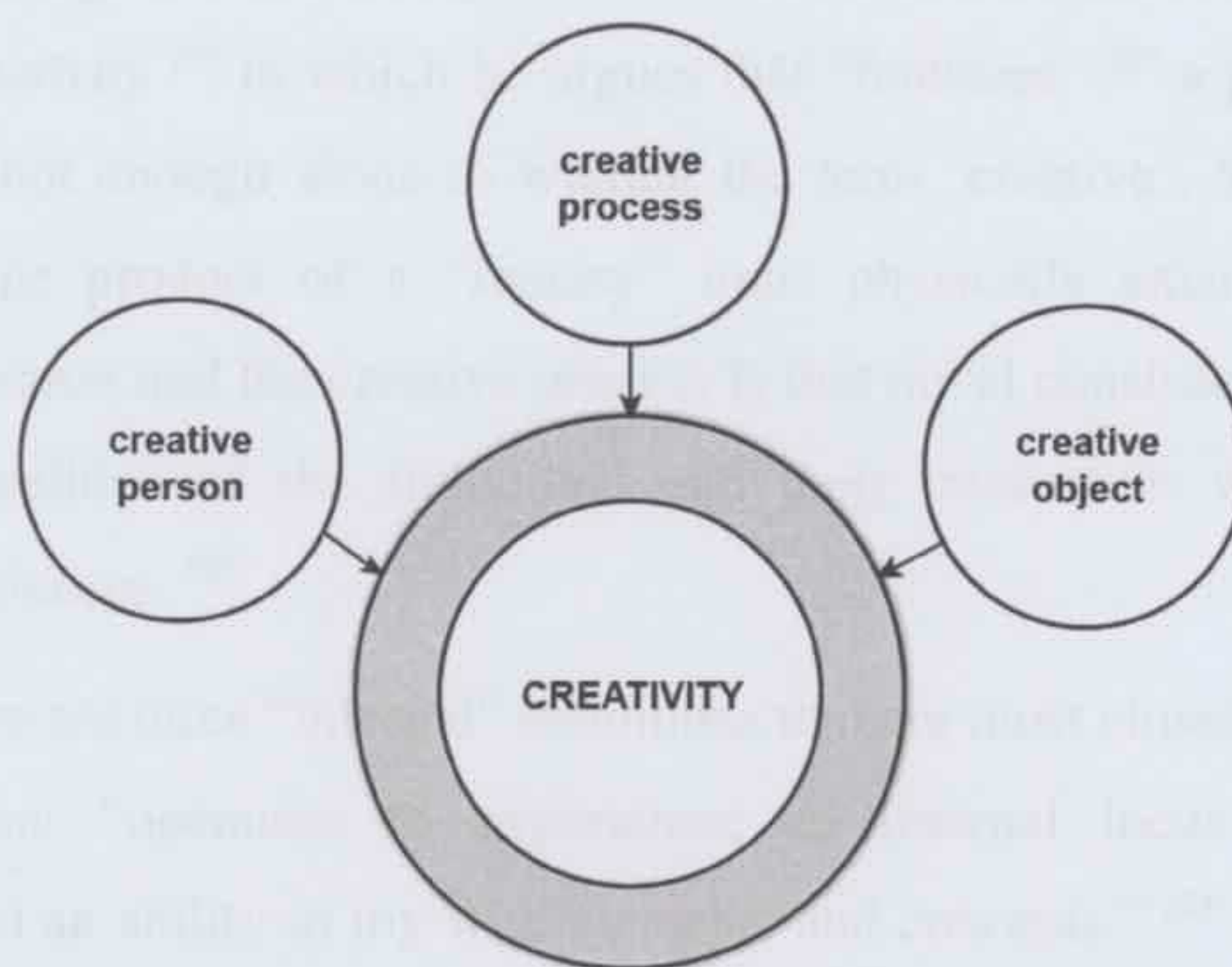


Figure 2 - Rothenberg and Hausman's three foci for analysing creativity (1976)

It is interesting to compare the two models. Both include the individual or creative person, however, the first is focussed on the context of creativity while the second describes the activity that contributes to creative outcomes. In combination, they provide an excellent overview of factors that contribute to, and affect, creativity.

In addition, American educational psychologist, Ellis Paul Torrence, identifies characteristics that he believes also define "creativity as a process". In his essay

<sup>219</sup> Rothenberg, A. & Hausman, C. R. (eds) (1976) *The Creative Question*, Duke University Press, Durham.

<sup>220</sup> Ibid. p 4.

<sup>221</sup> Ibid. p 6.

*Education and Creativity*,<sup>222</sup> he describes *creativity* as a sensitivity to, or awareness of problems, deficiencies and gaps in knowledge. He argues that to take part in a creative process one must: identify the problem to be solved, search for solutions, make guesses, formulate hypotheses, test and retest hypotheses, and finally, communicate results.<sup>223</sup> In agreement with Csikszentmihalyi, he also claims *creativity* is a natural human process.

*Strong human needs are involved at each stage. If we sense some incompleteness or disharmony, tension is aroused. We are uncomfortable and want to relieve the tension. Until the guesses or hypotheses have been tested, modified, and retested, we are still uncomfortable. The tension is unrelieved, however, until we tell somebody of our discovery.*<sup>224</sup>

Clinical psychologist, Carl R. Rogers, also discusses *creativity* in his essay *Toward a Theory of Creativity*<sup>225</sup> in which he argues that “fantasies”,<sup>226</sup> a person’s whimsical thoughts, are not enough alone to warrant the term ‘creative’. Something must be produced, some product of a “fantasy” must physically exist. The relationship between the person and the creative process is that novel constructions develop from the unique qualities of the individual and their interaction with materials and personal experiences.<sup>227</sup>

He claims there are three “internal” conditions that are most closely associated with a creative person; “openness to experience; an internal locus (focus point) of evaluation; and an ability to toy with elements and concepts.”<sup>228</sup> He believes that to foster and encourage such internal conditions, third parties can set up what he terms “conditions of psychological safety and freedom.”<sup>229</sup> This concept is applicable and relevant to any person wishing to encourage creativity in others, for example, a parent, an employer, a mentor, a collaborator or an educator.

---

<sup>222</sup> Torrance, E. P. (1976) ‘Education and Creativity’, in Rothenberg, A. & Hausman, C. R. (eds.) (1976) *The Creative Question*, Duke University Press, Durham.

<sup>223</sup> Ibid. pp 217-218.

<sup>224</sup> Ibid. p 217.

<sup>225</sup> Rogers, C. R. (1976) *Toward a Theory of Creativity*, in Rothenberg, A. & Hausman, C. R. (eds.) (1976) *The Creative Question*, Duke University Press, Durham.

<sup>226</sup> Ibid. p 296.

<sup>227</sup> Ibid. p 297.

<sup>228</sup> Ibid. p 299.

<sup>229</sup> Ibid. pp 303-304.

*Psychological safety* refers to those acts that make an individual (or group) feel secure within a creative environment. For example, the kind of socialising and orientation activities that have always been included in the first stages of previous *Omnium* projects. *Psychological freedom* involves giving the creator(s) the mandate to explore and experiment without the pressure of deadlines to produce outcomes. Again, exactly the type of freedom that *Omnium* projects aim to encourage through its notion of ‘unravelling’ briefs. Both conditions can be encouraged, and may be established, through three associated processes or attitudes: “accepting that an individual possesses unconditional worth; understanding an individual empathically; and by providing a climate in which external evaluation is absent.”<sup>230</sup>

To further encourage creativity, Rogers states that psychological freedom needs to be provided to allow individuals a complete license to exhibit “symbolic expression”.<sup>231</sup> In other words, the individual should be encouraged to be responsible for their actions, whether constructive or destructive to their actions or thinking. They should be free to accept the consequences of their mistakes and successes, which in turn reinforce the importance of playfulness, experimentation and the “willingness to allow disaster, as well as innovation in a creative process.”<sup>232</sup>

Harvard physiologist, Walter Cannon, not only describes the importance of trusting and being confident in one’s own conscious creative process, but also when flashes of inspiration come to us at unexpected or unplanned moments.<sup>233</sup> In scientific research, he explains such phenomena as “hunches”; a push or sudden thrust that progresses an idea within a creative process.<sup>234</sup> More specifically, a hunch is described as “a unifying or clarifying idea that springs into consciousness as a solution to a problem in which we are intensely interested.”<sup>235</sup> The hunch is observed as typically appearing after intense and lengthy periods of study but at a time when the investigator is not directly working on his or her problem. Cannon introduces the

---

<sup>230</sup> Ibid. p 304.

<sup>231</sup> Ibid. p 304.

<sup>232</sup> Ibid. p 304.

<sup>233</sup> Cannon, W. B. (1945) *The Role of Hunches*, in *The Way of an Investigator*, W.W. Norton & Company Inc, New York, pp 57-67.

<sup>234</sup> Platt, W. & Baker, R. A. (1931) ‘The Relation of the Scientific ‘Hunch’ to Research’, *The Journal of Chemical Education*, Vol. 8, No. 10, pp 1969-2002.

<sup>235</sup> Cannon, W. B. (1945) *The Role of Hunches*, in *The Way of an Investigator*, W.W. Norton & Company Inc, New York, pp 57-67.

term “extraconscious processes”, rather than unconscious or subconscious, to describe ideas that form whilst one is engaged in other activities; it is not that the brain or mind is switched off or dormant, rather that it is engaged in other simultaneous thoughts.<sup>236</sup>

In addition to Cannon’s suggestions, Nina Gruenberg, Associate Editor and editorial columnist for the weekly publication *Die Zeit*, declares the importance of a “spark” for a creative process to commence. She identifies personal involvement or ownership of an issue as driving the need to find a solution to a creative problem.<sup>237</sup> She states:

*The creative process starts with a sense that there is a puzzle somewhere, or a task to be accomplished. Perhaps something is not right, somewhere there is a conflict, a tension, a need to be satisfied. The problematic issue can be triggered by a personal experience, by a lack of fit in the symbolic system, by the stimulation of colleagues, or by public needs. Without such tension there is no need for a new response and without the stimulus of this sort, the creative process is unlikely to start.*<sup>238</sup>

I have cited the above references for two reasons: first, because they became influential to the further development of *Omnium’s five stage creative process model* and second, because they confirmed some of the choices I had already made in forming my initial, 1999, five-stage model. For example, the first *Gathering* stage was designed precisely to allow the type of “psychological safety and freedom” that Rogers described as important for creativity. In addition, the notions of the creative “hunch” and “spark”, described by Cannon and Gruenberg, were aspects of the creative process that I wanted to encourage. Torrance and Rogers also contributed interesting observations about the importance of recognising the problem that needs to be solved through a creative solution. It was this type of formal recognition of a problem that I was keen to explore within the second *Identifying* stage by allowing participants in collaborative creative projects to spend time devoted to analysis and identification of the initial problem and how they may solve it, before progressing to more refined proposals for solutions.

---

<sup>236</sup> Ibid. p 68.

<sup>237</sup> Gruenberg, N. in Csikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perennial, New York, p 95.

<sup>238</sup> Ibid. p 95.

### *Creative process models*

It was invaluable to the research I undertook to revise *Omnium's five-stage creative process model* that I identified and referred to a variety of creative process models that had previously been offered by theorists and practitioners.

In 1926, English social psychologist and educationalist, Graham Wallas, proposed a four-stage process for creative thinking: *preparation, incubation, illumination, and verification*.<sup>239</sup> Derived from personal introspection and observations, rather than systematic empirical observations, his process has since become widely accepted by theorists of creativity (Figure 3).



Figure 3 - Four-stage creative process for creative thinking suggested by Wallas (1926)

Wallas argues that the first stage, *preparation*, is not only concerned with preparing for a particular problem to be solved, such as purposely researching, brainstorming or gathering of appropriate materials, but also it refers to what he describes as “including the whole process of intellectual education ... The educated man has also acquired, by the effort of observation and memorizing, a body of remembered facts and words which gives him a wider range in the final moment of association ...”<sup>240</sup>

In essence, Wallas is saying that the *preparation* stage means applying intellectual skills obtained through a lifetime of experience and learning (education) which is akin to the concept of *knowledge-in-action* described by Donald Schön (see Chapter Four).

The second *incubation* stage is a period of ‘consideration’ that includes both conscious and voluntary thoughts about a posed problem, as well as unconscious and involuntary ones. Wallas argues that “our mind is not likely to give us a clear answer to any particular problem unless we set it a clear question, and we are more likely to notice the significance of any new piece of evidence, or new association of ideas, if we have formed a definite conception of a case to be proved or disproved”. In summary, an appropriate time period of thought must be applied to the consideration of solving a problem and directions can be formed by both conscious and unconscious incubation.

<sup>239</sup> Wallas, G. (1945) *The Art of Thought*, The Thinkers Library – no. 136, Watts & Co, London, pp 54-76, (first published by Jonathan Cape Ltd, 1926)

<sup>240</sup> Ibid. p 54.

Throughout Wallas' description of his four stages, he refers to the term *trains of association* as creative thinking and specific channels of enquiry. Multiple "trains of association" generate within the *incubation* stage and the majority will become "unsuccessful trains". However, the third *illumination* stage will see "flashes" or "clicks" occur that will lead the creative person to realise which "trains" are worth pursuing and are likely to lead to a successful solution. The fourth *verification* stage is akin to a period of reflection where known rules and systems are applied to the proposed final solution as a creative check-list that confirm whether the outcome has addressed the brief and solved the original problem.

Wallas' four stages compliment the stages proposed decades later by Csikszentmihalyi in terms of a person preparing to solve a problem and considering a number of ideas or concepts that form interconnections and present possible solutions. The numerous creative ideas continue to form through the incubation stage until one or more present themselves as being particularly appropriate, at which point they move into the verification stage where ideas are selected or rejected until a final outcome is formed and presented.

A decade after Wallas first proposed his four-stage process, psychologist Catherine Patrick developed his insights through a more systematic and psychological research study of one hundred subjects (50 artists and 50 non-artists).<sup>241</sup> She found that artists generally incubate an idea, which may include feelings or hunches, over a period of time as short as several hours or re-present themselves repeatedly over years.

Analysing her findings, she confirmed Wallas' four-phases but added a period of *revision* within his final *verification* stage (Figure 4). From her research, she found that many of the subjects within her study made minor changes (revisions) in this final stage as a result of the verification process described by Wallas.

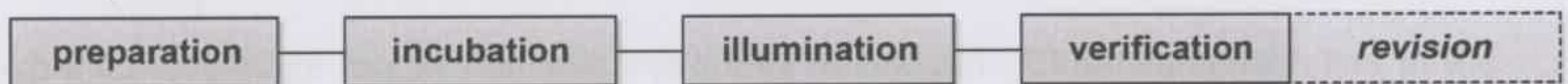


Figure 4 - Four-stage creative process suggested by Wallas (1926) amended by Patrick (1937)

What is perhaps more important about the findings was her identification that stages of the creative process were not isolated or exclusive and that the boundaries between them often blurred with examples of each step occurring simultaneously in

<sup>241</sup> Patrick, C. (1937) 'Creative Thought in Artists', *Journal of Psychology*, Vol. 4, pp 35-73.



some instances. For example, ideas that occurred throughout the preparation stage may well continue throughout the following stages and visa-versa.

In *Creativity: Flow and the Psychology of Discovery and Invention* (1997), Csikszentmihalyi isolated a creative process that can lead to outcomes that may change a creative domain or discipline. He also proposed a five-stage model: *preparation; incubation; insight; evaluation; and elaboration* (Figure 5).<sup>242</sup>



Figure 5 - Five stages of a creative process suggested by Csikszentmihalyi

*Preparation* is the first stage in which a person becomes immersed in a set of problematic issues that are interesting and arouse curiosity. *Incubation* is a period where ideas form and connections are made between them and the problem to be solved. The ideas do not yet lead the creative person down one particular pathway and unexpected combinations may form. The author describes the *Insight* stage as including the “Aha!” moment when defined possibilities present themselves. The *Evaluation* stage is when an individual or group must decide whether an insight is worth pursuing. Finally, the *Elaboration* stage, which takes the most time and work and, involves modelling an insight into a developed proposed outcome.

What is particularly interesting is that many of the proposed creative processes include a five-stage model. Each of the three above examples were influential in confirming my decision to undertake a revision of the *Omnium five-stage creative process model*. I make particular reference to Patrick and her observations that stages of the creative process are not isolated or exclusive and that the boundaries between them are often blurred, that a creative process is often one of *reiteration*. What I do not believe, however, is that one can progress through the process by missing out any stages.

Another five-stage model that was extremely influential did not directly relate to the creative process, but instead, was specifically constructed for facilitating online education (or e-learning). In 2000, Professor Gilly Salmon<sup>243</sup> proposed a *model of teaching and learning online through online networking* (Figure 6) in one of the

---

<sup>242</sup> Csikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perrenial, New York, p 79.

<sup>243</sup> Gilly Salmon is Professor of E-learning and Learning Technologies at the University of Leicester, England.

earliest books about online learning and teaching; *E-moderating: The Key to Teaching and Learning Online*.<sup>244</sup>

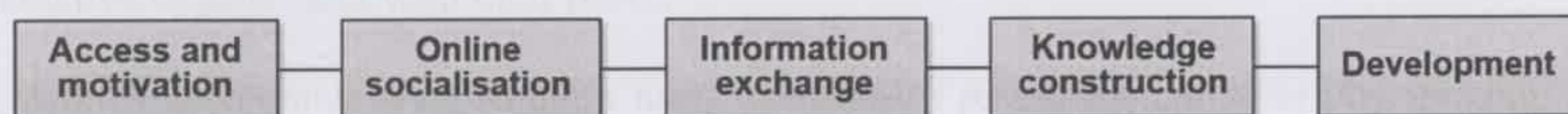


Figure 6 – Salmon's five-stage model of teaching and learning through online networking (2000)

Not only did the online learning process have five stages, but each step is divided into two areas: *technical support* (issues relating to the online environment) and *E-moderating* (issues relating to the teaching and facilitating of an online course or activity).<sup>245</sup> The five stages that Salmon proposed were not only appropriate to my own educational aims, but the divisions she applied to each stage gave me a similar idea for revising *Omnium's* existing creative process model before the start of the first *Creative Waves* project in 2005.<sup>246</sup>

### *Omnium's five-stage creative process model: Second iteration - (2005)*

Prior to the *Creative Waves* project commencing, I had no evidence to suggest that *Omnium's five-stage creative process model* needed any drastic revision as its implementation in projects up until then had generally received favourable feedback. Despite the fact that I *did* undertake informal student evaluations of all past *Omnium* projects between 1999 and 2004, it was not until the *Creative Waves* projects, in 2005 and 2007, that I issued formal post-project online questionnaires to evaluate the activities, including questions about using *Omnium's creative process model*. As a result, the same model used in the first *Omnium* project in 1999, was employed as the underlying structure to guide the activities throughout the seven weeks of *Creative Waves* (2005). However, I did make additional amendments to each of the existing stages.

In the same way that Salmon divided each of her stages into two sub-areas (*technical support* and *E-moderating*), I did likewise by placing emphasis on two types of participant contribution (*individual* and *collaborative*) throughout each of my five

<sup>244</sup> Salmon, G. (2000) *E-moderating: The Key to Teaching and Learning Online*. Kogan Page, London

<sup>245</sup> Ibid. p 11.

<sup>246</sup> Bennett, R. (2000) *Om'nium [vds]: Presenting an On-Line Future for Tertiary [Design]Education*, Outline 9, Winter Issue 9, University of Brighton, CTIAD, UK, pp 17-24.

stages. The intention was to help ease participants from more familiar and comfortable individual contributions through to more involved collaborative and creative engagement with their peers.

Also, in accordance with Roger's need to establish *psychological safety* by making participants feel as comfortable as possible when engaging in creative activity, I compiled a new diagram that I issued to all students at the beginning of the first *Creative Waves* project. The diagram not only showed the five creative stages of the project, but also gave details about the individual and collaborative contributions they were expected to make within each stage. I deemed it important that from the outset, students were fully aware of the progression of the project: the expectations regarding each level and types of contribution they would be asked to make (Figure 7).

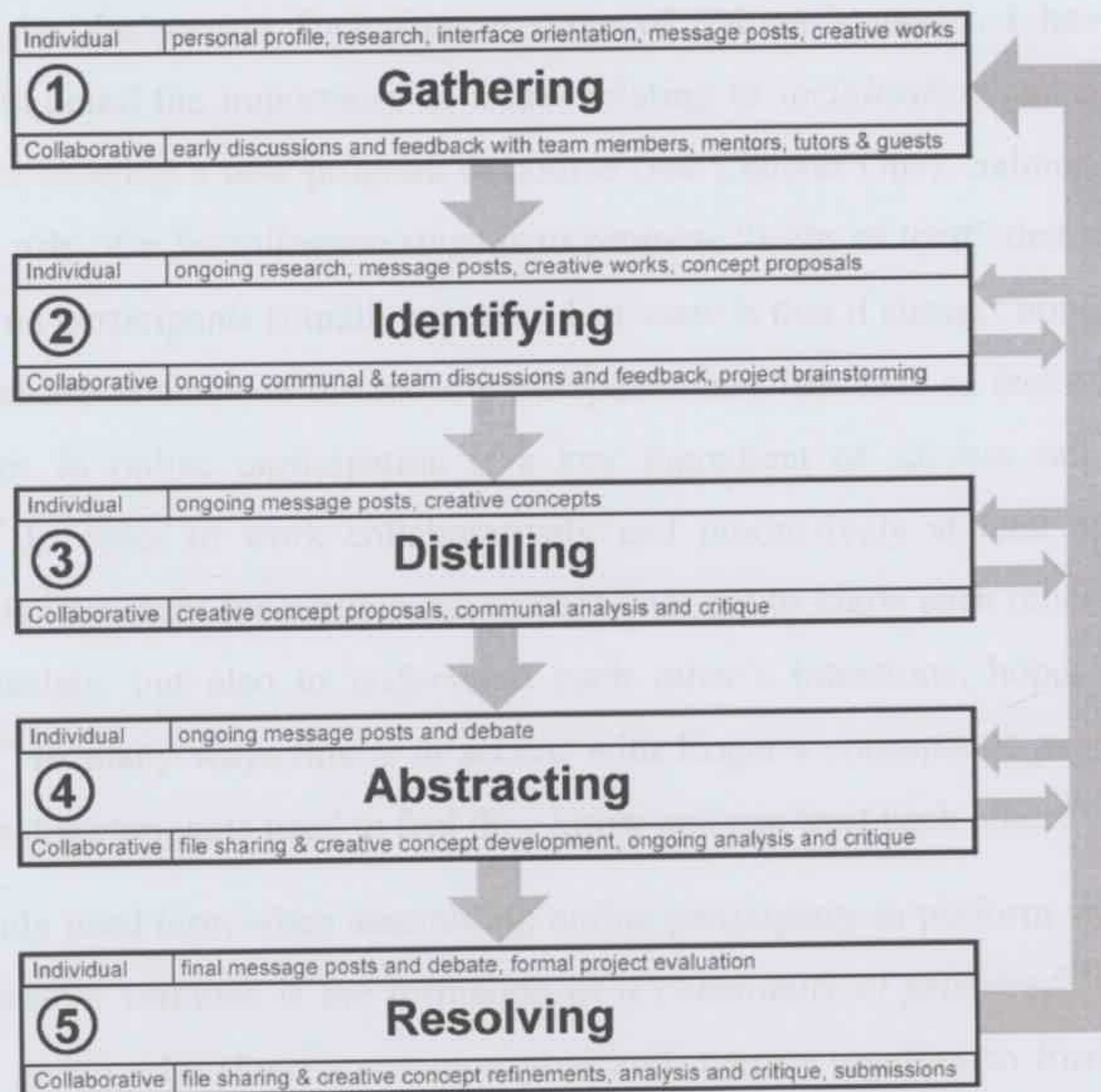


Figure 7 - Omnium's five-stage creative process model (second iteration) - including 'individual' and 'collaborative' activities within each stage. This model was applied during the first Omnium: Creative Waves project in 2005.

The first *Gathering* stage involved the most individual contributions throughout the project. It included each student adding biographical content to their own *Personal*

*Profile* area, researching issues relating to the brief(s) for that stage, posting messages to the Discussion Forum and beginning to create individual graphic submissions. The collaborative tasks at this early stage were few and involved introduction to other team-mates and early discussions and feedback about graphics produced by each member of a creative team. The diagram progressed through each stage until the final resolving stage where individual contribution was at a minimum. By this final stage, students were working in full collaboration through file-sharing, refining team concepts and visual works, and joining in team critique sessions. Apart from continuing to make individual posts in the forum areas, the only other activity that students individually undertook was to complete the online project evaluation form.

In revising the five-stage model for the first *Creative Waves* project, I was also influenced by the second *Socialisation* stage of Salmon's model. I have already discussed in detail the importance of issues relating to *socialisation* and *orientation* for students entering a new program or course (see Chapter One). Salmon describes part of the role of a *Socialisation* stage is to promote "webs of trust" that do not rely or depend on participants actually meeting. Her view is that if strong "bonds of trust" can be established between distanced participants then "the lack of face-to-face and visual clues in online participation is a key ingredient of success rather than a barrier."<sup>247</sup> In order to work collaboratively and productively at later stages of a project, it is important for participants to "not only get to know each others' persona and approaches, but also to understand each other's intentions, hopes and even dreams."<sup>248</sup> In many ways this is in accord with Roger's concepts of *psychological safety* in that participants need to feel they know and can trust each other.

A commonly used term when assembling online participants to perform shared tasks or collaborative ventures is the formation of *a community of practice*.<sup>249</sup> This term denotes a group who share a common goal and interact together to form a strong alliance and productive working environment. Wenger argues that communities of practice rely on three main components: *joint enterprise*, *mutuality* and *shared repertoire*. During the early stages of an online course or project, teachers,

---

<sup>247</sup> Salmon, G. (2002) *E-tivities: The Key to Active Online Learning*, Kogan Page, London p 20.

<sup>248</sup> Ibid. p 22.

<sup>249</sup> Wenger, E. (2000) 'Communities of Practice and Social Learning Systems', *Organization*, Vol. 7, No. 2, pp 225-246.

facilitators or *E-moderators* (as Salmon proposes) are responsible for guiding participants through activities designed to achieve the three aims.

*Joint enterprise* refers to participants understanding the value of working together online and how they may best achieve doing so; *mutuality* means that participants get to know each other and thereby form trust in each; *shared repertoire* involves exploring each others' languages, cultures, interests, routines, stories, dreams and aims etc. Based on Wenger's analysis, the *Creative Waves* (2005) project, aimed to make these three components clearly evident and achievable through the project.

But, as Salmon asks, how one can tell when appropriate socialisation tasks have been achieved? She states that socialisation is sufficiently established when participants start to share themselves online without intervention of facilitators or moderators.<sup>250</sup> That is, introductions have been made (to each other, the project and the technical platform) and the participants no longer rely upon the host to continue the socialising process. While not formally including 'socialisation' as a complete new stage within *Omnium's five-stage creative process model* (2005), it *did* include an emphasis on socialisation tasks for both students and mentors at the beginning of the project (see Chapter Seven).

In summary, the second iteration of *Omnium's five stage creative process model* that was applied throughout the *Creative Waves* (2005) project included the same five stages developed in 1998: *Gathering, Identifying, Distilling, Abstracting, and Resolving* (Figure 8). However, in addition, each of the stages of the model *had* been modified by dividing them into two areas that described *individual* and *collaborative* participation for the students in the project.

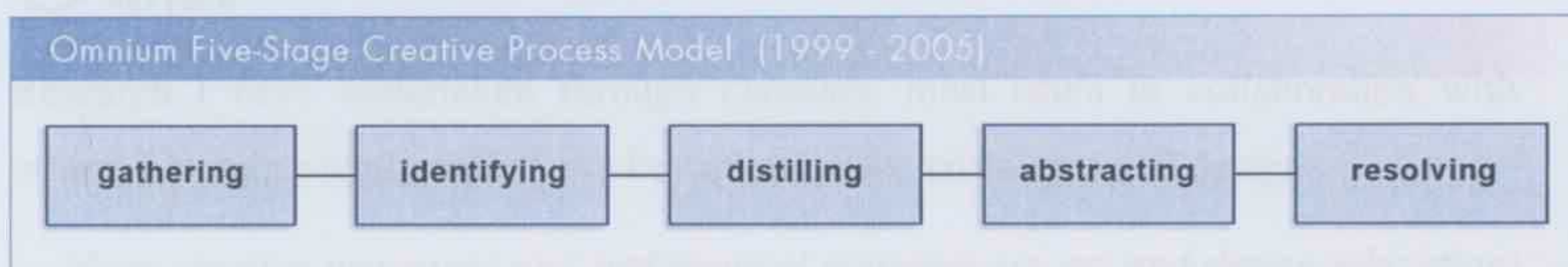


Figure 8 - *Omnium's five-stage creative process model* (second iteration) as applied during the first *Omnium: Creative Waves* project in 2005.

<sup>250</sup> Salmon, G. (2002) *E-tivities: The Key to Active Online Learning*, Kogan Page, London, p 24.

---

- CHAPTER SEVEN -  
CASE STUDY ONE  
CREATIVE WAVES: O3 > O4 > O5  
(2005)

---



[HTTP://CREATIVEWAVES.OMNIUM.NET.AU/030405/OUTLINE](http://creativewaves.omnium.net.au/030405/outline)

## **O**verview

Research I have undertaken through *Omnium*, most often in collaboration with others, has consistently included a key question for visual arts and design:

*Have creative processes and pedagogical activities (in art and design education) responded adequately to the ever-increasing complexities of living, creating and learning in a global society that is culturally complex, technologically driven and operates twenty-four/seven?*

The prospect of involving artists and designers in creative work that embraces co-creativity between distanced individuals, local and overseas offices, agencies and

studios has become an immensely attractive opportunity, both educationally and professionally.

This Chapter discusses one of *Omnium's* largest and most ambitious global online student projects. It offers an opportunity to examine and review in detail what has since become the first in a series of online visual arts projects, specifically commissioned and endorsed by the *International Council of Graphic Design Associations* (Icograda) <sup>251</sup> for their worldwide education network (IEN).

In 2004, I was approached by the Icograda committee and asked whether I would consider designing, producing and hosting a global online design project for students and teachers from IEN member institutions worldwide. <sup>252</sup> They were familiar with previous global online design projects I had produced since 1999 and were interested in whether *Omnium* could offer a similar project on their behalf.

After accepting their invitation gave me the opportunity to invite Dr Vince Dziekan, Acting Head Multimedia & Digital Arts at the Faculty of Art & Design, Monash University, to co-write and co-convene a major cross-disciplinary online visual arts project. I had been aware of Dr Dziekan's work through a number of conference presentations he had made that included a cross-institutional online project titled *Telling Story: Voice in Photography*, held in 2002, between students at Monash University, Melbourne, and Emily Carr Institute, Canada. <sup>253</sup> I believed our differing areas of expertise (photo-media and graphic design) would work perfectly in an online context and could stimulate an interesting dialogue between art and design students.

After accepting my invitation, Dr Dziekan and I co-wrote the project to challenge the paradigm of individual creative processes (introduced in this thesis using the quote by American graphic designer Paul Rand). It questioned the notion of championing exclusivity, isolation and private ownership in terms of creating art and design works, by involving a diverse group of art and design students from around the world

---

<sup>251</sup> International Council of Graphic Design Associations (Icograda) website – [www.icograda.com](http://www.icograda.com)

<sup>252</sup> International art and design colleges and universities that are part of the IEN can be found by going to: <http://www.icograda.org/education/members.htm>

<sup>253</sup> Dziekan, V. L. (2003) *Out of the Dark: Photographic Practice in Light of Virtual Studio*, eLearning For The Creative Industries - Create.ed Conference Proceedings, Faculty of Art, Design and Communication, RMIT University, Melbourne, Australia, pp 59-66.

in collective, collaborative and creative activities taking place within a *virtual* or online studio.

We named the project *Creative Waves (2005): 03>04>05*<sup>254</sup> to capture the feeling of the progression of creative work that would occur through working in such an asynchronous online environment over a set period of time. From an individual participant's perspective, they would make contributions to the project, whether through written comments or by working on visual files, and upload them to the user interface before logging out for a period of time. When they later returned, they would find replies to their comments and further work undertaken by others on their visual files. The nature of such interaction would appear to them to progress in 'waves.' In addition, as physical reiterative contributions would be absent (unlike face-to-face settings where voice, words, and body language are used to communicate) we imagined that each contribution from each participant would form a metaphorical 'wave' – much like a hand-wave signals a person 'is here', so would their addition to the creative process.

The subtitle *03>04>05* was chosen to allude to a creative process occurring over time; it was on one hand a reference to the counting of seconds that is a familiar process within traditional 'wet' photography labs when developing film, and because the project was run between March (03) and April (04) in 2005 (05).

### ***A***ims and objectives of the *Creative Waves: 03 > 04 > 05* project

In discussing visual creative practice, it has been argued that over-emphasising visual qualities and aesthetics of work produced often ignores social aspects of the creative process; aspects concerning efficiency of communication, and most importantly social responsibility.<sup>255</sup> Social interaction in the creative process can be enhanced by the Internet, enabling groups of people to work together in the management and production of complex visual projects.<sup>256</sup>

---

<sup>254</sup> Creative Waves website: [www.omnium.edu.au/promo/creativewaves](http://www.omnium.edu.au/promo/creativewaves)

<sup>255</sup> Frascara, J. (1997) *User-Centered Graphic Design: Mass Communication and Social Change*. London: Taylor & Francis, p 120.

<sup>256</sup> Fischer, G. (2000) 'Shared Understanding, Informed Participation, and Social Creativity: Objectives for the next Generation of Collaborative Systems', in *Proceedings of COOP 2000 [Fourth International Conference on the Design of Cooperative Systems]*, Sophia Antipolis, France, pp 128-136.



However, despite professional artists and designers recognising potential of strong social collaborations, efficient online collaboration, to date, remains largely unrealised or explored. Online creative collaboration has been identified as the main challenge since the introduction of computerisation in the creative process, and that collaborative decision-making processes can provide the main strength in new methods of creative practice.<sup>257</sup>

To form the social online community of students, educators and creative professionals to further explore *online collaborative creativity* we launched the *Creative Waves* (2005) project with the following words:

*What does it sound like when hundreds of photographs are taken at the exact same moment all around the globe?*

*The sound of synchronised shutters going off in one instant would begin a swelling, rolling, accumulating creative wave wrapping around the planet.*

Participants in the online community embarked on an eight-week program of creative work in response to these statements by initially gathering photographic imagery from their own geographic settings and individual cultural perspectives. Following these formative and individual stages of fieldwork, the project progressed into collaborative working phases through a series of design elaborations that culminated in the production of one shared graphic image from each of the fifteen small creative teams that contained five students in each team.

The project was conceived, in part, to address how during a creative process designers, especially students, often seem to neglect early conceptual aspects that need to be considered. For example, in design studio classes when a project brief is issued, often there is a tendency for students to begin by trying to predict what the final outcome will look like, or how it will function, without exploring numerous potential possibilities that the problem offers. In response to the challenge posed by this observation, the format aimed to allow time for on-going reflection and interaction with others in a creative conversation, or in what I term a *visual dialogue*.

---

Sulek, E. (1994) 'A Virtual Design Studio: Today's Opportunity for Effective Electronic Creativity', *Design Management Journal*, Vol. 5, No. 3, pp 15-20.

<sup>257</sup> Jones, J. C. (1991) *Designing Designing*, Architecture, Design and Technology Press, London, p 214.

Secondary aims of the *Creative Waves: 03>04>05* project were to further develop *Omnium's* two-part research framework (described within thesis *Introduction*) used for planning, producing, facilitating and hosting online collaborative creative projects. The research framework (Figure 1) includes a proposed *five-stage creative process model* and a *web-based technical platform*. It was around these two areas that I based the objectives of the *Creative Waves: 03>04>05* project.

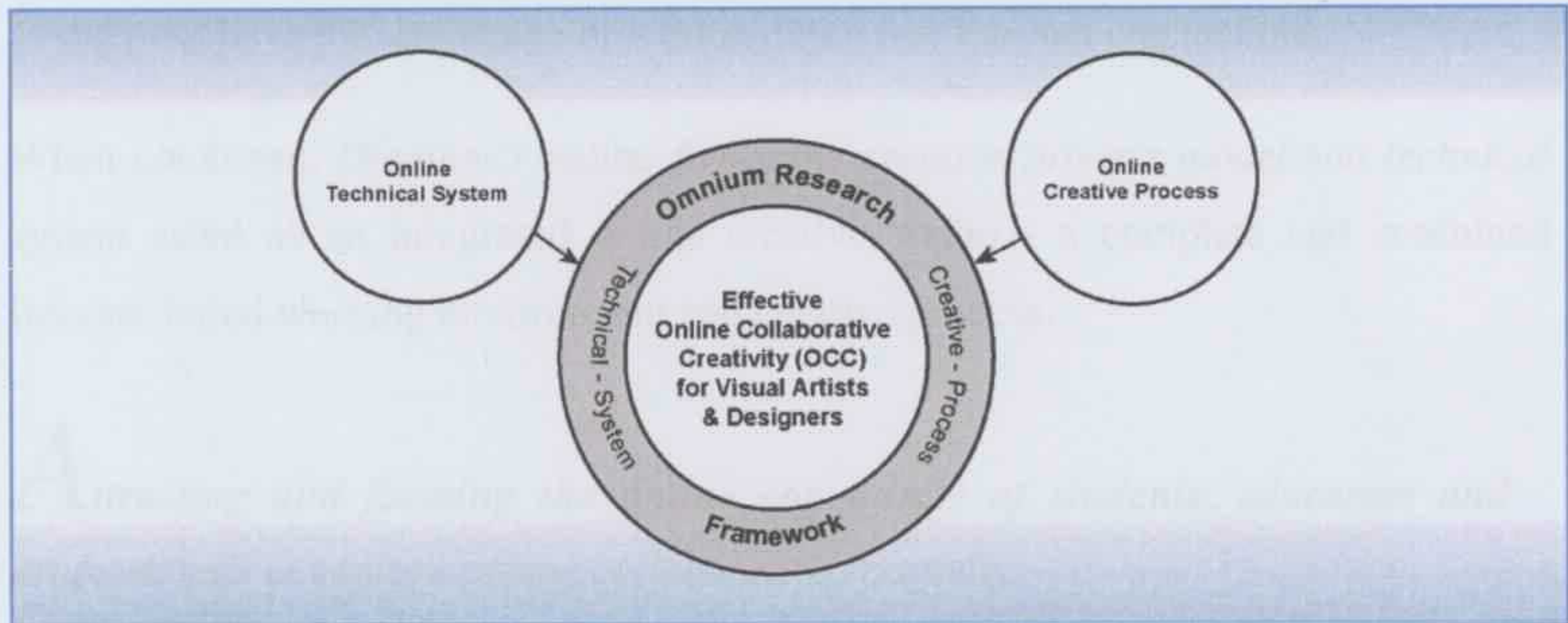


Figure 1 - *Omnium's* two-part research framework to encourage effective Online Collaborative Creativity includes an Online Creative Process and Online Technical System.

The adoption of the *Omnium* research framework led to the integration of creative studio production that included high levels of *dialogical* modes of interaction. These encouraged participants to engage in active and reflective modes of conversation, critical discussion and visual collaboration. By implementing *Omnium's* two-part research framework, the objectives of the project included:

*Online Creative Process:*

1. Provision of a five-stage creative process model to guide the activities and timeline of the project.
2. Collaboration and interaction between participants who work in small creative teams regardless of geographical, time, culture, gender, age or discipline differences.
3. Priority given to creative, cognitive and communicative processes, and not visual end results.
4. A concentration on content and creative activity and not on the many technical issues involved in allowing online interaction to take place.
5. Encouragement to work with people whom one normally might not meet.

*Online Technical System:*

1. The provision of a user-friendly online environment that attempts to understand behavioural issues of people interacting online.
2. A recognition that the Internet is a real and social space with its own unique social and cultural conditions and qualities.
3. An appreciation of technical restrictions and an understanding that many users may not have the advantage of working with fast Internet connections.

When combined, *Omnium's* online *five-stage creative process model* and *technical system* acted as an integrated online creative studio - a complete and combined Internet-based working environment and creative process.

***A*** *Attracting and forming the online community of students, educators and professionals to explore online collaborative creativity*

The planning and preparation for the *Creative Waves 03>04>05* project began nine-months before the project commenced in March 2005. One of the main concerns was how to attract expressions of interest from students, teachers, professionals and special guests. It was the official endorsement from Icoграда that made this task easier than in previous projects as we were able to reach our intended audience via their wide network of members from subsidiary graphic design associations in numerous countries.

Students from any of Icoграда Education Network's (IEN) affiliated international institutions <sup>258</sup> were eligible to take part in the project that crossed the disciplines of graphic design, digital arts and photomedia, using the Internet as their sole communication tool.

In preparation for a marketing campaign to attract participants, *Omnium* designed and built an *information website* to promote the project (Figure 2). The site introduced the project, described the proposed project's activities, the intended brief and offered potential participants the chance to take part through a series of online application forms. The website also offered a small media-kit containing project

---

<sup>258</sup> Art and design colleges and universities from around the world that are part of the IEN can be found by going to: <http://www.icograda.org/education/members.htm>

descriptions and a range of downloadable graphics and branding that other websites could place within their own sites to support the project.



Figure 2 - The Creative Waves: 03>04>05 project promotional website - <http://creativewaves.omnium.net.au/030405/outline>

Despite 'viral' methods of marketing <sup>259</sup> now being standard practice to gain mass public awareness, in 2004 when we were aiming to attract participants to the project, the notion was still relatively new. However, as a result of marketing efforts from Icograda via their own website and monthly newsletter, *Omnium's* own marketing initiatives, and a range of websites in various countries supporting the project, we had many applications from students, teachers and creative professionals wishing to take part within a relatively short time.

The involvement of teaching staff from some of the IEN institutions was integral to the online learning community. Teachers from around the globe acted as guest tutors within the project and were given the opportunity to mentor one of the 15 small design teams. The mentoring role was particularly influential in building the

<sup>259</sup> *Viral marketing and viral advertising* refer to marketing techniques that use social networks to produce increases in brand awareness or to achieve other marketing objectives through self-replicating viral processes, analogous to the spread of pathological and computer viruses. Godin, S. (2001) *Unleashing the ideavirus*, Seth Godin, New York.

individual *culture* of each team by engaging with team members and responding to their progress by offering regular advice and feedback.

Another important aspect during the project was the contribution made by creative professionals, writers and theorists. These *Special Guests* were invited to join the project through email, face-to-face meetings and via phone calls.

#### *Participant structure*

Applications to take part in the project came from 65 students and 22 teachers from 35 Colleges in 22 Countries. From day one of the project, the 90 participants who had made applications were divided into 15 small creative teams which comprised five students and between one and three teacher/mentors. The membership of the teams was carefully constructed so that each team had representatives from at least four countries and a combination of students from graphic design related courses and photo-media related courses.

It had been clearly stated on the promotional website that no more than two students would be selected from any one college or institution. However, we were aware that some colleges wished to include more of their students in the project. As a result, we suggested that the project be run at their own institution, in face-to-face mode, as part of their own curricula. They could then allocate two of their students to join us simultaneously in the full online version of the project and by doing so represent their institution.

The teachers who were allocated to act as mentors were offered the opportunity to read material provided by Professor Gilly Salmon and her *Beyond Distance Research Alliance*<sup>260</sup> team from the University of Leicester in the UK. The material specifically included information about online mentoring of student groups.

Throughout the project, the creative teams were regularly visited by the *Special Guests* who led collaborative *live-chat* sessions, contributed illustrated written *Lectures* or documentation of their own creative work through *Exposé Galleries*, as well as offering feedback to works presented by the creative teams at various stages of their creative process.

---

<sup>260</sup> The *Beyond Distance Research Alliance*, University of Leicester (UK), brings together teachers and researchers, interested in the field of innovation in teaching and learning, from any discipline or level of education - <http://www.le.ac.uk/beyonddistance> (accessed 10/07/08)

Two formal and facilitated *live-chat* sessions were conducted during the project with renowned graphic designer Stefan Sagmeister<sup>261</sup> (USA) and leading design theorist Steven Heller<sup>262</sup> (USA). Both sessions proved particularly productive and acted as concentrated focal points for community discussions within the project. The synchronous *live-chat* conversations continued in the form of ongoing asynchronous discussion threads in the project's main *Message Board* area that were regularly maintained by both special guests.

### ***O***mnium's online creative studio: providing the technical framework, course content and creative process

Three complimentary aspects of the project had to be considered and produced prior to commencement of the *Creative Waves 03>04>05* project: the technical framework, the course content; and the five-stage creative process model that was offered to the students throughout the project.

#### *Technical framework*

*Omnium's* own software designed to form online creative studio environments has been in continual conceptual and technical development since the first global project – *Omnium: [vds] '99*. It enables participants to interact and socialise online in small creative teams to challenge and respond to design briefs set by project coordinators and conveners.

Notably, during my research throughout the last ten years, I have found no other online communication tools or software that offer features necessary for *online collaborative creativity* to take place during the critical early conceptual stages of a design project. Apart from piecing together existing online tools such as email, chat rooms, instant messengers and file transfer protocols (FTP) in order to exchange ideas, artists and designers have had no specific software or systems at their disposal to manage an exchange of working files, yet alone enable feedback, discussion, critique and project management to be seamlessly accommodated. To reiterate, one of *Omnium's* main research aims is to produce an effective online technical system and interface for creative practitioners who choose to work together across time,

---

<sup>261</sup> TED (2009) *Stefan Sagmeister: Graphic Designer*, TED Conferences, New York, [http://www.ted.com/speakers/stefan\\_sagmeister.html](http://www.ted.com/speakers/stefan_sagmeister.html) (accessed 01/03/09)

<sup>262</sup> Heller, S. (2009) *Heller Books: About Steven Heller*, New York, <http://www.hellerbooks.com/docs/about.html> (accessed 01/03/09)

distance and cultural boundaries. The start of the *Creative Waves 03>04>05* project purposely coincided with a major launch of the latest iteration of the *Omnium* technical framework and user-interface and were specifically applied to the project. The features included:

### *Project Welcome Page*

The project's *Welcome Page* was open to all participants and public visitors and gave a brief introductory description of the project and access to main features through clear interface navigation. As the project progressed a *feature gallery* of works selected by the project conveners was added (Figure 3). Because all the project's participants were located in different parts of the world, time zones were an important issue to consider in arranging live online meetings, or for conveners to set deadlines for submissions. As a result, the *Welcome Page* also included a time-zone converter that gave a comparison between the world time-zone of each participant in their own location and *Omnium-Time* which was the projects default time in Sydney, Australia. A specifically designed indicator also showed which users were simultaneously online at any one time, their location, and in which creative team they belonged.

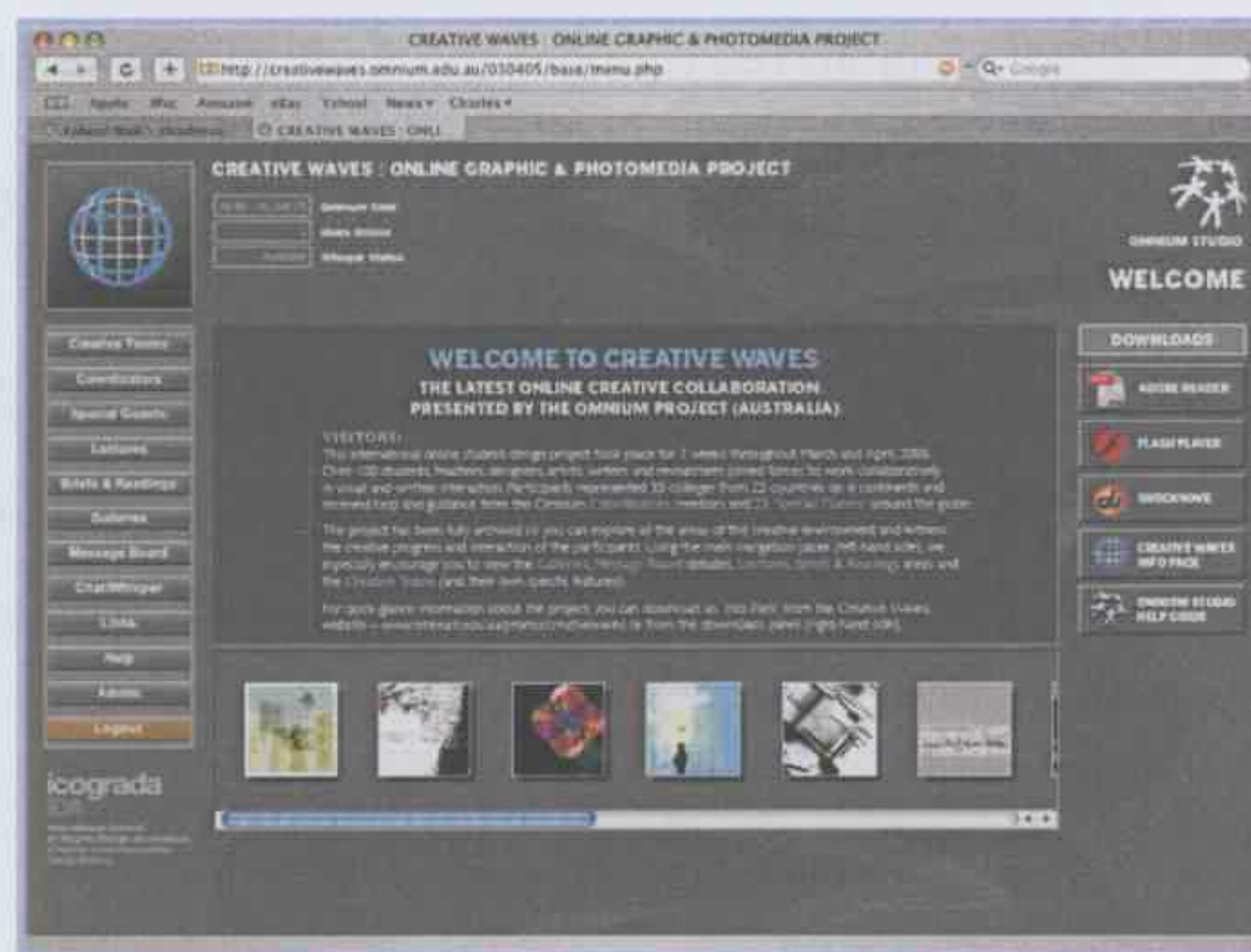


Figure 3 - The Creative Waves Welcome Page: Project introduction giving access to all features of the *Omnium Software* and showing a feature gallery extracted from the main galleries area.

### *Team Homepages and Team Features*

On arrival into the *Creative Waves* virtual community, the students and volunteer academic mentors were first divided into creative teams. Each team was allocated a *Team Homepage* which contained a sub-series of features available through central drop-down menus including: *Personal Profiles*, *Individual Sketchpads*, *Team Pin-Up Wall*, *Team Filing-Cabinet*, and a *Team Discussion & Feedback area* (Figure 4).

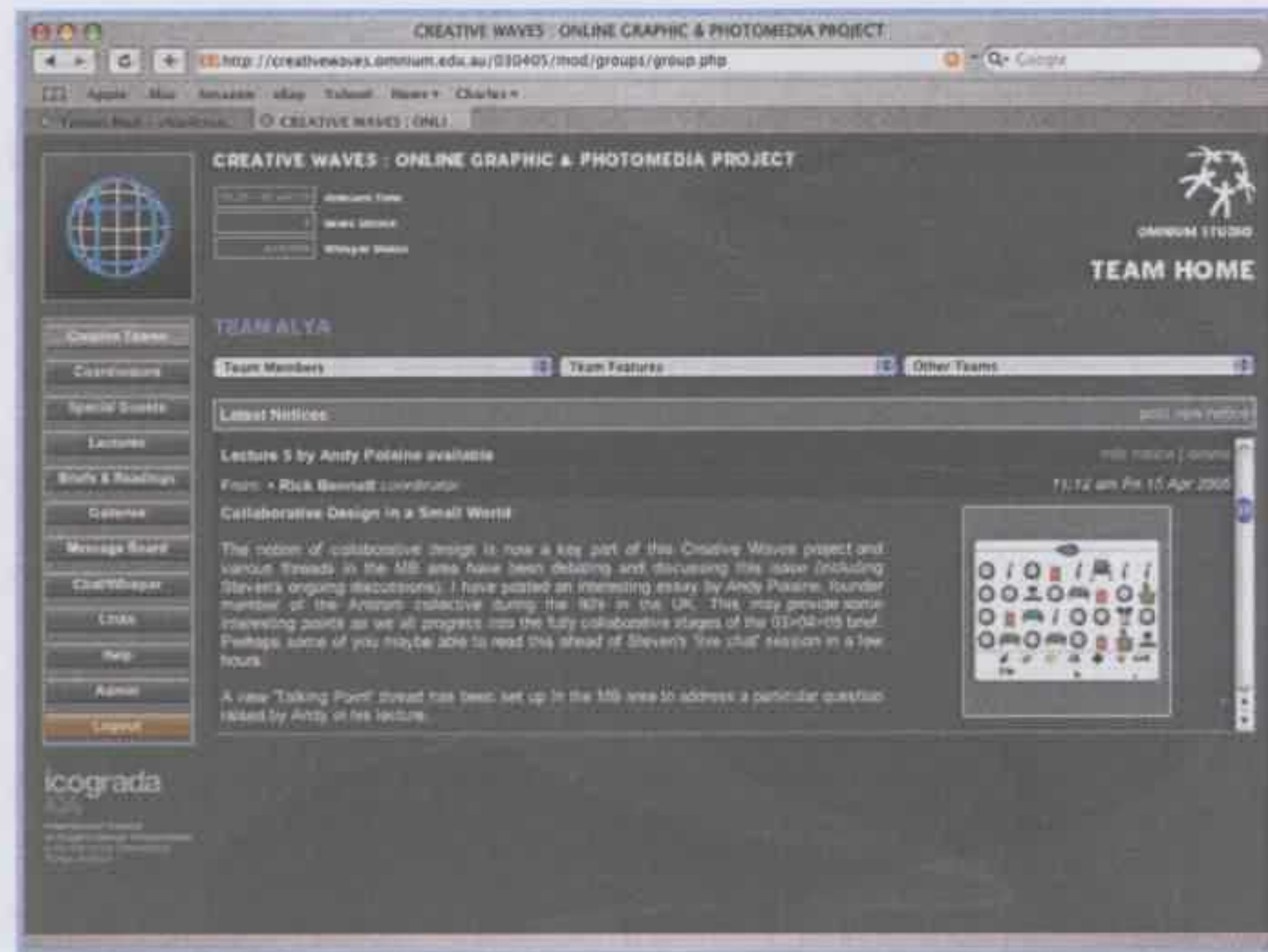


Figure 4 - A Creative Waves Team Homepage: Announcements and messages from project conveners directed participants to new content each day of the project. Three drop down menus allowed access to: team-members personal profiles; team features; and a quick navigation to other teams.

The Team Homepage (Figure 4) was where the conveners of the project could leave daily postings to inform and direct participants to content that became available throughout the seven weeks of the project. Messages and announcements could be left to specific teams or by default to all 15 teams taking part. Each team member within each team was also allocated a *Personal Profile* that they could easily self-manage and where they could leave their own introductory profile as well as an image of themselves or one they felt represented them.

The image they chose would automatically appear next to each message they published in the main communal threaded *Message Board* area. A feature within the *Personal Profile* area (Figure 5) also recorded their participation by listing the number of times they had left *posts* in the main project *Message Board* area as well as in their own team's *Discussion & Feedback* area.

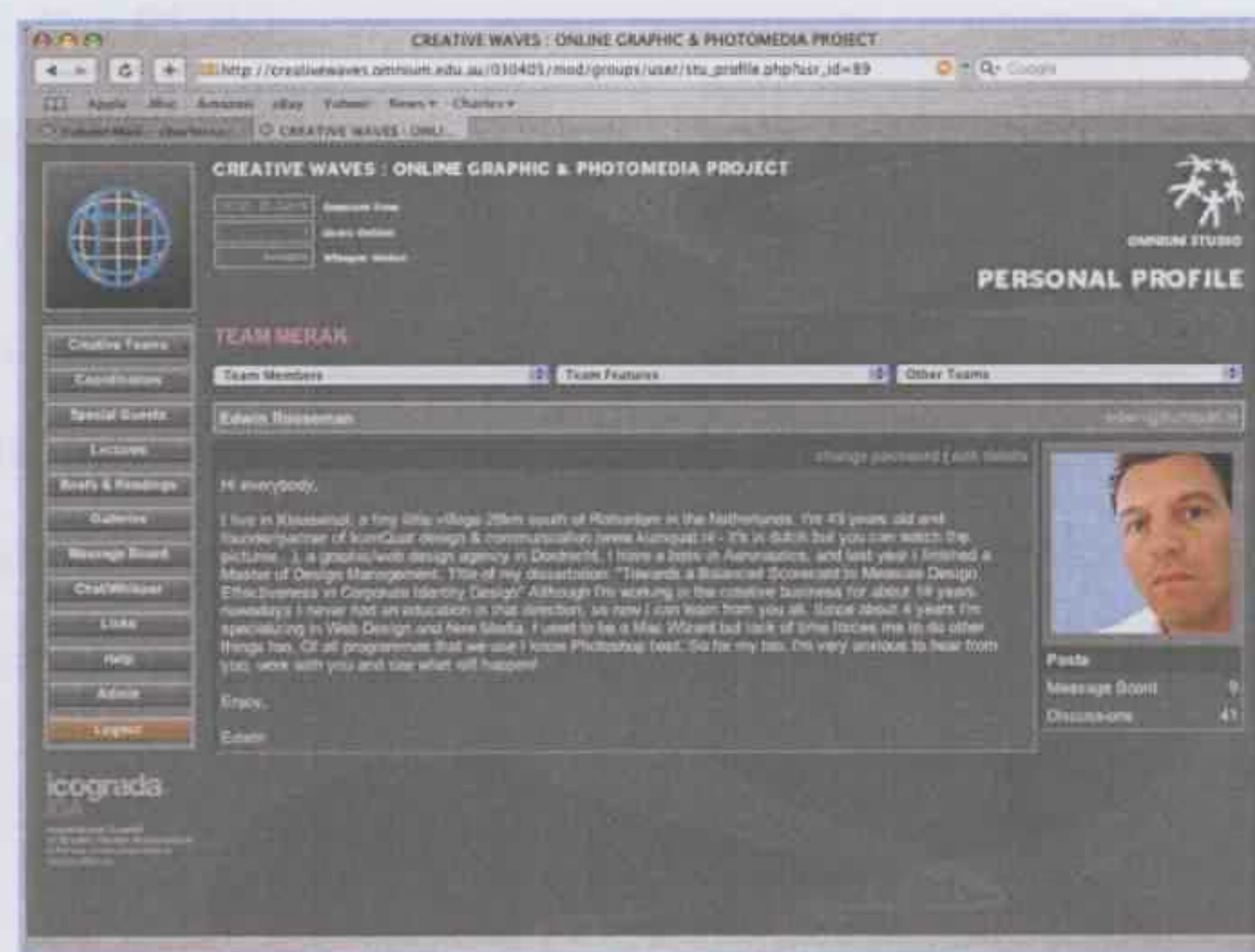


Figure 5 - A Creative Waves Personal Profile: Students and mentors were able to leave an introductory profile about themselves including an image to represent them throughout the interface.



### *Individual Sketchpads*

Each participant within the Creative Teams was allocated their own *Individual Sketchpad* area (Figure 6) where they could upload and store image and text files from their own desktop to be later directed to their other Team areas. *Individual Sketchpads* were secluded areas and files remained private to their owners until transferred to their *Team Pin Up Wall* area or sent to fellow team-mates' *Individual Sketchpad* areas. The 'sketchpads' were the gateway from a user's own desktop to areas within the *Omnium* online creative studio interface.

The term 'sketchpad' should not be interpreted literally as there was no function to actually sketch using an interactive whiteboard. The reason they were termed 'sketchpads' derived from their private nature and alluded to a student's journal sketchpad that they would use in a more traditional educational setting.

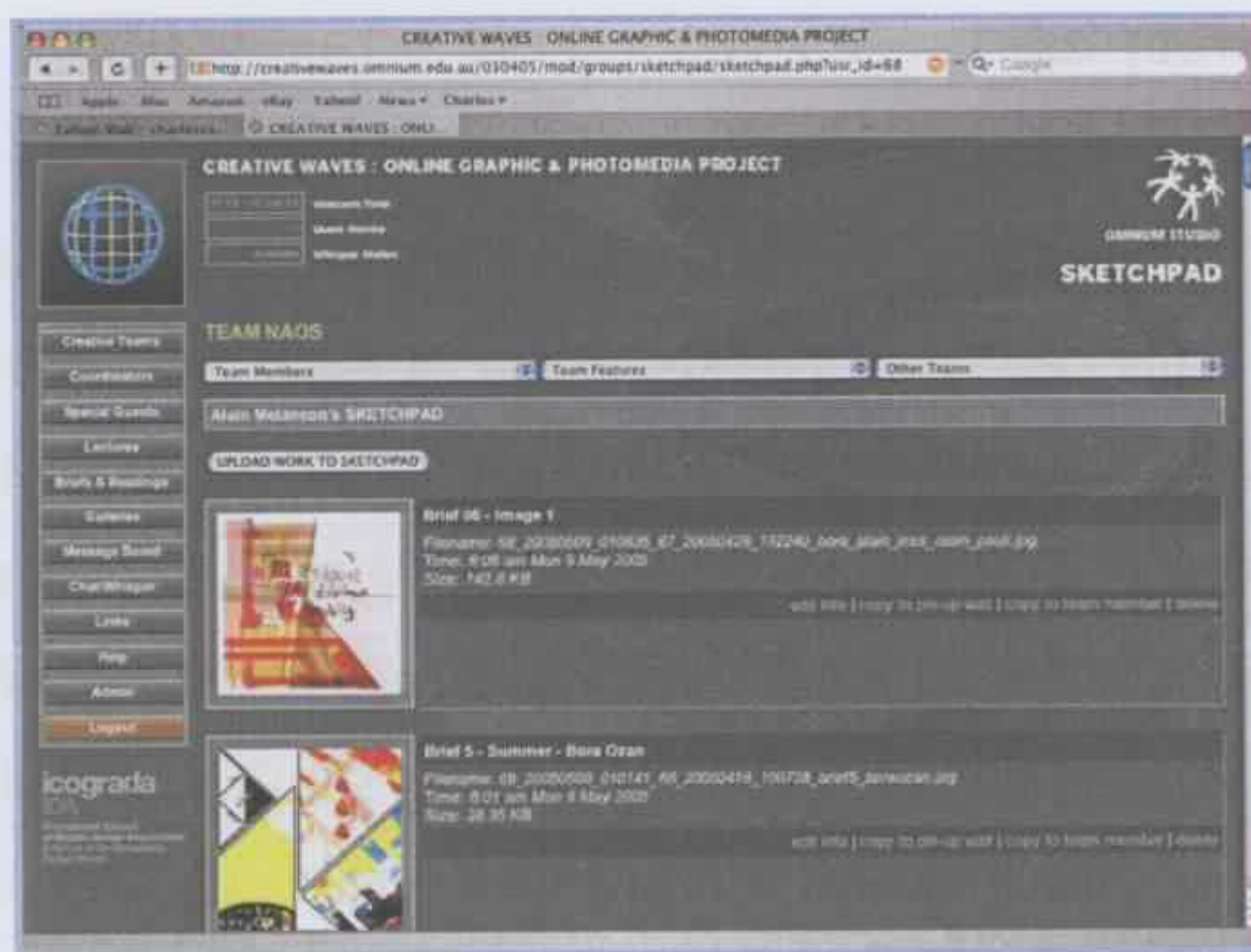


Figure 6 - A Creative Waves Sketchpad: Each Student was provided with a private area to upload digital image files that could then be directed to various areas of the interface.

### *Team Pin Up Walls (PUW)*

Each creative team was allocated a *Team Pin-up Wall* area (Figure 7) that enabled participants to share material developed by fellow team-members. Viewable to immediate team members, special guests and the project conveners, this was the place to evaluate and edit solutions before submitting them to the main project *Galleries*. Images submitted to the *Team Pin-up Wall* areas could be re-ordered at any time and visitors could click on any image to enlarge the work.

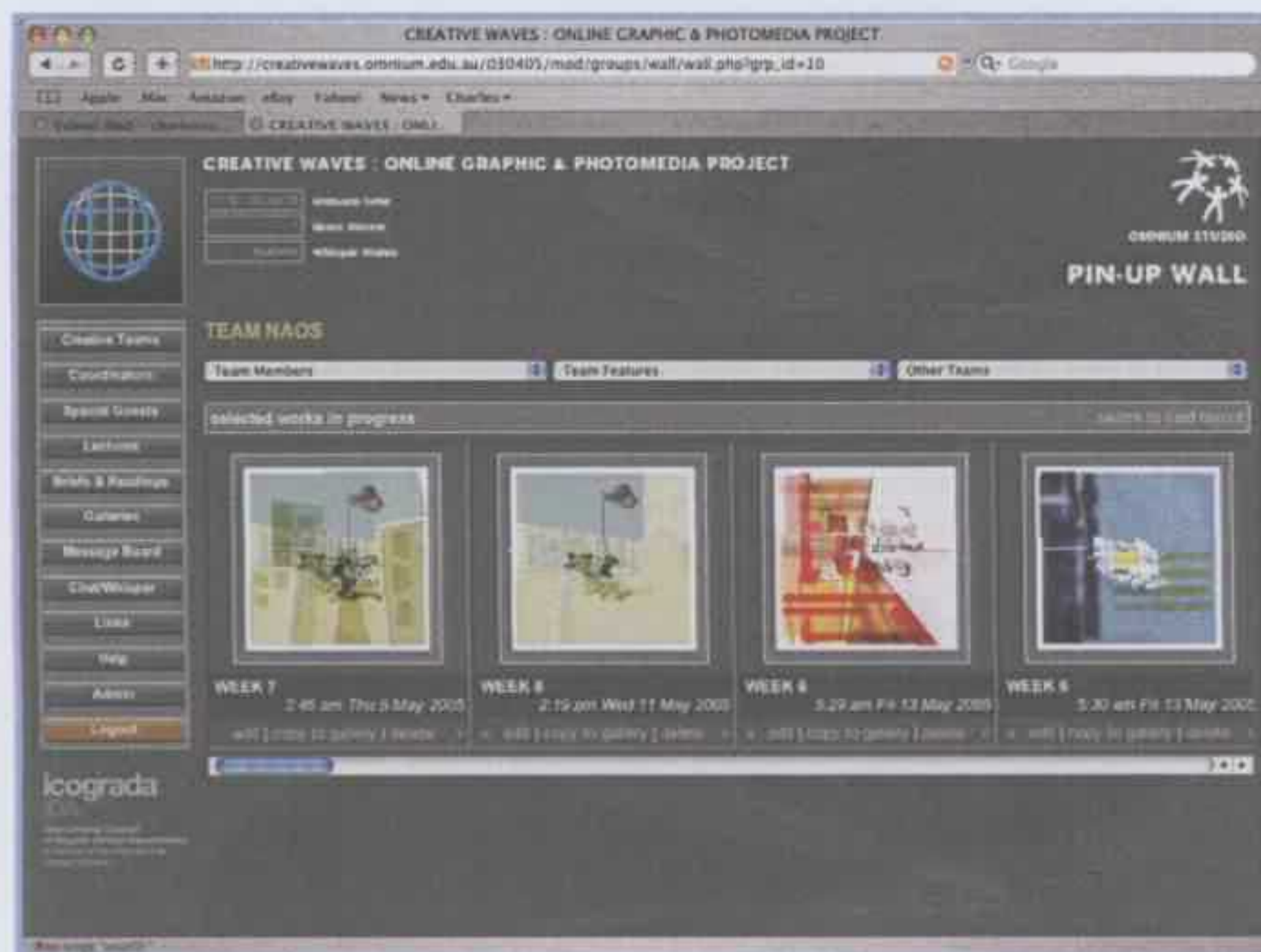


Figure 7 - A Creative Waves Pin Up Wall: Each creative team contained an area where students could upload their work for critique by other participants, mentors, special guests and project conveners.

### *Team Filing Cabinets*

Each team area also contained a *Team Filing Cabinet* that provided a communal storage area for essential files (images, text, sound and multi-media) needed by all team members to complete assignments. Works in progress and latest versions of files could be stored here (such as larger working files) that allowed participants to download them to their own desktop and work on the files that, for example, had not yet been compressed and that still had their 'working layers' open for editing and reworking.<sup>263</sup> When a participant had completed a particular work, files could be resubmitted to the *Team Filing Cabinet* for others to continue the creative process. This area allowed full collaboration to take place when working on group projects.

### *Team Discussion & Feedback (D&F) areas*

Perhaps one of the most important interactive features within each team was the *Team Discussion & Feedback* area (Figure 8). This feature allowed team members and conveners to discuss any issues relevant to the overall project and provided a team-based level of communication within the *Omnium* interface. The *Team D&F* area ensured collaborative communications took place at a team level and acted as a kind of integrated email system within the project. Having viewed a team's visual submissions via the *Pin Up Walls*, feedback could be left for each team within this area by fellow team-members, mentors, conveners and special guests.

<sup>263</sup> In many types of digital graphic files (such as Adobe Illustrator and Photoshop) the original file is made up of layers. Each layer refers to a particular part of the working file and when complete the layers are 'merged' to prevent further work from being carried out on the file. The advantage of merging final files is that it protects files from being reworked and also compresses the file into a smaller document.

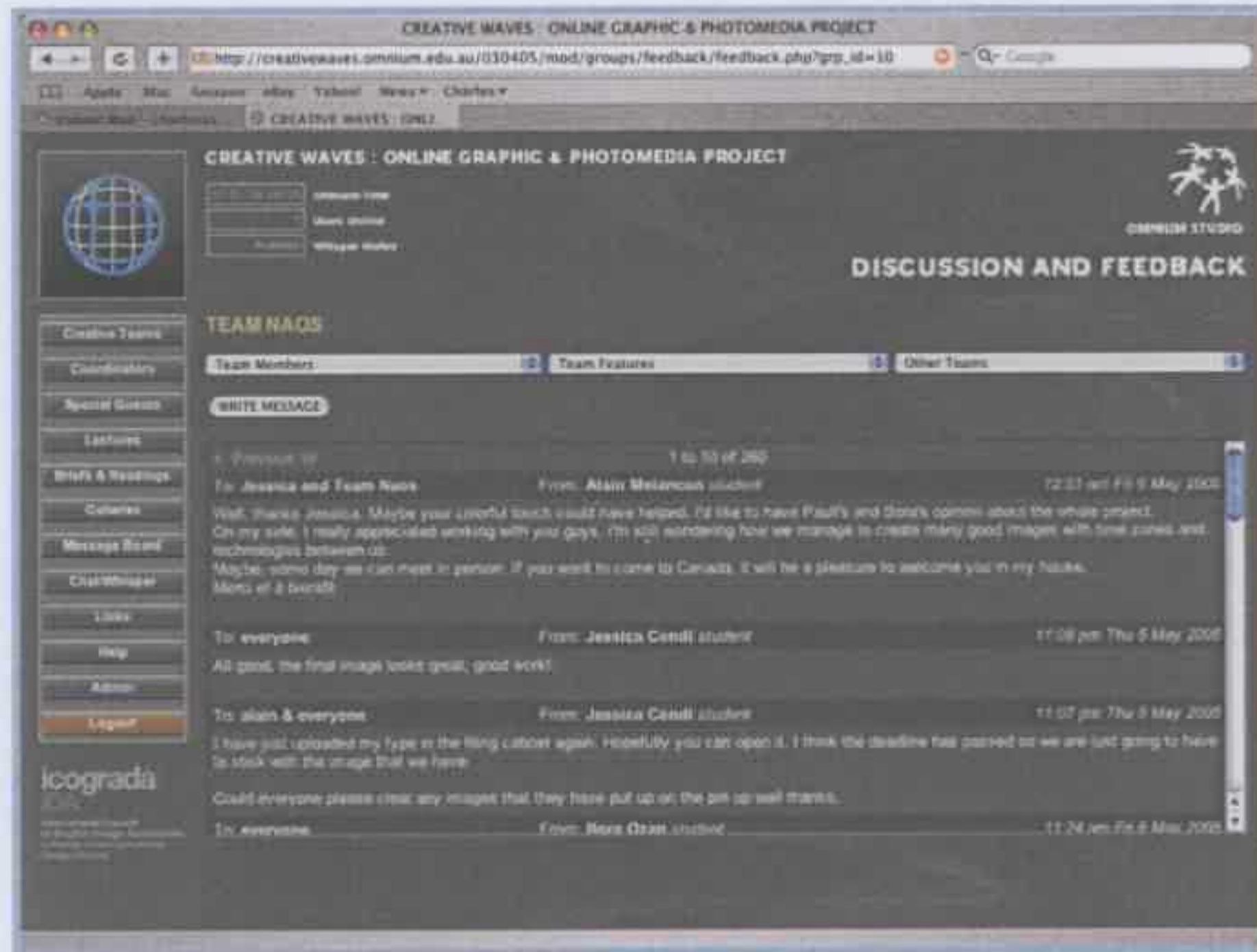


Figure 8 - A Team Discussion & Feedback area: Each creative team contained an area where students could discuss ideas with each other and receive feedback from their mentors and project conveners.

The *Team* features described above were allotted to each creative team working within the *Creative Waves 03>04>05* project. However, the majority of *Omnium's* technical features were available to all project participants, as well as public visitors. These included: Lists of *Creative Teams*; *Project Coordinators* (including conveners and team mentors) *Special Guests*; *Lectures*, *Briefs & Readings*; *Galleries*; *Message Board*; *Live Chat/Whisper*; *Useful Links*; and *Help* area.

#### Communal Features:

##### Message Board

*Omnium's* *Message Board* feature was perhaps the most distinctive communal communication tool throughout the project. It was typically used for communication that occurred over extended periods of time and contained discussions that were relevant to the entire virtual community (Figure 9).

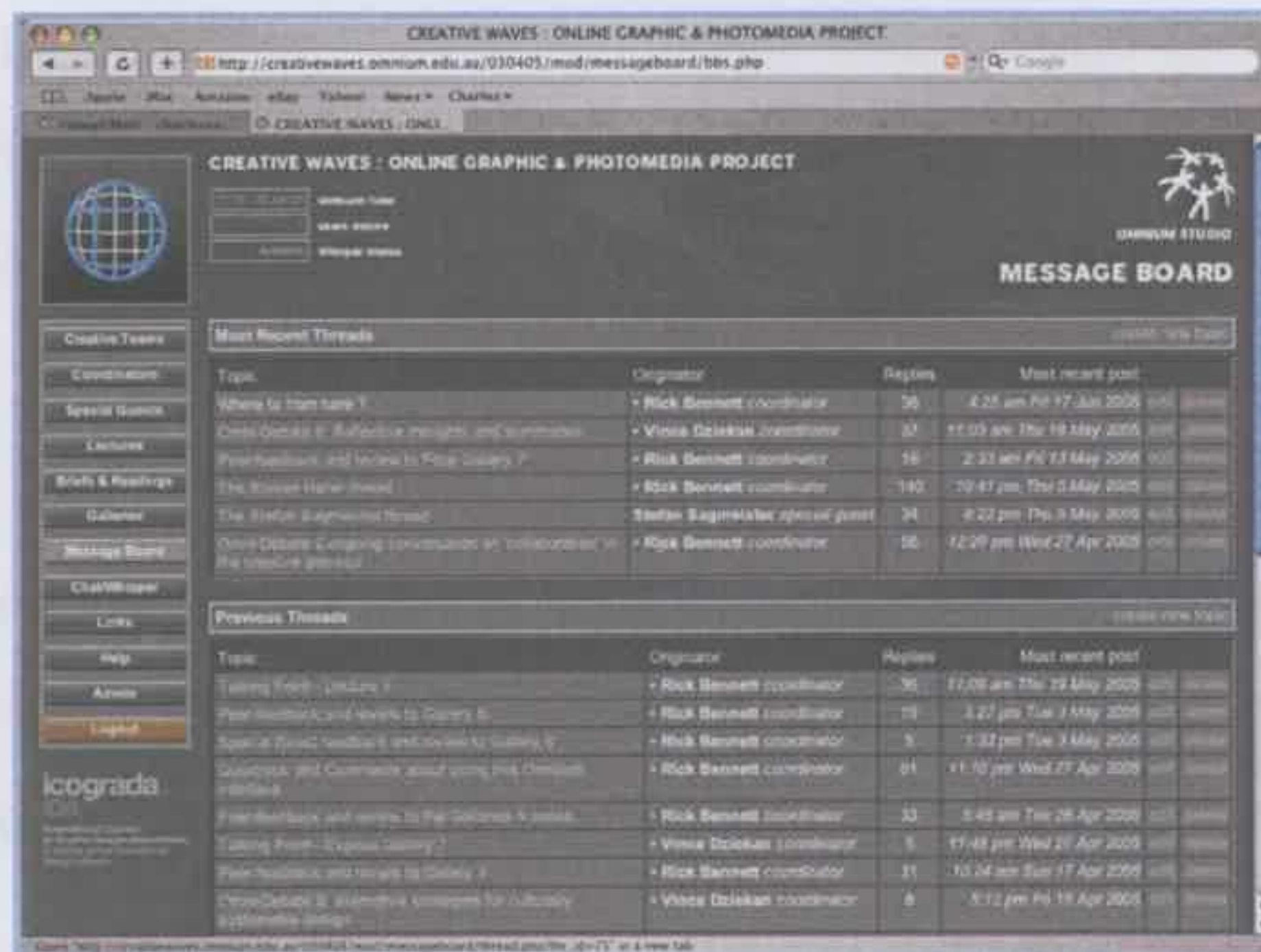


Figure 9 - The Creative Waves Message Board: As one of the main communal features in the project, all students, mentors, conveners and special guests could debate issues within threaded forums.

The *Message Board* was split into *latest* threads and *previous* threads so as not to overwhelm the viewer and included *Talking Points* from the seven written *Lectures* and *Omni-Debates* where all participants could discuss pertinent issues to the project (discussed later in this chapter).

#### *Discussion Threads (Omni-Debates & Talking Points, plus guest threads)*

When participants wished to contribute to any discussion by posting to the *Message Board* area, their comment was automatically accompanied by the self-representative image they had uploaded into their *Personal Profile* thereby giving more personalisation to the threads (Figure 10).

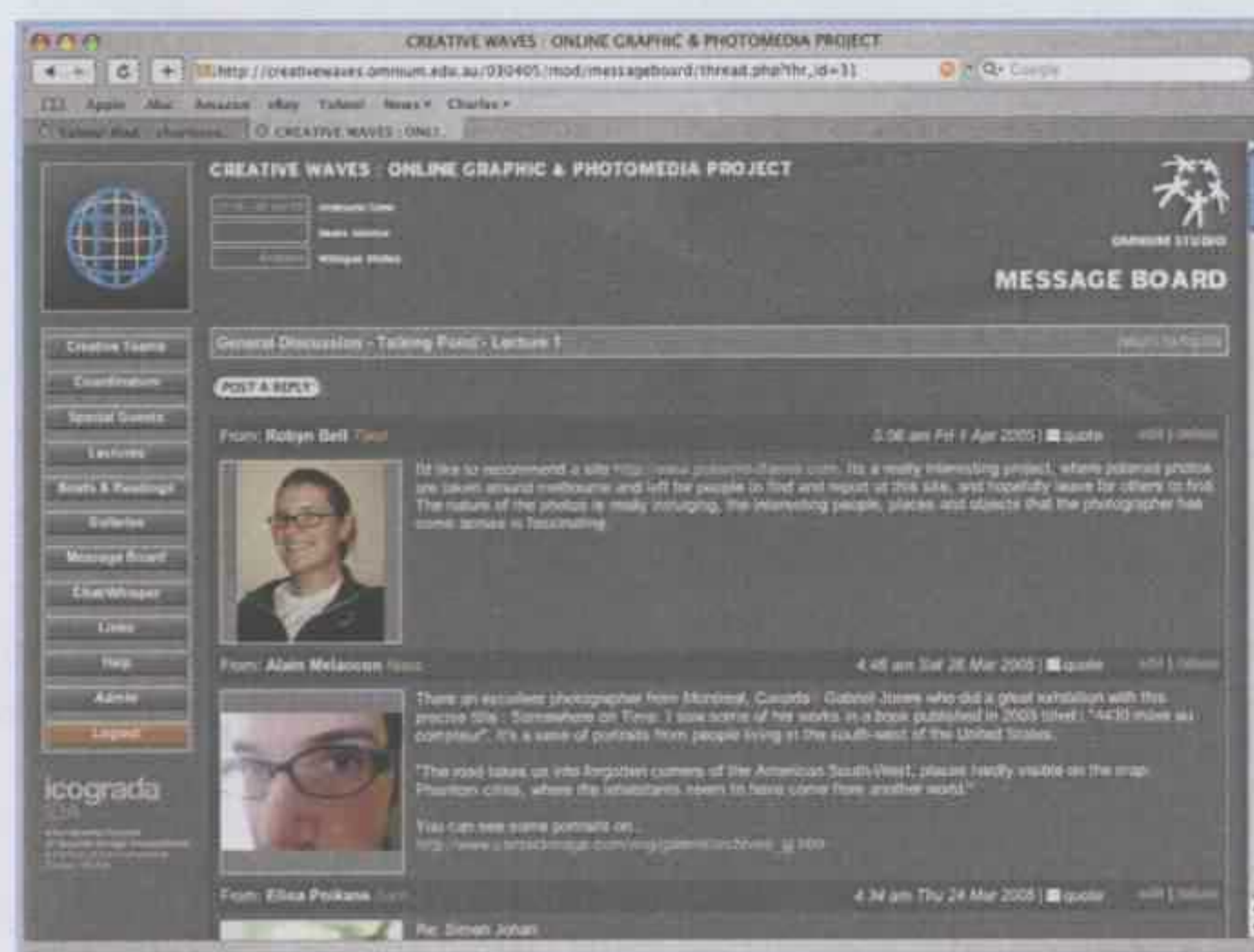


Figure 10 - The Creative Waves Message Board: When individuals left contributions to the Message Board area, their profile images automatically accompanied their response and a quote feature allowed them to cite others comments.

When posting a contribution to any thread, participants were also able to refer to previous comments in the thread by using the *quote* feature. This feature

automatically highlighted a 'quoted' comment which could then generate further debate. In total the *Creative Waves 03>04>05* project produced over 3000 individual discussion points and proved invaluable to the success of the overall project.

### *Live-Chat*

Throughout the project, all participants had access to the main synchronous, text-based *Live-Chat* areas. It was also possible to select between a *Team-Chat* area that was only accessible to fellow team-members, or the *Omni-Chat* sessions accessible to anyone logged into the project.

Participants were able to view who was online at the same time through the *users online* feature available on every page and select to live-chat with them about any issue. During the seven-week project, two *Special Guest live-chat* sessions were held with design writer Steven Heller (USA) and graphic design luminary Stefan Sagmeister (USA) (Figure 11). Each session lasted for about 90 minutes, with questions posed online to both guests by the collective group who had gathered for each session. For those who were unable to attend the session, downloadable PDF transcripts were made available. These sessions proved to be very popular with students and became highlights of the project.

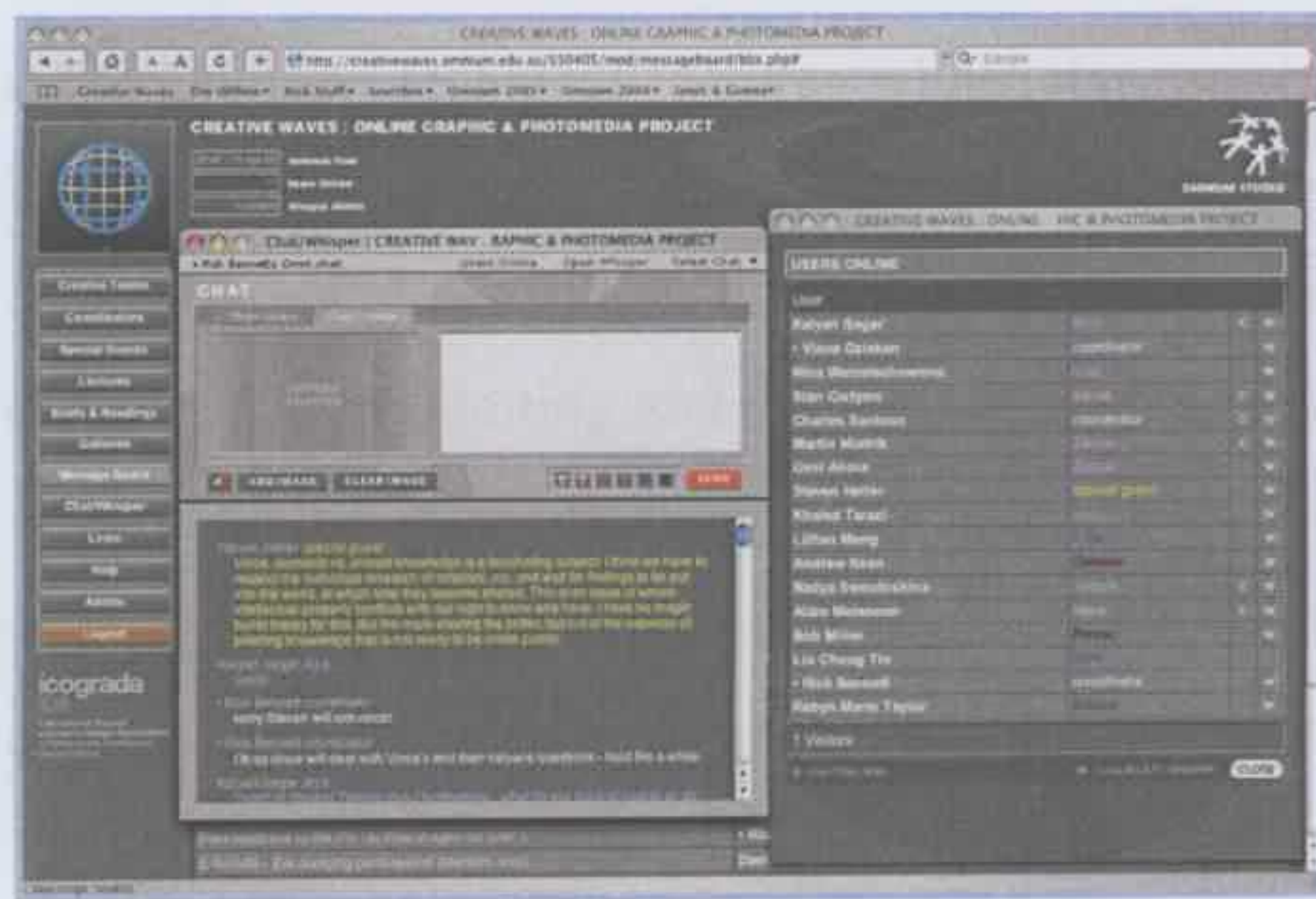


Figure 11 - The Creative Waves Live Chat area: Students were able to chat in real-time with each other as well as attend chat sessions with design luminaries such as Steven Heller and Stefan Sagmeister.

### *Whisper/Scribble Sessions*

The Whisper/Scribble feature was a novel feature specific to *Omnium's* creative studio software (Figure 12). It enabled project participants to conduct private, one-on-one conversations with any other online user. They could select a fellow user's name from a drop-down menu and type an instant text message to them.

Additionally, they could attach an image to their posted messages that was viewable to the other user. What was unique at the time was that they could draw directly on their images with a pencil tool to highlight specific issues and enhance quick communication as if users were sitting around the same table discussing visual proposals together.

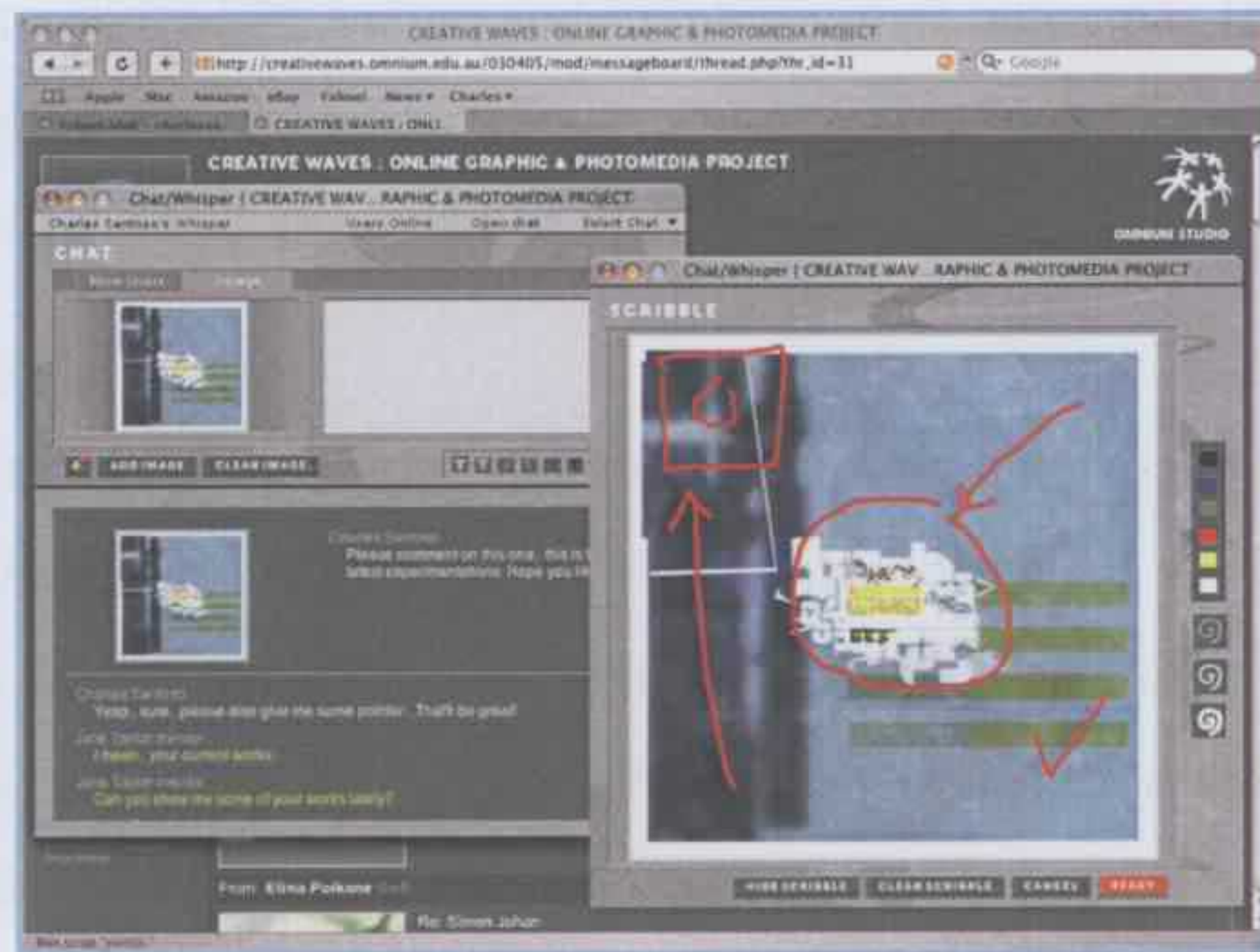


Figure 12 - Live Whisper/Scribble area: This feature comprised an instant-messaging system that allowed participants to write to each other one-on-one and attach images of their work including scribbled drawings over their images.

### Course content

The remainder of the *Omnium* technical features within the user-interface, and used throughout the *Creative Waves* project, were those associated with the provision of course content.<sup>264</sup> The course content took into account the overall project framework and was directed at eliciting and supporting particular modes of practice and interaction depending on particular stages in the project. Due the extensive amount of support material, these were released periodically to participants so as not to overwhelm them and to ensure they were not accessed out of sequence.

### Project Briefs

The creative process of the project was facilitated by progressively unfolding a sequence of seven creative (design) briefs (Figure 13). From the outset, in an attempt to encourage collaboration in the creative process, it was important to first encourage individual contributions. In forming this kind of online community participants need

<sup>264</sup> The collection of *Briefs*, *Lectures* and *'Expose Galleries'* discussed can be found in the archived version of *Creative Waves* website: <http://www.omnium.edu.au/promo/creativewaves>.

to feel that they have contributed personally to that which will finally become a collective outcome.

In view of this, the project was divided into two distinct phases: a first *individual-focussed* phase that based its activities principally on photo-media concerns (briefs #1-3) and a second *collaborative-focussed* phase that continued in prescribed stages towards producing more illustrative and graphic visual outcomes (briefs #4-7). Both phases were aligned with *Omnium's* proposed *five-stage creative process* model for *online collaborative creativity*.

### Phase One (Brief 1 - 3):

Although requiring predominantly individual creative submissions to be made by each student, *phase one* of the project was also designed to establish internal communications and team-building within each of the 15 creative teams. *Brief #1 - Negotiating Time* and *Brief #2 - Finding Place*, emphasised individual photographic fieldwork and also initiated a transition from solo practice to more common and shared approaches to creativity. *Brief #3 - Time Zones* marked the beginning of another transition, from lens-based photographic imaging to illustrative and graphic digital imaging. All three briefs were situated in the first *Gathering* stage of *Omnium's five-stage creative process model*.

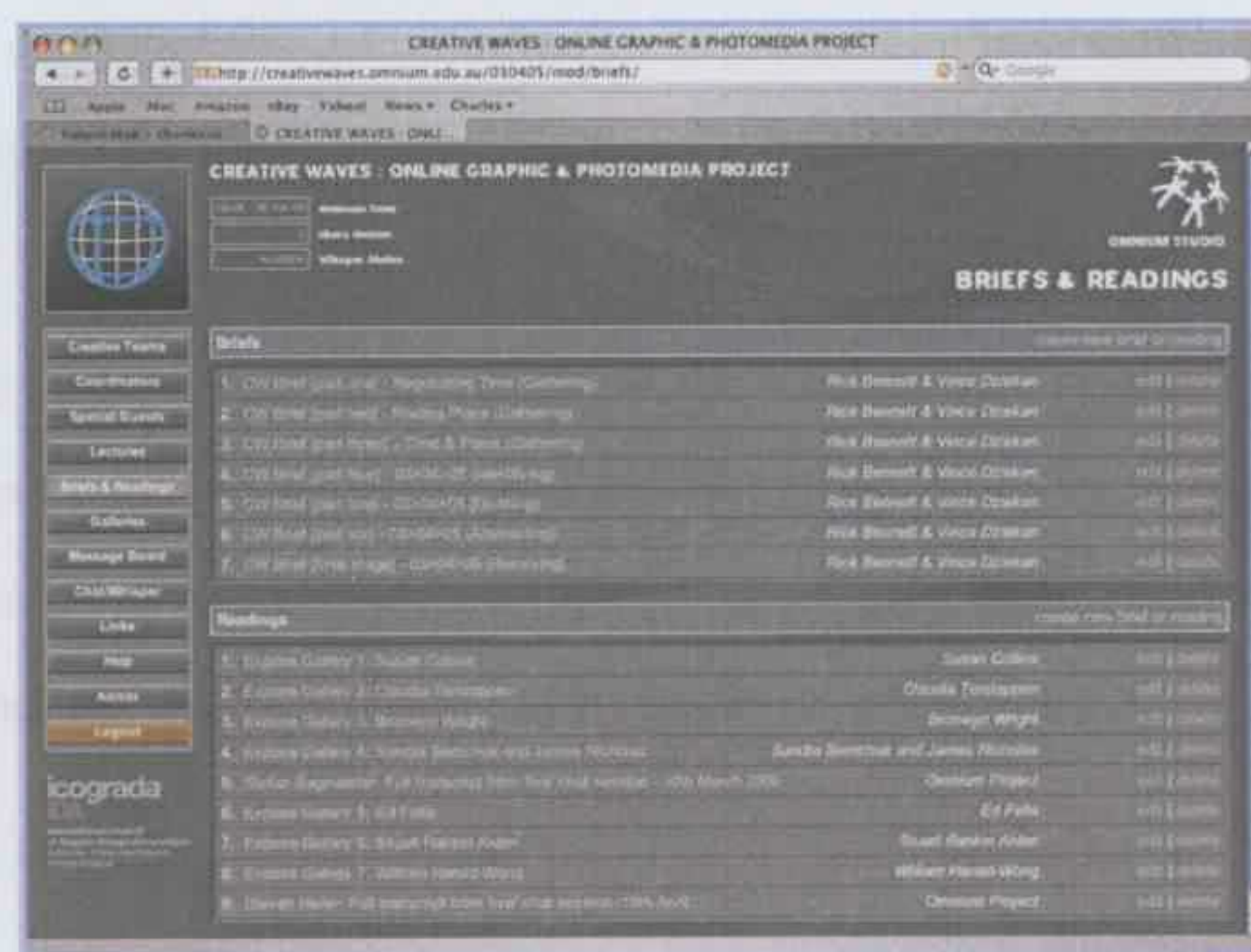


Figure 13 - Creative Waves Briefs & Readings: the seven weekly briefs issued throughout the project were accompanied by a series of associated readings from invited special guests.

### Phase Two (Brief 4 - 7):

During phase two each of the four briefs were aligned with the remaining four stages of *Omnium's five-stage creative process model*; *Identifying*, *Distilling*, *Abstracting* and finally *Resolving*. The second phase also encouraged students to make a

transition from posting individual contributions to engaging in fully collaborative creative practice with their team-mates. Commencing during the third week, the cryptic 03>04>05 subtitle of the project was emphasised and students within each team developed collaborative discussions, debates and creative interpretations in response to it.

### *Lectures*

In association with the series of project briefs, a series of specifically written illustrated *Lectures* were provided to students and mentors working in the project's creative teams (Figure 14). The *Lectures* punctuated the activities of the project and were released at strategic points to optimise their relevance to the creative discourse undertaken at specific stages. In total, seven *Lectures* were provided to all participants – written by (in order of release); the co-conveners, Rick Bennett and Dr. Vince Dziekan; and invited special guests, Pedro Meyer; Katherine McCoy; Steven Heller; Andy Polaine; and Ron Burnett.

The *Lectures* covered the following topics or subject areas:

- Collaboration in the creative process
- Issues concerning photomedia
- Issues concerning graphic design and visual communication
- Cultural differences and meanings
- Creativity and online methodologies
- Creative virtual communities

The main themes addressed in the *Lectures* coincided with the issues at stake in the particular context, phase or stage of creative investigation. Each of the *Lectures* offered had associated discussion threads so that participants could respond directly to the authors and debate the issues raised between each other.





Figure 14 - The first introductory Creative Waves Lecture: *The Omnium Project, Creative Waves and our aims for this online project* was a 3000 word fully illustrated lecture to set the scene for participants.

The first *Lecture*, *The Omnium Project, Creative Waves and our aims for this online project*, introduced *Omnium's* structural framework and the intended conceptual approach to the project; the second, *Creative Waves*, suggested a basis from which the initial photo-media activities of the project would be explored.

Following these two *Lectures* were the Special Guests' *Lectures*. The first was from Latin-American photographer Pedro Meyer,<sup>265</sup> entitled *About Cultural Meanings*. His essay was designed to focus participants' attention on communicative potentials and difficulties associated with images and the different cultural understandings of graphic symbols. Meyer's essay was followed by a paper written by American academic, Katherine McCoy,<sup>266</sup> titled *Green Communications: Cultural Sustainability*. The essay discussed the importance of acknowledging difference in cultures and how designers need strategies to speak appropriately to targeted audiences with tailored messages that resonate with each audience's language, cultural values, needs and preferences.

Her essay was followed closely by American graphic design theorist Steven Heller's *The Case for Critical History*. These two *Lectures* signalled an important paradigm shift within the project: from individual to collaborative creativity, and from a concentration on image making to visual communication of specific ideas.

<sup>265</sup> Meyer, P. (2008) *Short Biography: Pedro Meyer*, Mexico, <http://www.pedromeyer.com/biography/biography.html> (accessed 03/04/09)

<sup>266</sup> Wild, L. (1999) *Katherine McCoy: Expanding Boundaries*, AIGA, New York, <http://www.aiga.org/content.cfm/medalist-katherinemccoy> (accessed 01/03/09)

The last two *Lectures* explicitly focused on the context within which all the project's activities were taking place: an online setting on the Internet. Interactive designer, Andy Polaine's penultimate *Lecture*, *Collaborative Design in a Small World* (Figure 15) provided the stimulus for discussion between participants specifically about *online collaborative creativity*. Within the introductory remarks to his *Lecture*, Polaine stated:

*Collaboration has long been an aspect of the creative process in design and the arts ... new technologies (such as the Internet) now feature in contemporary design collaboration. What kind of processes lead to productive collaborations and where can it go wrong? What is the point of collaborating anyway?*<sup>267</sup>

The most active and lively discussions occurred in response to Polaine's essay and were directly associated to the key concept of the entire *Creative Waves* project: collaboration and creative processes.

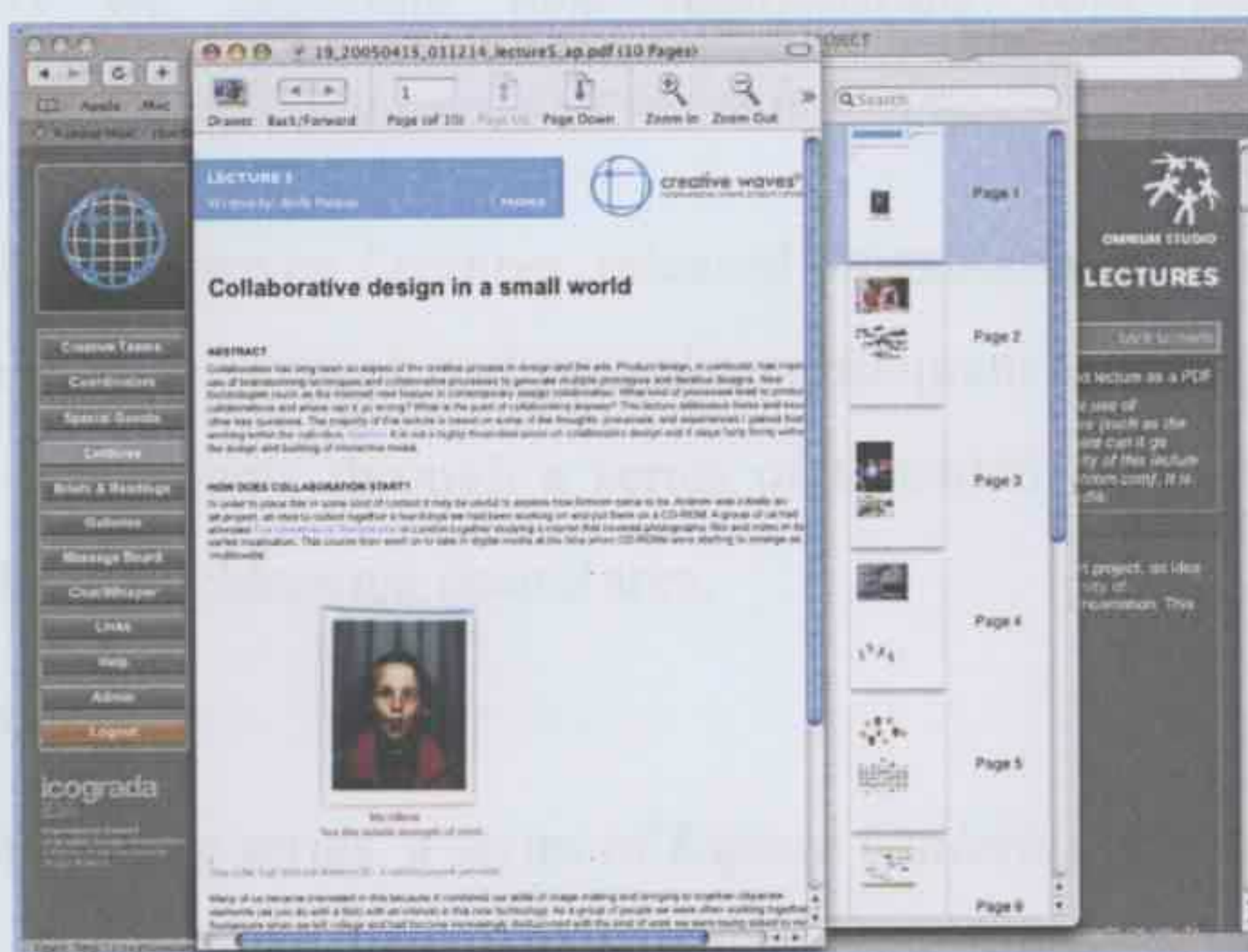


Figure 15 - The fifth Creative Waves Lecture: *Collaborative Design in a Small World* (A. Polaine). Shown being viewed in a downloaded printable PDF format.

In the last *Lecture*, issues regarding *online learning communities* and the implications that digital creativity would have on educational and professional settings were raised by Canadian academic, Professor Ron Burnett.<sup>268</sup> Quoting the abstract that introduced the compendium of his papers, including *Learning to Learn*

<sup>267</sup> Polaine, A. (2005) *Collaborative Design in a Small World*, Omnium Creative Waves project - [http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec\\_id=19](http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec_id=19) (accessed 21/06/09)

<sup>268</sup> ECUAD (2009) *Ron Burnett: President*, Emily Carr University of Art & Design, Vancouver, <http://www.ecuad.ca/about/people/bio/12058624> (accessed 24/05/09)

*in a Virtual World and The Challenge of Change in Creating Learning Communities*, Burnett stated:

*The context for learning and education has altered dramatically over the last few years. We are witnessing shifts that will have a profound effect not only on the social and political orientation of nation states, but also on the ways in which we see ourselves and act upon and within the communities of which we are a part. These shifts will affect how we create meanings, messages and information for the proliferating electronic networks that now surround us. We will also have to re-examine how ideas circulate and how learning and knowledge can be acquired within a digital context ... the conjuncture of computers, networks, lifelong learning and a vast array of new tools for human interaction variously described through the tropes of the virtual and the cyberspatial, means that teachers will have to reinvent themselves. Virtual spaces generate hybrid environments for the interaction of people and computers. As we negotiate new relationships with these emerging technologies, we are defining new spaces for learning.*<sup>269</sup>

In summary, each of the seven *Lectures*, released progressively over the seven weeks of the project, aimed to prompt and provoke subsequent and ongoing discussions between project participants through a series of threaded discussions titled *Omni-Debates* within the main *Message Board* area.

#### *Exposé Galleries*

In addition to the *Lecture* series, a series of *Exposé Galleries* was associated with the lecture topics and released in sequence to maximise the influence upon creative work occurring within the creative teams. Specifically for the *Creative Waves 03>04>05* project, the seven *Exposé Galleries* showcased the creative work of invited artists and designers: Susan Collins; Claudia Terstappen; Bronwyn Wright; Sandra Semchuk & James Nicholas; Ed Fella; Start Rankin Alden; and William Harold Wong,<sup>270</sup> and represented the following disciplines and creative approaches:

---

<sup>269</sup> Burnett, R. (2005) *Essays by Ron Burnett*, Omnium Creative Waves project - [http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec\\_id=20](http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec_id=20) (accessed 21/06/09)

<sup>270</sup> WHW Design (2009) *William Harald-Wong & Associates: Company Profile*, Kuala Lumpur, [http://www.whwdesign.com/pdfs/whw\\_Profiles.pdf](http://www.whwdesign.com/pdfs/whw_Profiles.pdf) (accessed 24/05/09)

- Art Photography
- Digital Imaging
- Typography
- Illustration
- Graphic Design

Such a body of works, provided by leading photographers, artists and graphic designers representing a variety of nationalities and cultures from around the world, became an integral component within the ongoing *Creative Waves* program. As with the *Lecture* series, the opportunity to make presentations of image-based works (ranging from art photography, new media, experimental graphic imaging and commercial illustration) provided the means by which a number of diverse practitioners could become involved in the project.

All but one of the *Exposé Galleries* were presented in pairs - a deliberate strategy to encourage dialogue through their juxtaposition and which highlighted divergent approaches to a common theme. The following schedule of *Exposé Galleries* was presented:

*Exposé Gallery 1:* Lens-based imaging work involving both traditional photography and new media approaches to the landscape by Claudia Terstappen (Germany) and Susan Collins (UK).

*Exposé Gallery 2:* Photo-based work responding to place and site-specificity using documentary and interventionist approaches by Bronwyn Wright (Australia) and the collaborative partnership of Sandra Semchuk and James Nicholas (Canada).

*Exposé Gallery 3:* Photographic fieldwork and its illustrative application within graphic design and typography, as represented by graphic artists Ed Fella and Stuart Alden (USA).

*Exposé Gallery 4:* Visual communication, with an over-riding cultural emphasis upon visual vernaculars (imagery, graphic symbols, cultural associations and references), by William Harold-Wong (Malaysia)

Each *Exposé Gallery* included a web-based collection of images as well as an accompanying publication (in PDF format) that contained an artist's statement and biography in order to personalise the work and establish the creator's expressive and communicative intentions (Figure 16).

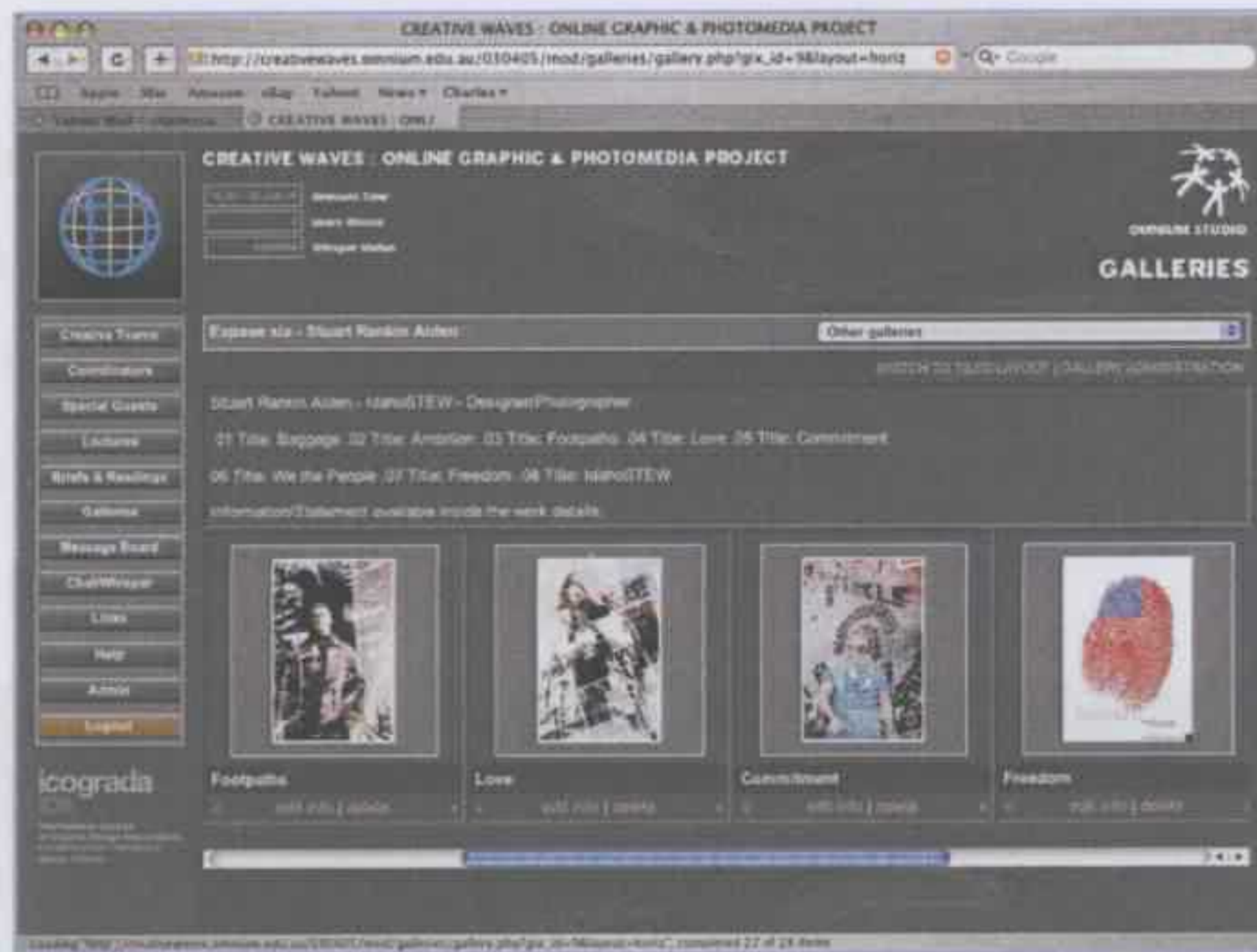


Figure 16 - A Creative Waves Exposé Gallery: Graphic works provided by Stuart Alden to assist the participants at a particular stage of their creative process.

Besides providing a means to *expose* students to visual works that might provide inspiration for their own work, prompted by the series of briefs, the over-riding purpose of the *Exposé Galleries* was for students to use them as a starting point to further discuss and debate. To achieve this aim, each launch of an *Exposé Gallery* was accompanied by the initiation of a *Talking Point* discussion thread in the *Message Board* area. These discussions were introduced by the conveners through a short statement that focused on a topical point of engagement within each work. In a number of cases the discussion threads also provided a means by which students could engage in conversations with the invited guest presenters. For students, this integrated mix of engaging with and reflecting upon the work of others while undertaking their own studio investigations proved a most worthwhile and distinctive feature of the project.

## **C**reative Waves: project briefs and their alignment with Omnium's five-stage creative process model

The *Creative Waves 03>04>05* project unfolded progressively over the five sequential stages of an online creative process model that has been in development since the first *Omnium* online design project in 1999 (see Chapter Two and Chapter Six).

*Omnium's five-stage creative process model* is not intended to be totally linear in progression and can be modified to suit the time available for a project. For instance, if time allows, it is often worth revisiting various stages through a reflective and reiterative process. But it is strongly recommended that when using the model, time

is allowed to reflect both individually and collaboratively. Each stage is designed to encourage participants to make varied levels of individual and collaborative contributions; from stage one which requires predominantly individual creative contributions, while at the same time engaging in collaborative discussions - to stage five which requires fully collaborative contributions, while continuing individual messaging, debate, reflection and critique (Figure 17).



Figure 17 - Omnium's proposed five-stage creative process model for online collaborative creativity as it was during the (2005) Creative Waves 03>04>05 project.

#### ***Week zero: socialisation and orientation***

In the week leading up to the official start-date of the *Creative Waves: 03>04>05* project, students and mentors were given the opportunity to acclimatise themselves to the *Omnium* technical user-interface. They first created their own *Individual Profiles* within the user-interface environment before accessing the wide range of features provided. To prepare for their need to later work in the small creative teams, participants were able to familiarise themselves with the team features by investigating their *Individual Sketchpad* areas, *Team Filing Cabinet* areas and *Team Pin-up Walls*. Most importantly, the user-interface did not require users to have high-level technical ability or any knowledge of web programming languages such as

HTML. Uploading and exchanging work was as simple as choosing a file from one's desktop and storing it in their *Individual Sketchpads* or *Team Pin-up Walls*.

By making the technical environment as unobtrusive as possible, participants could focus more time on *socialisation* and *orientation* activities and explore the various means available for communicating with their fellow team-members, supervisors and other creative teams. The features available for doing so included the asynchronous communal project *Message Board* area, their own team's *Discussion & Feedback* area and *Omnium's* unique *Chat & Whisper* instant messenger system.

During week zero, students (and any other project participant) who arrived early to the project were also able to access the *Introductory Lecture* and respond to points raised throughout it via a specifically titled thread in the main *Message Board* area. By engaging in the user-interface in the ways described above, most students were fully prepared to begin the creative activities of the project when the official start-date arrived the following week.

### ***Stage 1 – Gathering (Weeks 1 & 2)***

The first *Gathering* stage aims to encourage initial individual involvement from all participants and simultaneously produce work with a rich mixture of cultural and personal backgrounds. It is a chance for each participant to not only introduce their own work, but to also introduce themselves through discussions and short autobiographies. Participants are also subtly introduced to the technicalities of the technical user-interface (software) without tedious formalities of a technical training or exhaustive 'how-to-use' guides.

#### ***Brief One: Negotiating Time***

The initial tasks for all students (and any other academic and creative participants) were designed to contribute to a general socialisation and familiarisation process, providing each person with an opportunity to introduce themselves, and thereby highlight the diversity that was embodied within each creative team.

Each student was asked to take a series of photographs of where they were at a specifically appointed time, synchronised globally using *Omnium Time*, to produce the first 'creative wave' across the planet.<sup>271</sup> Each individual student was then

---

<sup>271</sup> All students were required to execute a set of photographs taken over a 30 minute time period starting at 22.00 hours *Omnium Time* on Monday 21 March, 2005. Therefore, wherever participants were in the world, all members of the project were taking photographs at the exact same moment.

required to examine their collection of photos and select three images to upload to the interface through their own *Individual Sketchbook* area. Each image was to include text explaining their choice, then the collection of images was presented for all the members in a specific team to see on their *Team Pin-Up Wall* (Gallery 1).



*Gallery 1 – Brief One: Shows a selection of photographic responses from individual students around the world, having been asked to record where they were at the same specific moment in time.*

### *Brief Two: Finding Place - (Gathering Stage)*

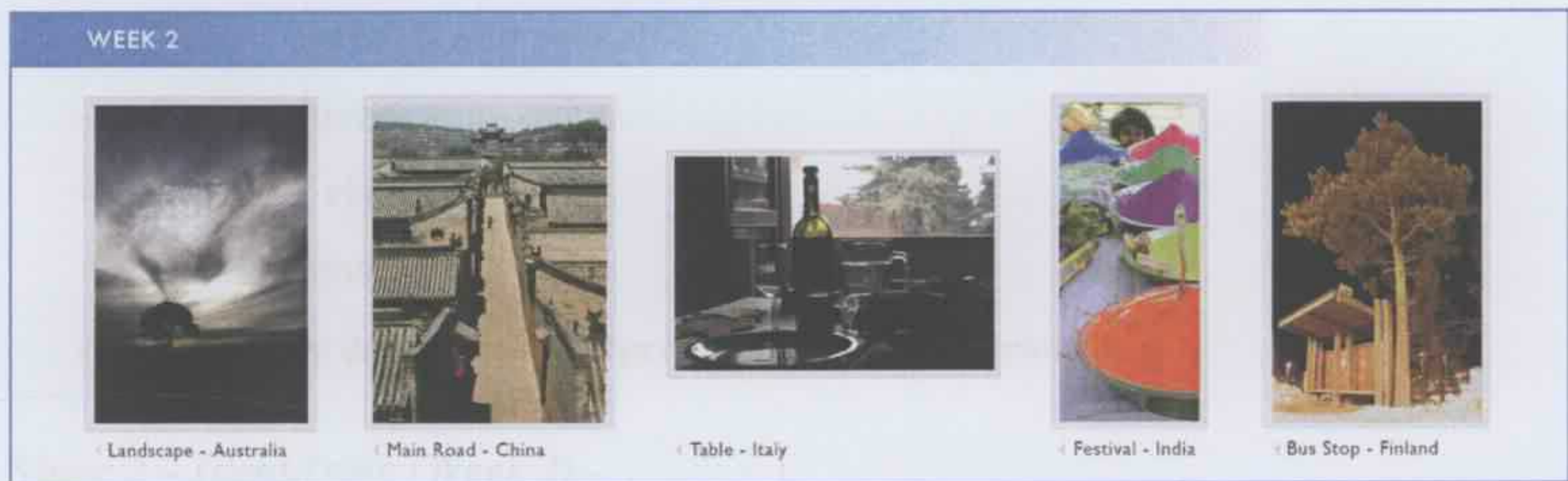
Following the upload of selected photographs from *Brief One*, participants were asked to undertake a second individual photographic shoot. This time, instead of synchronising the activity to a single shared moment in *time*, each team was asked to find a common *place* to photograph. Given the geographic distancing of all participants this task did not immediately appear to be that easy, or even possible.

The most critical component of this brief was that it necessitated much group discussion and collective negotiation within each creative team to decide and agree on the place that each would capture photographically. The mutual decision arrived at was supported mainly through the use of the team's own asynchronous *Discussion and Feedback* area.

Some common places agreed upon were actual locations (i.e. the kitchen or their local town meeting place) or places carrying certain connotations (i.e. spiritual places, or those which evoke a feeling of security). The images represented each team member's personal vision and interpretation of their team's nominated 'place' from their own cultural position. Once again, the expectation was that three images would be selected and uploaded by each student in each creative team (Gallery 2).

On completion of the first two *Gathering* activities, each team member had individually submitted a total of six unaltered photographic images in response to the two different briefs: *Time* and *Place*.





Gallery 2 – Brief Two: Shows individual photographic responses from Creative Waves' students, when asked to visually record a 'Place' that best described their own location.

### Brief Three: Individual Graphic Response - (Gathering Stage)

Having uploaded their six selected photographs in response to the first two briefs, participants were asked to undertake the third *Gathering* stage brief. Using their six photographic images as a starting point, each student was required to digitally edit, combine and re-work them to form one new composite image to illustrate their interpretation of their own *time* and *place*. Team members were encouraged to share preliminary versions of their work with other teammates and their team mentor(s) to receive opinions and feedback at this formative stage of their image production. Each individual student submitted their one graphic response to this part of the brief by posting it on their *Team Pin-Up Wall* (Gallery 3).



Gallery 3 – Brief Three: Shows individual graphic responses by students to visually describe the combination of Time & Place. These works had to be produced by using only their previous photographic submissions from Briefs 1 & 2.

The third *gathering* brief introduced the opportunity to commence image manipulation and editing of the existing photographic works, producing increasingly illustrative and graphic visuals to communicate their design intent. The production of these new works, building upon the material they had *gathered* previously, provided the opportunity to consider creative issues such as:

- Design elements and principles
- Compositional approaches
- Forms of visual narrative
- Visual vernaculars
- Culturally dependant interpretation and local meaning

### ***Stage 2 – Identifying (Week 3)***

The *Identifying* stage amplifies the process of uniting teams' individual membership into fully-operative working units and encourages individuals to engage in a social context and begin collaborative working processes. At this stage the project broadens significantly by accommodating a varied collection of team projects, held together by the unifying concept of the overall design brief. It is also a stage within the process when a creative team identifies a collective aim to achieve as a result of a brief or problem.

The *identifying* stage, and its associated course content material, begins to offer advice and reference points to assist each team in determining the creative direction they will follow and identifies the strengths and weaknesses of each team member. This is important within a collaborative working unit as tasks and allocations can be assigned to various team members according to their individual talents.

#### ***Brief Four: 03>04>05***

Each team was encouraged by the project conveners to agree on a design concept that would underpin all subsequent works in response to a collectively agreed interpretation, understanding and meaning of the cryptic sub-title of the *Creative Waves* project: 03>04>05.

Collaborative work that needed to develop from this point forward necessitated that each of the creative teams engage in ongoing communication and dialogue. Via written interaction in the *Team Discussion and Feedback* areas, participants within their creative teams recognise and identify points of contact, commonality, difference and overlapping interests arising from activities throughout the *Gathering* stage. The studio-based activity involved each team member submitting his or her prior individual images to form a collective pool of images for their team. Each team member would have already uploaded a total of six photographic images plus one graphically worked design response to the preceding three briefs. The resulting set of

35 images (seven images from five team members) became a shared team resource that became the basis of all their subsequent creative work.

Each individual student was then required to produce two further graphic works, aligned with their team's negotiated design concept, in response to the fourth brief. However, they were no longer restricted to using their own resources (previously submitted photographs), but were able to use and rework any of the collected images from the rest of their team (Gallery 4).



Gallery 4 – Brief Four: Using their graphic submissions from weeks 1- 3, students began to work within their creative teams to progress collaborative creative ideas.

### Stage 3 – Distilling (Week 4)

During the *Distilling* stage each creative team continues to discuss their intended creative direction and establish their collaborative working processes. This stage analyses concepts and ideas from works produced from the preceding *Gathering* and *Identifying* stages and places an increasing demand on the participants' abilities to critically assess their own combined creative outcomes.

The overall creative brief is further unfolded and requires for the first time that the image-making process includes digital working files to be exchanged between each creative team's members. Teams use the team features of the *Omnium* technical interface to download each other's files, re-using the elements they identify as important in order to rework them, and then resubmit them to their team for further work to be carried out.

Throughout this third *distilling* stage, each creative team is required to consolidate their imagery to suit their own visual communication aims as directed by their collective interpretation of the project's brief. The teams are faced with the task of discarding some of the images they have collectively produced, to clarify their intentions through a *distilling* process. Ideas and proposals for their shared responses

are suggested through two forms of dialogue: the production of graphic creative works and via concept development discussions and peer-critique.

*Brief Five: 03>04>05*

The final graphic responses presented at the end of week four (*Identifying*) became an important new and shared resource within each team; a resource from which all their subsequent creative work would be drawn. Using the visual works contained within each team, team members continued to exchange and share files. This collaborative work necessitated that team members engage in increased communication to clarify their design intent.

On completion of the activity from brief five, each team was expected to submit a total of five graphic responses to the fifth brief (or one per team member if a team did not have five members) (Gallery 5).

This stage of the project emphasised the *distillation* of previously submitted work and involved a range of considerations:

- Simplifying and agreeing upon the message each team wished to visually communicate to illustrate their interpretation of the *03>04>05* project title
- Developing their preceding creative ideas through collaboration
- Working with each other and their team mentors to critique their own collective works
- Exchanging working files so that other team members could contribute to their imaging
- Using the supporting *Lectures, Exposé Galleries* and commentary from the coordinators, mentors and special guests to clarify their ongoing working process



*Gallery 5 – Brief Five: Continuing to work graphically to answer the Creative Waves design briefs, students worked in total collaboration by swapping and sharing digital files and ideas to produce collective team graphic responses.*

#### *Stage 4 – Abstracting (Week 5)*

The penultimate stage requires that participants in their creative teams extend the *Distilling* stage by further simplifying their works in an effort to attain a clearer and more concise visual communication outcome. Throughout the *Abstracting* stage, team members are encouraged to collaboratively reconsider the *essence* of what is beginning to be formed as their collective visual response to the brief. Team members continue to exchange digital files between each other via the online user-interface, resulting in creative submissions that all team members have had an opportunity to contribute to and edit.

#### *Brief Six: 03>04>05*

This stage of the creative process involved further simplification and consolidation of the agreed intentions of visual options that each team wished to represent in their interpretation of the ambiguous *03>04>05* project title. By further culling the team submissions from the previous fifth brief, each team was expected to once again reduce the total number of designs submitted; this time down from five to only three graphic responses (Gallery 6).



*Gallery 6 – Brief Six: Students began the process of further clarification and consolidation of their respective team's response to the project title 03>04>05 through continued collaboration.*

This became a significant stage in their imaging process because, up to this point, the size and membership of the group could be used to accommodate each individual's contribution (that is, five outcomes from the previous stage reflecting five students in each creative team). However, as soon as the number of required outcomes was less than the number of contributors, the implications of working collaboratively became far more clearly focused and issues of creative ownership were raised. Students were required to be more critical in their feedback to ensure their team produced the best possible outcome from a collective point of view. The focus was clearly on the collective *creative reputation* of a team and less on the individual membership of those who made up each team.

### ***Stage 5 – Resolving (Weeks 6 & 7)***

The final *Resolving* stage ultimately leads to the production of final collaborative team-based creative submissions. The execution of final works provides opportunities for participants to reflect upon the entirety of their creative process: from the individual beginnings of a project to the collaborative and collectively examined outcomes.

*Resolving* does not only apply to the finalisation of creative work produced both individually and collaboratively throughout a project, but also to examining both the creative and educative experience. It is during the final stage of the process that participants of a project are asked to complete online evaluations to gain their views on a number of issues. For example, issues relating to the content and nature of the project, technical aspects of their experience in terms of managing the user-interface, as well as the levels of social interaction participants were able to achieve. The evaluations not only contribute to a person's reflection of their own participation but also provide valuable insights from which future developments can be based for the *five-stage creative process* model and the technical platform (software) necessary for effective *online collaborative creativity*.

#### ***Brief Seven: 03>04>05***

With the release of the seventh and last brief, the combined intention of all the seven project briefs was finally revealed. It emphasised the need for further amendments to be made to works, and to *resolve* conceptual and graphic ideas to a point where each team agreed upon, and produced only one final response for submission. In summary, each team was expected to submit one graphic response that would communicate their collective interpretation of the *03>04>05* project title (Gallery 7).

It was not a time for teams to rethink their concept or the message they were trying to communicate, but to resolve what they had agreed upon as clearly as they could. Importantly, it was also a time where the feedback gained throughout the project from the variety of sources (peers, coordinators, mentors and special guests) could be considered and applied to the last stage of their creative process.

To conclude their involvement in the project, participants collectively included a written text to describe and explain their rationale and intentions regarding the one image they had collectively produced.



Gallery 7 – Brief Seven: 13 image submissions (one per creative team) in response to the final brief

## *Reflections on Omnium's research framework for online collaborative creativity*

Throughout this case study I have described a variety of considerations and aspects that contributed to structuring and presenting the *Creative Waves: 03>04>05* project. I outlined the overall two-part *Omnium* research framework (technical platform and creative process model) that I used to guide and facilitate an online collaborative creative process. Having such a framework under-pinning a project is important because it enables participants in the online creative studio to interact easily and work collaboratively online throughout all five stages of the creative brief. I have focussed attention upon the formation of an online community of students, educators and professionals to explore collaborative modes of creative interaction and practice.

I have differentiated between components described as course content, such as *Lectures*, *Exposé Galleries* and *Project Briefs*, as well as those of a more infrastructural nature, such as the formation of creative team clusters and message forums used to encourage and facilitate conversation and reflective modes of dialogue, conversation, discussion and visual collaboration.

Some of the most fascinating and important discussions and comments were made during the *Omni-Debates* that resulted from the project's written lectures and took place within the communal *Message Board* area each week. The threads remained active throughout the seven-week program and the most valuable discussions covered issues relating to *online collaborative creativity* such as: the importance of collaboration in a creative process; the difference between the terms 'collective' and 'collaborative'; and aspects of socialisation and communication between artists and designers.

Below are samples of responses selected from amongst the 3000+ entries posted in the *Message Board* threads by participants during the project.

***The importance of collaboration to creative processes:***

CW [student] USA:

*To me, even a single input from another person toward your project already means some kind of collaboration. Another person looking at it can have a fresh view of it that will help you better your work. This is collaboration in the barest minimum. At the other end of the spectrum, 'high-level' collaboration is great but it is very hard. I have had been involved in collaborative projects before with other people who have very distinctive directions in their design. And that was awfully hard, because a part of each of us was always battling, wanting our own way to come through. Like the interaction we have with a client, you have to communicate and compromise. To me, there is always a balance involved in compromising, too. Having the ability to work with other people is vital to being a designer. Collaboration is great, as our learning curve is never ending.*

RR [mentor] Australia:

*As good communicators, we should know the most appropriate form, output or delivery method to use. As designers, we are not restricted to the visual any longer; visual is only one of many outcomes. My point is that a communication designer should be more concerned about communicating appropriately and not*



*just styling the visual. Collaboration is of paramount importance in the development and furtherance of our field.*

JCF [special guest] Mexico:

*Regarding collaboration, I think it's a great resource, both in terms of productivity and creativity. The more minds you have access too, the richer your palette will be.*

*If it can be agreed that collaborative creativity is becoming increasingly instrumental factor in the design process, then how and in what ways can it be implemented and fostered in a creative scenario?*

***The definition of collective versus collaborative approaches:***

AM [student] USA:

*I have always viewed the word 'collective' to derive from collection, and specifically in this project, collective would be our group work as a whole. 'Collaborative' would describe the product of our group's collective work, but directed together toward a common goal.*

VK [mentor] Bulgaria:

*In my opinion, 'collective' means a number of people doing something together. However this does not necessary assure completing a successful project, or working well as a group. The hard work is achieving effective results with sharing responsibilities, motivating each other, and being able to work out problems rather than spreading them. That is what I consider as collaborative process. Of course leaders are needed otherwise planned activities would never start. In my point of view, a good leader is not a person who knows everything but someone who finds the right people to assist him or her to achieve goals.*

***Socialisation and how designers communicate***

AM [student] USA:

*As our profession evolves, the complexity of many design and communication problems requires increasingly specialized expertise from many different areas. The task of designing an enterprise website for example, engages skills in business strategy, visual communications, branding, culture and software engineering. In complex collaborations, design is a robust social activity that*

*demands new kind of relationships and organizational structures'.<sup>272</sup> Creative Waves is just such a form of community that enables the analysis and problem solving of tasks from many directions simultaneously.*

AP [special guest] UK:

*I'd like to clarify that collaboration doesn't always mean everyone doing the same job or the same amount of work. There are plenty of projects that I have worked on that I couldn't exactly say what my or others' contributions were, just that I know they had an important effect.*

*Trust and respect are important, but so is honesty. As I mentioned in my lecture, I think politeness leads to mediocrity. There is a paradox here - allowing your work to be scrutinised and taking on board criticism (done with respect) actually increases your self-confidence in your work and can inspire you to be more daring creatively.*

## ***Q***uantitative evaluation of the Creative Waves 03>04>05 project

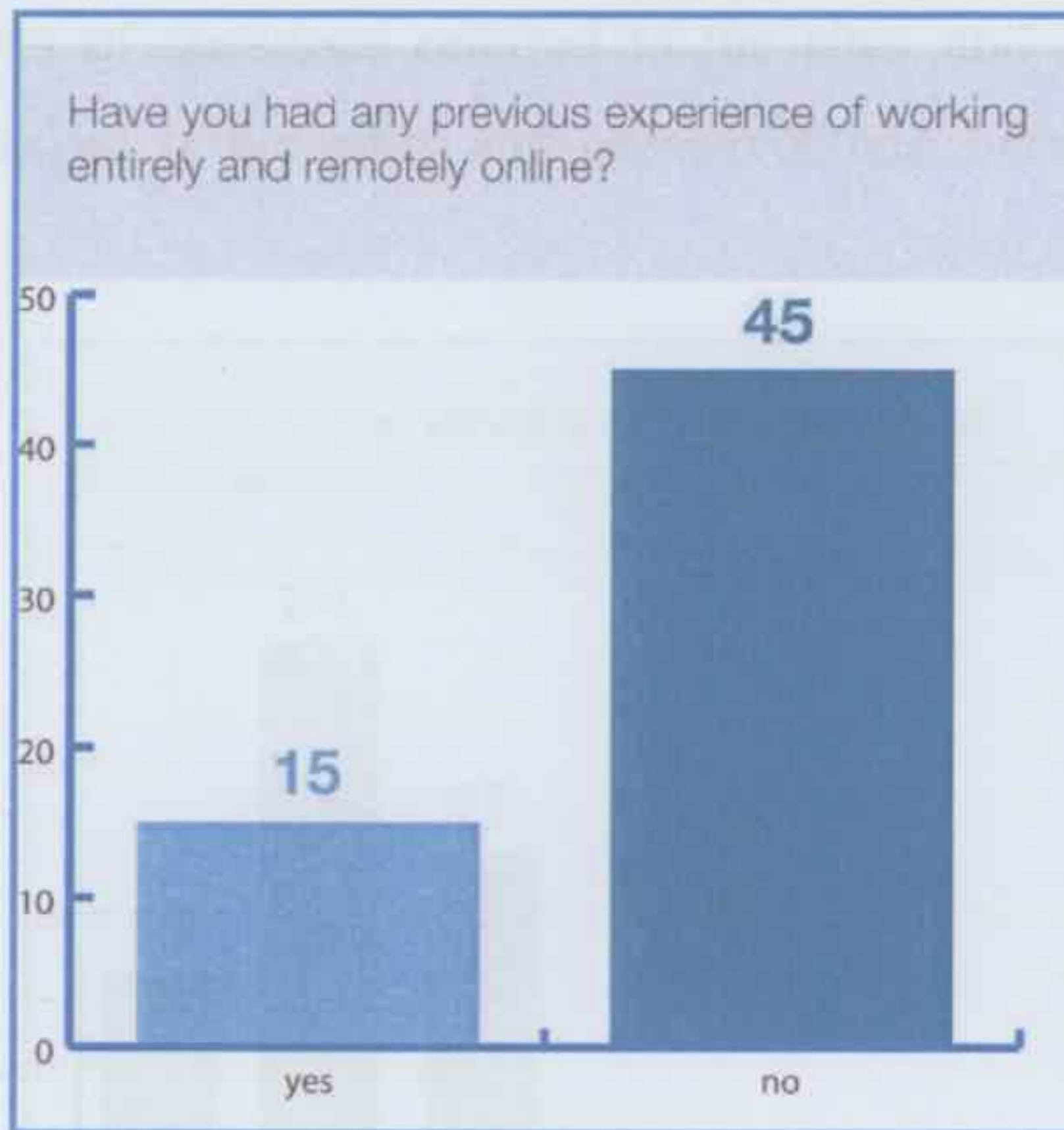
To balance the qualitative data with more formal and quantitative results, a survey was conducted following the official conclusion of the *Creative Waves: 03>04>05* project. The data was collected from sixty student responses to an anonymous questionnaire structured around general observations on the project, communication and interface features, and culture, identity and language issues.<sup>273</sup>

The first question sought to find out how many of the students who took part in the project had had previous experience of working on a creative project online (Graph 1).

---

<sup>272</sup> Reference made to Loretta Staple in Steven Heller (2001), *The Education of an E-Designer*, Allworth Press, New York.

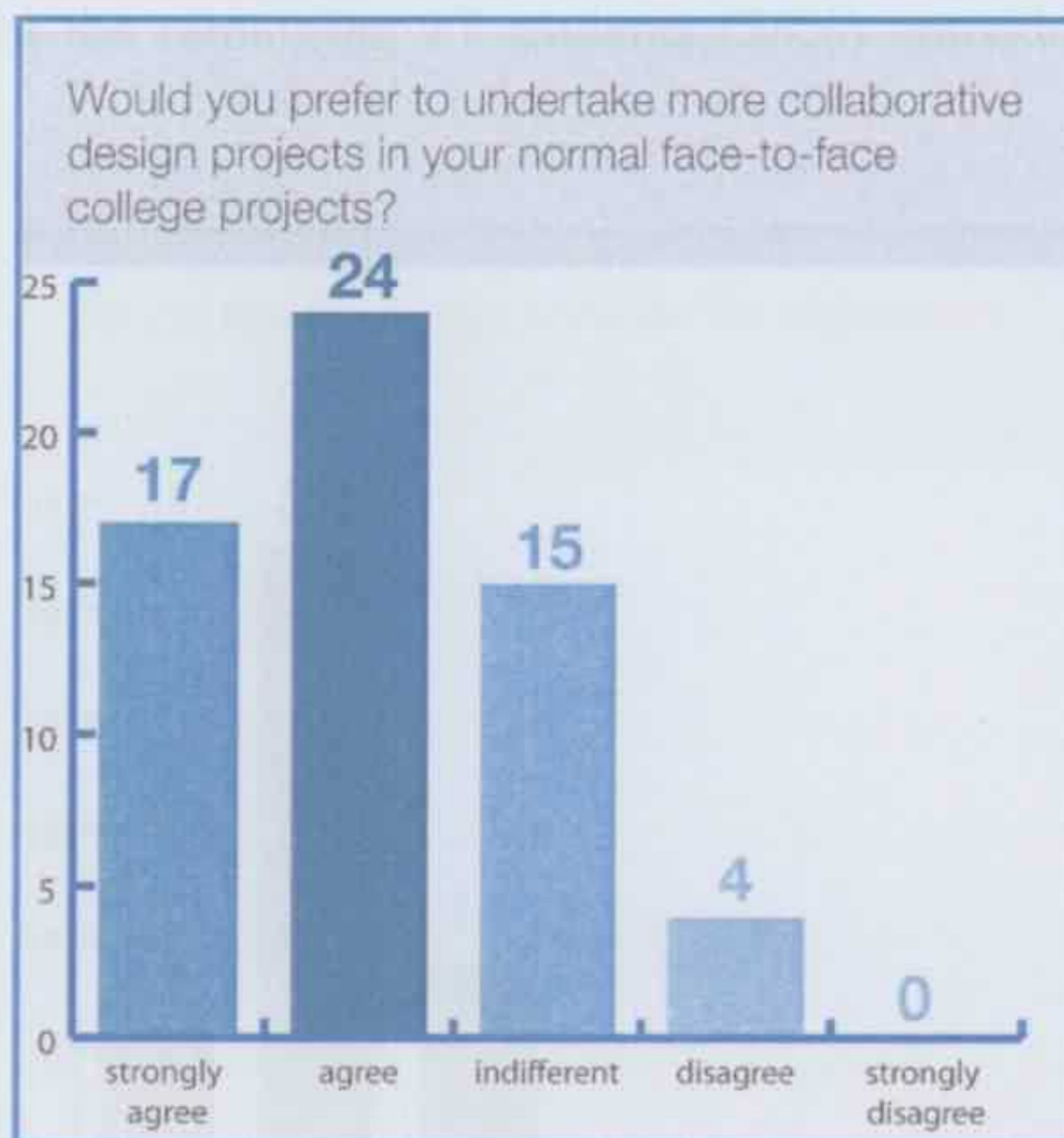
<sup>273</sup> Referring to the graphic charts, these specific responses have been selected because of their relevance to the present discussion of collaboration.



Graph 1

Quite clearly, the majority (75%) had no experience of having done so and the *Creative Waves* project was an entirely new experience for them.

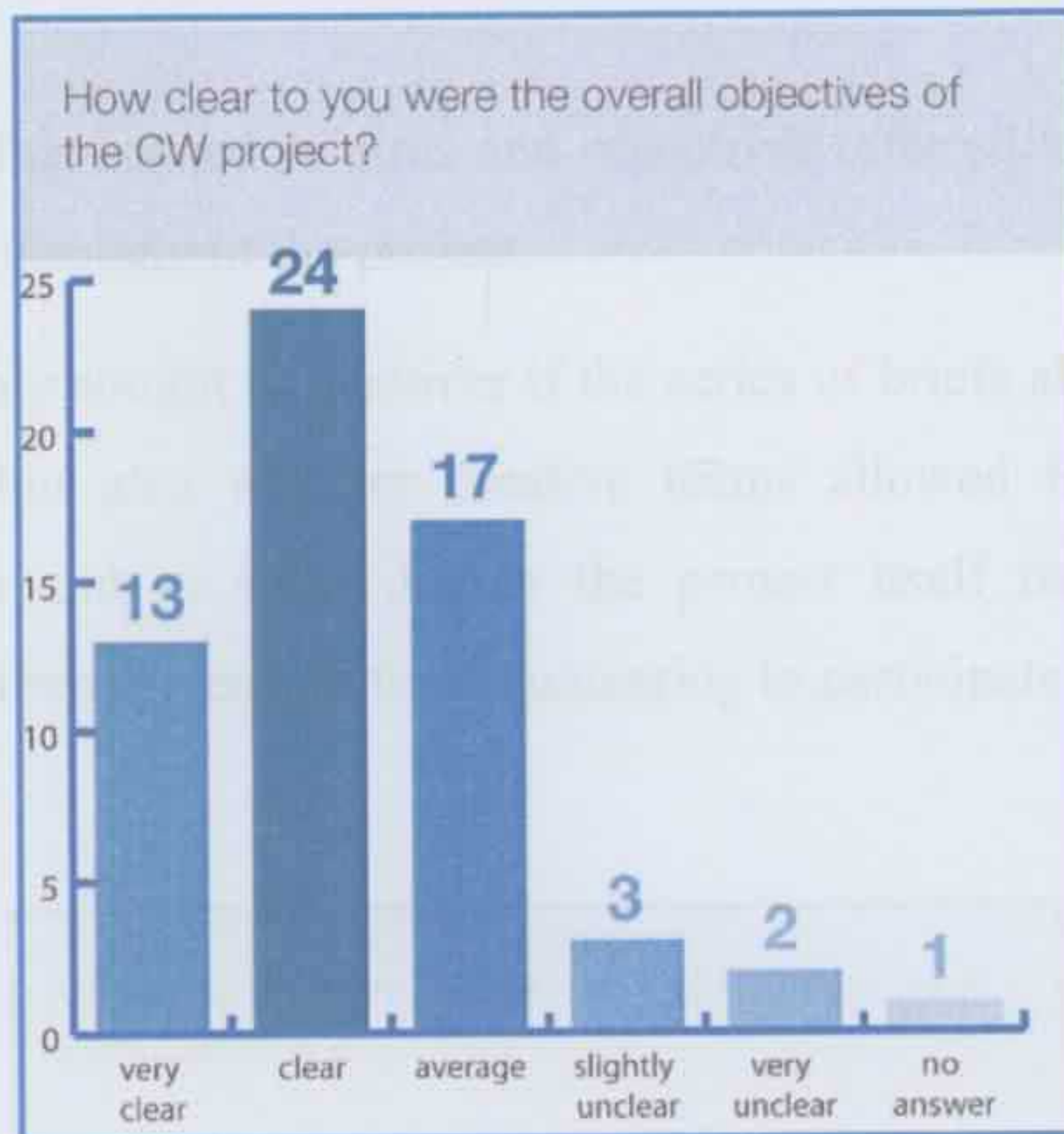
In relation to issues re collaborative creativity, the second question asked whether students would like to see more team-based projects within the courses and programs at their own institution.



Graph 2

From the results to this question, only four participants stated they would not, whilst 50% agreed they would like to see increased levels of collaborative design projects in their studies, and 25% remained indifferent (Graph 2).

The following series of questions referred to the aims and objectives of the project. The first asked if the aims and objectives had been made clear to the students.



Graph 3

Again, the results appear positive with only 5 students stating they felt the aims were slightly or very unclear. 37 students (61%) believed the project aims were either very clear or clear whilst the remaining 17 students (28%) considered the clarity to be average (Graph 3).

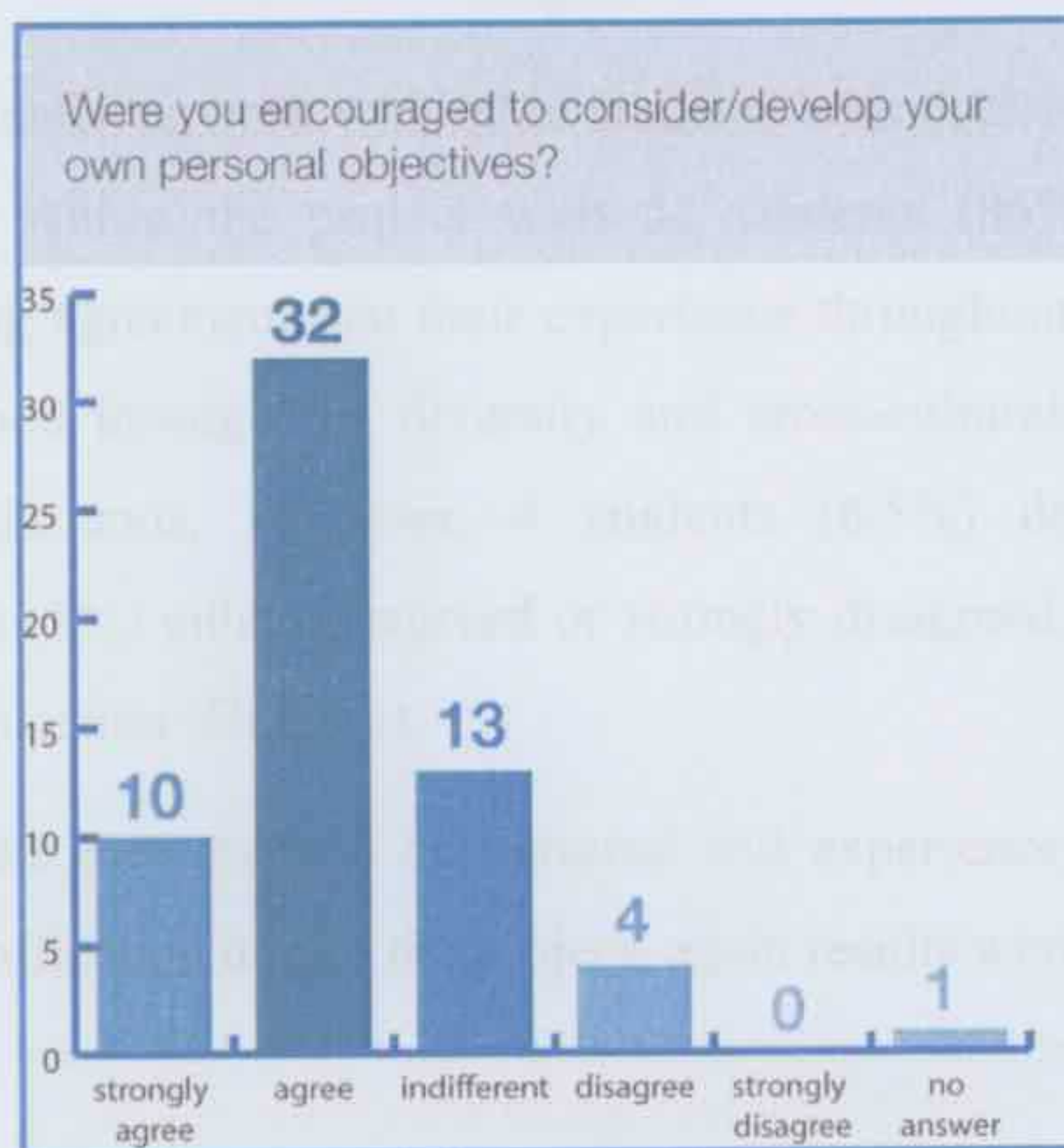


Graph 4

With regard to whether on reflection the project achieved its objectives, the majority of students were positive with 44 students (73%) either agreeing or strongly agreeing. Only 1 student disagreed whilst 14 students remained indifferent (Graph 4).

The final question that related to aims and objectives referred to the student's own personal objectives throughout the project.

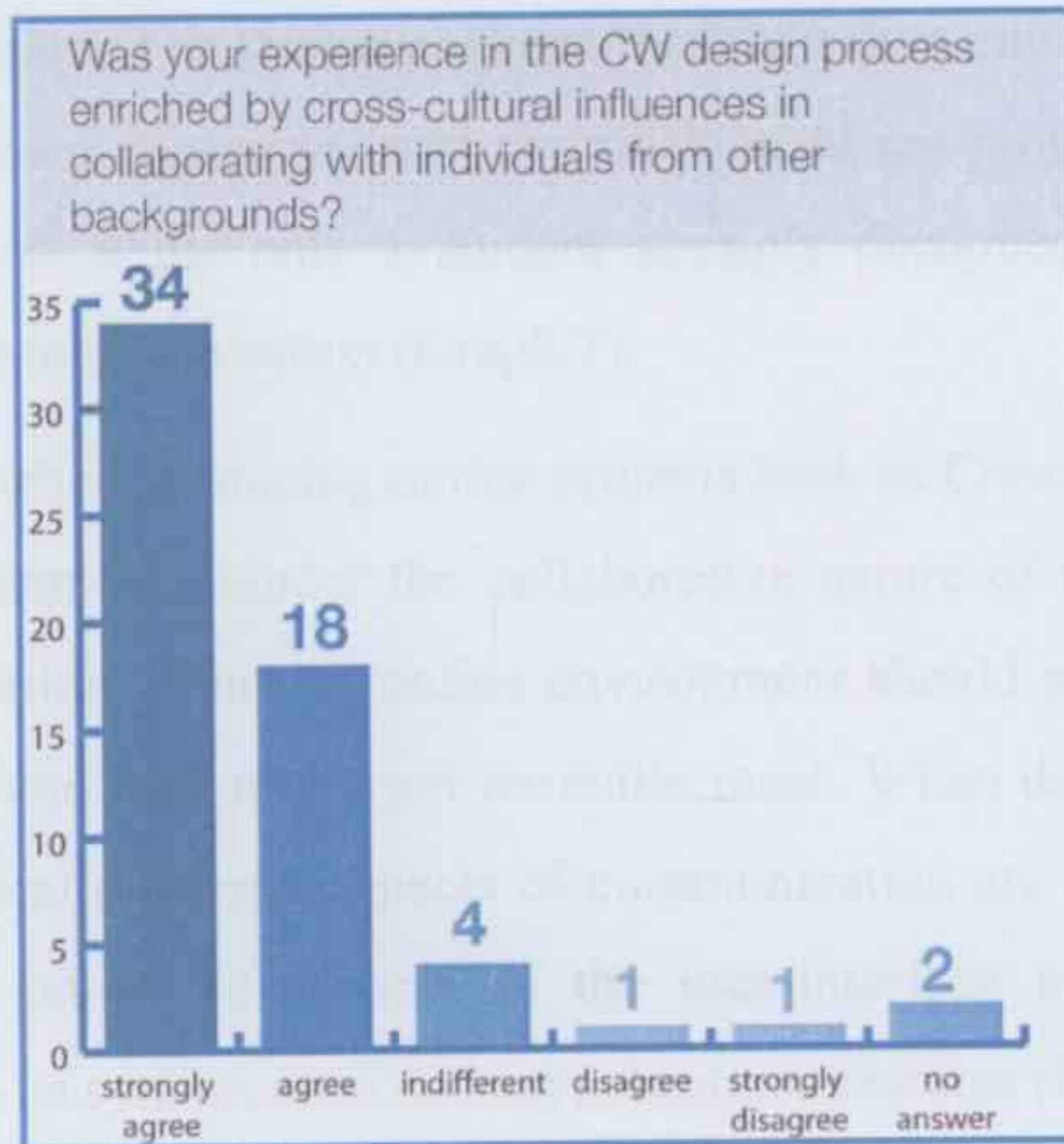
The question not only sought to discover if the series of briefs allowed personal and creative freedom, but also whether creative teams allowed freedom to develop personal objectives and to what degree the project itself had lived up to the objectives students themselves had for volunteering to participate.



Graph 5

Results showed that 42 students (70%) agreed or strongly agreed that they were encouraged to consider and develop their own objectives whilst 4 students disagreed. 13 students (21%) remained indifferent to the question (Graph 5).

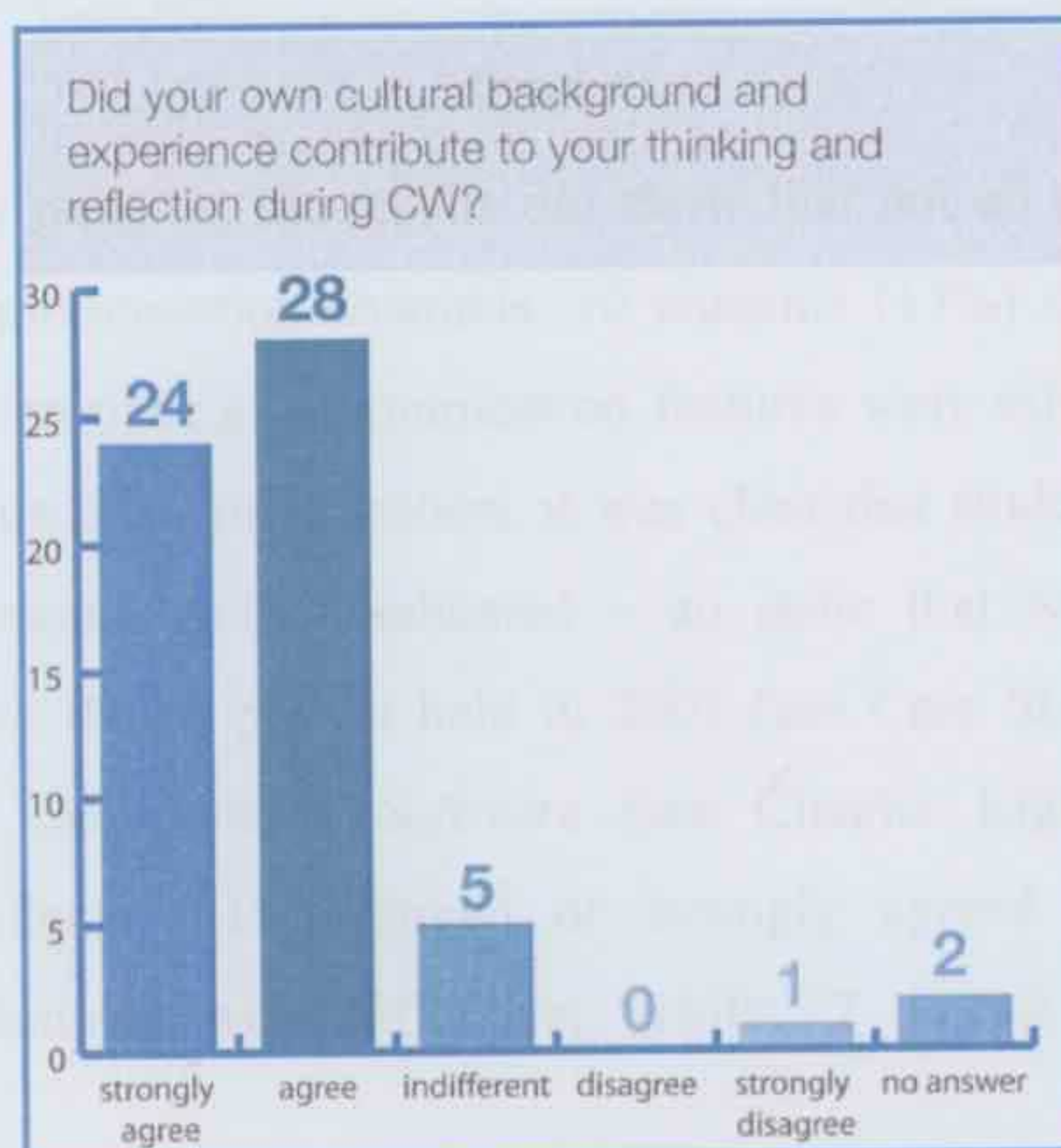
The following two questions related to students geographic and cultural differences.



Graph 6

Clearly, the opportunity to work with other students with diverse backgrounds was a strong motivation within the project with 52 students (86%) expressing either agreement or strong agreement that their experience throughout the *Creative Waves* project was enriched through the diversity and cross-cultural influences of other participant's backgrounds. However, 4 students (6.5%) declared indifference, whereas 2 students (3%) either disagreed or strongly disagreed. 2 students provided no answer to this question (Graph 6).

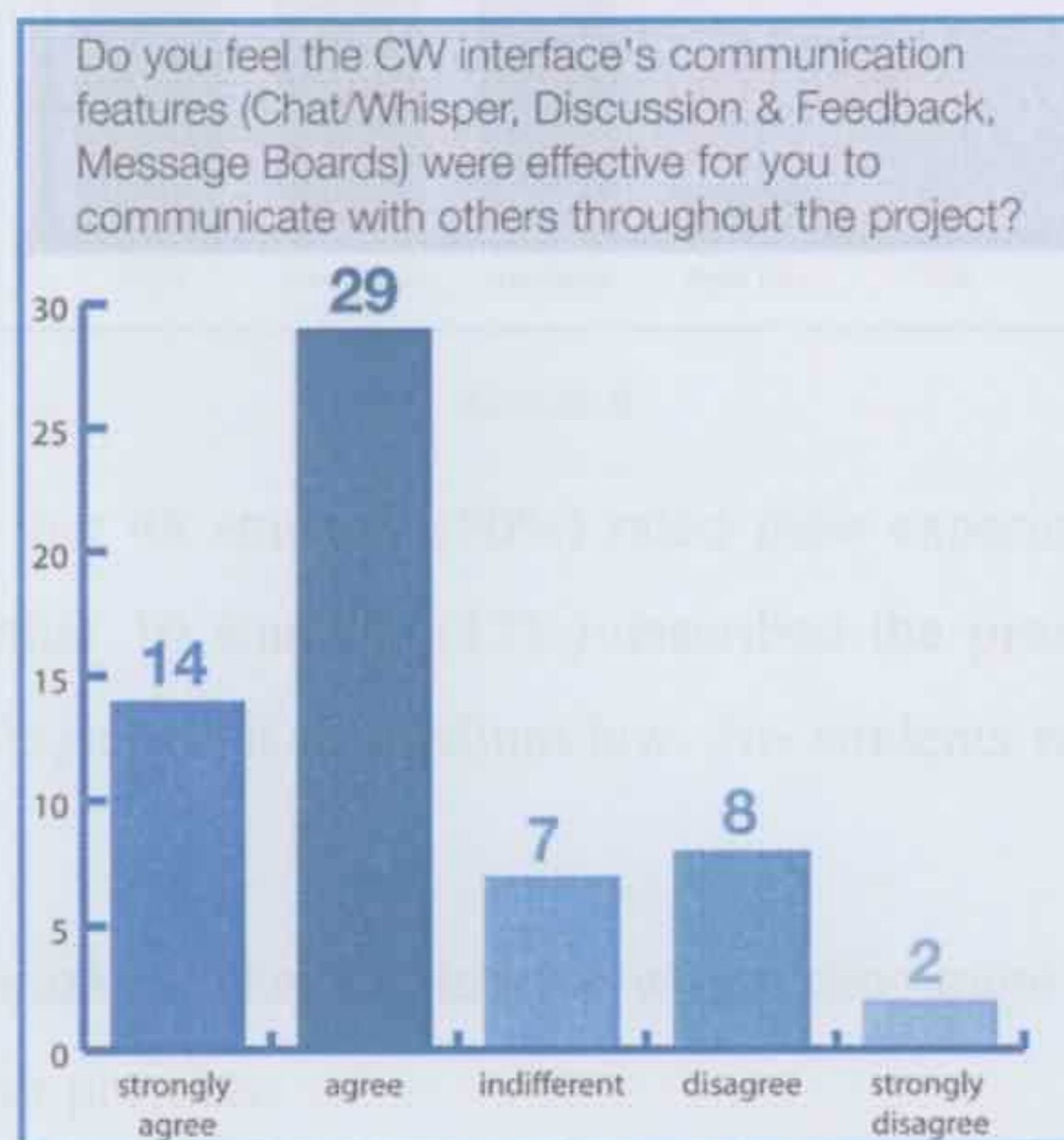
When asked if their own cultural background and experience contributed to their own thinking and reflection during the project, again results were extremely positive.



Graph 7

52 students (86%) agreed or strongly agreed that their own cultural background was important to their own experience and contribution to the project. 5 students (8%) declared indifference, while only 1 student strongly disagreed. Again, 2 students provided no answer to this question (Graph 7).

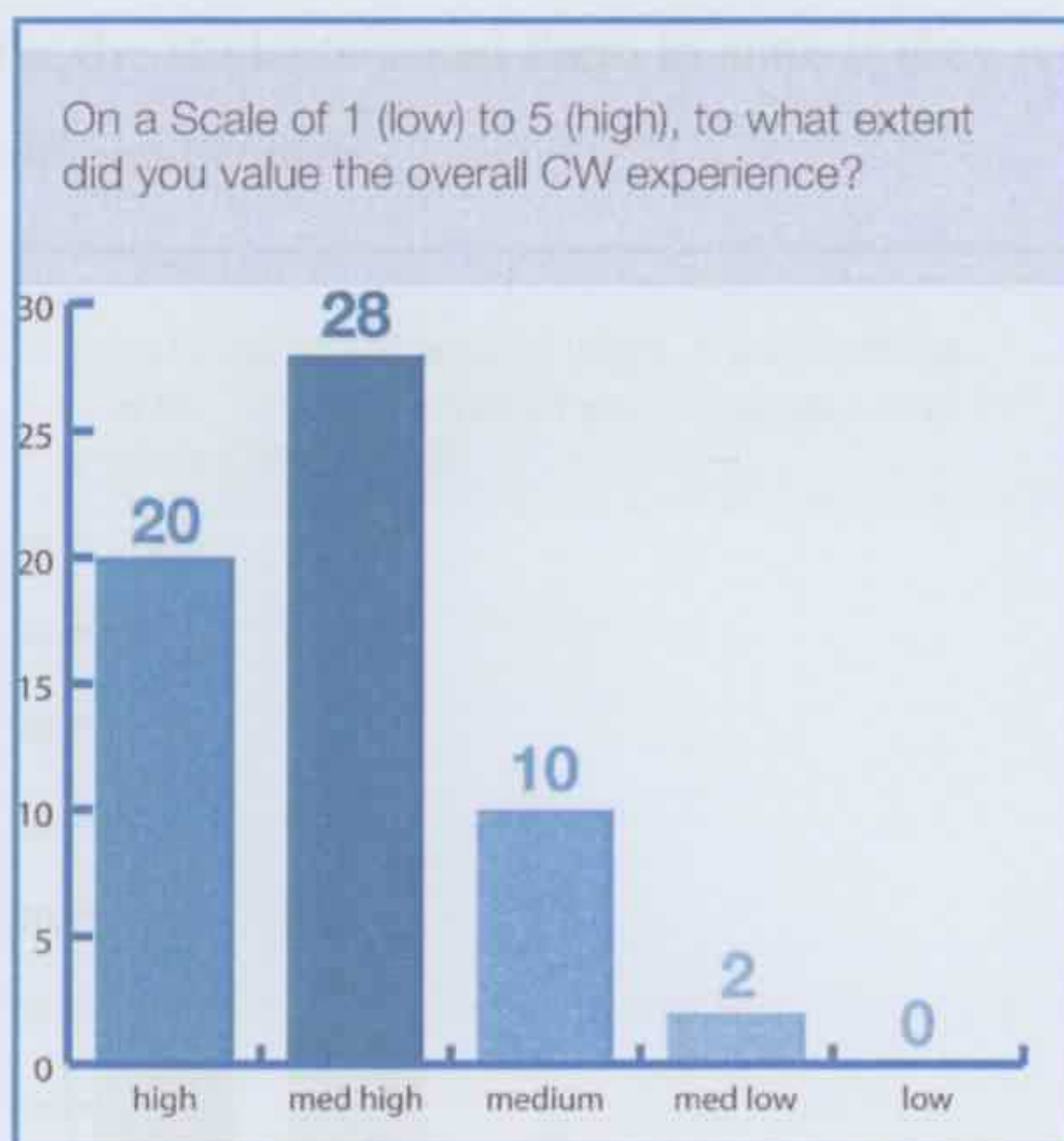
An ongoing worry when producing online projects such as *Creative Waves* is that the technical environment will hinder the collaborative nature of the creative process. Ease of communication within an online environment should allow people to work easily with others who they might not normally meet. When designing and refining the *Omnium* technical platform, aspects of communication are high priorities and it was important to gauge the success of the user-interface in terms of allowing interaction through its synchronous and asynchronous features (Graph 8).



Graph 8

Although generally positive, the results did show that not all students were totally happy with the communication channels. 10 students (17%) disagreed or strongly disagreed that the interface's communication features were effective. When further questioning the issue of communication, it was clear that students felt the live-chat areas were troublesome and complicated – an issue that was addressed in the subsequent *Creative Waves* project held in 2007 (see Case Study Two) and in the latest versions of the *Omnium Software* (see Chapter Eight). However, more positively, 43 students (71%) agreed or strongly agreed that the software's communication features were effective, whilst 7 (12%) students remained indifferent.

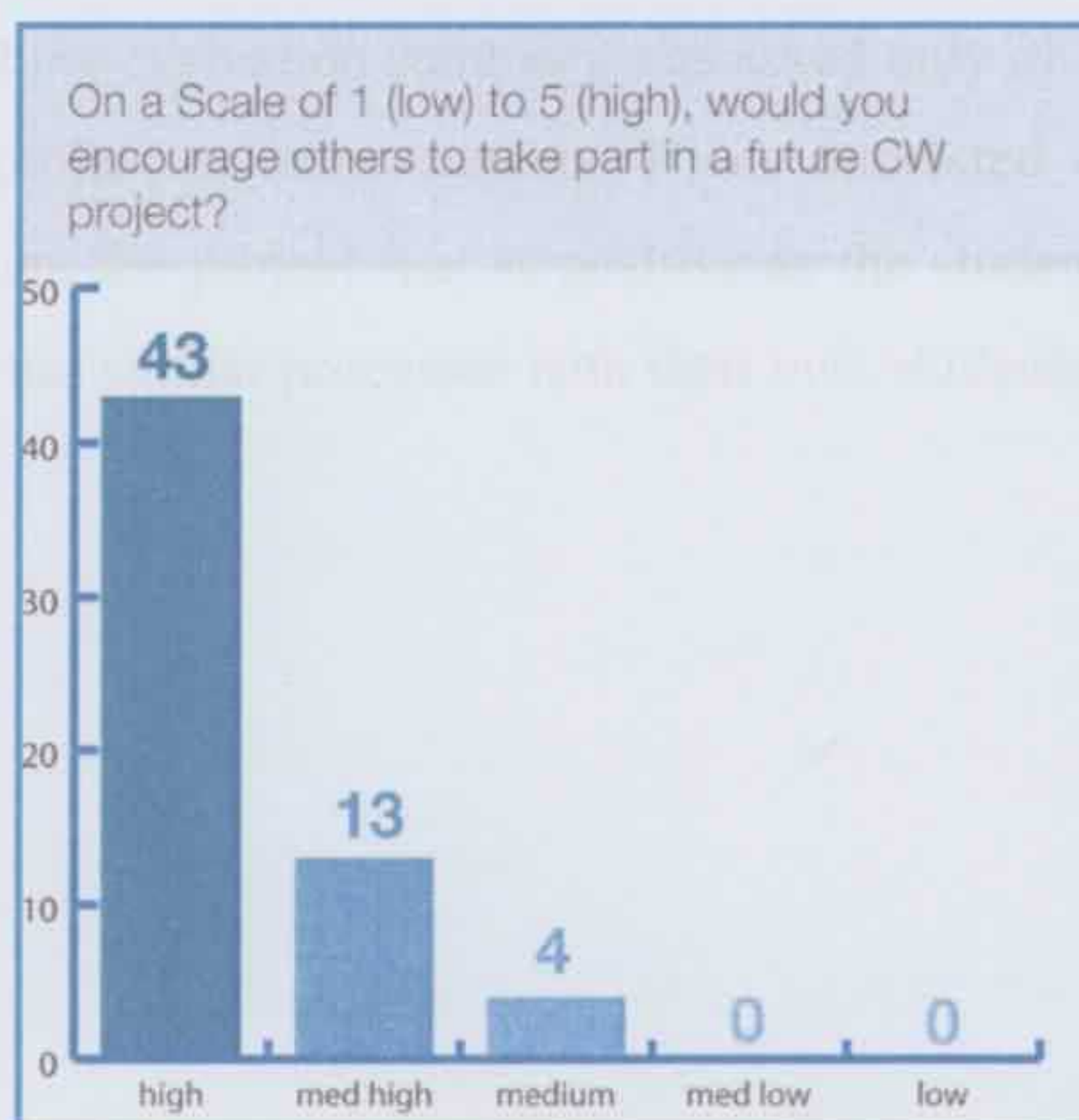
The final three questions for students included in this evaluation summary refer to students' reflections on their overall *Creative Waves* experience. The first question asked the 60 students to rate the value that they gave to the entire project.



Graph 9

The results showed that 48 students (80%) rated their experience as either high or medium/high. A further 10 students (17%) described the project as medium value whilst 2 students (3%) rated it as medium/low. No students rated the value as low (Graph 9).

The second question asked whether students would encourage others to take part in future *Creative Waves* projects.

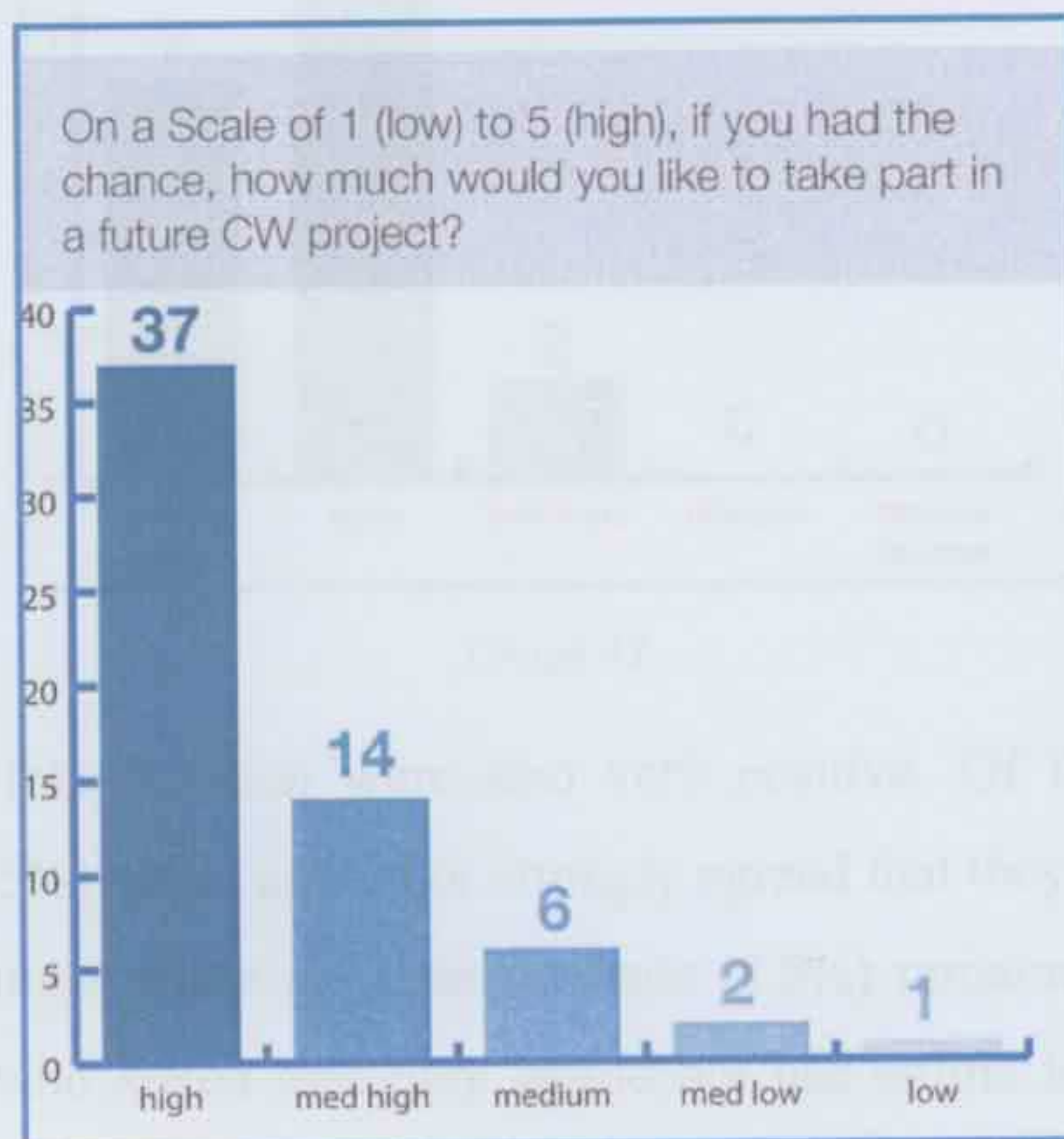


Graph 10



The responses were equally positive with 56 students (93%) returning either high or medium/high responses whilst the other 4 students (7%) declared a medium response. No students offered a negative response to this question (Graph 10).

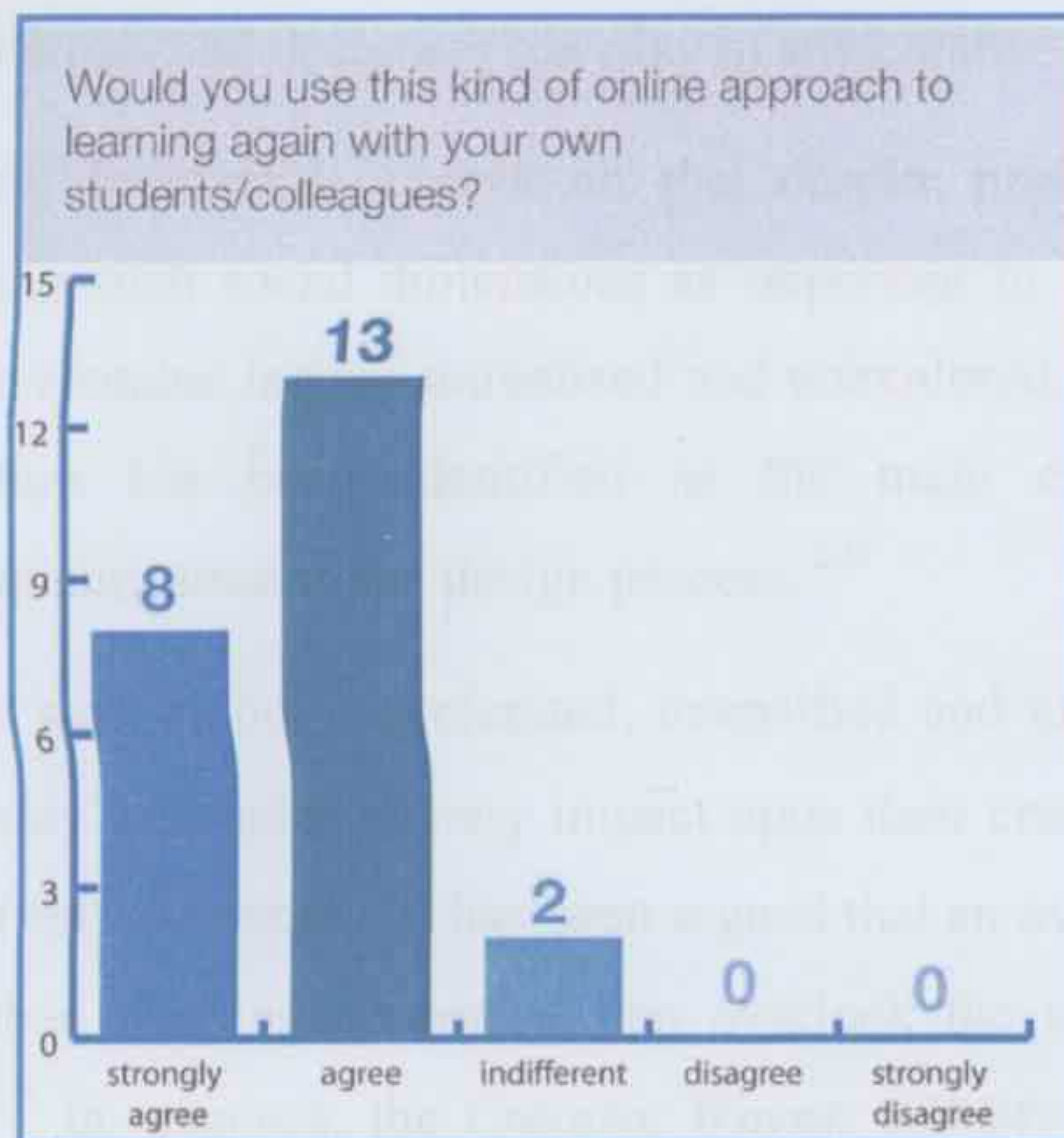
The final question for the students asked them to state if they would like to take part in a future *Creative Waves* project.



Graph 11

Again, responses were generally positive with 51 students (85%) declaring high or medium/high interest, whilst only 3 students (5%) were negative in their responses about any future involvement. 6 students (10%) stated that they had 'medium' interest in joining a future *Creative Waves* project (Graph 11).

The last question of the evaluation summary was asked only of the teachers who had taken part in the project as team mentors. I was interested to see whether their experience throughout the project was as positive as the students'. And, if so, were they encouraged to use similar processes with their own students and colleagues?



Graph 12

The responses to this question were also very positive. Of the 23 teachers who responded, 21 (91.5%) either agreed or strongly agreed that they *would* use an online approach in the future, while on 2 respondents (8.5%) remained indifferent. There were no teachers who stated that they would not use online learning in their own classes (Graph 12).

Evaluations from the *Creative Waves: 03>04>05* project were quite clearly positive although complacency in making improvements to both the online technical platform and online creative process model for future projects is dangerous. To make the evaluation process worthwhile, it is important that the weaknesses are acted upon in both areas.

## **C**onclusion

The *Creative Waves: 03>04>05* project demonstrated how the importance of social interaction in the creative process can be brought into sharper focus by employing the Internet to enable small teams of people to work together in the management and the production of complex creative endeavours. The Internet enables socially creative interaction, enhances collaborative processes and provides new methodologies for creative decision-making.

An online collaborative creative project operating on the scale of *Creative Waves: 03>04>05* provides other researchers, curriculum designers and visual artists/designers with an important demonstration of the critical role that the social

dimension between artists and designers can play in any creative process.

However, I reiterate Frascara's observation that despite professional artists and designers recognising such social dimensions as important in their work, efficient online collaboration remains largely unrealised and unexplored, even though online *creative* collaboration has been identified as the main challenge since the introduction of computerisation in the design process.<sup>274</sup>

It also raised issues such as how accelerated, intensified and increased pressure on people's time in today's complex society impact upon their creative activities? As I wrote at the start of this case-study, it has been argued that an over-emphasis on pure aesthetics, rather than working processes, can overlook the social dimensions of creative practice.<sup>275</sup> In response, the *Creative Waves: 03>04>05* project aimed to tackle aspects that concern the efficiency of communication; the effect of technology upon idea generation; conceptual development in the design process; and (of growing importance) the social responsibility of design in a globalised world.

The project also asked beyond the imperative to produce creative outcomes, how might the meaning, experience and narrative that accompanies the making of visual work be valued as an integral part of the creative process (whether online or face-to-face) and how might it be better articulated and acknowledged in both environments?

On a more critical and personal note, there were aspects of the project that I found to be problematic. These are not to be seen as negative aspects, but lessons learnt and to be incorporated into subsequent online collaborative creativity projects. For example, the amount of course content provided to participants was somewhat overwhelming. In production of the project both Dr Dziekan and I, as conveners, wanted to provide thorough and relevant support materials for students. However, the array of project material in the form of *Lectures*, *Exposé Galleries* and *Project Briefs*, not to mention *live-chat* interviews with Stefan Sagmeister and Steven Heller, tended to swamp the students.

In addition, there were issues relating to participation that caused some anxiety for students. Some creative teams had more than one team member withdraw from the

---

<sup>274</sup> Jones, J. C. (1991) *Designing Designing*, Architecture, Design and Technology Press, London, p 214.

<sup>275</sup> Frascara, J. (1997) *User-centred Graphic Design: Mass Communication and Social Change*, Taylor & Francis, London, p 14.

project for one reason or another, which left them disadvantaged in terms of workload. In my experience of hosting similar global online creative projects, this is in nearly all cases the norm. It should be remembered that all participants in such projects participate on a voluntary basis and unless granted so by their own institutions, do not receive any formal academic credit towards their own programs of study. Apart from unique and unforeseen circumstances that affect any student, such as family bereavement, personal accidents, etc, the most common reason for students leaving a project is a heavy workload or assessment requirements of their own academic studies (which in most cases are taking place at the same time). During the seven-week time frame of the *Creative Waves 03>04>05* project, nine students resigned. This meant of the original fifteen creative teams, 13 completed the project.

Furthermore, some teams were allocated teachers who had applied to take part in the project as mentors, only for them to make very brief appearances (or none at all in extreme cases) and offer little or no support to their allocated team. Since my first project in 1999, the question of teachers applying to join a project has frequently caused concern. Of course, many have made significant and invaluable contribution at great cost to their own time, however, equally as many apply to take part and fail to do so. Because this has consistently been the case, *Omnium* has revised their team structures to allow for this. In subsequent *Creative Waves* projects (see Case Study Two) the notion of teachers being allocated to specific creative teams was abandoned in favour of teachers adopting a free-roaming role where they could visit any team, at any time, to offer support and guidance. This meant teams would always have help and support from at least one mentor.

The final aspect of the project that I felt could have been more successful was the quality of the final graphic outcomes. This is not to say that technically the graphic skills were not excellent, but the conceptual thinking and reasoning could perhaps have been resolved at a higher level. I personally felt that the experimentation in graphic solutions did not achieve a level that explored a variety of ideas and that many of the (individual) responses were refined versions of the first ideas students came up with. The graphic ideas in response to the first briefs were in many cases literal interpretations of *Time* and *Place* and it would have been interesting to see more lateral solutions explored.

Given that one of my own personal aims for the project was to encourage the global student cohort to produce graphic work that was well considered and justified through examination of the creative process, the project did produce outcomes that in some instances may have been considered to be superficial. I also felt that with such a great deal of time and effort put into the project by so many people (conveners, students, teachers/mentors, special guests) the outcomes had no real purpose or lasting meaning to a broader global society. In essence, the project was more remarkable for the fact that it formed such an enthusiastic community of dispersed designers and perhaps less so for the graphic outcomes that the community produced. These aspects of the project were of concern to me and were a critical consideration in the production of the second *Creative Waves* project in 2007.

*Omnium's Creative Waves: 03>04>05* project did, however, provide a very clear example from which we can better extrapolate the considerable influence that digital communication technologies are likely to continue to exert on the evolving modes of creative practice. The experience gained by participants throughout the project bolsters the proposition that we find ourselves on the cusp of a significant paradigm shift in visual arts and design – a 'creative wave' rolling towards new forms of *online collaborative creativity*.

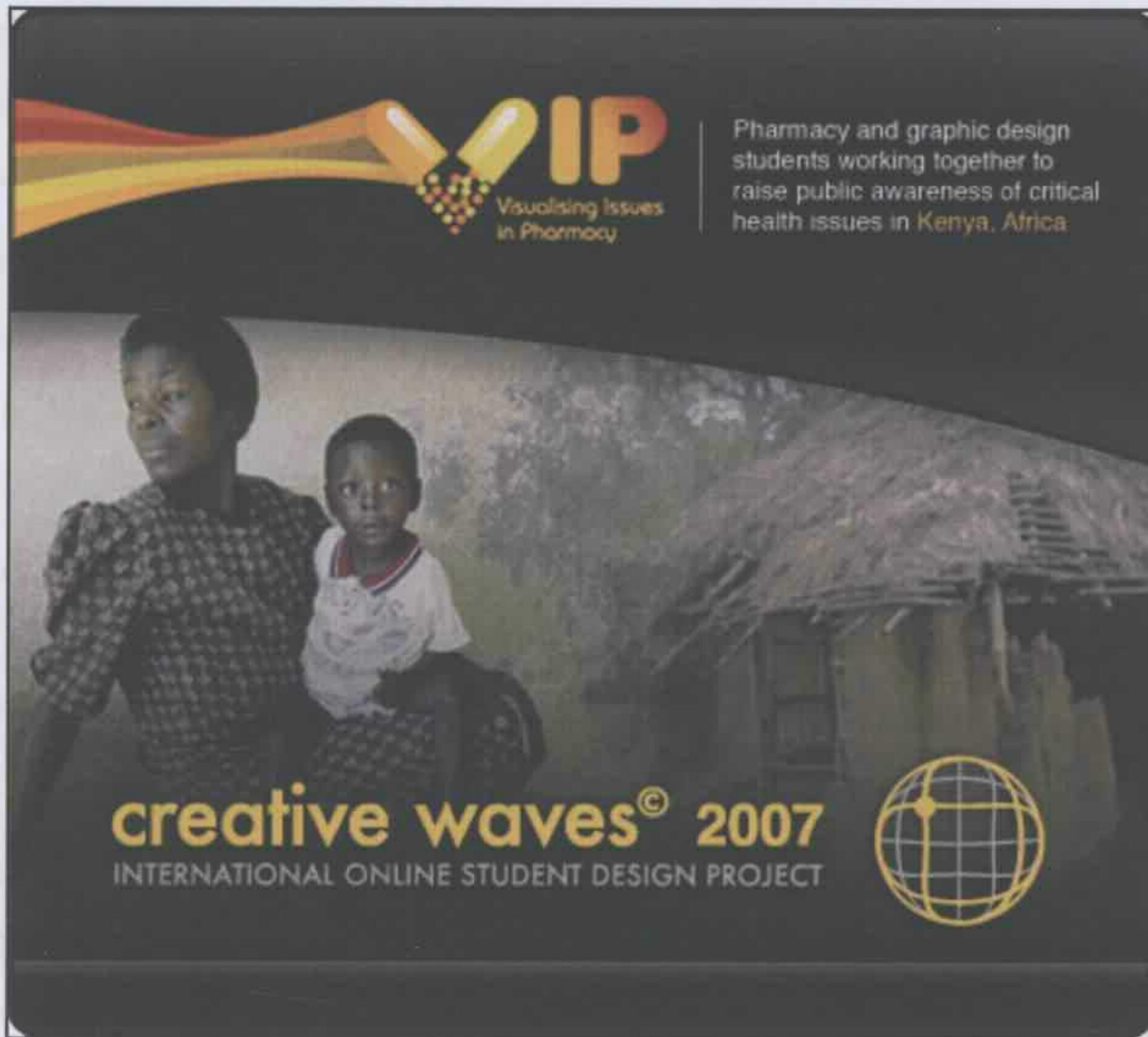
---

---

- CHAPTER EIGHT -  
CASE STUDY TWO

CREATIVE WAVES: VISUALISING ISSUES in PHARMACY (VIP)  
(2007)

---



[HTTP://CREATIVEWAVES.OMNIUM.NET.AU/VIP/OUTLINE](http://creativewaves.omnium.net.au/vip/outline)

## *O*verview

This Chapter discusses the second international *Omnium Creative Waves* project, designed to further explore *online collaborative creativity* by implementing *Omnium's* two-part research framework (online creative process and online technical system). It progressed the previous *Creative Waves* project in three main ways:

1. The project was of a much larger scale in terms of both participant numbers and the time-frame of activities (14 weeks).
2. The project focused the work of its participants on a real-life brief that sought to aid a rural, low-income community in Kenya, Africa.

3. The project was a cross-disciplinary venture divided into two distinct phases: Pharmacy (health science research) and Art and Design (creativity).

This second *Creative Waves* venture, subtitled: *Visualising Issues in Pharmacy (VIP)* was a three-month international project, hosted during March, April and May, 2007. In total, it linked over 200 students, educators, teachers, special guests and local community representatives from Kenya in a completely online learning environment that focused on the research and design of visual public awareness campaigns that addressed six critical health concerns for rural villagers in Kenya.

The *Creative Waves: Visualising Issues in Pharmacy (VIP)* project was a cross-disciplinary initiative that extended beyond the visual arts by linking art and design students, teachers and professionals with their equivalent counterparts from the discipline of Pharmacy and other health science programs.<sup>276</sup>

This case-study describes and details the preparation, structure, content, technical platform, student experiences, and formal evaluations of the project. The objectives in the discussion of this case-study are to:

- Review the *VIP* curriculum design, which used collaborative learning to engage participants in the voluntary project.
- Discuss how an interactive communication technology (*Omnium® Software*) facilitated sustained research, dialogue, negotiation and visual collaboration through a variety of interactive features, including both synchronous and asynchronous discussions.
- Assess the significance of teamwork and collaboration within and across disciplines.
- Describe the design outcomes of the *VIP* project and evaluate the value of the lessons learnt from this multidisciplinary online learning initiative.

---

<sup>276</sup> I wrote, produced and convened *Creative Waves: Visualising Issues in Pharmacy (VIP)* in collaboration with Dr Nataly Martini, a full-time Lecturer from the University of Auckland, New Zealand (UoA). The project was a joint research venture between the UoA's School of Pharmacy and the *Omnium Research Group* based at the College of Fine Arts (COFA) at the University of New South Wales (UNSW).

The project was endorsed, once again, by the International Council of Graphic Design Associations (Icograda) for their International Education Network (IEN). In addition, it was also formally supported by the International Pharmaceutical Federation (FIP), the International Pharmaceutical Students' Federation (IPSF) and Universitas 21; a network of international higher education providers of which both UoA and UNSW are member institutions.

- Document the results of the design student questionnaires and their qualitative feedback throughout the project.
- Assess the limitations of online learning environments against the potential of technological innovations to transcend boundaries of time, language, culture and disciplines and encourage new approaches to higher education.

Before presenting the case-study account, it is important to be aware of vast social and cultural changes regarding the use of computers and the Internet that have emerged over the last decade. It is even more relevant to observe recent changes and trends that occurred between the completion of the first *Creative Waves* project in 2005, and the start of the *Visualising Issues in Pharmacy (VIP)* project in 2007.

## *R*ecognising and acknowledging emerging online social and cultural change

Since the first online design project offered by *Omnium* in 1999, many of the social, creative, and technical processes involved in hosting such a project have since become part of the everyday fabric of many cultures and societies. How such processes affect online learning, and how they have subsequently influenced academic aims, is due in part to the fact that today's students are perhaps the most technologically literate users of digital and web-based technologies. For the current student population, the use of these technologies is so much an everyday practice that educators need to consider new ways of teaching, and design strategies for how students socialise and collaborate throughout their studies.

The Internet has clearly changed the nature of both communication and social networking over the last decade and has formed new ways of living and working for many in today's internationalised societies.<sup>277</sup> For example, Web-logs (blogs), possibly the most well known example of new communication technologies, have attained massive growth in recent years. In fact, Blogging has grown so rapidly that statistics are continually out of date (and thus hard to measure), but by the time the second *Creative Waves* project began in 2007, the blog tracking service, Technorati,

---

<sup>277</sup> Castells, M. (2000) *The Rise of the Network Society: The Information Age*, Blackwell Publishers, West Sussex, p 358.

Johnson, S. (2001) *Emergence: the connected lives of ants, brains, cities, and software*, Scribner, New York and London, p 117.

Rheingold, H. (2003) *Smart Mobs: The Next Social Revolution*, Perseus Books, New York, p 122.



had tracked over 72 million blogs and the 'blogosphere' was over 100 times bigger than it was two years before, in 2005.<sup>278</sup> To cite another example, in 2006, YouTube, another famous online success story, served 100 million videos per day and was receiving over 65,000 daily video uploads.<sup>279</sup>

In a striking example of how prolific and powerful online communities and social networks had become, The Jubilee Debt Campaign<sup>280</sup> was started by one person in London and gathered enough momentum, and 24 million signatures, to help persuade Western governments to cancel US\$36 billion of debt owed to international banks by third-world countries and developing nations.<sup>281</sup>

As a result of the massive increase in usage of computer technologies, in 2007, there were three new, emerging and overlapping areas to consider in the context of producing the second *Creative Waves* project:

- Social networks and communities
- Collaboration, open-source and the rise of the pro-ams
- Organisational change

## *O* *online social networks and communities*

In recent years the rise of 'portable media' (such as podcasts, the iTunes Music Store and other video equivalents), blogs and social networks have created an interesting shift in traditional relationships between the public and education, consumer, and political behaviour. Collectively, web applications such as *YouTube*, *Flickr*, *GoogleMaps*, *Digg*, *Facebook*, *MySpace*, *Last.FM* and *Wikipedia* are known as *Web 2.0* applications;<sup>282</sup> a term that not only describes the technical approach to their

---

<sup>278</sup> Sifry, D. (2007) *The State of the Live Web*, Technorati, <http://www.sifry.com/alerts/archives/000493.html> (accessed 14/11/08)

<sup>279</sup> YouTube (2006) *YouTube Fact Sheet*, [http://www.youtube.com/t/fact\\_sheet](http://www.youtube.com/t/fact_sheet) (accessed 08/10/07)

<sup>280</sup> The Jubilee Debt Campaign (2008), London, UK, <http://www.jubileedebtcampaign.org.uk/?lid=98> (accessed 21/11/08)

<sup>281</sup> Leadbeater, C. & Miller, P. (2004) *The Pro-Am Revolution: How Enthusiasts Are Changing Our Society And Economy*, Demos, London, p 54.

<sup>282</sup> O'Reilly, T. (2005) *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software* <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html> (accessed 29/5/09)

creation, but also the idea that users and their audience create web content and form communities based on such content.

It is interesting to consider that despite the term *Web 2.0* attracting so much focus since 2005, especially in academic contexts, *Omnium's* technical platforms and interfaces have been creating web content, around which communities form, since 1999. The strength of new and highly popular online social networks and communities is that they not only provide a method of searching through enormous amounts of information on the web, but also that they create significant social bonds that aid the process of finding relevant information. For example, the notion of *collaborative filtering*, evident in contexts like *Amazon.com* and *iTunes* (people who bought X also bought Y), or *user recommendations*, from social networks like *Last.FM*, differ very much from the paradigm of *searching* that is often taught in current 'information literacy' courses in universities and colleges.

To elaborate, when searching for something using an online search engine, one tends to already know what one is looking for - it just needs to be found. But, via *collaborative filtering* one doesn't necessarily know what one is looking for, but finds things of value by following the connections that other people have made. Basically, collaborative filtering is a way of obtaining relevant, yet non-specific or pre-determined information, which in itself, is a powerful process.

A final aspect to consider is that people who are used to working in socially networked online communities often hold a similar set of personal values and attributes that are worth encouraging. To emphasise such values and attributes, *Yahoo!'s* Tom Coates sums up three main requirements for any social software application:<sup>283</sup>

- an individual should get value from their contributions;
- their contributions should also provide value to their peers;
- the organisation that hosts the service should derive aggregate value and be able to expose this back to the users.

However, the ability of most existing educational structures to implement these outcomes is questionable. Providing information to, or receiving information from, peers may often result in accusations of plagiarism or cheating. On the contrary,

---

<sup>283</sup> Coates, T. (2006). *Greater Than the Sum of its Parts*, presentation at the The Future of Web Apps, San Francisco - <http://www.plasticbag.org/files/greater> (accessed 10/08/09)

these strategies should be seen as powerful *social values* in which one's own interests create value for others in a communal learning environment. This indeed is the philosophical foundation for the *open-source* <sup>284</sup> movement; projects in which accessibility to a software's source-code can be read, viewed, modified, and distributed, by anyone who so desires.

I argue that the *way* in which students now learn is fast becoming more important than *what* they learn, and that 'collaborative learning' is beginning to seriously challenge more traditional and individual-based learning techniques and protocols.

## **C** *ollaboration, open-source and the rise of the pro-ams*

In the book *The Pro-Am Revolution*, its authors argue that a combination of recent technical innovations and social changes have led to the rise of professional amateurs, or what are commonly termed *Pro-Ams*. These groups generate a great deal of social, as well as financial, capital and accordingly are 'the new research & development (R&D) labs of the digital economy.' <sup>285</sup> From astronomy to activism, to software design and saving lives, *Pro-Ams* are a powerful force and one in which collaboration, often via the Internet, is key:

*Traditional innovation policies subsidise R&D and accelerate the transmission of ideas down the pipeline and into the market. Pro-ams are helping to turn this closed model on its head ... ideas are flowing back up the pipeline from avid users to the technology producers.* <sup>286</sup>

*Open-source* software projects, such as *WordPress*, <sup>287</sup> in which many hundreds and thousands of people voluntarily contribute to the greater good, are the clearest

---

<sup>284</sup> *Open source* is an approach to the design, development, and distribution of software, offering practical accessibility to a software's source code that can be read, viewed, modified, and distributed, by anyone who desires. The term *open source* gained popularity with the rise of the Internet, which provided access to diverse production models, communication paths, and interactive communities.

Open Source Initiative (2009) *The Open Source Definition*, OSI, San Francisco, <http://opensource.org/docs/osd> (accessed 10/08/09)

<sup>285</sup> Leadbeater, C. & Miller, P. (2004) *The Pro-Am Revolution: How Enthusiasts Are Changing Our Society and Economy*, Demos, London, p 67.

<sup>286</sup> *Ibid.* p 64.

<sup>287</sup> *WordPress* started in 2003 with a single bit of code to enhance the typography of everyday writing and with just a small number of users. Since then it has grown to be the largest self-hosted blogging tool in the world, used on millions of sites and seen by tens of millions of people every day. *WordPress* is one of the most well-known Open Source projects, with hundreds of developers all over the world working on it. <http://wordpress.org/about> (accessed 29/09/09)

example of this. For example, software development projects are so complex that it is virtually impossible for a single entity (even a company as large as Microsoft) to manage the process. By creating an open-source environment, in which anyone can contribute changes, thousands of workers and testers are brought into play and apply multiple minds to the complexity of any problem. These people contribute their time for free, on the understanding that the more they contribute, the more they receive in the end (because the software is improved) and in addition, within the open-source community of computer programmers, there is an implied social kudos amongst their peers that they receive.

As clearly evidenced through *Omnium's Creative Waves* projects, this is also a valuable process within educational situations, in which groups of volunteer participants collaborate towards future development of humanitarian social outreach, learning and teaching initiatives, as well as the progression of interesting and effective creative methodologies.

## *O*rganisational change

A third valuable change to note, regarding emerging online social and cultural change, originates from the group *Demos*, a non-partisan public-policy research and advocacy organisation with headquarters in New York City. *Demos* was reportedly influential to the thinking of Tony Blair's *New Labour* government in the UK, and describe themselves on their website as a "think-tank for everyday democracy".<sup>288</sup> They claim their aim is to put their philosophy into practice by working with organisations in ways to make them more effective and legitimate. The article *Working Progress*<sup>289</sup> examines the nature of *organisational change* and an apparent new disconnect between employers and their younger staff. The authors claim that organisations are finding it more difficult to recruit graduates with the right skills, even though they acknowledge that graduates are more highly qualified than ever before, because graduates accustomed to working in modern, social, peer-to-peer environments within universities find it hard to shift to structures of traditional

---

<sup>288</sup> Demos (2008) *About Demos*, London, UK, <http://www.demos.co.uk/about> (accessed 10/11/08)

<sup>289</sup> Gillingson, S. & O'Leary, D. (2006) *Working Progress: How To Reconnect Young People and Organisations*, Demos, London, p14.

organisational hierarchies and in turn experience difficulty relating to their bosses.<sup>290</sup>

It should be reiterated, at this stage, how pertinent and interesting this observation is in relation to fundamental and original ideas I had in forming *Omnium* in 1998. As I have described in previous chapters, in the late 1990s I was fascinated to observe how new media design agencies operated easily as collaborative teams and how they seamlessly embraced new and emerging computer technologies - particularly those associated with the Internet.

Professional organisations, especially professional creative industries, appear to be changing, more and more, through new emerging working patterns. From what have traditionally included 'higher' managerial levels and 'lower' production levels, they increasingly now appear to encourage flatter structures that gives greater chance of staff meeting in a 'middle' on a more democratic level. *Demos* argue that strongly hierarchical companies are slowly becoming outdated and being replaced by networked and communal organisational structures that are analogous to those seen online in social networks.

Gillingson and O'Leary<sup>291</sup> surveyed senior human resources (HR) directors from FTSE200 companies and the top employee qualities that directors rated most highly were:

- Communicating ideas
- Problem-solving
- Team-working
- Creativity and Innovation

These are qualities that have been strongly encouraged in past online *Omnium* projects. For example, anyone can learn how to use graphic software applications such as *Adobe Photoshop* or *Illustrator*, however, as useful as they are for designing, creativity and collaboration involve more *process skills* than *skilful practice*.

---

<sup>290</sup> Ibid.

<sup>291</sup> Gillingson, S. & O'Leary, D. (2006) *Working Progress: How To Reconnect Young People and Organisations*, Demos, London, p38.

## *I*ntroduction to the *Creative Waves* (2007) online pharmacy and design project

In Australia and other countries in the Asia-Pacific region many examples of new and innovative learning and teaching approaches, especially those adopting educational technologies, are increasingly being reported through academic organisations such as the Australasian Society of Computers in Learning in Tertiary Education (Ascilite). At their national conference held in December 2005, in Brisbane, Australia, *Omnium* was awarded the *Ascilite President's Award* for its first *Creative Waves* project and the *Omnium Software* used to host the interaction.<sup>292</sup>

It was during the 2005 Ascilite Conference that I was approached by Dr Nataly Martini, from the School of Pharmacy at the University of Auckland, who wished to discuss ideas she had for introducing strategies used in *Omnium's* first *Creative Waves* project to an undergraduate Pharmacy curriculum. Dr Martini was able to show me many examples within the curriculum where digital imaging and animations could be very effectively used and that were freely available via the Internet. We decided to attempt to design, produce and host a second *Creative Waves* project, this time through an unlikely collaboration between the two disciplines of Pharmacy and Graphic Design.

As co-conveners, Dr Martini and I formed the brief for a second *Creative Waves* project that identified the village of Winam, in Kenya, as the community the project aimed to collaborate with and help. Winam is a rural community on the shores of Lake Victoria in the Kisumu district of Western Kenya. This area has significant health and social welfare problems and is an area of high unemployment, low incomes and comparatively low adult literacy rates. Regarding the health of the local community, there is a high prevalence of tropical illnesses such as malaria as well as widespread instances of HIV/AIDS. There is also a growing problem with chronic diseases, such as diabetes and heart disease in African nations, although for now, communicable (infectious) diseases still dominate the mortality statistics in less urbanised settings like Winam.<sup>293</sup>

---

<sup>292</sup> Ascilite (2005) 2005 Awards, NSW, Australia, [http://www.ascilite.org.au/index.php?p=ascilite\\_awards\\_2005](http://www.ascilite.org.au/index.php?p=ascilite_awards_2005) (accessed 11/08/09)

<sup>293</sup> Baingana, S. & Ros, E. (2006) *Changing Patterns Of Disease And Mortality In Sub-Saharan Africa: an overview*. In D.T. Jamison et al. (Eds.), *Disease and Mortality in Sub-Saharan Africa* 2<sup>nd</sup> edition, The World Bank -

Having worked on other social-outreach design projects that aimed to assist poor communities in East Timor, Sri Lanka and the Philippines, I knew it was important to have an intermediary organisation to act as a conduit between the participants actually working on a project and those based in a foreign and culturally distanced country who we were aiming to assist. In my experience of working on such projects, it is important that the 'conduit' organisation be: a non-profit agency or non-governmental organisation (NGO); be based in the country being assisted, and have local knowledge of language and dialects as well as local customs and cultures. Throughout the *Creative Waves: VIP* project, this proved invaluable and one of the main reasons why the project could actually take place.

### *Aims and objectives of the Creative Waves: VIP project*

An initial aim of the *Creative Waves: VIP* project was to experiment with ways that pharmacy curricula could be modernised to include online communities, thus assisting student communication and access to modern digital resources that would support their studies. Secondary aims were to: further the progress made through past *Omnium* projects in regard to forming online creative communities, to refine *Omnium's five-stage creative process model for online collaborative creativity*, and to further develop the operating platform that had now formally been registered and trademarked as *Omnium® Software*.

In addition, a socially-responsible community outreach aim was introduced to the project. A weakness I felt existed in the first *Creative Waves* project was the fact that so much effort was given by so many participants to create visual outcomes that had no real practical purpose or benefit to a broader society. In light of this, we wanted to make the overall brief and tasks within the *VIP* project aimed towards a real-life objective that would benefit people in a socially responsible way. It was clear from the first *Creative Waves* project that many students were somewhat uncomfortable working on a purely conceptual and experimental brief as, in many cases, this departed from their usual study projects that generally required useable outcomes to be created. The new practical aim of the *Creative Waves: VIP* project was to deliver new and innovative visual health awareness campaigns for use in Winam, whilst an important educational sub-text to the project was to raise global awareness about

---

<http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=dmssa&part=A84> (Accessed 15/08/08)

health problems and access to healthcare in developing countries and the impact that online volunteers can play.

The main educational aims of the *Creative Waves: VIP* project were to examine the interaction of higher education students from diverse geographical locations, educational backgrounds, and discipline study areas as part of an online learning community. By bringing together pharmacy and design students who shared between them a set of values for health improvement, socially-conscious ventures and design expertise, the project targeted six specific health issues relevant to the region. These were:

- adherence to medicines (medical instructions)
- chronic diseases
- tuberculosis
- sexually transmitted infections (including HIV/AIDS)
- malaria
- immunisation

### *Location-specific representation to assist Creative Waves: VIP*

Our main point of contact in Kenya was Mr George Onyango, a member of the *Nabuur Global Network*;<sup>294</sup> an online international volunteer organisation that aims to create positive social change where it is most needed. Mr Onyango is a development worker with a wide range of skills, particularly in social work and project management.

At the time of the project, Mr Onyango was living in the city of Kisumu, in Western Kenya, and was the *Nabuur* local representative for the neighboring village community of Winam. During the project he was (and still is at time of writing) the Team Leader of *HelpHeal* – a project based in the Winam community that works actively in giving hope to patients from surrounding communities who are seemingly ‘abandoned’ by their families in times of illness.

The impact that Mr Onyango, and fellow *HelpHeal* colleague, Mr Salim Opere, brought to the project was immense. For the entire three-month duration of the project (and a year after the project finished) they interacted with project participants, and later with myself and Dr Martini in production of the outcomes, to ensure that as

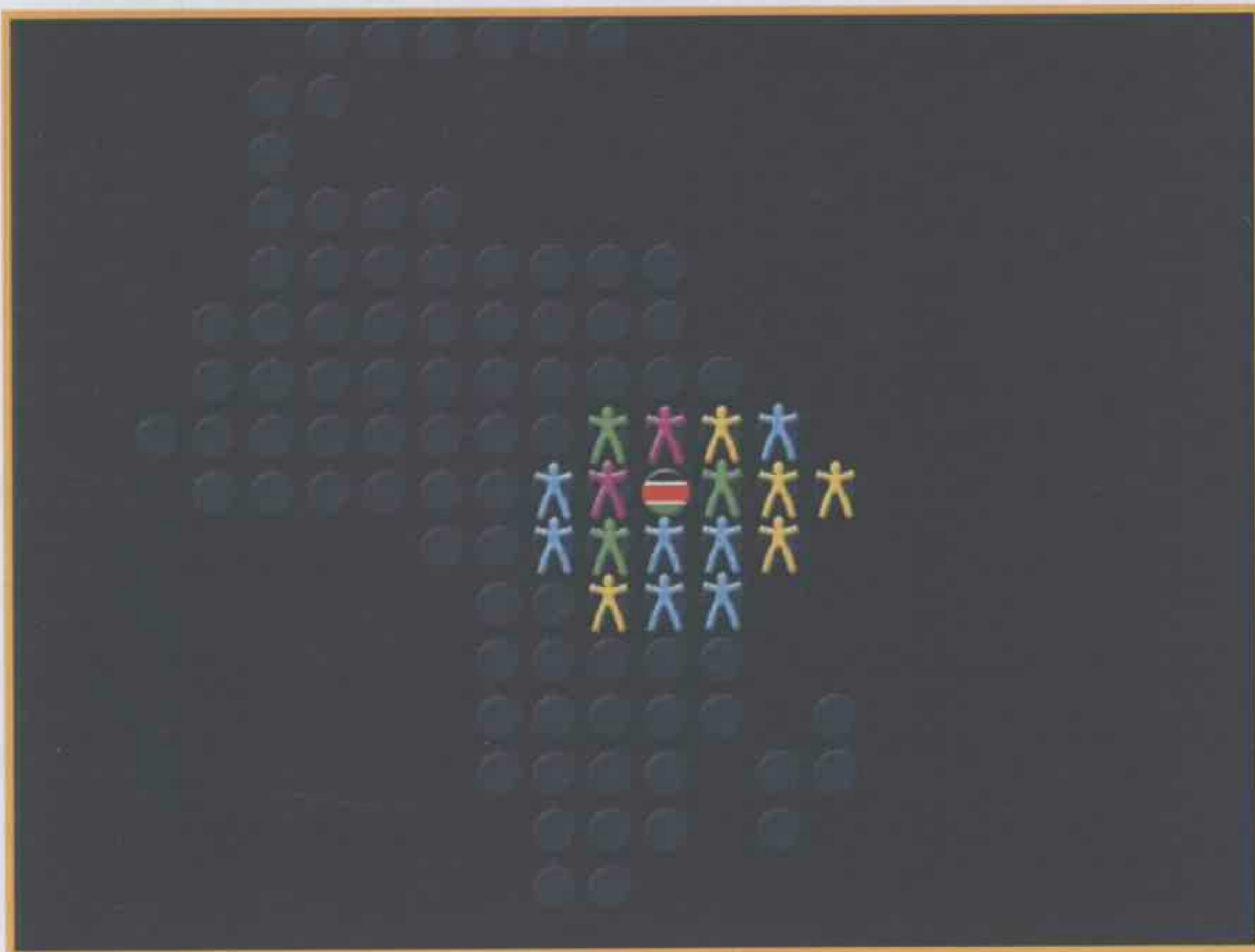
---

<sup>294</sup> <http://www.nabuur.com> (accessed 10/10/08)



non-Kenyans we could understand the realities of the problems faced by the community in Winam.

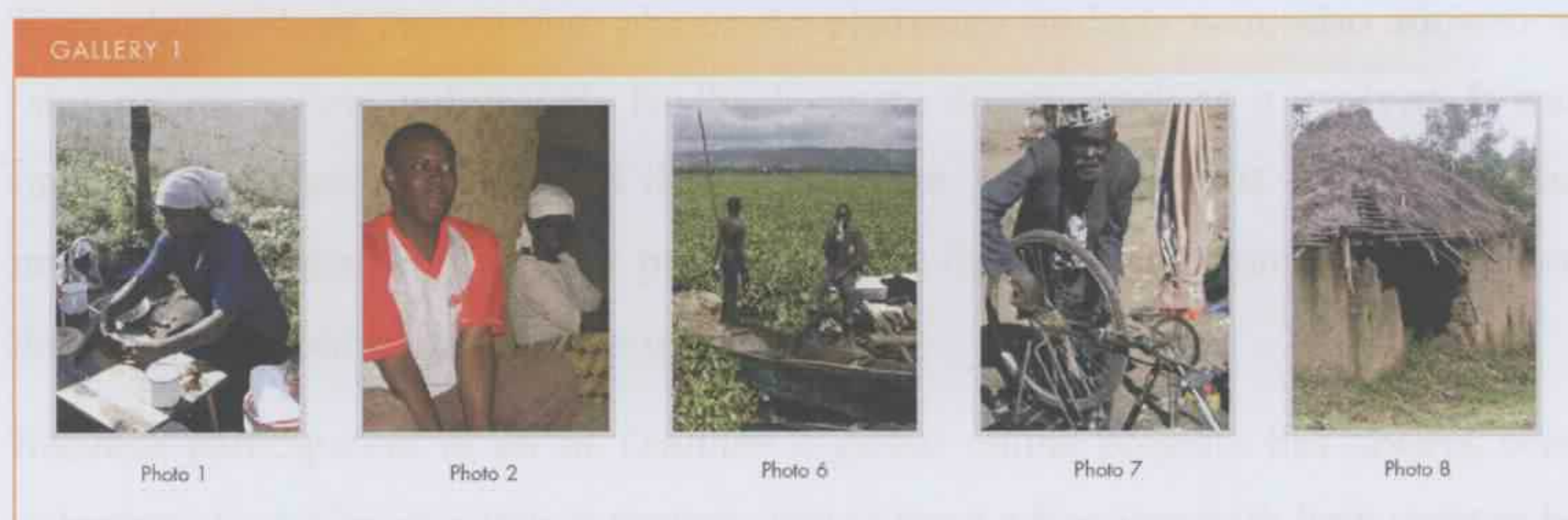
In addition to George Onyango and Salim Opere who were the main local (Kenyan) contributors to the project, both Dr Martini and myself felt it vital to encourage other participation from Kenya. We approached pharmacy and design students and teachers from local colleges in Kenya and attracted numerous expressions of interest to take part. As a result, the entire project was enhanced by contributions from the location specific representation that consisted of volunteer health-workers, students, teachers and professional practitioners from both pharmacy and design disciplines (Figure 1).



*Figure 1 - Summary of location specific representation from Kenya within the Creative Waves 2007 - Visualising Issues in Pharmacy (VIP) project - (Yellow = Pharmacy Students, Blue = Design Students, Purple = Professional Mentors, Green = Invited Special Guests).*

Mr Onyango initially made his mark on proceedings by providing the first written *Lecture* for students (and other participants). It proved to be one of the most influential and motivational aspects of the entire project. Such a reaction was not purposely planned, but his honesty and frankness, coupled with some powerful photographs taken from the village to illustrate his points (Gallery 1), had an early influence on the project and portrayed the brutal reality about his people's situation to the rest of us in disparate parts of the world. It was the images in particular that gave visual reality to the situations he was describing. For example, he referred to men in the village losing their fishing livelihood due to an over-growth of weeds on

the local lake (Photo 6 - Gallery 1), and showed an image of an old women's house that she would return to if she survived the basic and harsh medical treatment offered to her at the local hospital (Photo 8 - Gallery 1).



*Gallery 1 – Photographs provided by George Onyango (Photo 2) to illustrate particular points in his lecture and set the scene in general for project participants about life in Winam*

It was clear that the situation Mr Onyango described in his lecture, in relation to care available to patients in local rural hospitals, was almost unfathomable by many of the *VIP* participants worldwide.

## **S**tructure of *Creative Waves 2007 - Visualising Issues in Pharmacy (VIP)*

Online learning environments have been described as *knowledge eco-systems* where groups of people are engaged in collective inquiry to enhance their personal knowledge and the application of such knowledge to work situations.<sup>295</sup> As previous chapters have described, learning through the use of online environments presents a new challenge for both students and teachers and requires different tools and pedagogical methods than in more familiar face-to-face settings.

The three-month *Creative Waves: VIP* project was structured in two distinct phases:

*Phase One (research):* International pharmacy students divided into small research teams of five people to collaborate over a seven-week period to investigate their team's *assigned health issue (AHI)* and develop a detailed research report about one of the six health issue topics.

*Phase Two (design):* International design students also divided into small creative teams to develop the research reports produced in phase one (acting as design briefs) into a series of visual public awareness campaigns relating to the six health issues.

<sup>295</sup> Shrivastava, P. (1999) 'Management Classes As Online Learning Communities', *Journal of Management Education*, Vol. 23, No. 6, pp 691-702.

The two phases overlapped by two weeks allowing the pharmacy and design students to interact with each other to discuss the final research reports and to clarify relevant issues that were deemed necessary to know before proceeding to the design phase. Throughout *Phase Two* (design phase) the pharmacy students were also allowed to ‘stay on’ to review and provide feedback on the design work as it evolved. It was important that having completed their own phase, the pharmacists (many who had invested considerable time to the project) did not feel excluded from being involved throughout the remainder of the project.

Because participation in all of *Omnium’s* global online projects has always been voluntary, both *Creative Waves* projects had to tread a fine line with how strict to be in enforcing timelines and deadlines, as well as how rigorous to be regarding the amount of time participants were expected to commit. Despite people having the very best of intentions, if their contribution is sporadic and/or minimal, it is generally disruptive to a project’s workflow. This is an issue that *Omnium* tries to anticipate when selecting participants to include in its projects. However, despite clearly asking applicants how much time they will be willing to commit before a project begins, online projects have tended to have a fairly high attrition rate. The issue of enrolling and choosing participants from the applications is one that will be addressed in the following pages.

## *P*articipant selection and recruitment

Six months prior to the intended start-date for the *VIP* project, a promotional website was designed and released that gave prospective applicants a full introduction to the event (Figure 2). It included information about the aims for the project, the organisers, a FAQ (frequently asked questions) area that predicted information that would be required by a variety of potential participants, and easy-to-use online application forms for potential participants (students, teachers, professionals).



Figure 2 - Creative Waves 2007 - Visualising Issues in Pharmacy (VIP) promotional website <http://creativewaves.omnium.net.au/vip/outline>

Public awareness about the *VIP* project was helped significantly by publicity through websites and newsletters of its major industry supporters (FIP and ICOGRADA). In addition, in the past, other websites and ‘blogs’ that promote worthwhile ventures such as *Creative Waves* have proved to be another effective way of attracting support and participation for such voluntary initiatives. One only has to enter *Creative Waves* into a *Google* search engine to see the numerous websites that have discussed the project, usually as promotional support prior to commencement. It is amazing that in a world of ever increasing numbers of online social communities and networks, news about a project such as *VIP* can turn up in the most unexpected places.<sup>296</sup>

Subsequently, several weeks prior to the *Creative Waves: VIP* project commencing, approximately 250 applications were received from potential participants in over 30

<sup>296</sup> During the planning and promotional stages of both *Creative Waves* projects (2005 & 2007) a website based in Turkey that focuses on design and design innovation, promoted both projects through their news and announcements pages. As a result, throughout the application processes for participants, an extraordinarily large and disproportional number of applicants came from students and teachers based in Turkey.

countries. From numerous applications received to participate in the project, 60 students were selected for each phase of the project (pharmacy and design).

Selection criteria included: the amount of time applicants stated they could allocate to the project, their written English proficiency, technical access, reasons stated for wishing to take part, and their discipline background and/or year of study within the two main discipline fields. It was also decided that except for Kenyan participants and those from the two host institutions (UNSW and UoA), no more than two students would be selected to represent any one educational institution.

Additionally, many applications were received from teachers and professionals who felt they could offer assistance to the project in the role of mentors. We applied the same selection criteria when selecting mentors as we used for the student applications. The *Project Conveners* also personally invited, through emails, phone-calls and letters, special guests who were luminaries from both pharmacy and design fields. These guests acted as motivators to the project by offering feedback to students in their creative teams, providing written *Lectures*, and/or contributing to the *Discussion Forum* and/or live chat discussions relating to certain facets of the project.

Both the pharmacy and design phases of the project relied on discipline experts who acted as specific *Team Coordinators (TCs)*. In Phase One, the *TCs* were academic staff from the School of Pharmacy in Auckland (New Zealand) and also members of the pharmacy curriculum advisory panel during preparations for the project. In Phase Two the *TCs* were academic staff from the College of Fine Arts, UNSW. The role that all the experts played was to mingle with students in specific teams and act as their advisory point of contact and help them through discussions and live-chat sessions within the teams.

Throughout the two seven-week phases of the project (pharmacy and design), in order to facilitate the development of end results that were useful as effective public awareness visual campaigns and that were culturally appropriate, Dr Martini and I arranged for a series of illustrated *Lectures*, as well as interactive discussions with *Special Guests* and *Mentors*, both from Kenya and locations around the world. The *Special Guests* and *Mentors* also in some instances provided resource materials for students to review offline and then participate online in both synchronous and asynchronous discussions. We included two live-chat sessions with a major *Special*

*Guest* contributor on either side of the project (pharmacy and design) with transcripts of the synchronous discussions posted for those participants who were not able to participate directly.

In summary, over 200 participants, including students, project coordinators, academic and professional mentors and invited special guests from 30 countries<sup>297</sup> were enrolled for the start of the *VIP* project in May 2007 (Figure 3).



Figure 3 - *Creative Waves 2007: Visualising Issues in Pharmacy (VIP) map indicating global locations of the 200+ participants (Red = Conveners/Coordinators, Yellow/Blue = Students, Purple = Mentors, Green = Invited Special Guests).*

Whether students were able to receive formal academic credit for their involvement (the most commonly asked question in the application forms) was not a decision that as *Project Conveners* we could determine. We did, however, recommend that participants contact their own academic coordinators and request as such. In the end, however, it was only the New Zealand and South African pharmacy students that had the *VIP* project form part of an accredited subject at their own colleges.

---

<sup>297</sup> Countries represented by participants in the *VIP* project were: Brazil, Finland, Italy, USA, China, Philippines, Bosnia, Russia, India, USA, Kenya, Australia, New Zealand, Ethiopia, Pakistan, Sweden, England, Iran, Indonesia, Singapore, Uganda, South Africa, Peru, Canada, Germany, Mexico, Greece, Scotland, Taiwan, Hong Kong.

## **C**ollaborative working teams

During both phases of the project, pharmacy and design students were initially allocated to one of twelve teams that each comprised five or six student members (Figure 4). Based on *Omnium*'s previous online projects, this number was deemed to be most effective for online collaboration, as groups smaller than five run the risk of becoming too small if one or more team members has to retire for any reason. In contrast, teams larger than five or six members have on occasion previously become unruly, difficult to coordinate, and lack a sense of community. Additionally, larger working teams run the risk of alienating some team members as dominant factions can form within a team. In the past, large teams have occasionally also led to a situation where participants can *hide* within a team (what is widely termed as *lurking*) and only contribute at publicly visible stages of a project. In short, they may take credit for work done by the rest of the team.

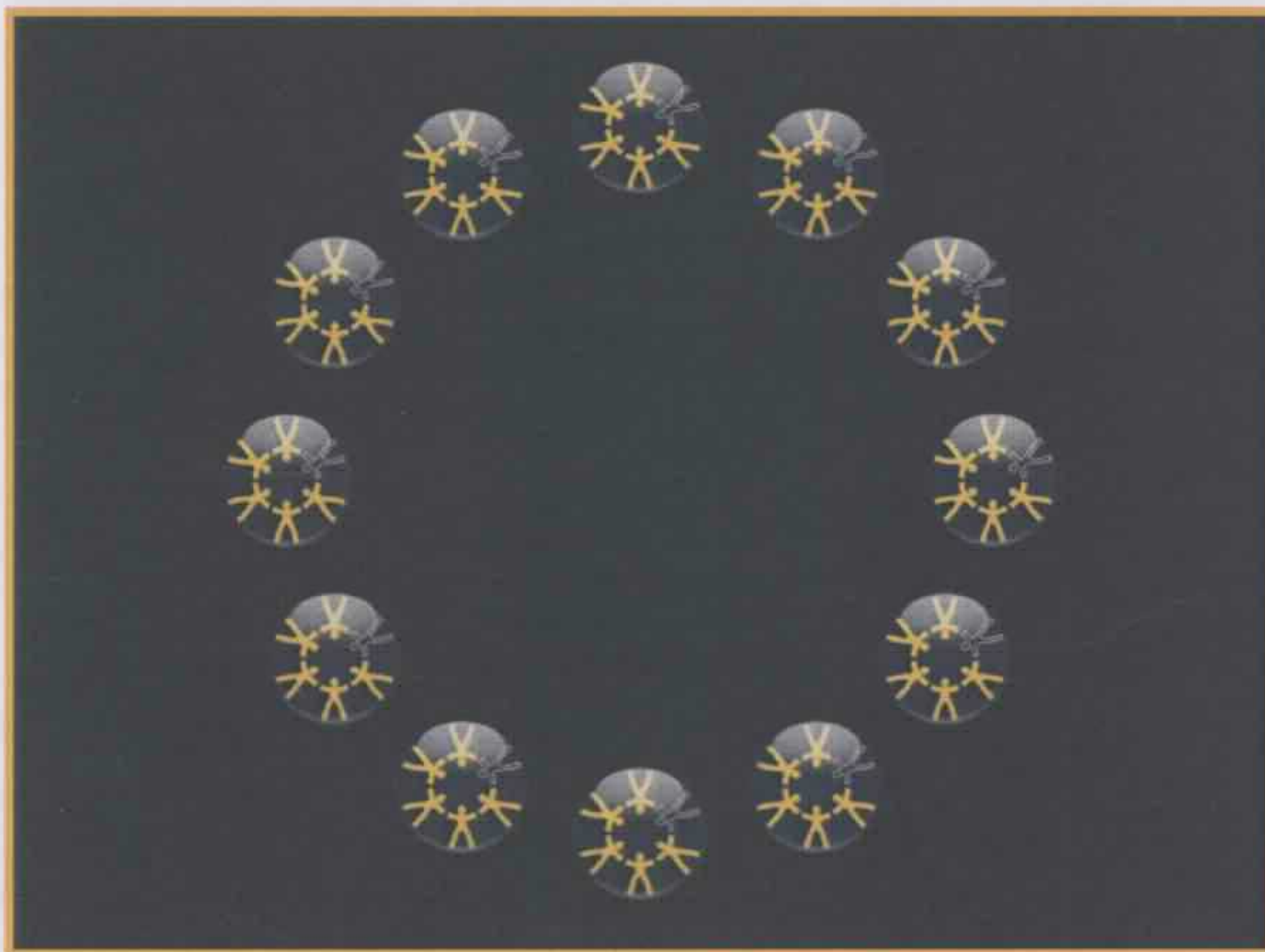


Figure 4 - During each of the two phases of the project, 60 students divided into twelve working teams with allocation of team coordinators to assist and support the activities and discussions within each team.

During the pharmacy *and* design phases, each of the small research/creative teams were assigned a *Team Coordinator*, plus one or more volunteer *Team Mentors* selected from applications received from teachers and professional practitioners.

At commencement of the first pharmacy phase (weeks 1 - 7) each of the twelve research teams were allocated one of the six *assigned health issues* (AHI) to focus

their studies. As a result, two teams were allocated to each AHI and each AHI had the attention of one *Team Coordinator* with professional expertise in that area (Figure 5). The *Team Coordinators*' role was to lead and direct the students, providing assistance and commentary on their work as they addressed the briefs posted by the *Project Conveners* each week.

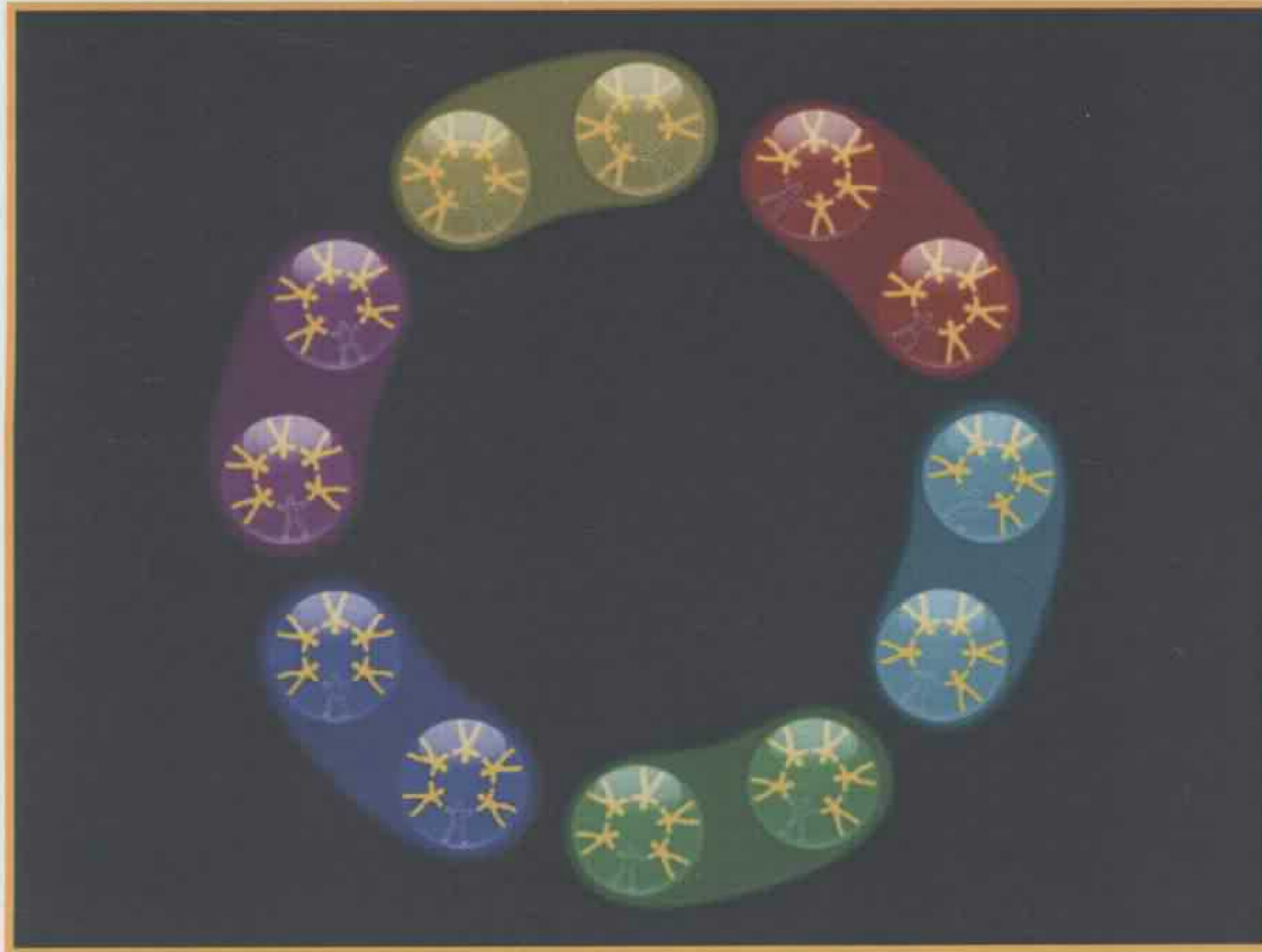


Figure 5 - Sixty pharmacy students divided into twelve research teams with each team allocated to research one of the six Assigned Health Issues (AHI).

The *Team Mentors*' role was also to provide additional resources, commentary and feedback on the students' discussions and contributions. This type of collaboration creates a rich and empowering environment<sup>298</sup> and encourages multi-directional dialogue among participants and mentors to promote collaborative learning. New knowledge can be gained by pooling ideas and information, and the success of one participant helps others in their own success.<sup>299</sup>

A similar team structure was also established from the beginning of the design phase (weeks 8 -15). The sixty design student participants were allocated and divided into twelve creative teams. A slight difference in the design phase was that only four *Team Coordinators* were selected and each managed three teams in the early stages of the project. Similar to the pharmacy phase, design *Team Coordinators* interpreted

---

<sup>298</sup> Palloff, R. M. & Pratt, K. (1999) *Building Learning Communities In Cyberspace*, Jossey-Bass, San Francisco, p 3.

<sup>299</sup> Gokhale, A. A. (1995) 'Collaborative learning enhances critical thinking', *Journal of Technology Education*, Vol. 7, No. 1, pp 22-30.



the projects briefs as they were issued to the participants and gave support and feedback on the ideas that were suggested and formed within each team. In response to the pharmacy teams being divided between the six AHI's, the design teams worked on the six final research reports produced as final outcomes by the pharmacy teams. Each of the six final research reports acted as briefs for the designers and each (one from each AHI) had two design teams working from them.

One of the most fascinating stages of the entire project was the *hand-over* period from pharmacists to designers in weeks 7 and 8 (Figure 6). It was a time of full collaboration and inter-disciplinary discussion, as designers asked questions of the pharmacists in the project's main *Message Board* (MB) area. Each of the AHI's had a specific discussion thread set-up within the MB area which was fundamental to the hand-over period and discussions multiplied between the students, *Team Coordinators*, *Mentors* and *Special Guests*.

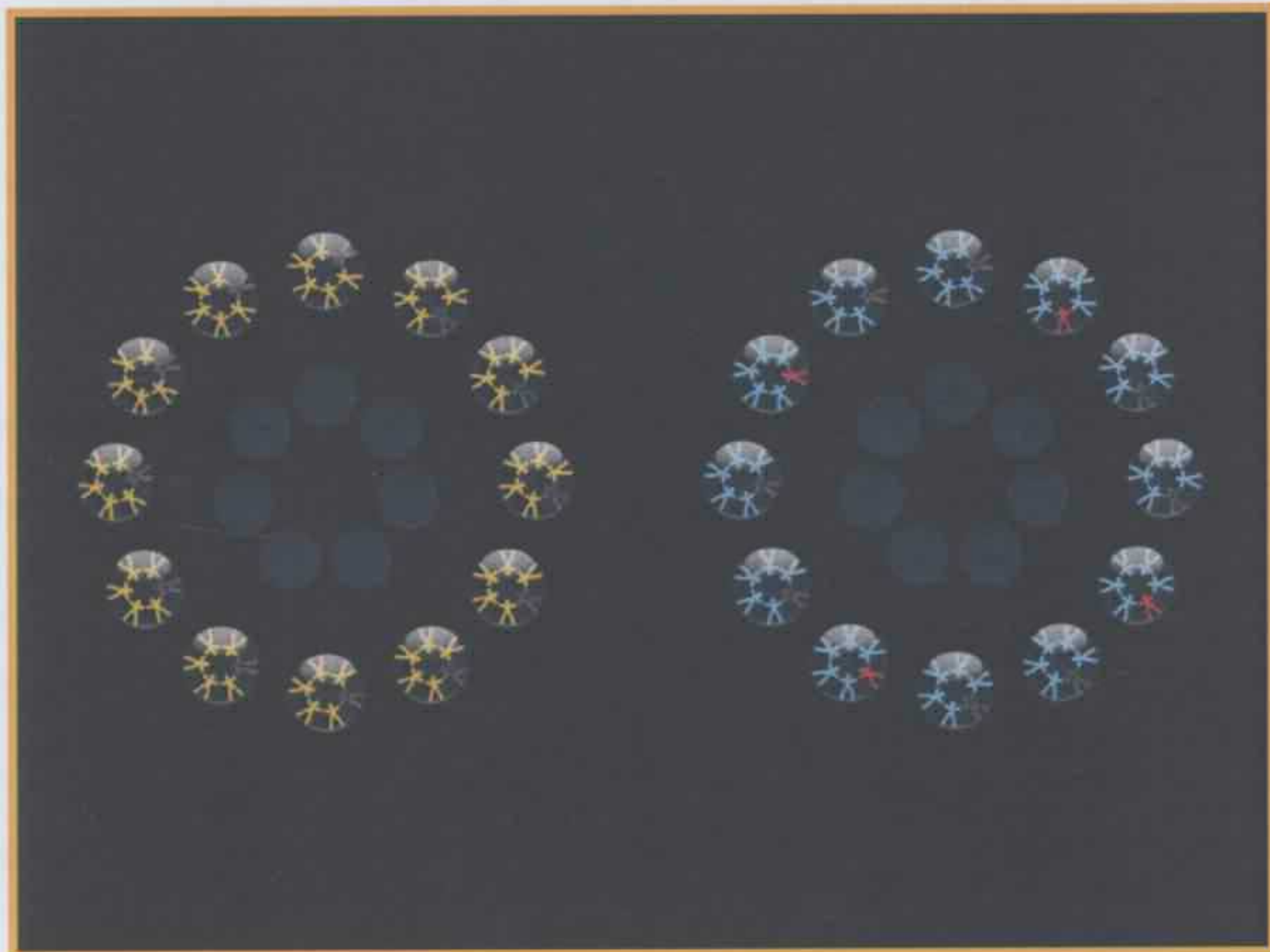


Figure 6 - Sixty pharmacy students (yellow) divided into twelve research teams are joined in weeks 7 and 8 by sixty design students (blue) divided into twelve creative teams together with the team coordinators to discuss the project together.

Later in the design phase, when creative outcomes had been identified from many discussions between project participants and representatives in Kenya, the smaller design teams were disbanded and formed into three larger teams to focus on the design development of three final design solutions. The identified solutions and their designs, *soccer uniforms*, *educational malaria cards* and *a variety of stickers* are discussed in more detail later in this case-study.

## *O*mnium<sup>®</sup> Software and the Visualising Issues in Pharmacy (VIP) project

As with the first *Creative Waves* project in 2005, the *Visualising Issues in Pharmacy (VIP)* project was designed around traditional principles of a structured learning community<sup>300</sup> but delivered using interactive communication technologies. By 2007, *Omnium's* own online user-interface had progressed to be a fully registered and trademarked software application. It provided features common to many online learning platforms but also those specifically and uniquely orientated to facilitating online collaborative creativity - for example, provision of numerous areas for uploading and using visual, sound and moving image materials (as well as most text file formats).

The version of the software that was used in the *Creative Waves VIP* project was new and had been released to coincide with the launch of the project: *Omnium version 4.0* - a version number determined by the technical code-base of the software that was in its fourth major iteration. The most important changes of *Omnium version 4.0* were general refinements in usability, functionality, administrative choices and aesthetic look. However, the underlying code-base was completely re-written to allow the interface to be far more flexible in allowing permission choices, feature additions, and more governance by users and project administrators. The *Omnium Software* used in the VIP project included the following enhanced features:

### *Log-In page*

Access for users/participants to all user-interfaces used in *Omnium* projects since 1999 has been through secure password protected *Log-In* systems. Despite being similar in functionality, the security in place for *VIP* was technically far advanced. In addition, the *Log-In* information provided by the variety of users on access to the interface automatically recognised a range of user-types. It was this difference in user-types that determined differing levels of access to the interface: e.g., areas accessible to the general public through to high-level administrative access for project conveners and system administrators only.

The *Omnium version 4.0* software also included a *Feature Gallery* that could appear on the *Log-In* page selected by conveners/administrators from any one of the

---

<sup>300</sup> Dewey J. (1997) *Democracy and Education*, 3rd ed. Free Press, New York, p 150.

project's *Galleries* that had already been compiled within the interface (Figure 7). This detail is useful as it informs all users of new and updated *Galleries*.



Figure 7 – Omnimium Software v4 (2007): – Secure Log-In page with Feature Gallery feature

### Welcome page

Having logged-in to the *VIP* project interface, site administrators could choose whether participants arrived at the project's *Welcome page* or the main project *News* page. The *Welcome* page included an introduction to the *VIP* project, a diagram of countries and locations where the projects participants resided, as well as details of the organisations that were endorsing or supporting the initiative (Figure 8).



Figure 8 – Omnimium Software v4 (2007): – Welcome page (introducing main navigation panel)

## News page

The *News* page was significantly redesigned in version 4 of the *Omnium* software. Each news item was able to include a full text description as well as an image to represent the news item. The main addition to the *News* area involved communication with participants taking part in the project. Conveners who wrote news items were able to automatically email each news item directly to users through a subscription system. Participants would receive a formatted email to their own supplied email address, including the choice to unsubscribe should they wish. Participants also had the chance to receive news items via *RSS* feeds that could be sent directly to their own *RSS* feed aggregator.<sup>301</sup>

Both systems allowed participants to receive important news rapidly as they did not have to wait until they next visited the site to realise additional news or announcements had been posted (Figure 9).



Figure 9 – Omnimium Software v4 (2007): – News page with email and *RSS* functionality.

## User-Lists

The way in which users (or participants) in the project were identified was also revised in design and functionality in the new version of the software. Lists of users could be separated into any variety of named lists (through a folder system) and different user-lists could be shown under multiple navigation buttons down the left side of the interface. In the *VIP* project, users were identified under the following

<sup>301</sup> *RSS* - most commonly translated as *Really Simple Syndication* (but sometimes *Rich Site Summary*) is a web feed format used to publish frequently updated works—such as ‘blog’ entries, news headlines, audio, and video—in a standardized format.

buttons; *Students, Mentors, Coordinators, Special Guests*. Within each list, different categories of user were shown, for example, within the student user-list, participants were segregated into lists of pharmacy students and design students.

Within user-lists, participants could now also indicate additional information such as the institution in which they studied, the country they came from, and their personal website (if applicable). Most importantly, the user-lists provided the *gateway* to each participants own *Individual Profile* and *Personal Portfolio* areas.

### *Individual Profiles & Personal Portfolios*

Perhaps the most fundamental areas of the *Omnium* technical platform, since its earliest iteration in 1999, are the *Individual Profile* areas that each participant is allocated (Figure 10). These are areas that are totally self-managed by the user and where they can add introductory information about themselves and an image/avatar to represent them throughout the site. For example, if a user adds a message to a discussion thread within the *Discussion Forum* or the *Team Discussion & Feedback areas*, the image they place initially in their *Individual Profile* area will automatically be placed next to their comments. The software also automatically shows their location and the current time at that location, as well as how many contributions each individual makes to the main *Discussion Forum* and the *Team Discussion & Feedback* areas of the team they belong to.



Figure 10 - Omnium Software v4 (2007): an Individual Profile page giving participants a space to introduce themselves and add an image/avatar to represent them throughout the site.

The *Individual Profile* areas also include another vital component for assisting *online collaborative creativity* - a feature that differentiates *Omnium Software* from all other online learning environments. Each *Profile* area also contains a *Personal Portfolio* area (formerly known as *Sketchbooks*) where participants can upload, store and arrange large amounts of visual materials in a large choice of file types (photographs, drawings, animations, movies, etc.) for others to see. The *Personal Portfolios* were the *doorway* to the project for visual content and the place where participants could import files from their own computer desktops for other participants to view and use collaboratively. Having uploaded files, there were many choices a participant or convenor could make: from organising the range of visual material; to editing the descriptions; making individual files public or private; and sending them for general display to the project's main *Galleries* area.

Arguably, the *Individual Profile* areas, which have existed in a variety of forms throughout all versions of *Omnium's* user-interfaces, contribute most to building the social community of a project such as *Creative Waves: Visualising Issues in Pharmacy (VIP)*. It is always the first task for project participants to upload their own profile information and images into their own *Personal Portfolio*. This empowers them to feel they have already contributed to the overall project from day one and mastered the use of the software by contributing their own content.

#### *Discussion Forum*

The *Discussion Forum* (previously sometimes called the *Message Board*) is critical to forming fully interactive and highly social learning environments. An additional option in the *Discussion Forum* during the *VIP* project was the ability to group discussions into different folders. This was particularly useful in a cross-disciplinary project where one could organise a series of discussions about pharmacy related issues as well as those relating to design issues (Figure 11).

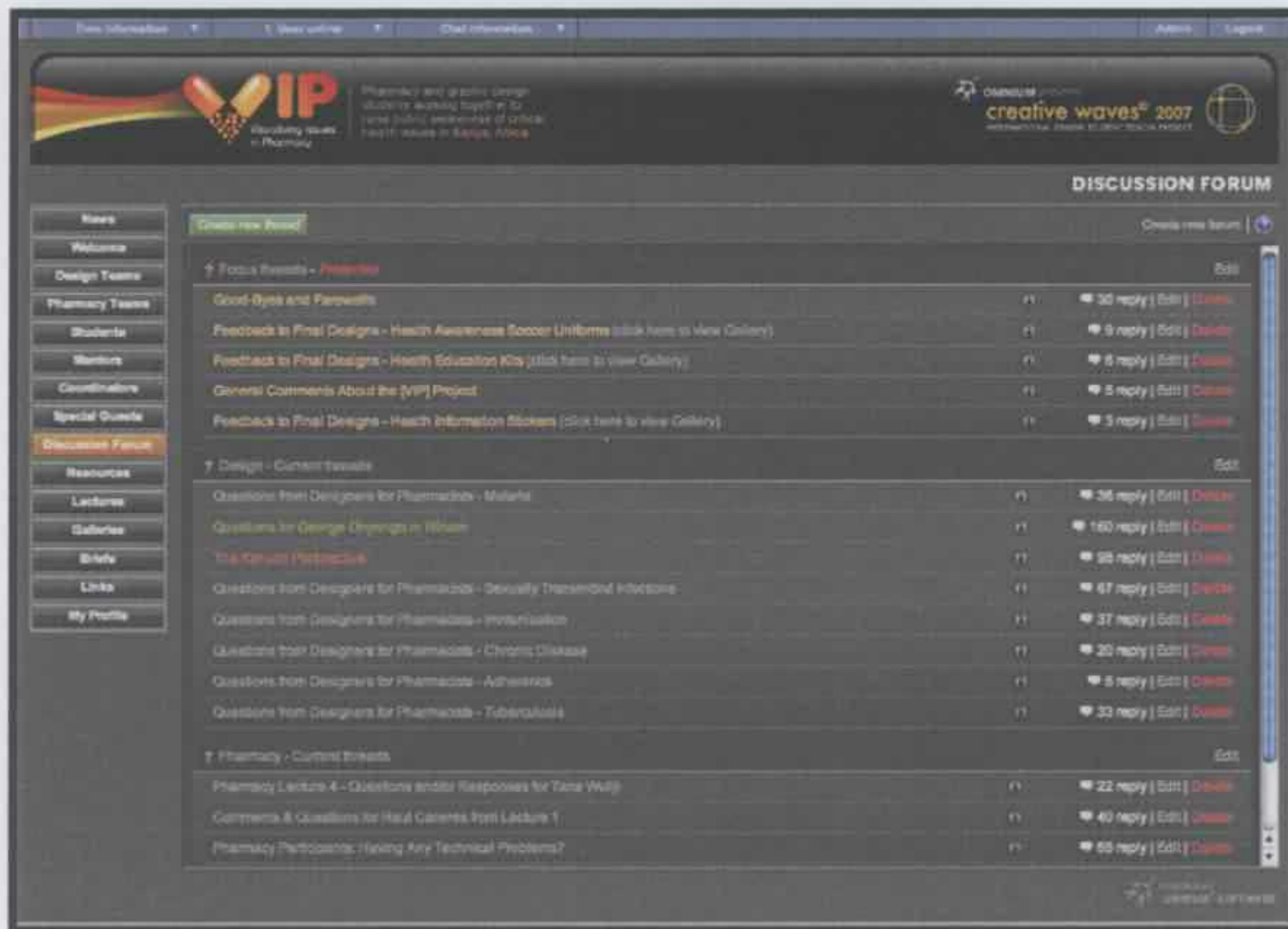


Figure 11 - Omnimium Software v4 (2007): Discussion Forum including threads in separated folders, highlighted text and number of replies and un-read messages in each thread.

In addition, the text could be highlighted in a variety of colours to indicate, for example, levels of priority and focus to specific threads or current debates as well as a feature that showed coloured icons to determine if individual participants had read a particular thread item or not.

The functionality and visual composition of individual messages left by participants was also improved. Participants were able to 'quote' previously posted messages in a far easier way and the identification of quoted sections of a message included the original author, their user-status and the time and date the message was left. Each message within a thread also included a small speech bubble icon that if coloured yellow meant the viewer had not yet read the message (Figure 12).



Figure 12 - Omnimium Software v4 (2007): Discussion Forum threaded message showing main message and image of author, together with quoted section of previous author (dark area).

## Galleries

The most obvious difference between *Omnium Software* and other e-learning software applications is the specific focus on displaying visual materials. The main project *Galleries* area of the user-interface improved in design and functionality since the previous *Creative Waves* in 2005. Once again, multiple *Galleries* could be uploaded by *Project Conveners*, but in the *Omnium Software version 4*, the list of *Galleries* included a number of thumbnail images within the galleries (the exact number could be set within the technical administration area).

By the end of the *Creative Waves: VIP project in 2007*, twelve complete *Galleries* had been uploaded that showed the progress of the project from early research investigations by the pharmacy students, through to completion of final design works by the design students (Figure 13).





Figure 13 - Omnimium Software v4 (2007): Galleries preview page. The Creative Waves: VIP project contained twelve complete galleries of process work as well as galleries of images provided by the invited Special Guests.

Once inside a selected visual gallery, the development of previous *Omnium* interface versions was also apparent. The visual layout had been improved to emphasise the images themselves, and each image was accompanied by a small menu bar underneath that included the ability to enlarge the image, gain information about the image (author, file-type, file size, date and time uploaded), edit or delete the image and finally, easily reorder the image within the gallery in a *drag and drop* format (Figure 14).

To view an image in closer detail, viewers could enlarge the file and gain access to written details about a file and scroll through the larger view of all images in the selected gallery by using *forward and back* arrows.

Following the ease-of-use philosophy on which the *Omnium Software* bases its design and programming, users do not need to know how to format or prepare image files for upload. The software automatically reduces all file uploads to a small preview (thumbnail) size and a larger blow-up size. Even so, the original large file is not displayed, but is available for download in this area using the 'Download original file' feature that also indicates the file size of the original file (Figure 15).



Figure 14 - Omnimium Software v4 (2007): Galleries detail page showing highlighted administration access to file details, blow-up images, and 'drag and drop' arrangement.



Figure 15 - Omnimium Software v4 (2007): Galleries image 'blow-up' page showing options for viewing associated written description and downloading original larger file.

### Team areas (Pharmacists & Designers)

During the *Visualising Issues in Pharmacy (VIP)* project it was vitally important to form a team structure for both groups of students (pharmacists and designers). Completely new areas for working teams were designed and programmed for the *Omnium Software version 4*.

Each *Team* contained a secondary horizontal navigation bar (Figure 16) that via three *drop-down menus* gave team members access to all other teams, the four *Team features* within their own team (described below), and the individual profiles of all

the members of a team selected. By default, when choosing to enter the *Team areas*, participants were automatically directed to their own team.

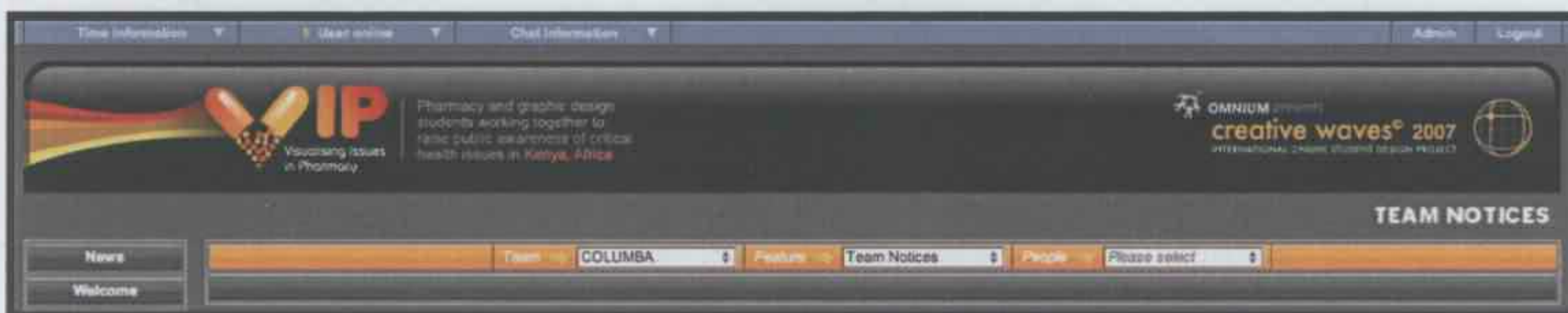


Figure 16 - Omnimium Software v4 (2007): Team areas include a three-choice navigation panel giving access to Other Teams; Team features; and People (members of teams).

Team areas gave participants access to four *Team features* that enabled *Project Conveners* and *Team Coordinators* to make announcements, and team members to show their visual works, communicate with each other, and share files for collaborative work. The four *Team features* are described below.

### Team Notices

The first of the four team-specific features were the *Team Notices* areas that were very similar in format, structure and functionality to the main project *News* area and were areas where *Project Conveners* and *Team Coordinators* could notify teams of any team-specific announcements or news. Once teams had been divided to work on particular projects (such as the six different *assigned health issues*), the *Team Notices* areas became very important and well used. As with the main project *News* area, team members could be contacted directly with team focused news and announcements through emails and RSS feeds (Figure 17).

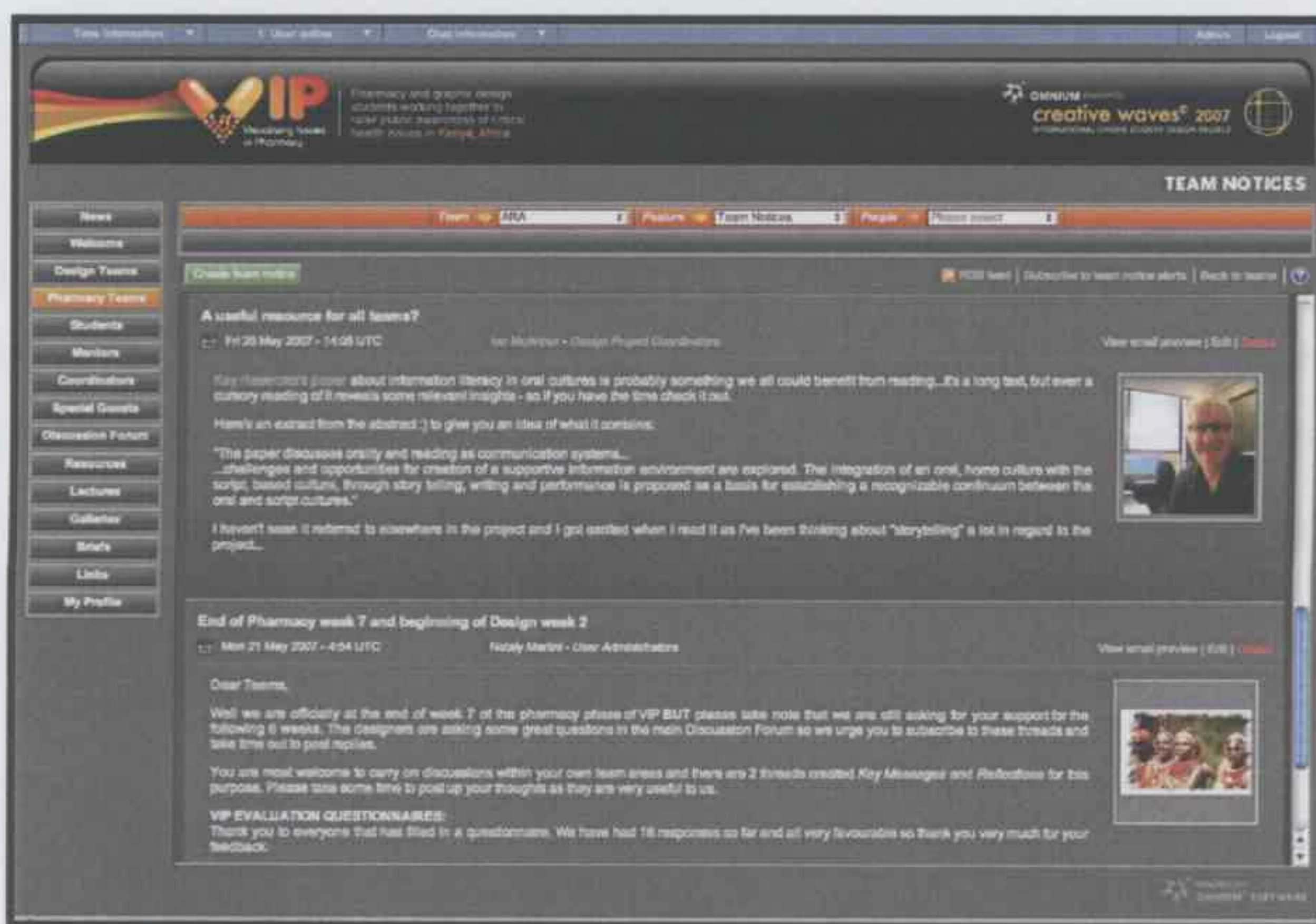


Figure 17 - Omnimium Software v4 (2007): Team Notices area showing project conveners and team coordinators notifying individual teams of important news relating to their team.

### *Team Pin-up Walls*

The second team feature, the *Team Pin-up Walls*, had existed in the previous *Creative Waves (2005)* project but in the new *Omnium Software version 4* they were functionally extended. *Pin-up Walls* were areas where team members could post files for others to view, read and later discuss or leave feedback. The additional functionality in the *VIP* project was that teams could create multiple *Pin-up Walls* and their format replicated the main project *Galleries* area described previously. It was through the *Team Pin-up Walls* that project *Mentors* and *Special Guests* could visit each team, view work on display and leave feedback through the *Team Talk & Feedback* areas.

### *Team Talk & Feedback*

The third feature, the *Team Talk & Feedback* areas, replicated the threaded format in the main project *Discussion Forum* (described previously) and as the project briefs progressed and work became more collaborative from week to week, the use of these areas increased. These were also the areas where the project's *Team Coordinators*, *Mentors* and invited *Special Guests* had most direct contact with the students.

### *Team File-Sharing*

To facilitate a project in which physically distanced students could work collaboratively on a variety of file types, the *Team File-Sharing* area was a necessary fourth feature for participants within each team. In previous iterations of the software, these areas had been called the *Filing-Cabinets* and were simply storage areas for files that could be downloaded and reworked. However, in the *VIP* project, the functionality of these areas was extended to allow a progressive record of files (versioning) to be stored (Figure 18). In essence, this meant that a file could be worked on by individual team members and that each iteration of a file was stored and dated. All versions of the file could be downloaded, giving participants a clear view of the progress of a working file, and also gave them the opportunity to go back through the various stages and rework any file that had been stored over a period of time.



Figure 18 - Omnum Software v4 (2007): a File Sharing area progressive production of a word document by varied participants within a working team over a period of time.

By extending the functionality in such a way, the notion of true file-sharing was established. Some early virtual design studio examples (see Chapter Four) had attempted to encourage file-sharing between distanced participants but in most cases were hindered in doing so by the technology needed not being available or adequate.

#### *Time Information, Users Online and Chat Information*

The *Omnum Software* also provided three general features within the top *blue bar*. These gave all participants information about time differences around the world, an indicator of who was online at any particular time, as well as access to a variety of live chat-room features. Once again, the design and functionality was kept simple and easy to use and these features became important when participants wished to take part in the projects *live* (real-time) events with *Special Guests* or to simply chat to others they saw were online at the same time as they were (Figure 19).

For example, on Friday 4<sup>th</sup> May, 2007, a two-hour live-discussion was held with Dr. Eva Ombaka, coordinator of the Ecumenical Pharmaceutical Network (EPN) in Kenya and an advisor to the World Council of Churches (WCC). A pharmacist by training, Dr. Ombaka is an acknowledged expert on drug management in developing countries. Using the *Time Information* feature, each participant was given the time in their own location and a comparison with a time location of any other participant in the project (Figure 20). This made planning for such *live* events simple to manage. For those who could not attend the live sessions, full-transcripts of the discussions

were available as PDF documents only moments after the conclusion of each session.

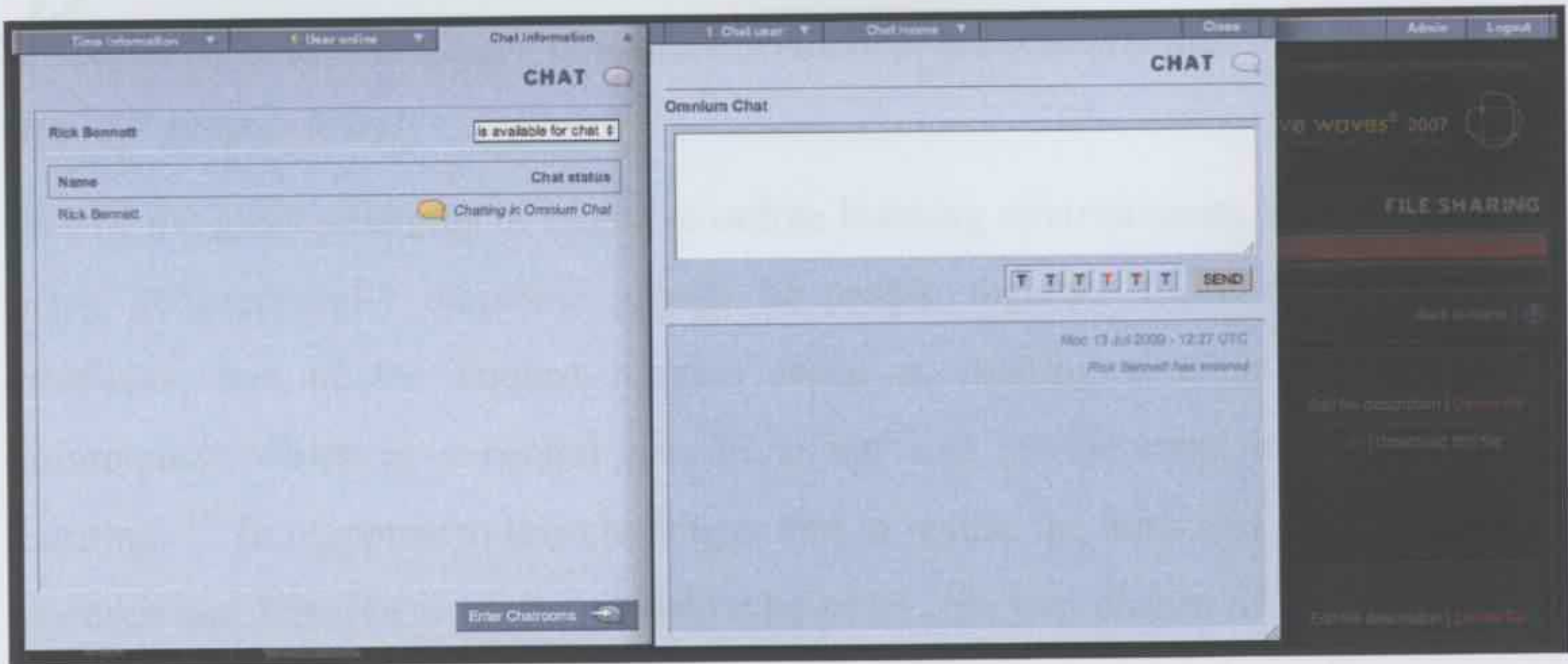


Figure 19 - Omnium Software v4 (2007) – Live Chat Rooms gave participants the opportunity to meet online in real-time either as individuals talking together or via pre-arranged team meetings.

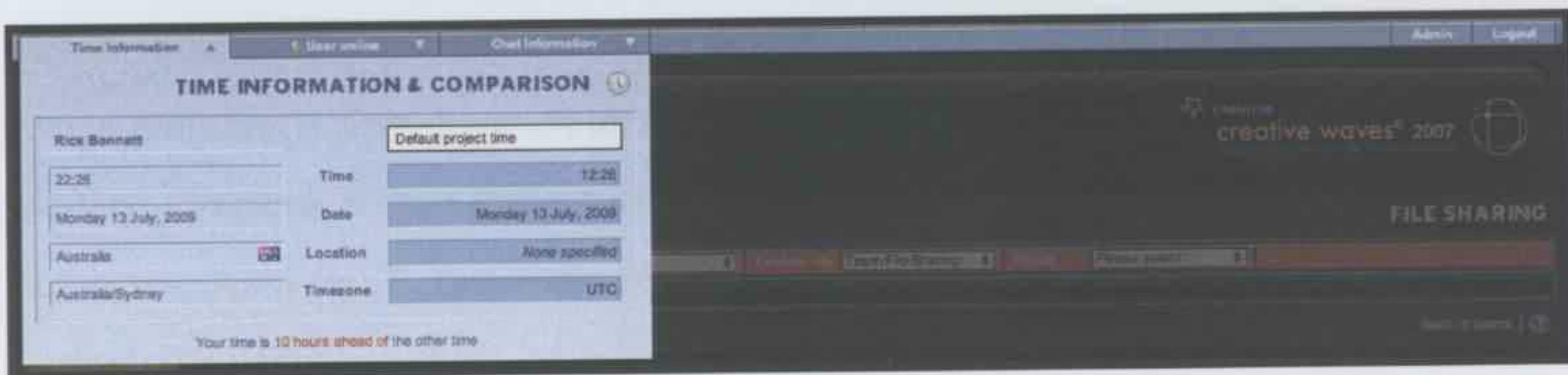


Figure 20 - Omnium Software v4 (2007) - Time Information & Comparison feature enabled each participant to compare the time in their own location with any other participant worldwide.

### *Omnium Software Summary*

In summary, the *Omnium Software version 4* is specifically designed to be user-friendly for participants with little or no computer experience. *Omnium's* design philosophy regarding its software has always been - *if you can copy and paste from a text file and browse and select a file from your own computer, then you already know enough to use Omnium Software.*

However, it is a basic stipulation that a user should have enough technical skill to take a digital photograph, or use a digital scanner, and import images or scans to their own personal computer. Apart from a short three-page illustrated '*Getting Started*' PDF that is attached to emails sent to participants when issuing their usernames and passwords, no other instructions or training in the use the software is provided. It is interesting to note that no technical help or forums have been needed since the first *Omnium* project was produced and hosted in 1999. Participants do not need training to use the *Omnium Software* and have adapted to the navigation and features rapidly.

## *Refinement of Omnium's five-stage creative process model and its alignment to the VIP project briefs*

One of the great strengths of effective online learning environments is their ability to bring geographically disparate groups of people together for a common cause. However, one of the biggest hurdles faced is creating a sense of a learning community, which is a central part of social and interpersonal aspects of adult learning.<sup>302</sup> In response to this challenge, and to realise the aims and development of research and creative work that would take place, the two phases of the *VIP* project were aligned with *Omnium's five-stage creative process model* through a series of briefs, thus creating a highly social learning environment.

Before hosting the second *Creative Waves* project, I decided it was important to revise *Omnium's five-stage creative process model*. I did so, following results from the first *Creative Waves* project in 2005, and further literature review about creative processes. As a result, two main revisions were made to the model used in the 2005 project. The first involved an issue I had been contemplating even before the first *Creative Waves* project, and the second, a revision to the overall model.

### *First revision*

The first revision involved a renaming and re-ordering of the five stages. In Chapter Six, I described being strongly influenced by the second *Socialisation* stage within Professor Gilly Salmon's *five-stage model of teaching and learning through online networking*.<sup>303</sup> Despite my earlier *Omnium* projects (including *Creative Waves* 2005) already containing socialisation activities, they were not formally recognised as existing within one of *Omnium's* defined process stages. As a result, I refined my *five-stage creative process model* to include *Socialising* as the first stage of the process.

---

<sup>302</sup> Nicol, D. J., Minty, I. & Sinclair, C. (2003) 'The Social Dimensions of Online Learning', *Innovations in Education and Teaching International*, Vol. 40, No. 3, pp 270-280.

Johnson, C. M. (2001) 'A Survey of Current Research On Online Communities of Practice', *Internet and Higher Education*, Vol. 4, No. 1, pp 45-60.

Shea, P. (2006) 'A Study of Students' Sense of Learning Community In Online Environments', *Journal of Asynchronous Learning Networks*, Vol. 10, No. 1, pp 35-44.

<sup>303</sup> Salmon, G. (2000) *E-moderating: The Key to Teaching and Learning Online*, Kogan Page, London, p 28.

Salmon, G. (2002) *E-tivities: The Key to Active Online Learning*, Kogan Page, London, p 10.

It is vital that students are comfortable within any learning environment before starting to deal with course content or assignments. When working solely online, the importance of students adjusting to their working environment and becoming familiar with peers and fellow team members (who they will probably never will meet) makes the process of socialisation even more critical. The *Socialising* stage of the five-stage creative process model included the following activities:

- Formally welcoming students and other participants to a project.
- Asking participants to complete non-assessable tasks such as completing their own introductions within their *Individual Profile* area.
- Inviting participants to read/view an *Introductory Lecture*.
- Requiring participants to respond to the *Introductory Lecture* by posting comments in the main *Discussion Forum* area.
- Downloading course/project outlines, curriculum aims and objectives, etc.
- Participants posting their own expectations of the course/project within the *Discussion Forum* area.
- If a project included team-work, the *Socialising* stage would ask participants to also identify their own team allocation and make introductions and social greetings to fellow team members.

By engaging and taking part in the above activities, participants not only felt they were contributing positively from the outset, but also became quickly acclimatised to the technical interface without having to read formal, and often tedious, 'how to' guides. A one-week period is sufficient time for the formation of an online cohort, and is equivalent to the socialising period in a face-to-face course or program.

Despite introducing a new first stage, I did not want to extend the *Omnium's model* to include six stages. Instead, I decided to merge the former third and fourth stages (*Distilling* and *Abstracting*) into one stage. Both of these stages involve refinement of already existing visual material and there seemed no reason why this could not be undertaken within the same stage. I do, however, maintain there is a difference between the two activities: *Distilling* is the first process of refinement, *Abstracting* is the second refinement of visual material produced by *Distilling* activities. That is, both activities are *creative filters* of conceptual ideas and visual material, with



abstraction acting as a secondary filter for the first distillation of concepts and creative works.

### *Second revision*

The second revision to *Omnium's five-stage creative process model* was an overall structural addition. I was particularly interested in a discussion about *creative thinking* presented in *Creativity: Flow and the Psychology of Discovery and Invention*, in which two opposite ways of creative thinking, *divergent and convergent*,<sup>304</sup> are described. *Divergent* thinking involves fluency and the ability to generate a great quantity of ideas, flexibility and the ability to switch from one perspective to another, as well as *originality* in recognising unusual associations of ideas. In contrast, *convergent* thinking involves solving well-defined, rational problems that often have a more predetermined answer.

The first two stages of the model, *Socialising* and *Gathering* are concerned with a divergence of opinions, materials, knowledge, content, social acquaintances, etcetera, while the last two stages, *Distilling/Abstracting* and *Resolving*, converge ideas and processes to a final solution. The middle (third) stage, *Identifying*, was a time of more static progression and, in my view, neither divergent nor convergent.

The two processes perfectly described the types of practical and cognitive dynamics that *Omnium's* creative projects were aiming to encourage within its participants. I envisaged that the *five-stage creative process model* should include reference to them, hence the addition of simple diagonal and perpendicular lines in the model. I presented this modified diagram to all participants during the new *Socialising* stage the *Creative Waves* VIP project (Figure 21).

---

<sup>304</sup> Csikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perrenial, New York, p 60.



Figure 21 – A revised Omnium five-stage creative process model (third iteration) including indicators of diverging phases (stages 1 & 2), static phase (stage 3) and converging phases (stages 4 & 5). The model was applied to both phases (pharmacy and design) of the *Creative Waves: Visualising Issues in Pharmacy (2007)* project.

#### *Pharmacy Stage One - Socialising (Week 1)*

From the outset of a solely online collaboration, it is important to understand a significant difference between the initial tasks in a face-to-face course and those of an online course. For example, if a face-to-face class was timetabled to begin at 10.00am on a Monday morning, you may expect some of the more keen or organised students to arrive at the classroom anywhere from 9.30am onwards. Late students may have arrived by 10.30am and so there is an introductory *window* of around one-hour difference. Within an online project such as *VIP*, some students may begin logging-in to the interface out of excitement, fascination and curiosity almost a week early. However, due to world time-differences and general organisation of so many people in so many different places, some students may log-in to the interface several days after the official start date. When working online, the *window* of attendance may vary by up to a week. This is quite normal and the initial *Socialisation* stage tasks must take this factor into account. Within all *Omnium* projects, I always set introductory tasks for participants to complete, so that early students can begin contributing to the project whilst waiting for the entire cohort to arrive.

The first activity that participants were asked to complete in the *VIP* project was to write introductory texts and add images into their own *Individual Profile* areas. It was vital that when participants logged into the interface for the first time, the environment was fully prepared for their arrival. It was also important not to have too much available as this can create a daunting or overwhelming situation and cause an early sense of confusion. For example, only the first *Lecture* was available to participants on arrival. Having finished uploading their written and visual introductions to their *Individual Profile* areas, participants were next asked to read the *Introduction Lecture* that outlined the project. They were then instructed to contribute to the two threads in the project's main *Discussion Forum* that were titled: *Welcome Message & Expectations*, and *Discussion Forum Task – Introduction Lecture*.

Both threads produced very good initial engagement and participation, with each of the 60+ pharmacy participants posting their greetings and describing their expectations for their own involvement in the project. In addition, they were each asked to contribute one web-link to any other visual campaign designed to raise public awareness of a health issue (from any country). Within days a very useful resource had been built of recommended web-links. I have included a small sample of some of the responses from the very first discussion thread of the project.<sup>305</sup>

RD [sg] South Africa:

*All this fascinating material being posted is not good for my productivity at work! It is obvious that there is an almost unlimited source of material 'out there'. But how much of it would be appropriate for the target population in this VIP course? I've included a website called Khomanani<sup>306</sup>, which is a South African government-led communication campaign which aims to prevent the spread of HIV infection and improve care, support and treatment for people with HIV/AIDS.*

*I feel they get a number of things right - e.g. they are available for download in different languages - a real issue in a country with 11 official languages, they are uncluttered, and the text is simple and clear. The main problem I have with them is that they are kinda boring... what do you think?*

---

<sup>305</sup> The comments include the initials of the participant as well as a letter in brackets to determine whether they were a student [s]; a mentor [m]; or special guest [sg]. Their country is also noted.

<sup>306</sup> <http://www.aidsinfo.co.za>

PS [s] Bahamas:

*Hi Everyone, This is really a wealth of knowledge, information and resources posted by you all. Cheers, keep it up.*

BMM [s] Kenya:

*Bravo to all those who have inspired us already with the great images. Such a good beginning is an indication of how interesting the whole project promises to be.*

KL [s] Australia:

*Wow ... some of the posters you guys have found are amazing! I came across this website in my search, and thought I'd add it to the list, just for the cute factor! Basically it's a campaign to raise awareness about infectious diseases by using photos of animals. Photos may not be completely relevant, but the posters would definitely grab the attention of any animal lover.*<sup>307</sup>

During the first week of the project, pharmacy students were informed of the research teams that they had been allocated to, the *assigned health issue* (AHI) they were to research, as well as introduced to their *Team Coordinators*. Given the nature of the project, the *Socialisation* phases for pharmacy students in their teams revolved around the selection and discussion of images that represented their *assigned health issue* (AHI). The teams then moved on to gathering information about their own AHI in relation to global health issues, and then a re-focusing of the global issues onto Kenya and, more specifically, the community of Winam. Discussions and communication were now occurring of a general nature in the project's main *Discussion Forum* area, as well as within each smaller research team. By the end of Week One, the project had a very social nature with students, coordinators and special guests introducing themselves and discussing issues freely with each other.

The *Project Conveners* were also able to browse through the wealth of collected information and curate the first general project *Gallery* for all to see. The first project *Gallery* titled: *General Visual Campaigns for Health Related Issues* (Gallery 2) consisted of numerous examples of existing visual campaigns relating to health issues of one nature or another, provided by a global representation of participants.

---

<sup>307</sup> <http://webbertraining.com>

## GALLERY 2



Infectious disease poster



AIDS poster



Quit smoking campaign



Prostate cancer awareness stamp



Anti smoking campaign

### *Gallery 2 – Selection of Visual Public Awareness Campaigns of Health Related Issues*

#### *Pharmacy Stage Two - Gathering (Week 2)*

With students now comfortably situated working in one of twelve small research teams, the *Project Conveners* formally issued the first of the *Gathering* stage tasks within the *Briefs* area. Not only did the brief explain what tasks students were to complete, but also where they should submit their findings and a date and time for submission. When working online, it is imperative that instructions are very clear and unambiguous. The first formal brief (below) asked students to complete an individual task followed by a collaborative team task. It is important at the early stage of an online project that collaborative teamwork is not rushed into too quickly and that participants are still able to contribute on an individual basis. If collaborative tasks take place too soon, some of the shyer or less confident students can feel alienated and that they have not had a chance to offer their own input.

#### *Individual activity*

The individual task asked all pharmacy students to research any visual campaign to promote awareness of their team's *assigned health issue* (AHI). They also had to present a short paragraph indicating why they felt it was a good or bad campaign and a link to a website that showed their chosen campaign (Gallery 3).

#### *Collaborative team activity:*

Having submitted their chosen visual campaign, students were asked to discuss within their team strengths and weaknesses of all the images that had been presented by their team. The first two steps of the *five-stage creative process model* (*Socialising* and *Gathering*) are of a divergent nature, that is, they are designed to expand the project and collect information that gives breadth, allowing experimentation without closing down on ideas too early on in the process.

GALLERY 3



HIV campaign

Team research image

STD campaign

Malaria campaign

"Treat for life" campaign

Gallery 3 – Individually selected existing graphic campaigns relating to the assigned health issues

Pharmacy Stage Three - Identifying (Week 3)

Having established small close-knit research teams over the previous two weeks, students now freely discussed what they thought they should collectively aim to achieve for the project.

The third stage, *Identifying*, is designed to be a time in which participants reflect on the first two stages and identify the most relevant and useful materials they have collected that they can work with (as well as whether or not they may have omitted to collect material that they still need to gather).

The third stage of the project built upon the previous *Gathering* stage and asked the pharmacy students to *identify* resources that specifically related to visual campaigns about the *assigned health issues* that had previously been designed for either Kenyan or more general African audiences. The aim of the next brief was to focus on issues that related specifically to Kenya (Gallery 4). Discussions of cultural sensitivity and other issues that would need to be considered when designing for a rural Kenyan community took place..

GALLERY 4



AIDS campaign South Africa

AIDS poster

E-card

HIV campaign

Cartoon poster

Gallery 4 –Existing graphic public awareness campaigns relating to the assigned health issues and aimed specifically at either Kenyan or more general African audiences

The two Kenyan *Special Guests*, George Onyango and Salim Opere from the *HelpHeal* organisation, based in the village of Winam, were introduced to the participants and a main thread was set up in the Discussion Forum called *The Kenyan Perspective*. The aim of the thread was to give all participants the chance to directly question the two guests about issues specific to Kenya. This proved to be one of the most active threads throughout the entire project and saw hundreds of questions posed by a world community to the two experts situated in the village of Winam.

By the end of the third week, the *Project Conveners* curated the fourth project *Gallery*, titled; *Visual Health Campaigns from Africa*. The images, from submissions to the *Identifying* stage brief, enabled participants from all pharmacy teams to view what the other teams had selected without having to browse each team individually.

#### *Pharmacy Stage Four – Distilling/Abstracting (Week 4)*

From the outset of the project, and clearly stated in the project outline (made available in the general project *Resources* area), pharmacy students within their research teams were aware that by the end of the project they would have to produce and submit a detailed research report about their own team's *assigned health issue* (AHI). Apart from recognising past visual campaigns that had been produced to promote awareness of the six health issues, they were also required to start gathering written information about their assigned health issue through collaborative research.

Week four required that all students, through active communication and file-sharing within their teams, share and discuss the research information they have collected about their AHI to particularly consider specific Kenyan needs. This required teams to begin *distilling* the information they had collectively gathered during the first three weeks of the project into a working document for their final research report. The information included collated individual research by team members, as well as collectively submitted visual health campaigns relating to team's *assigned health issues* (AHI).

In addition, teams began to identify the needs of patients, communities and healthcare providers that related to their AHI and distilled this information to develop a profile of their AHI in Kenya. This was more clearly recognised by continued communication with the local Kenyan representatives through the *Discussion Forum* threads.

Most importantly, the *Distilling/Abstracting* stage required students to reach a collaborative consensus on the intended direction of their final research report and agree upon what needed to be produced for the designers to work with in Phase Two of the project.

#### *Pharmacy Stage Five – Resolving (Weeks 5 & 6)*

During weeks Five and Six, each team was requested to submit one final research report based on their collaborative work on their *assigned health issue* (AHI). The reports were the result of all participants' individual and combined efforts within their teams, from weeks one to six, and needed to reflect the team's combined ideas, discussions and concepts.

Clear guidelines were given relating to the structure of the final research reports that took the format of an academic research paper. The papers were required to include:

- *Background* - A Summary of the team's AHI, reasons for poor control of the AHI in developed and developing countries, past and present visual campaigns for public awareness, and the perceived effectiveness of these campaigns.
- *Health Needs* - General needs of patients/communities and health care providers (HCP) and specific needs of patients/communities and HCP in Kenya.
- *Recommendations* - Specific issues that need to be considered in Kenya e.g. cultural issues.
- *Action Plan* - What has been done? What needs to be done? What can be done to help? What is needed to be produced and why?
- *Follow up* - Ideas for future design development.
- *Concluding Remarks* – Any further information or comments useful to the designers.

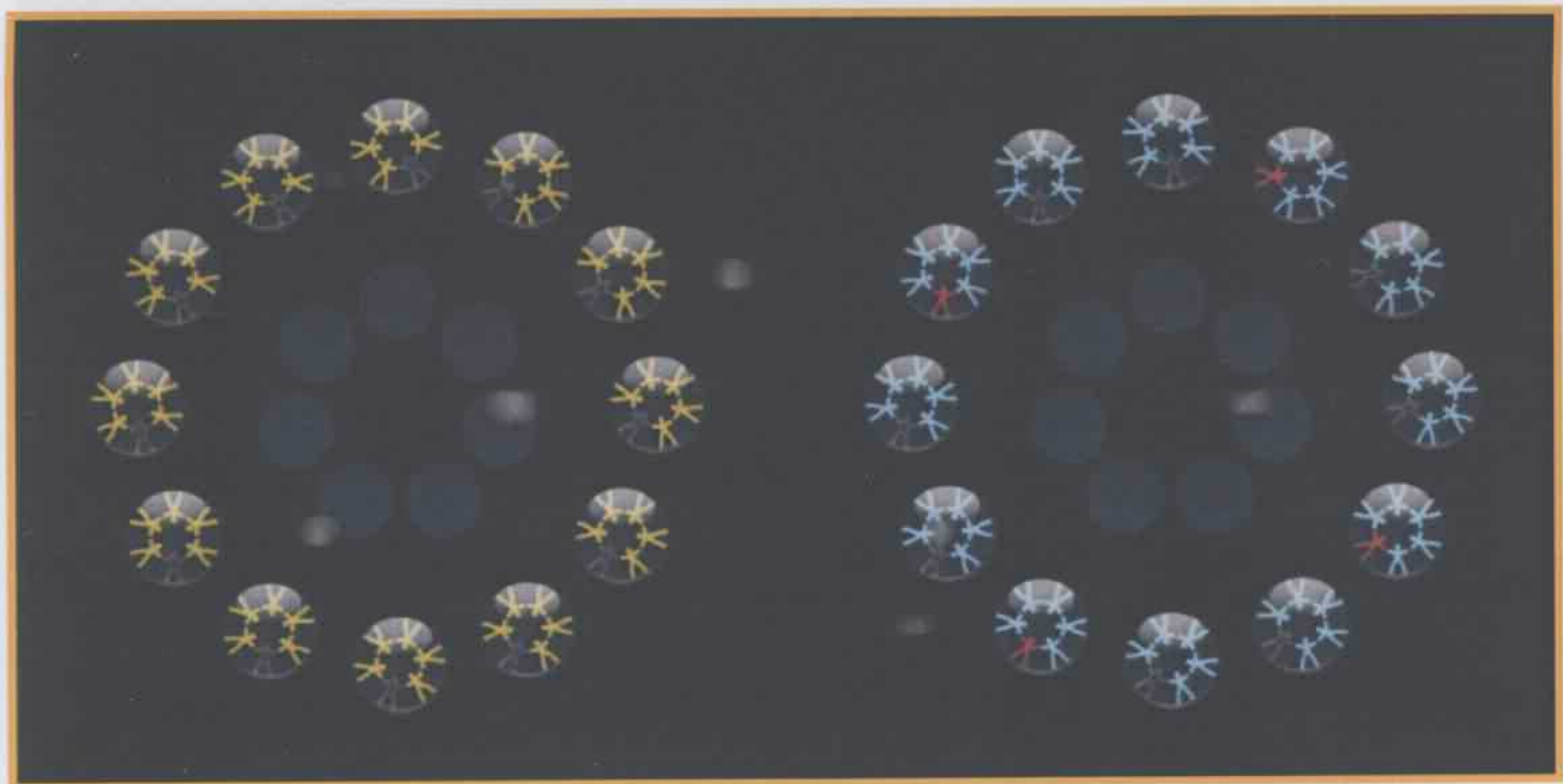
On conclusion of the six-week Pharmacy phase of the *VIP* project each of the twelve teams submitted their final research report. Following submission, the twelve reports were edited and aggregated by the *Team Coordinators* (specialists in each area) to form one document for each AHI - this was to be the basis of the designers project.



## *Pharmacy and Design project handover – (Weeks 6 & 7)*

### *Design Stage One - Socialising (Week 6)*

Weeks Six and Seven were perhaps the most fascinating period of the *VIP* project as it was a period when over one hundred new design participants (students, team-coordinators, mentors and special guests) entered the project. Not only did they have to take part in their own *Socialising* stage, but also meet the pharmacy participants who had been working together for nearly two months and receive their final research reports (Figure 22). In Week Six, the design students completed the same socialising tasks that the pharmacy students had undertaken.



*Figure 22 - Diagram of the two cohorts (pharmacists and designers) in the Creative Waves: Visualising Issues in Pharmacy (VIP) project coming together to discuss the hand-over.*

### *Design Stage Two - Gathering (Weeks 7 & 8)*

In week seven, having allocated the sixty design students into their small *creative teams* and assigned their specific health issue, they were then asked to read the final research report produced by the pharmacists that related to their own team's AHI. As with the pharmacy teams, threads were set up for each *assigned health issue* (AHI) in the main *Discussion Forum* where the teams of designers could ask the pharmacists questions about the final research reports they had produced. In essence, the designers were receiving their design brief from the pharmacists.

The design students were introduced to the four project *Design Coordinators* who would circulate amongst the design teams to offer advice, feedback and encouragement. All participants joining the design phase of the project were

encouraged to download a diagram of the structure of the project that showed each of the two phases (pharmacy and design), where they overlapped and how they aligned with *Omnium's five-stage creative process model* (Figure 23).



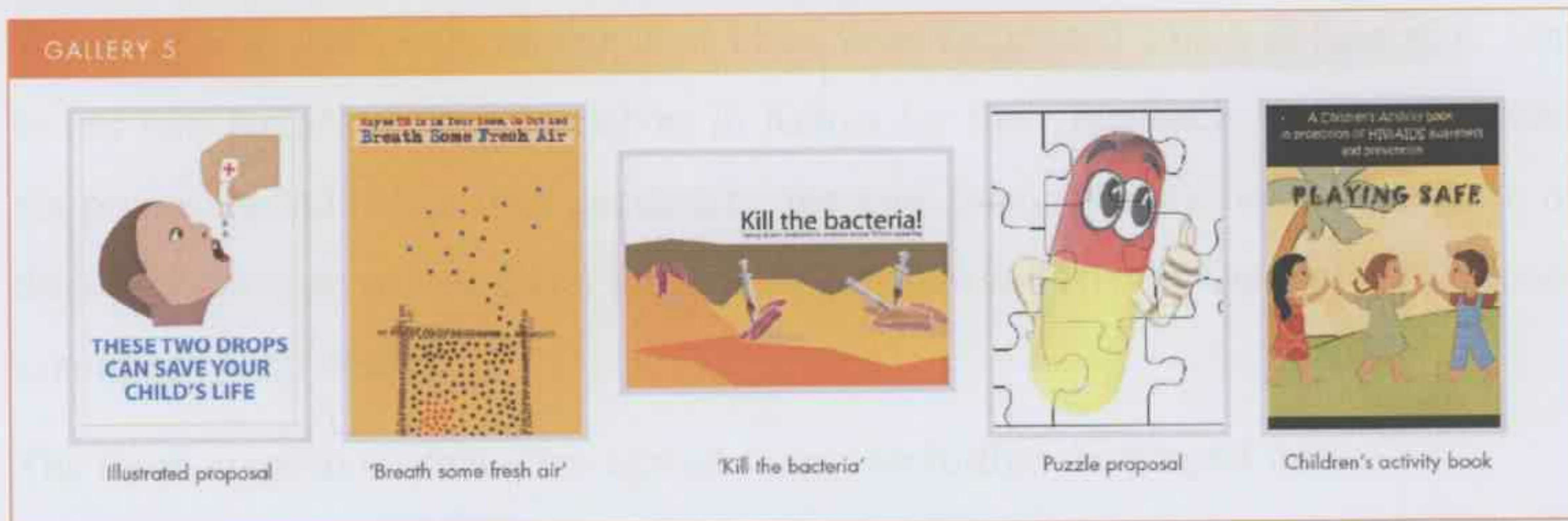
Figure 23 - Diagram of the two phases (pharmacy and design) of the *Creative Waves: Visualising Issues in Pharmacy (VIP)* project. Weeks 6 & 7 being the overlapping finish of the pharmacy phase and the start of the design phase.

The *Project Conveners* also asked the recently arrived designers to read the *Introductory Lecture* and respond to it through the designated thread in the main project *Discussion Forum*, and to read the *Lecture* provided to the pharmacists by George Onyango. They were expected to post messages to the specific thread in the *Discussion Forum* that Mr Onyango had already been coordinating for over six weeks in which he had answered questions from the pharmacists in relation to gathering information for their research.

The *Gathering* stage for the designers continued into week eight and a new directive was issued to them through the *Briefs* area. Students were asked to suggest preliminary ideas, approaches and concepts for their team's design proposals in their *Team Talk & Feedback* areas. They were also asked to continue interacting with the pharmacy students who had produced the final research reports that related to their own *assigned health issue* via specific *Discussion Forum* threads.

As a conclusion to the *Gathering* stage, students were asked to begin visualising at least one individual design idea in relation to the problems identified in the research report that related to their own team (Gallery 5). To help initiate their design proposals, students were given some guiding directives that included a consideration

of how their proposal may be implemented in regard to any text used (re: translation into Kenyan dialects), what had previously been attempted and how successful it may have been, their specific target audience, the situation and context of their target audience, and the cost of potential production/implementation of their proposed design proposal (to be kept to under US\$1000.00).



Gallery 5 – A selection of early individual visualisations produced by creative team members for design ideas that related to the six assigned health issues

### *Design Stage Three - Identifying (Week 9)*

The third stage of the design phase brought an end the *divergent* stages of the *five-stage creative process* model and began the stages of *converging* ideas that would be worked on by the creative design teams for the remainder of the project. Each team member was asked to choose one of their ideas and develop it in preparation for a formal presentation and review by all *Team Coordinators*, *Mentors* and *Special Guests* at the end of the week.

It was emphasised during this stage that the creative ideas forming within each team should still be viewed as conceptual and experimental stages of the overall design phase. However, it was also a time where increased collaboration needed to take place within each team, and where multiple designers would identify one concept to collectively progress. Simultaneously, the opportunity to further discuss the final research reports with the pharmacy students continued via the *Discussion Forum* threads. However, I was growing concerned that the design students were tending to prematurely consider their early ideas as being the ones they would finish with. There was too little experimentation and brainstorming of numerous ideas within each team. I wanted to introduce an activity that would produce faster and more varied ideas and visual proposals, akin to brainstorming.

*Worldstorming* was an unplanned idea I developed in an attempt to address this

concern. I asked all design participants (including students, mentors and special guests) to suggest ten quick ideas in bullet-point form for campaigns that could promote awareness of the six AHIs. The exercise was intended to have a fast turn-round time of only 24 hours and ideas were to be posted in a specifically titled *Worldstorming* thread situated in the main project *Discussion Forum* area.

Within a short time, over six-hundred ideas were suggested which in turn were sent to our two *HelpHeal* representatives in Kenya for their feedback. They short-listed six proposals and it was then decided by the four *Design Coordinators* that three of the suggestions would be taken through stages four and five of *Omnium's five-stage creative process model*.

The three suggestions that were agreed should be further developed were:

1. A game for school children to play with their teachers, peers and families that focussed on public awareness of issues relating to the prevention of malaria.
2. A series of brightly coloured stickers that conveyed simple messages about disease prevention and adherence to medicines.
3. Designs for a set of soccer uniforms to be worn by teams of young local footballers, as well as their supporters, and the average person in the street, to promote awareness of the critical dangers of HIV/AIDS.

To tackle the task of designing solutions and outcomes for each of the three suggested ideas, it was agreed by the *Design Coordinators* to merge the students from the twelve original creative teams into three *Super-Teams* (Figure 24) that each had approximately 15 students and one design coordinator. Natural attrition rates of students and mentors meant that by this stage of the design phase of the project, between 15 and 20 participants had resigned. Having only three *Super-Teams* meant that not all of the six AHI could be addressed fully to a final resolve stage. However, the issues of malaria and HIV/AIDS were tackled fully through designs of the educational children's game and the soccer uniforms, whilst all the other issues were addressed through various designs for the sticker campaign.

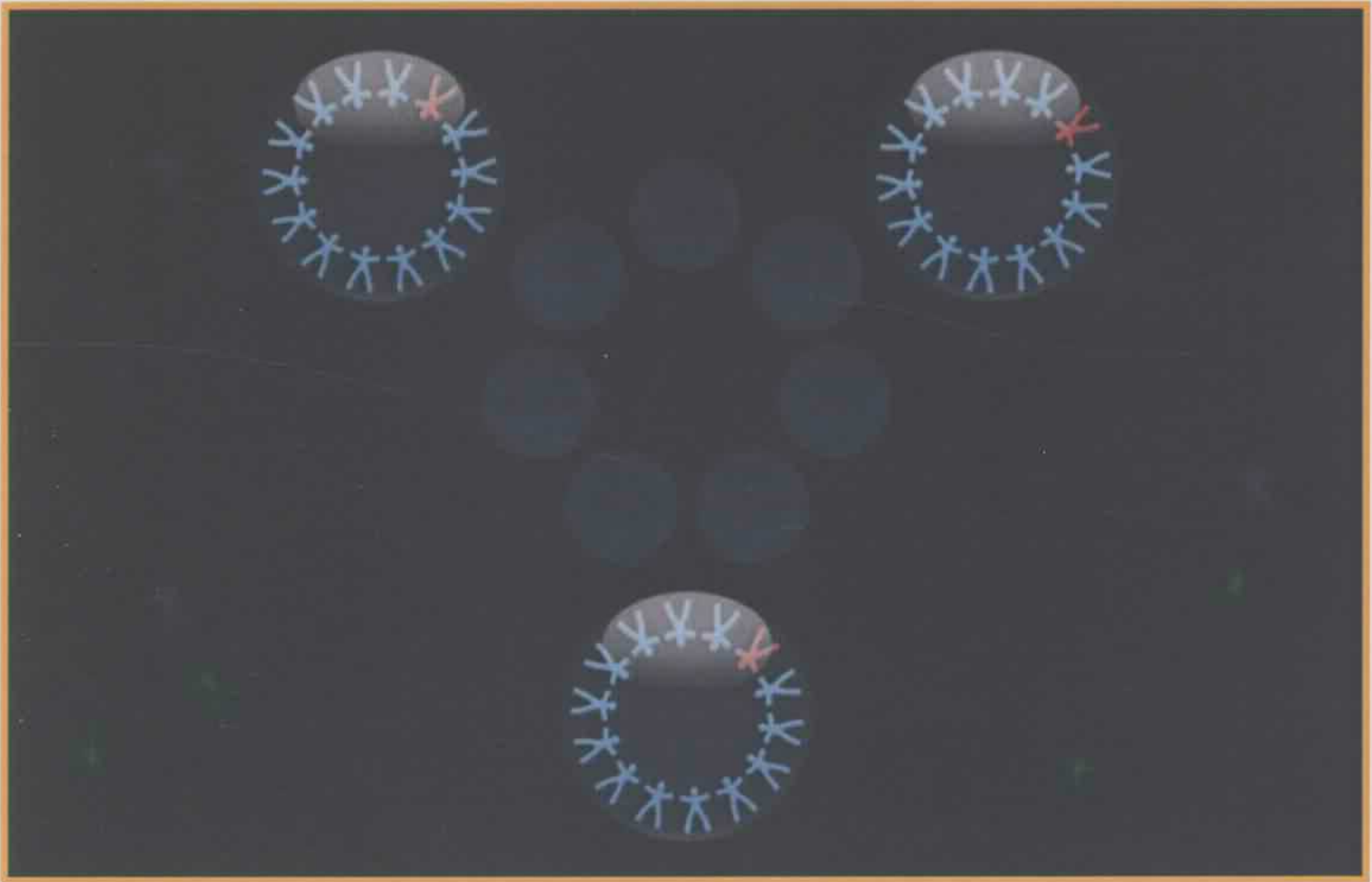


Figure 24 - Diagram showing the 3 Super-Teams of design students and a team coordinator formed to tackle creative proposals for each of the identified design outcomes.

The plan was that each team would take one of the proposed design solutions and under the guidance of one *Design Coordinator* develop creative ideas through the remaining two stages of the *Omnium creative process model* for presentation at the end of the seven-week design phase.

#### *Design Stage Four – Distilling/Abstracting (Week 10)*

The tenth week of the *VIP* project (week 5 for designers) continued to converge creative ideas through collaborative work undertaken within the three *super-teams*. By the end of week ten, each super-team was required to submit a series of design proposals for their own project to their team *Pin-Up Wall* area. Teams were guided through their creative process work by the *Team Coordinators* and were reminded that their creative proposals should consider: the situation and context of the target audience, the language of any text used, colours, representative shapes and forms in the designs, and to communicate as effectively as possible by simplifying their ideas. During this stage, despite having clear ideas of what their project aimed to achieve in terms of a final outcome, the design ideas were, in many cases, over-complicated and not suitable for the specific audience. Once again, the representatives in the Kenyan village of Winam were on hand to answer any questions and advise on the proposals put forward.

In particular, two discussion threads were invaluable to this process; *The Kenyan Perspective* and *Questions for George Onyango*. Between the two threads, over three thousands words were exchanged in the form of questions and answers between students, mentors and the *HelpHeal* representatives located in Winam.

This fourth stage of the creative process also attracted the most helpful contributions from the project *Mentors* and *Special Guests*. One of the *Special Guests*, Mr Nick Kapica, an English graphic designer living in Germany, was highly influential throughout this stage. I had previously been attracted to his body of professional work that dealt with communication design and signage in public spaces and I had asked him to help the teams with their design ideas. Mr Kapica provided a visual *Gallery* of his company's work (Gallery 6) that would later be used to assist and provide direction to the design proposals – in particular the designs for the soccer uniforms.



Gallery 6 – A visual gallery of professional work by Germany based graphic designer, Nick Kapica, that had strong influence on final design outcomes produced by the creative teams

#### Design Stage Five – Resolving (Weeks 11 & 12)

In the final two weeks of the project the design students, under the supervision of the *Team Coordinators*, and with help from a variety of mentors, finalised design proposals for each of the three projects to be ready for production. This was the most intense and active creative period between the students' super-teams and project coordinators and mentors. However, it was also a time in which the most number of

students appeared to withdraw from, or quietly *lurk* within, the teams. This was anticipated and proved the disadvantage of working online with teams containing large numbers of participants.

I discussed earlier the fact that all participants in the project were volunteers and as such one cannot 'force' students to contribute in the same way one can in accredited classes within degree and diploma programs that depend on results through formal assessments and academic credit points. Dr Martini and I had noticed, before re-arranging the smaller teams into the *super-teams*, that some teams were beginning to lose members and we took a gamble that by making larger teams, we would still achieve some effective and usable end results. This indeed happened, yet at the cost of losing some team members and frustration on the part of some more active participants. The following comment posted in the *Discussion Forum* by one of the design students echoes the feeling of several of the participants. The comment also included a very interesting strategy to perhaps overcome the same problem in future projects.

TB [s] Australia:

*I was somewhat annoyed at the switch of teams, not at you guys, but at the lazy ppl who choose to join the program and then made excuses as to why they could not help out. I did not get too annoyed simply because we are trying to do something positive. However, I never missed one deadline for this project so I can say that with conviction and I am proud of that. Just other ppl not contributing was a real sort of 'struggle' for me. I let it get to me too much and to be honest in the end I was glad it was over as I was getting wound up. My suggestion is to have some sort of rotating leadership plan.*

*What I like to call 'the soccer team orange mum' principal. Every Saturday, a different mum (or dad) peels some oranges for the local kids soccer team, so everyone is a part of it.*

*If you give ppl the chance to be the 'art director' and send them a personal email to remind them, they may be more inclined to contribute, as they will feel as though others are relying on them. This will create a direct conflict with their ego (a great motivator) and also install a small amount of 'fear of failure' - another great motivator!*

By the conclusion of the *Resolving* stage, the students within the super-teams did indeed present three very impressive solutions to each project; *soccer uniforms* that promoted awareness of the dangers of HIV, *information stickers* with messages about adherence to medication and helping family members who were ill, etc, and an *educational game* that aimed to help children better understand aspects of malaria and prevention of the illness (Galleries 7, 8, 9). In general, the input from the majority of students and mentors was very high and a great deal of effort was made to complete the project.

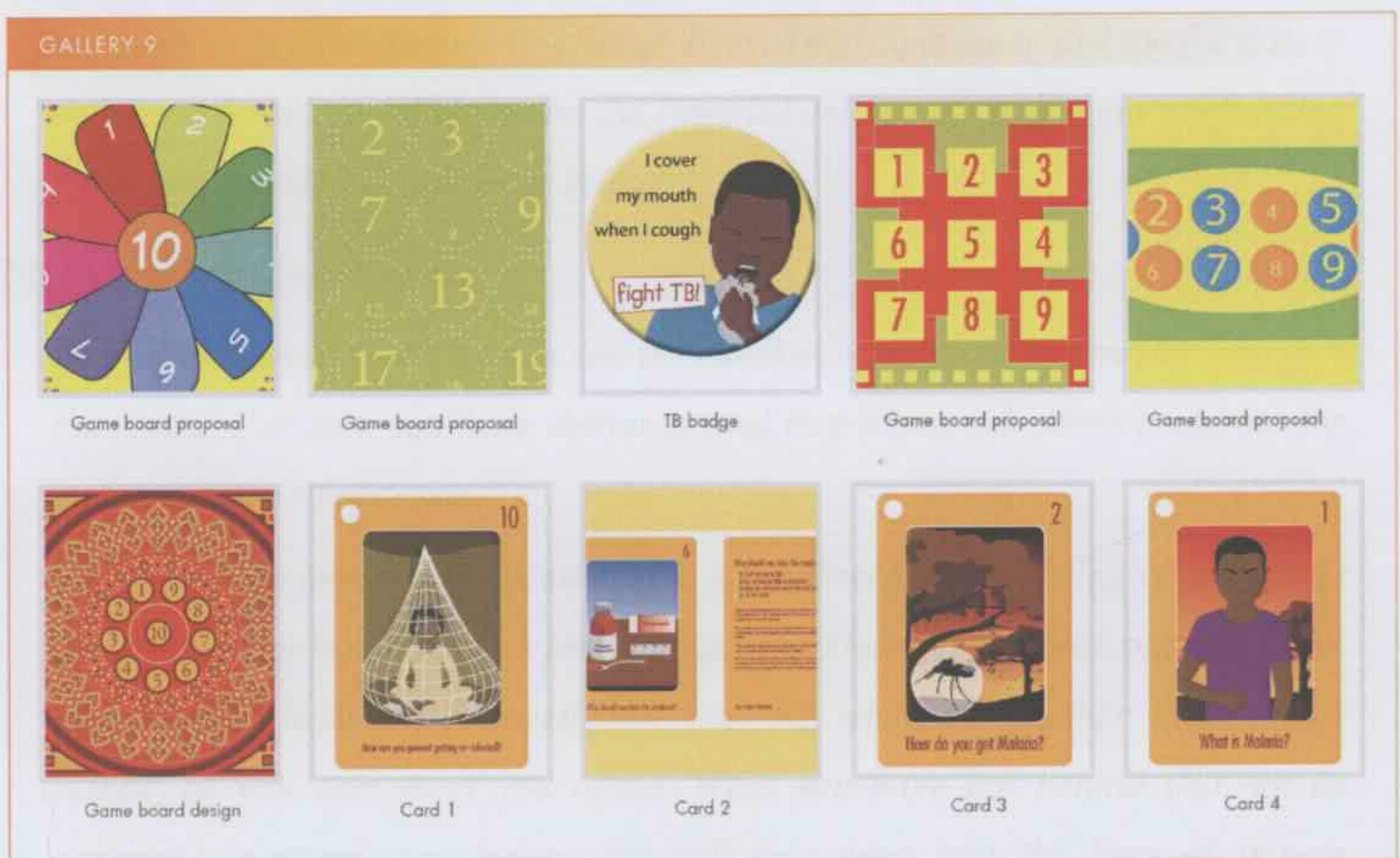


Gallery 7 – selection of process works showing the progression of designs for the soccer uniforms from early suggestions through to final designs for production





Gallery 8 – selection of process works showing the progression of designs for the information stickers from early suggestions through to final designs for production



Gallery 9 – selection of process works showing the progression of designs for the children's game from early suggestions through to final designs for production

### Pharmacy & Design reflections – (Week 13)

The final week of the project invited all the project's participants (pharmacy and design) to reflect on the entire twelve-week research and creative process via a selection of threads in the main *Discussion Forum*. It was important that there was a chance for everyone involved to be able to offer reflective feedback about the project, itself, as well as the three final design submissions.

During the week of reflection, participants were also given the chance to say final farewells to each other and to bring the project to its formal close.<sup>308</sup> Below are some concluding remarks made by the two *HelpHeal* representatives based in the village of Winam in Kenya.

Mr George Onyango [sg] Kenya:

*As sad as it may seem, it's true we have to end VIP and more unhappily to end the friendly bond that was nurtured. To me it all looks so sudden yet from the beginning we knew the end will eventually come.*

*When you look at the pharmacy team reports you wonder how such magnanimous work was done without having to physically visit the area/population. It is surely a mark of dedication and unwavering focus of the teams. The design teams followed suit and have also been so focused. You guys are amazing!*

*This rare and unique mix has taught me a lesson in life. That lesson will help my work with communities to change lives. This experience did awake a deep reflection for me. A reflection on the complex collage of challenges confronting Kenya especially the village of Winam.*

Mr Salim Opere [sg] Kenya:

*It is amazing how much a team can accomplish when it doesn't matter who gets the credit. For sure you have demonstrated that teamwork doesn't tolerate the inconvenience of distance.*

*My friends, no one, not in my situation, can appreciate my feeling of sadness at this parting moment. To this project, and the kindness of these people, I owe everything, I now say farewell, not knowing when or whether ever, I may return, or will ever meet you again. What you have left behind will not be engraved in stone monuments, but will be woven into the lives of Winam residents.*

*Henry Ford once said:*

*Coming together is a beginning,*

*Keeping together is progress,*

*Working together is success.*

---

<sup>308</sup> There are too many messages posted in the *Discussion Forum* to fully document the reflections within this thesis but the entire discussions can be found on the archived *VIP* project interface - <http://creativewaves.omnium.net.au/vip/modules/forum>

*I've been reflecting on what the past 3 months have meant and mean. And the image that comes to mind is the progress made by the VIP team to create awareness of the sanctity and dignity of every human life, regardless of distance, race or religion. Most of these children can be cured. We know of treatments available to restore their health, but too many of them will be lost in the cavernous divide between rich and poor, poverty having stripped them of their basic human right to effective health care.*

*Finally, I am going to miss those tough and strange names like Zhao Yuanbing, Patrizia Schettino, Pisak Koharunchitt, Nina Groentved, Maria Macaelle Gomes Timbo, Tinotenda Chipso Sachikonye ... plus those common and simple ones like Rick Bennett, Nataly Martini, Andy Polaine, Ian McArthur, Robins Oyoo, Muriithi Kinyua and Anyango Oiro.*

*I bid you all an affectionate farewell.*

## ***P***resentation to production

As mentioned previously, one of the primary aims of the *VIP* project was to conclude the venture with resolved design solutions derived from the research reports which could be realised, produced and sent to Kenya to be used in the village of Winam.



Uniform design FRONT



Uniform design BACK



Uniforms in action

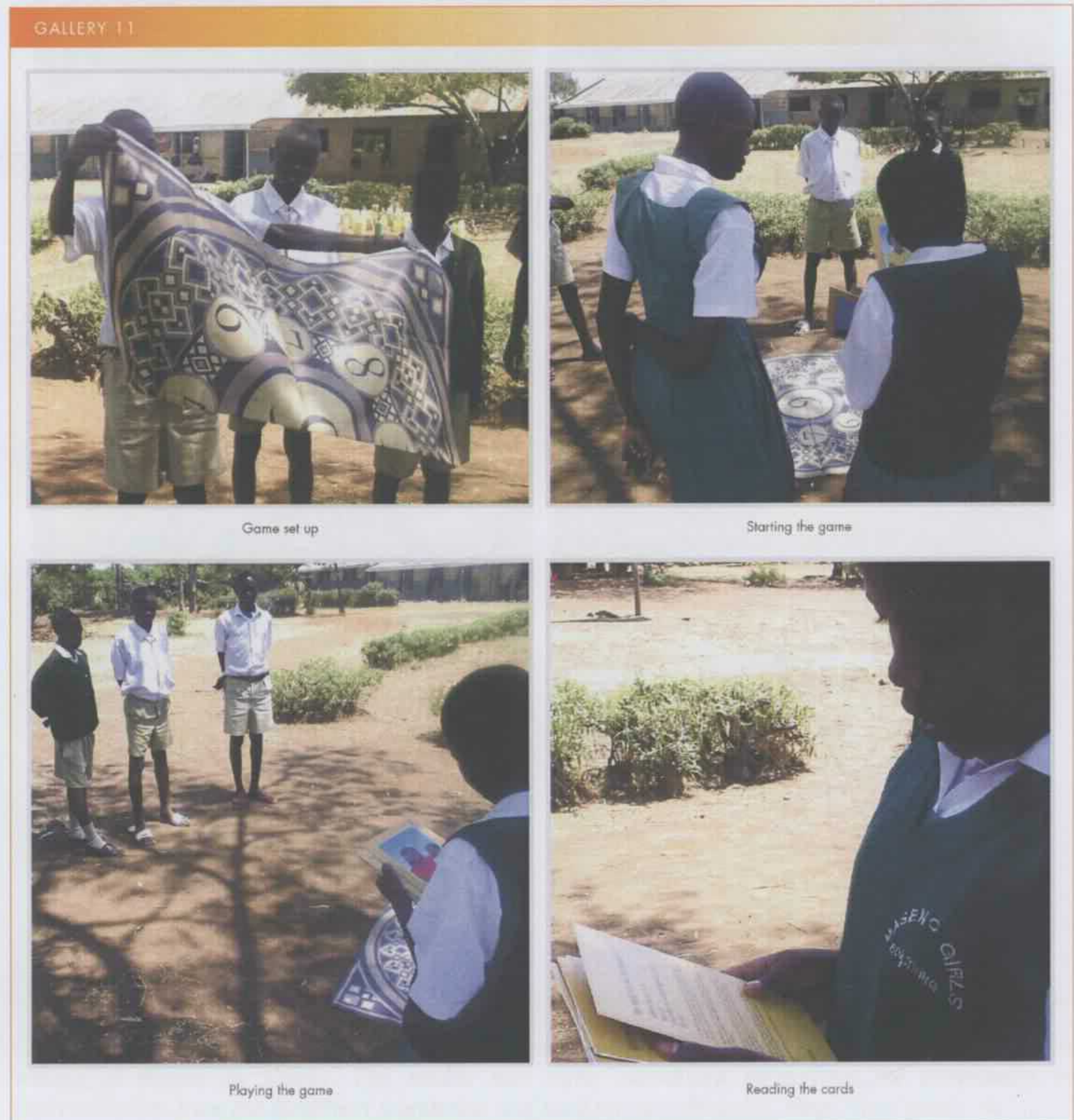


Green shirt design

*Gallery 10 – Images showing the final soccer uniforms designs being implemented in the village of Winam in Kenya. 60 complete soccer uniforms in 4 colours were produced and worn in formal soccer tournaments as well as informally by young locals as street wear.*

Following final design submissions from the three student *super-teams* (Galleries 7, 8 and 9) the working files were downloaded by *Omnium* staff and prepared for production at *Omnium's* Sydney studio. This process was in itself a steep learning curve as it soon became clear that there was still a great deal of work to be done to take the final designs produced by design students to a state where they were ready for production. For example, the two dimensional graphic designs for the soccer uniforms were inappropriate as working patterns for the manufacturers. The two-dimensional designs had not considered the shapes and individual pieces of fabric that are printed and machined separately before being stitched together along seams to produce the final garments. The precise typography and fonts chosen were also

unable to be replicated exactly and the colours had to be modified to suit fabric dyes available.



*Gallery 11 – Images showing the final children's game designs being implemented in the village of Winam in Kenya. 4 complete sets of Malaria education cards and Gaming mats in 4 colours were produced and implemented in schools and churches in the Winam community in Kenya.*

Following the end of the 2007 *Creative Waves VIP* project, I established a community outreach division of the *Omnium* studio<sup>309</sup> to accommodate such projects as *VIP*. The final designs submitted through the *VIP* project were reworked in discussion with manufacturers by staff within the *Omnium Outreach Projects'* office, and as a result, in 2008, the three design projects were finally complete, produced, and sent to Mr George Onyango for distribution in the village of Winam.

<sup>309</sup> Omnium Outreach Projects - <http://omnium.net.au/oop> (accessed 10/08/09)



Sticker 1



Stickers arrive in the mail



Sticker 2



Sticker 3

*Gallery 12 – Images showing some of many health awareness stickers being implemented in the village of Winam in Kenya. The sticker sets were introduced throughout the community by representatives from the HelpHeal foundation and used on cars, bicycles, shops, food goods etc ...*

Galleries 10, 11 and 12 show the final design outcomes from the VIP project being introduced to the community in Winam, Kenya.<sup>310</sup> The manufacturing costs were covered by the *Omnium Research Group* and paid for through licensing sales from clients of the *Omnium Software* products.<sup>311</sup>

<sup>310</sup> Further research is planned to be undertaken by staff and students at the University of Auckland, led by Dr Martini, in 2010 to gauge the effect upon the community in terms of public awareness to the health issues covered in the designs. Images and short video clips have already been received showing the design products in use but at this time, it is too early to survey the people of Winam to ascertain the effectiveness of the designs as public awareness campaigns.

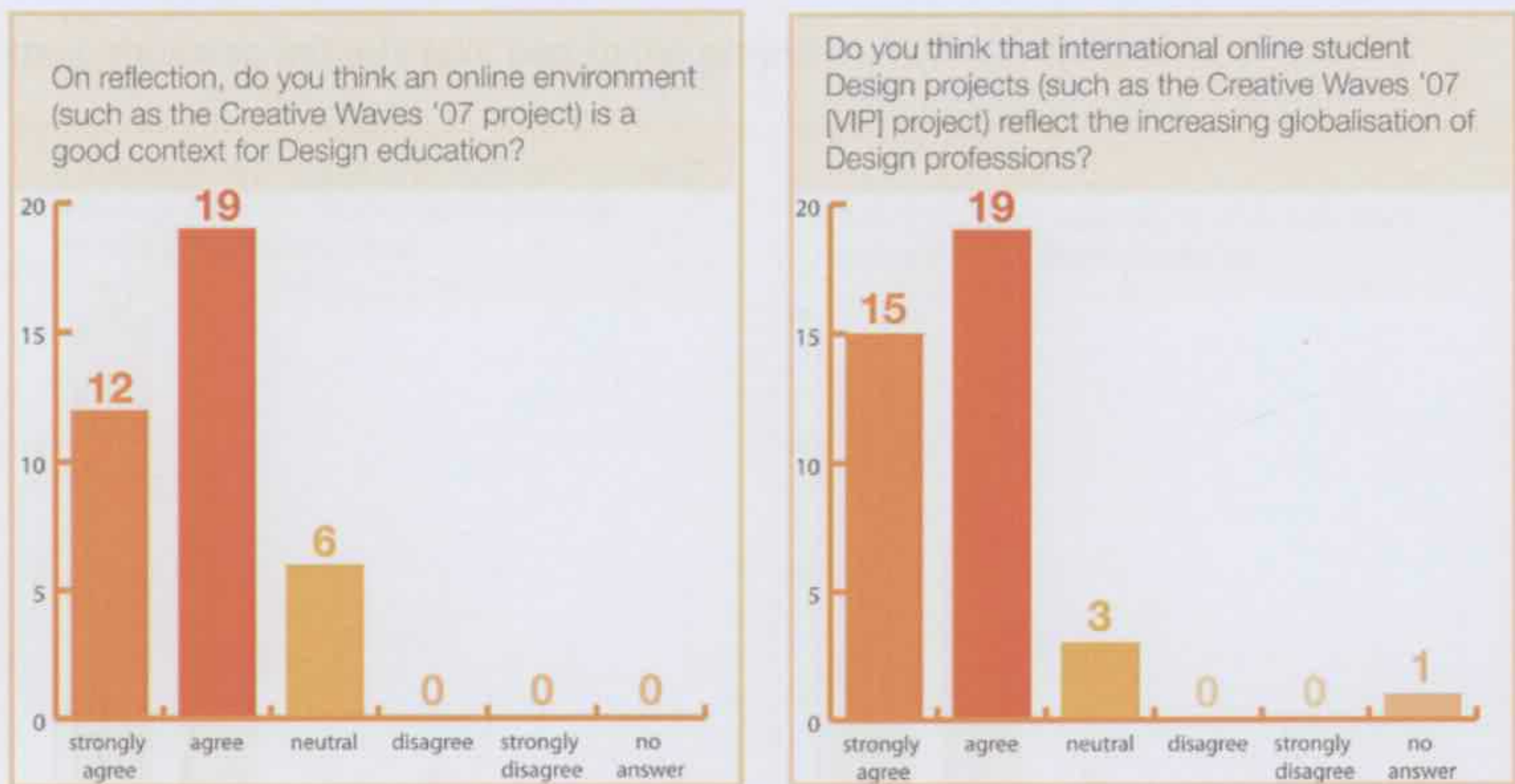
<sup>311</sup> Omnium Software website - <http://omnium.net.au/software> (accessed 12/08/09)

## Quantitative evaluation of the Creative Waves: VIP project

During the *Reflecting* week immediately following the completion of the project, formal evaluations took place.

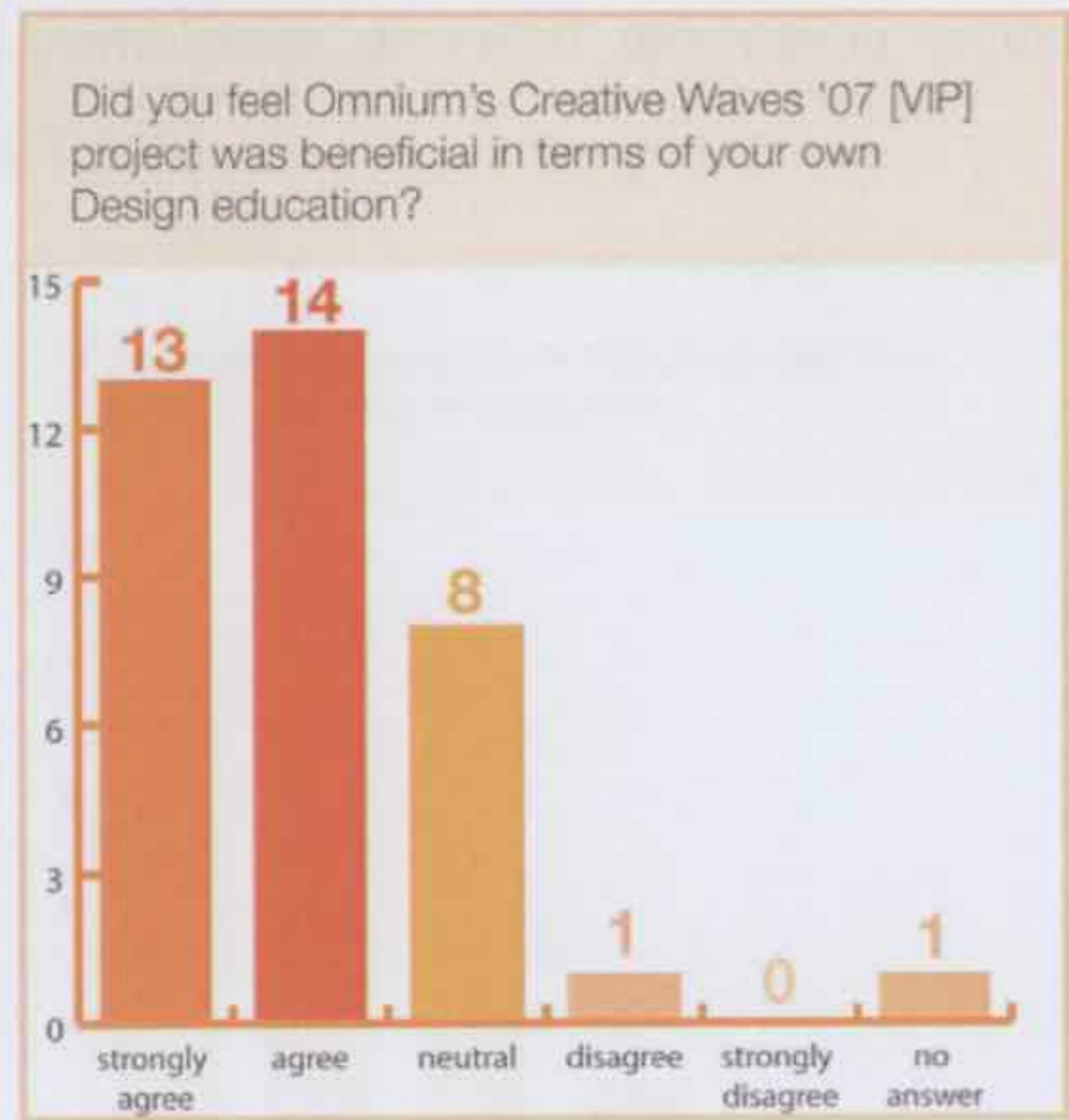
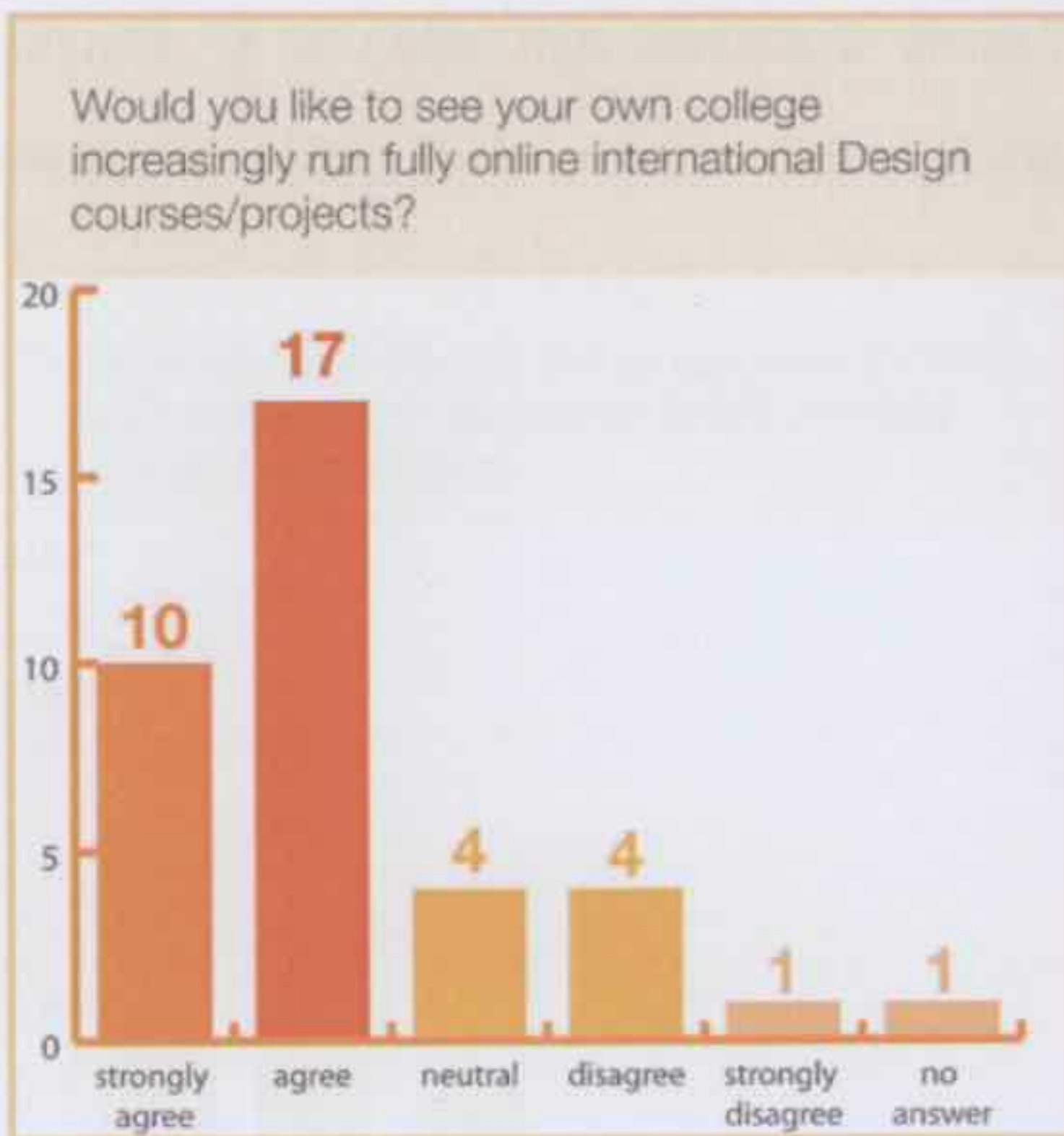
Although all students (pharmacy and design) who completed both phases of the *VIP* project were surveyed, for the purposes of a thesis exploring issues relating to *online collaborative creativity*, only results from the design students have been reported in the following pages. Data was obtained from 37 design students via an anonymous online questionnaire containing twenty questions concerning: general aspects about the project, communication and interface features, and culture, identity and language issues.

The first questions reported asked participants about their views on the value of online environments as contexts for design education, and whether they believed the *VIP* project reflected a shifting paradigm for visual arts (design) disciplines (Graphs 1 & 2). In both cases, results were positive.



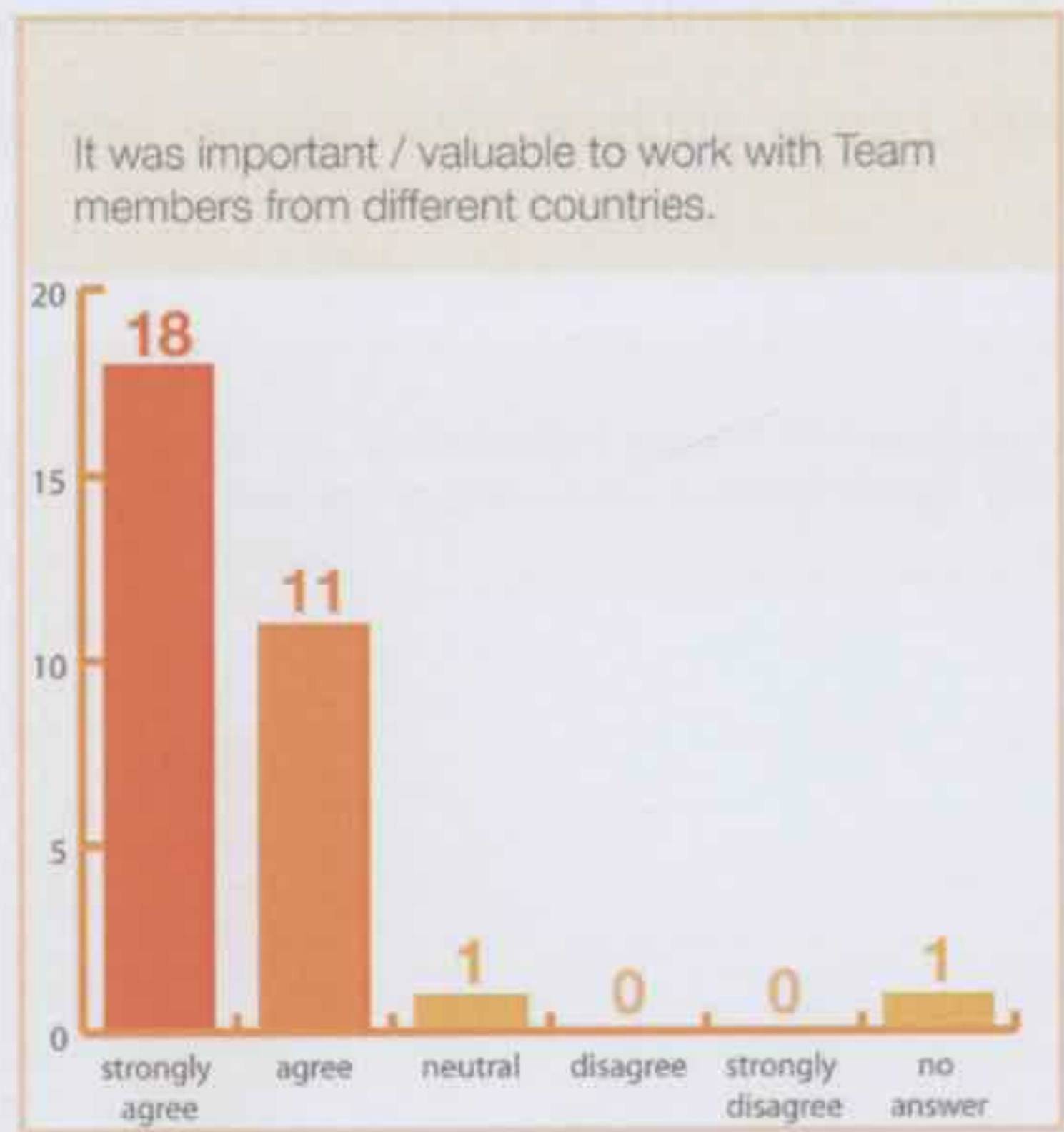
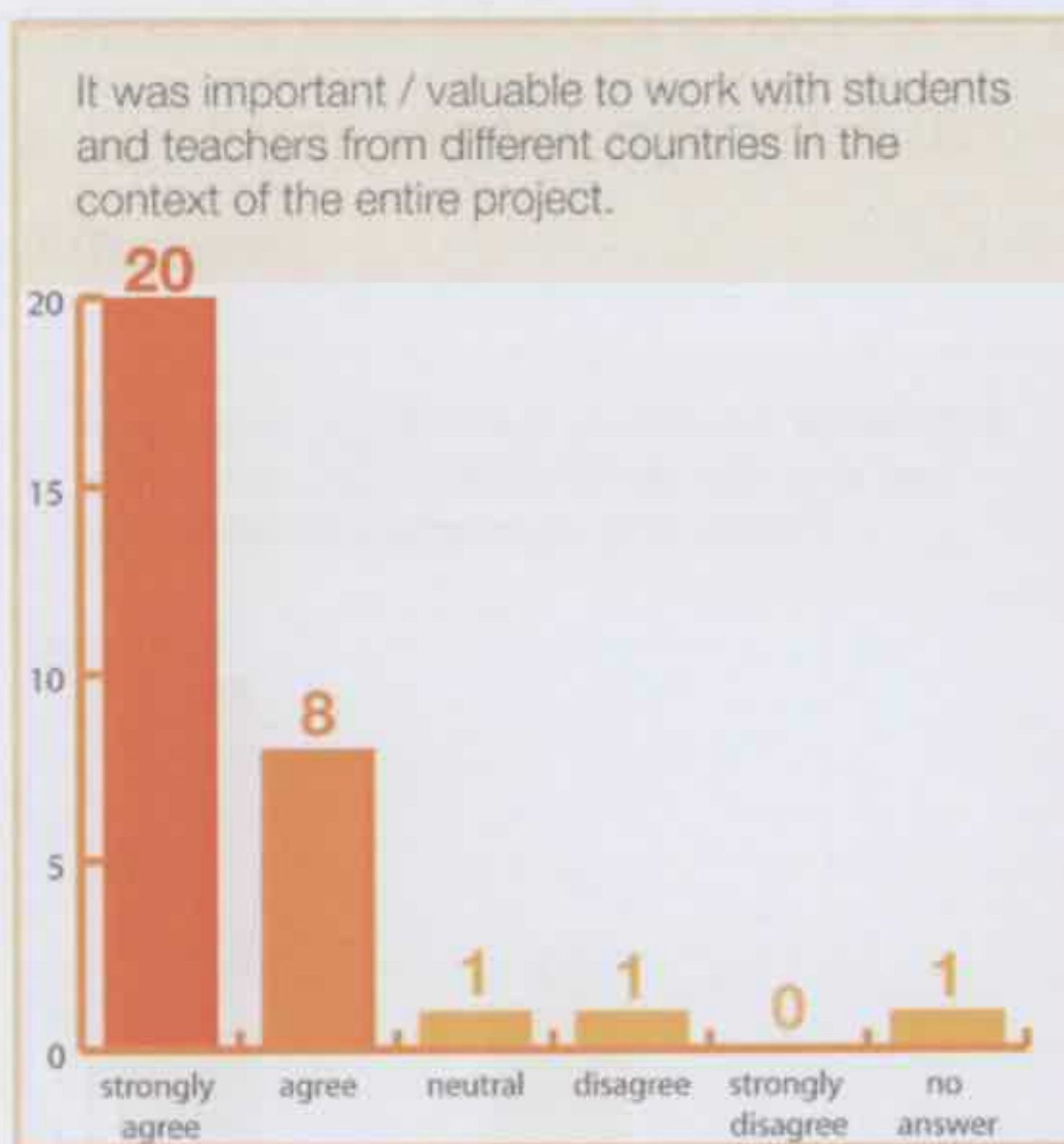
Graphs 1 & 2

The following two questions asked participants whether they felt they would like to see their own college or education institution run projects similar to *VIP* and whether they felt the *VIP* project was beneficial to their own visual arts (design) education (Graphs 3 & 4).



Graphs 3 & 4

The next two questions were designed to obtain information about the value of collaborating with people from other countries (Graphs 5 & 6). Once again, the students' views emphasised that the international context was important to them and echoed the comments made in their student applications. They indicated that to work with people from different backgrounds, countries and cultures was a driving force in their choice to initially take part in the project.

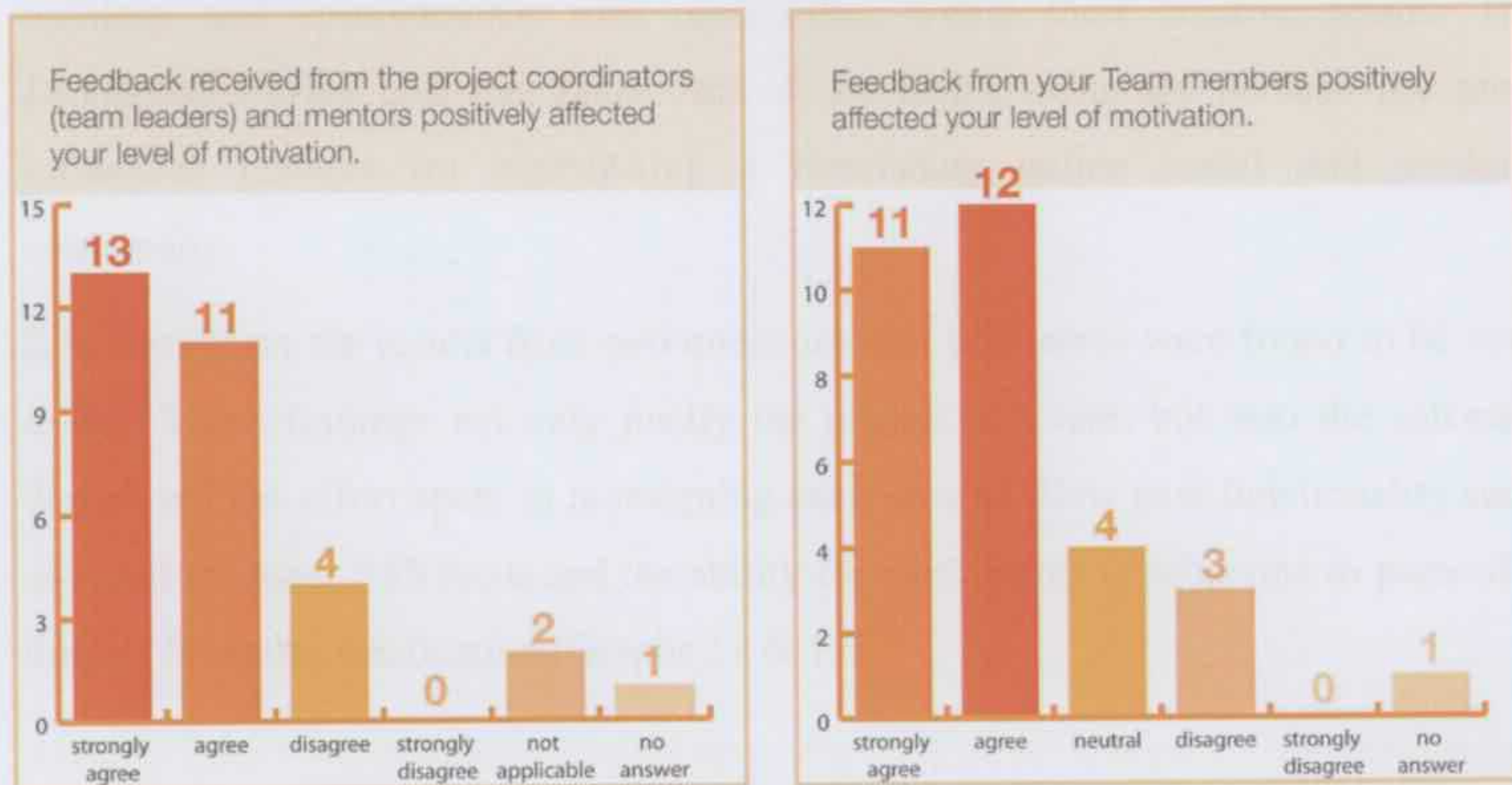


Graphs 5 & 6

The following two questions inquired about the value of receiving feedback and comments from the *Project Conveners*, *Team Coordinators* and *Mentors*, compared to receiving the same from student peers within their creative teams. From the

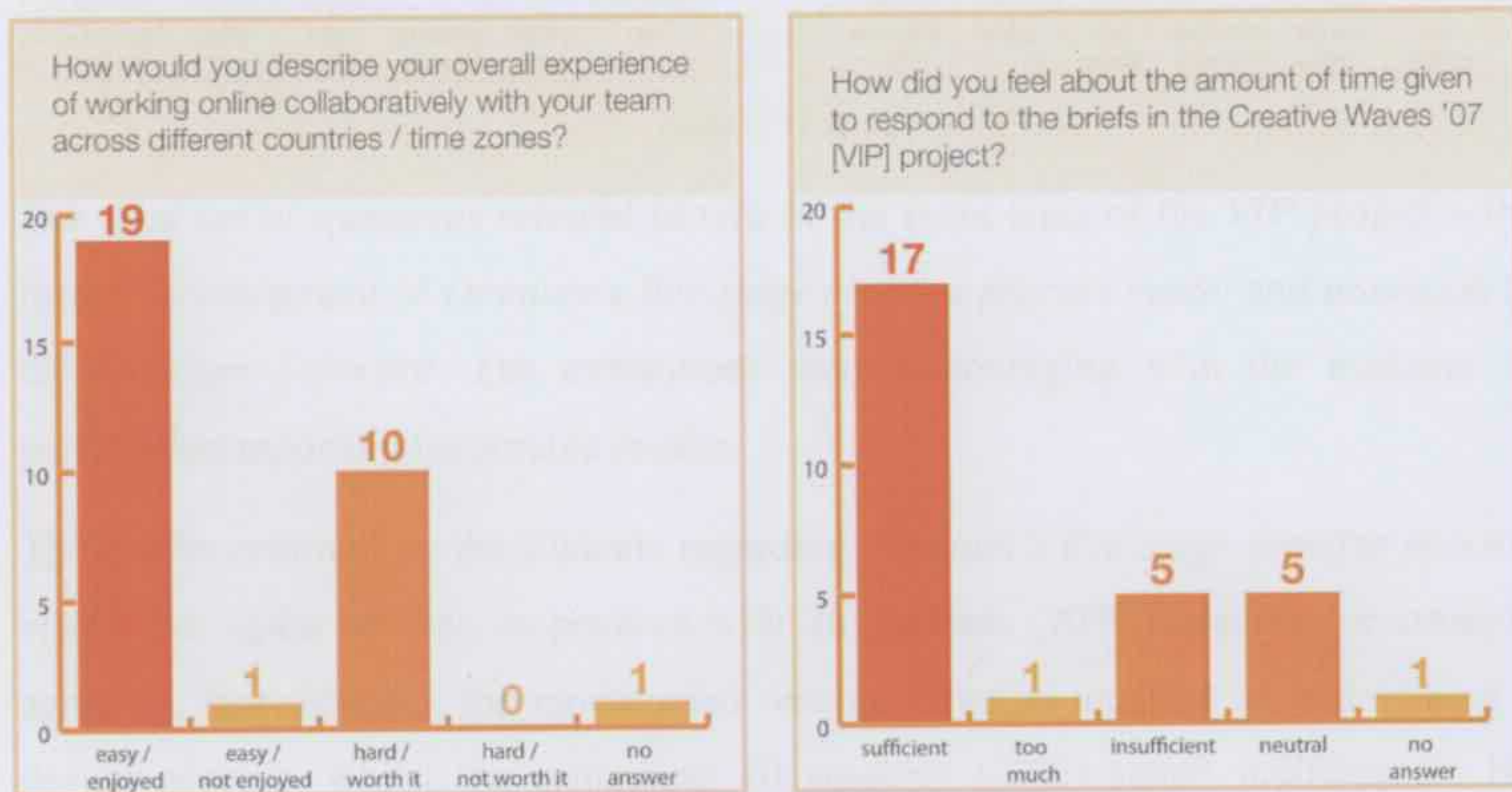


results, it is clear that feedback from all participants provided motivation to the students within their creative teams (Graphs 7 & 8).



Graphs 7 & 8

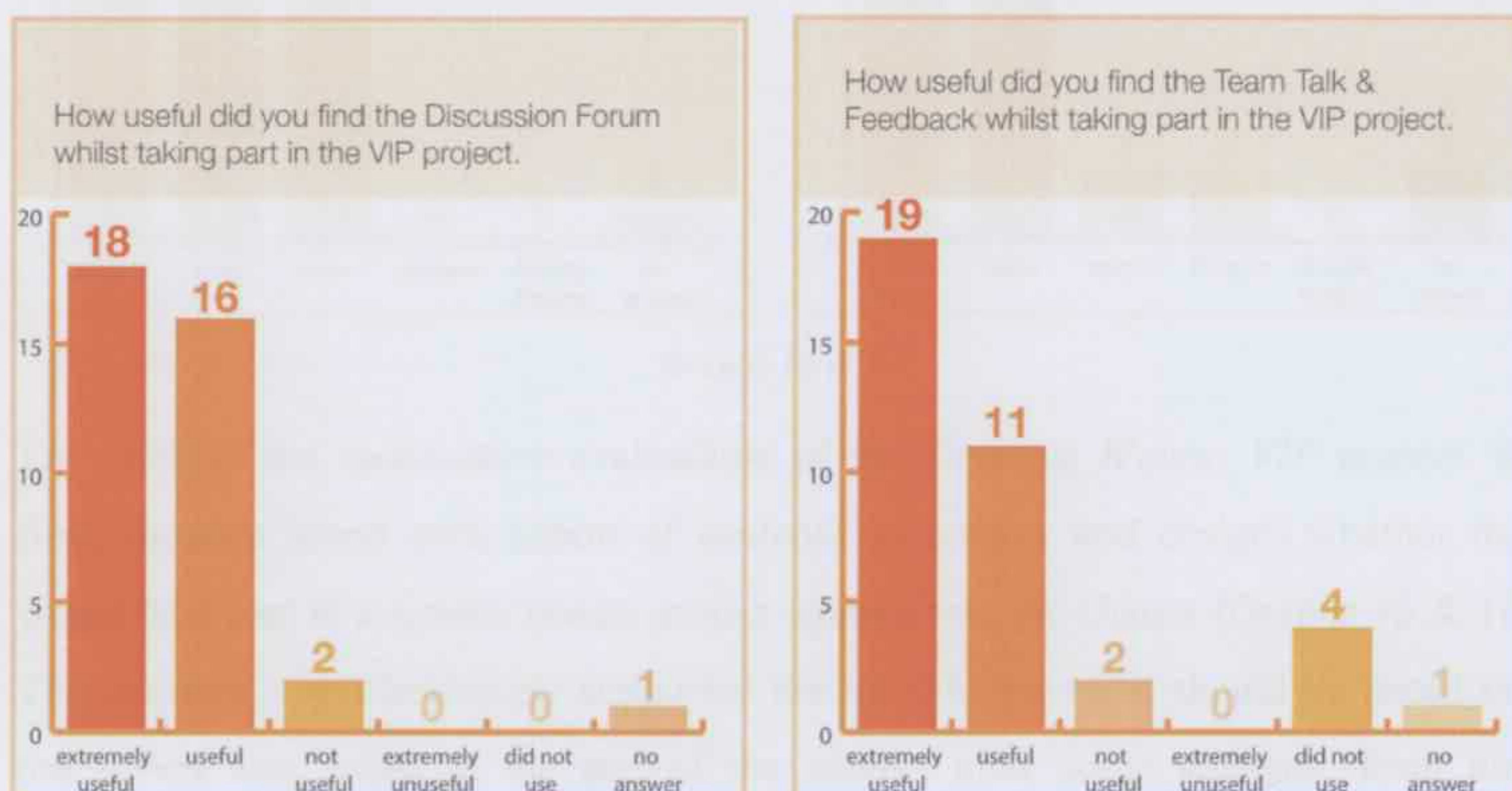
One of the most interesting aspects when working online between numerous sets of people in various countries is how issues relating to different time-zones affect their working and creative processes. Two questions were asked that related to aspects of time-difference; the first about working with others; and the second, about the amount of time allocated to each of the project briefs (Graphs 9 & 10). Quite clearly, a significant number reported difficulties and unease with working across time-differences.



Graphs 9 & 10

Regarding communication within the online community, it was important to ascertain the level of ease with which the design students were able to contribute opinions and communicate with each other within their creative teams. The *Discussion Forum* and the *Team Talk & Feedback* areas are perhaps the most influential features for establishing a flourishing online social and working community.

It is clear from the results from two questions that both areas were found to be very useful. These findings not only justify the project structure, but also the software design and the effort spent in redesigning each area to allow new functionality such as email releases, RSS feeds and the ability for participants to subscribe to particular threads for faster notification (Graphs 11 & 12).

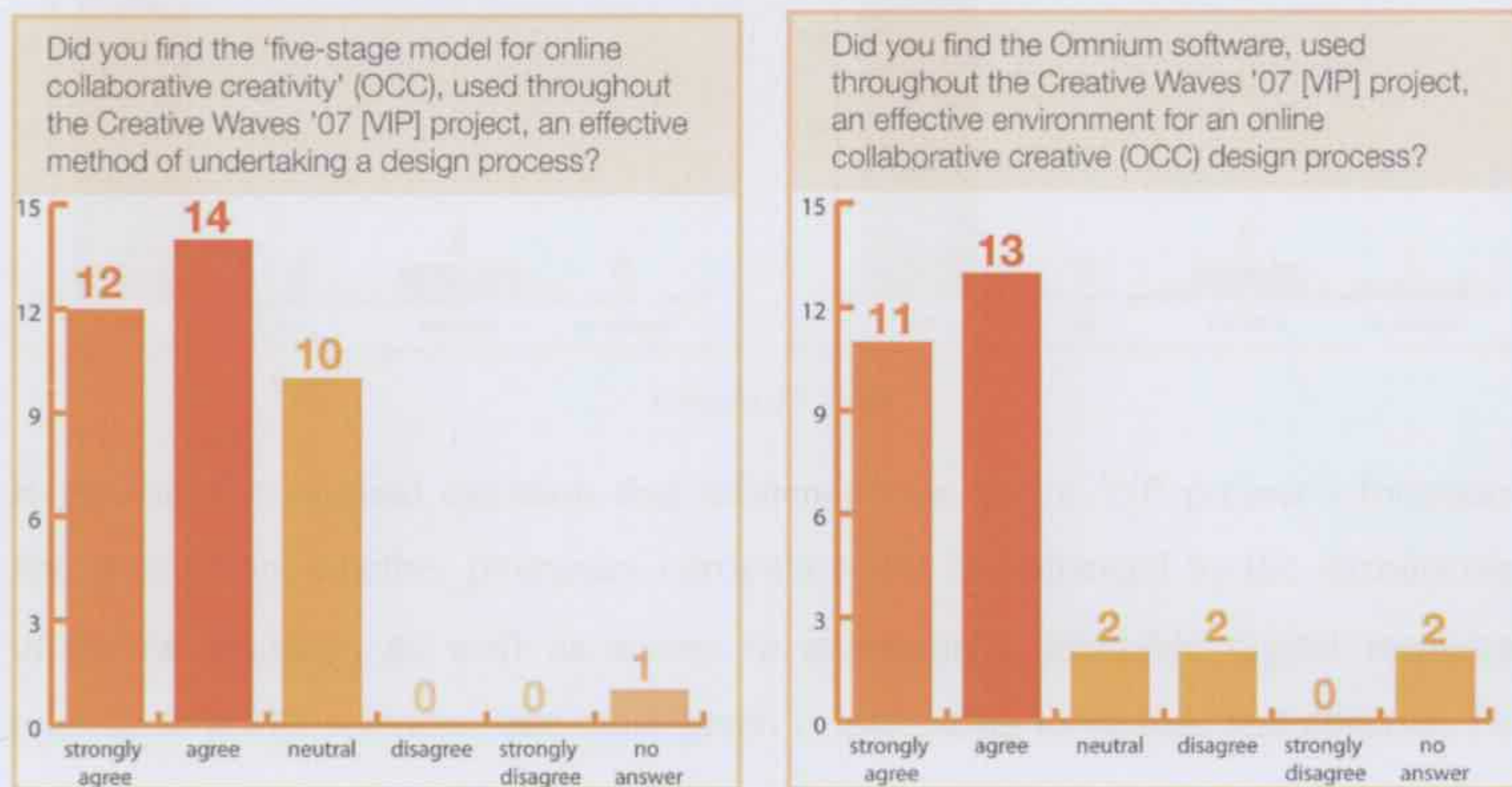


Graphs 11 & 12

The final set of questions referred to two of the main aims of the *VIP* project – the further development of *Omnium's five-stage creative process model* and provision of the *Omnium Software*. The evaluations were encouraging with the majority of participants reporting favourable results.

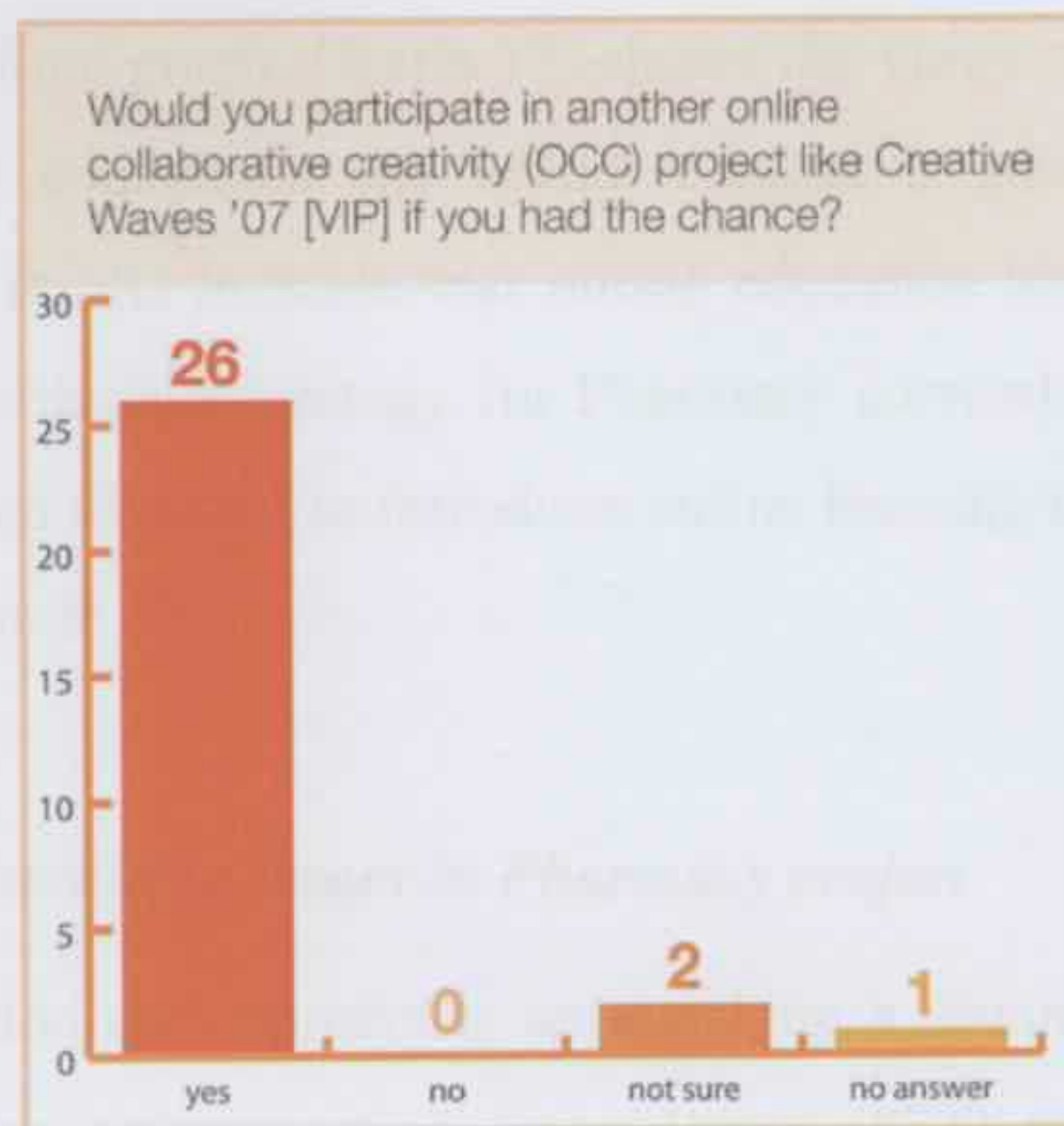
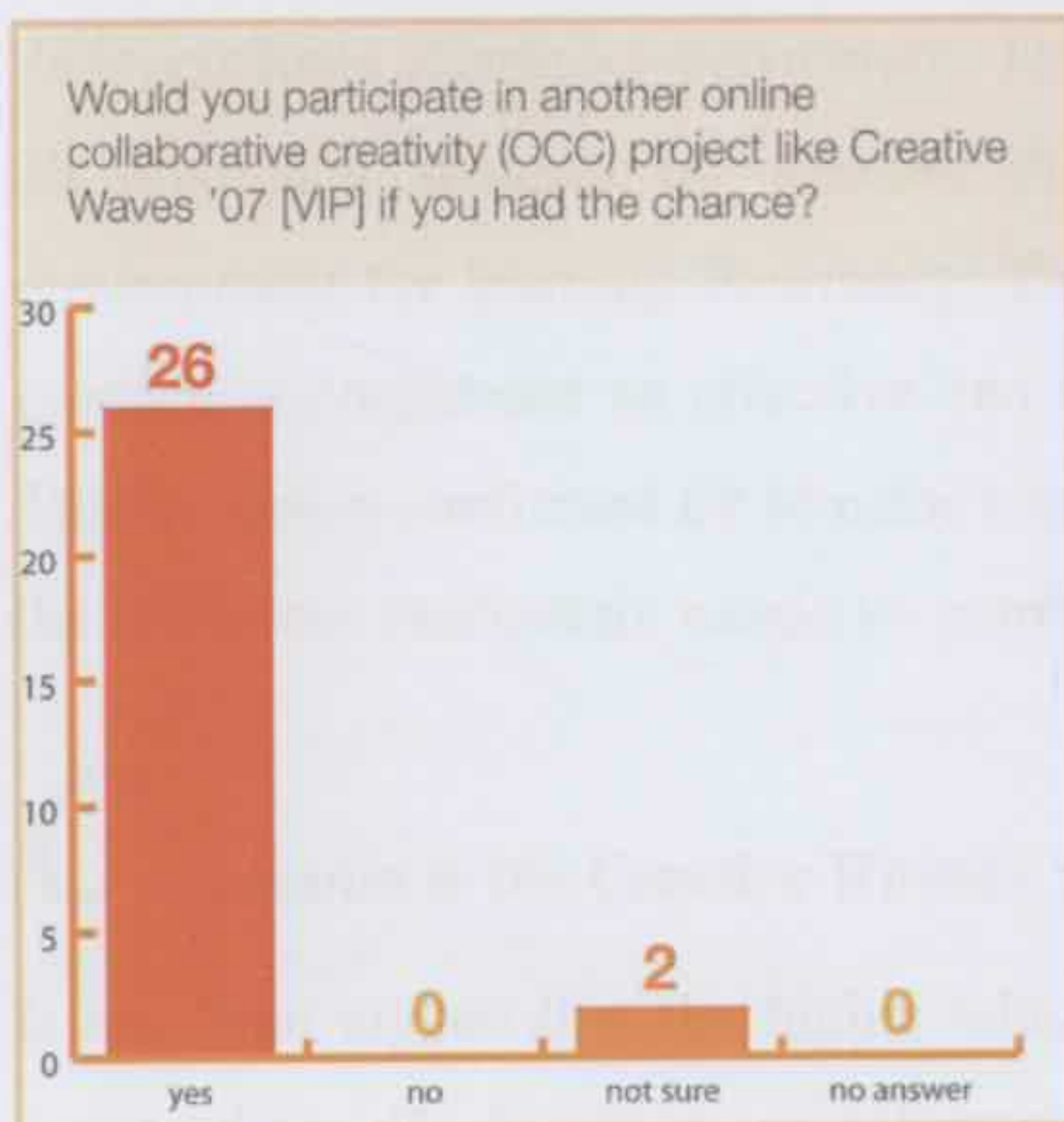
The results returned by the students regarding *Omnium's five-stage creative process model* can again be seen as positive with 26 students (70%) agreeing, or strongly agreeing, that they felt the model used *was* an effective method of undertaking a design process, whilst the remaining 10 students (27%) stated indifference. No returns showed any disagreement to the model being effective, although one response showed no answer.

Results returned by students about *Omnium's* latest software (version 4) were also positive with 24 students (80%) agreeing, or strongly agreeing, that they found it to be an effective environment for an online collaborative creative process. Of the remaining students who responded, 2 students stated a neutral response while 2 students disagreed and a further 2 students gave no answer (Graphs 13 & 14).



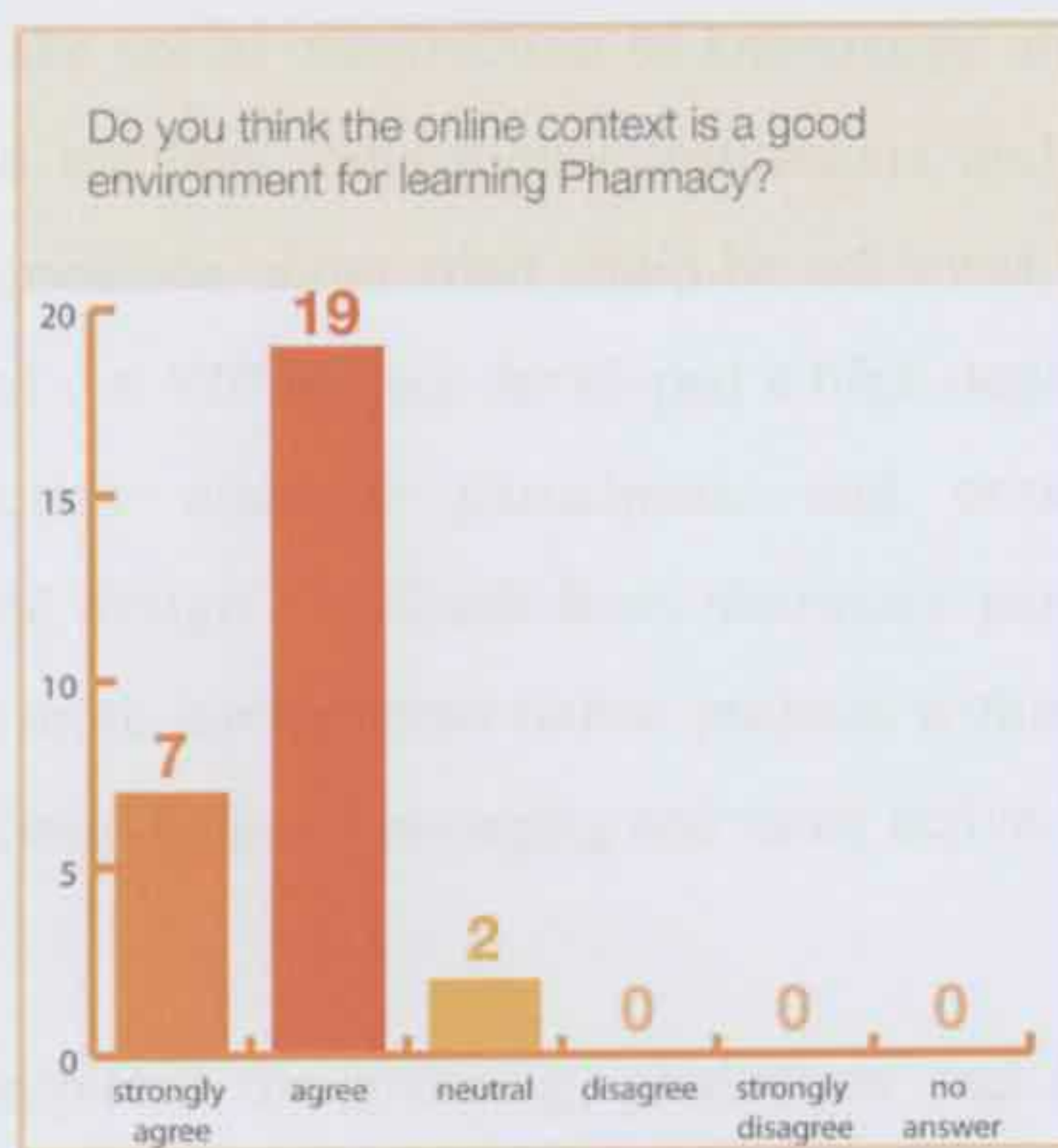
Graphs 13 & 14

To conclude the quantitative evaluations of the *Creative Waves: VIP* project, the final question asked each cohort of students (pharmacy and design) whether they would take part in a similar online project again given the chance (Graphs 15 & 16). The majority overwhelmingly supported the idea, however, it should be noted that the survey was taken at the end of the project after some students, from both disciplines, had left the project for one reason or another. The data was obtained from 28 design students and 29 pharmacy students.



Graphs 15 & 16

Regarding the original question that influenced the entire *VIP* project's formation and production, whether pharmacy curricula could be enhanced by the introduction of online learning, as well as access to increasingly available digital resources relating to health sciences, one more graph is interesting to include and observe. The final graph was produced by data collected from the evaluation of pharmacy students at the end of Phase One of the project – the seven-week pharmacy research phase (Graph 17).



Graph 17

The Introduction to the *VIP* project within this case-study described how Dr Nataly Martini, from the School of Pharmacy at the University of Auckland, wished to discuss with me whether practicalities and approaches from the first *Creative Waves* (2005) would be applicable to ideas she had for introducing similar strategies to an

undergraduate Pharmacy curriculum. The final graph (Graph 17) shows the views of 28 pharmacy students on whether they considered the online context a good environment for learning Pharmacy. The results indicate that online education and practice *is* considered an effective and worthwhile strategy for Pharmacy curricula. This evidence confirmed Dr Martini's initial idea that to introduce online learning in the pharmacy curriculum would be worthwhile.

## **C** *onclusion to the Creative Waves - Visualising Issues in Pharmacy project*

It has been argued that the higher education environment is approaching a *tipping point* where developments in information communication technologies (ICT) are creating a new landscape for education. A recently introduced term, *Education 3.0*, is characterised by rich, cross-institutional, cross-cultural educational opportunities where the learners themselves play a key role as creators of shared knowledge in which social networking plays a major part.<sup>312</sup> *Education 3.0* also places an emphasis on learning and teaching processes which focus on institutional changes that accompany the breakdown of boundaries (between teachers and students, higher education institutions, and disciplines).

The *Creative Waves - Visualising Issues in Pharmacy project* echoed these dynamics in that it encouraged the social construction of knowledge and broke down barriers between students and teachers, educational institutions and disciplines. Although there were initial reservations about what could be achieved, the practical (research and creative) stages of the *VIP* project developed a high degree of socialisation and cross-cultural interaction amongst participants and cross-disciplinary contact between pharmacy and design. Feedback from pharmacy participants, in particular, indicated a desire for more international online projects within their curricula so that pharmacy education could be more engaging and more active in raising public health awareness.

However, having completed the planning, production and facilitation of a major online education project such as the *Visualising Issues in Pharmacy* project, and similar projects over the last decade, I still don't believe that many people in higher

---

<sup>312</sup> Keats, D. & Schmidt, J. P. (2007) 'The Genesis and Emergence of Education 3.0 in Higher Education and its Potential For Africa', *First Monday Journal*, Vol. 12, No. 3. <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1625/1540> (accessed 07/08/09)

education yet realise, or want to realise, the difference that technology can make, or is yet to make, to learning and teaching throughout the next decade. These challenges are not only posed by the technology, itself, but by the way technology is rapidly influencing and changing societies, cultures and the day-to-day lives of an increasingly global community. This was emphasized by expressions made to Dr Martini and myself, as *Project Conveners*, that what we aimed to achieve through the VIP project could not be done. The following reasons were some of those most frequently cited reservations: students would not have the time to undertake the extra-curricula activity, people in less developed countries would have problems with technology or language, and, it would be impossible to recreate normal practices (pharmacy or design) without ever physically meeting ones peers or teachers with a high degree of socialisation, cross-cultural interaction, and appreciation of others' situations, disciplines and differences.

*Omnium's Creative Waves: Visualising Issues in Pharmacy* project is a convincing example of how new technology-assisted visions and approaches to learning and teaching have to be taken seriously and are proving many people wrong.

The *VIP* project was not based on marks, grades or individual learning accomplishments but on how collectively, an international group of students, teachers and professionals can use their talents to help solve social problems and foster cross-cultural respect. Judging by student, teacher and *Special Guest* enthusiasm, and the fact that the people in Kenya responded so positively is a testament to the hard work of everyone (pharmacy and design) who took part in the project.

The level of engagement throughout a project such as *VIP* clearly signals there is a demand for such initiatives from both students and teachers and that the computing technologies we now use everyday can enable such interaction. However computing technologies cannot drive such projects, they can only support them. They need to be treated as tools for the human interaction that any kind of education is ultimately dependent upon. The next decade of education should be viewed with excitement, not fear.

---

- CHAPTER NINE -  
REALISING ONLINE COLLABORATIVE CREATIVITY:  
OMNIUM TODAY  
(2009)

---

**O***mnium's five-stage creative process model: Fourth iteration - (2008-2009)*

*Omnium's* two-part research framework, used as the foundation for its online collaborative creative projects, since 1999, has since been used to structure activities in numerous other online creative projects over recent years by making available its evolving *five-stage creative process models* and *software applications*.

For example, in 2008 an online project titled *Collabor8*<sup>313</sup> sought permission to adopt both the *Omnium* and *Creative Waves* branding. It linked graphic design students from a variety of universities in Australia and China through a seven-week intense creative project. *Collabor8* was a project about creating awareness of important issues of cross cultural design practice and sustainability in design. It challenged students to work together to design graphics for contemporary ceramic and textile products that were environmentally friendly.

In addition, in 2009, a similar project to *Creative Waves* (2007) was supported by *Omnium* through provision of its software platform and also adopted its *five-stage creative process model*. The project, *Triune Uganda*,<sup>314</sup> challenged a diverse, international body of students, educators and professionals - from the fields of medicine, nursing, pharmacy, sociology and anthropology - to address important global health issues through the production of written research reports and creation of subsequent key health messages for people in rural Uganda.

Both projects gave further opportunity to explore the development and revision of the model for *online collaborative creativity* and it was clear that two further revisions needed to be made.

---

<sup>313</sup> *Creative Waves: Collabor8* website - <http://creativewaves.omnium.net.au/c8/outline>

<sup>314</sup> *Creative Waves: Triune Uganda* website - <http://creativewaves.omnium.net.au/triune/outline>

### *First revision (2008)*

The first revision was made in 2008 and included the additional process of *orientation* into Stage One. Having added *socialising* as the new first stage in 2007, the reason to also include orientation derived from the development and findings of the *TOM* survey issued in 1998 (see Chapter One). The activities within the socialisation stage were types of *orientation* in themselves – that is, to become socially orientated to other participants of a project or course and more specifically with team-mates a participant is required to work with to solve an online collaborative creative task or problem. I formally included *orientation* aims within the first stage of the model to acknowledge the need for any participant taking part in a project to become not only acquainted with other participants, at the earliest point, but also with the outlines, aims and objectives of a project or course. In addition, and of equal importance, is the need to become comfortable with the technical platform and environment in which a project exists. Through well-constructed *socialising* activities, that involve careful *signposting* and directives for newcomers to the user-interface, participants quickly become familiar and gain confidence in navigating the software's features.

### *Second revision (2009)*

The second revision was made in 2009 and involved activities at the other end of the creative process model. The *resolving* stage had been in place since the very first iteration of the model in 1999, however, on completion of every project that *Omnium* has hosted over the last decade, there were always additional periods of time that participants were either required to contribute to, or more commonly, actually requested. For example, it was on completion of a project that informal and formal evaluations were made. It is also at this time that students are asked to reflect upon their online experience of a project, and, in many cases provide conclusive feedback to each other regarding the team's final creative outcomes.

During these periods, not only are participants requested to reflect upon their individual and collaborative creative processes and outcomes, but also say farewells and arrange ongoing social contact with many of a project's participants. So, the final stage of *Omnium's five-stage creative process model*, *Resolving*, was amended to include activities of both resolving *and* reflection. The revised final *Resolving/Reflection* stage now does not need to have a defined end in terms of the participants' ongoing reflection and interaction, even though official activities have to



draw to a conclusion by certain dates. It is not uncommon for participants to carry on, for weeks and even months, working on art and design outcomes that they have officially presented as the final submission of a project. For example, in the first *Omnium [vds]: '99* project, students finished the official stages of the project, only to begin work for another month on making interactive presentations of their entire creative process for gallery exhibition. Likewise, on conclusion of the *Creative Waves (VIP)* project in 2007, some students helped *Omnium* design staff to take the final design submissions through a production process to be ready for manufacture almost a year later.

In summary, the fourth and current iteration of the *Omnium five-stage creative process model*, for use in projects and courses that aim to promote online collaborative creativity, includes: *Socialising/Orientation*, *Gathering*, *Identifying*, *Distilling/Abstracting*, and *Resolving/Reflection* (Figure 1).

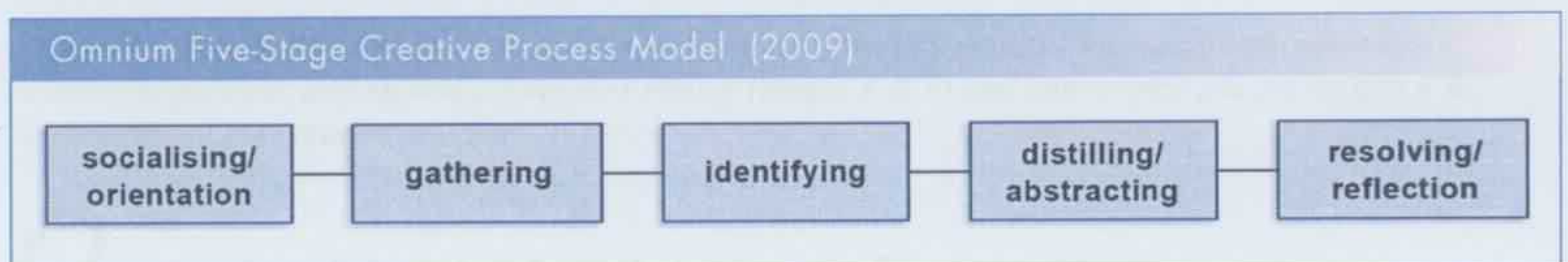


Figure 1 - *Omnium's five-stage creative process model* (fourth iteration) including the most recent revisions and additions: 'orientation' (stage one) and 'reflection' (stage five).

A more detailed graphic illustration of the five-stage model (Figure 2) indicates its directional progression, the reiterative nature of each stage that allows participants to revisit any stage throughout the process, and references the first two stages as predominantly divergent (*Socialising/Orientation* and *Gathering*) and the last two stages predominantly convergent (*Distilling/Abstracting* and *Resolving/Reflection*).

The model has been thoroughly tested, evaluated, and amended through numerous online creative projects and it is clear that *Omnium's five-stage creative process model* is not only feasible and worthwhile, but also contributes to forming effective collaborative creative processes for participants within an exclusively online environment.



Figure 2 - *Omnium's five-stage creative process model (fourth iteration) including indicators of a reiterative process, and showing divergent phases (stages 1 & 2) and convergent phases (stages 4 & 5) throughout the creative process.*

### *Omnium's web-based technical platform (software application)*

As I described previously (see Chapter Two), in 1998, when I first planned to host an online global creative project there was no software available that was specifically designed, or could be accommodated to suit creative studio practice. In fact, to this day, there is still no other software available that is suitable, as a package, to use effectively to undertake online creative projects that have a focus on collaborative working practices.

Between 1999 and 2003, a series of iterative developments of *Omnium's* technical platforms were created, although during this period they existed only as one-off instances built specifically for individual projects. It was not until 2004, with the financial support of a three-year Australian Research Council (ARC) Discovery Grant, that *Omnium* began developing a replicable and scalable technical code-base that now forms the foundation of a software package designed for online collaborative creative practice.

Since being awarded the grant, I have designed and developed, through the *Omnium Research Group*, three completely revised software versions. Each version was technically defined and differentiated by their underlying code-bases as well as

having the visual appearance re-designed. In addition, various functional features within the software were either added, withdrawn, or revised. The reason for the ongoing redevelopment of *Omnium's* software over recent years was not due to negative feedback (Figure 3) or ineffective creative interactions, rather it was necessitated by increased availability and rapid changes in web-based technologies, as well as changes in the way people were increasingly accustomed to online communities and social networks in other areas of their lives. Ultimately, it is the user-experience that is important to *Omnium* and its software development and we have had to be constantly aware of, and keep up to date with, the online experiences that our end-users encounter everyday in many different contexts.

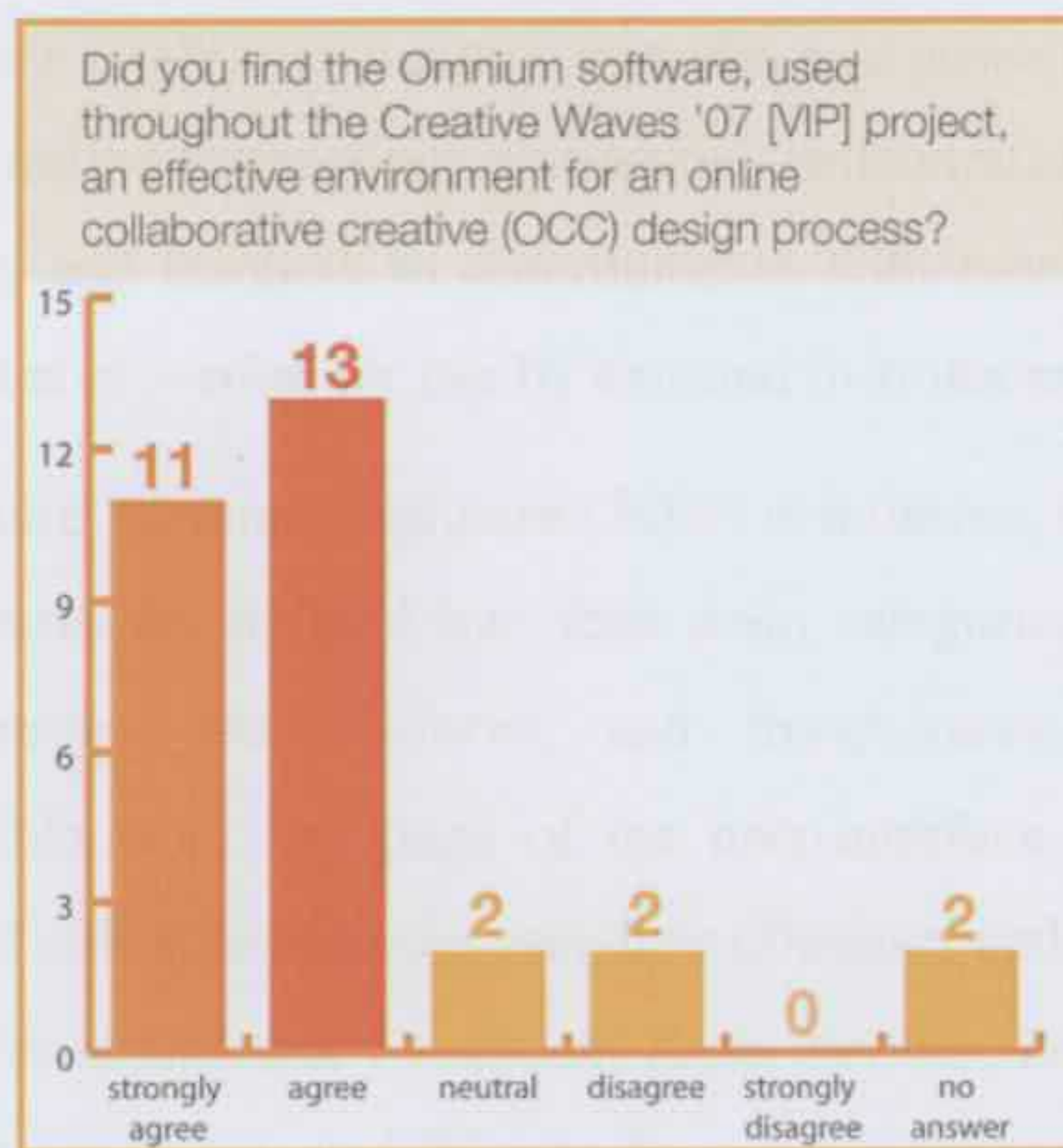


Figure 3 – Graph showing favourable student responses to a question about Omnium Software (2007)

It is a very time consuming and expensive task to keep up with, yet alone stay ahead of online user-experience, and it is my belief that this issue is an area that, in general, online applications for e-learning have failed to achieve.

The two case-studies provided of *Omnium's Creative Waves* online global design projects (see Chapters Six and Seven), give detailed descriptions of successive versions of *Omnium Software* produced between 2004 and 2007. Each version was designed and programmed specifically to be the technical foundation for use during each of the *Creative Waves* projects (2005 and 2007).

As a result, in 2007, *Omnium's* technical platform (software) was granted an Australian trademark and officially registered as a web-based software application for forming online social networks (especially for visual artists and designers) in

educational and professional contexts. Since completion of the second *Creative Waves* project and the granting of a trademark, what is now officially called *Omnium Software* has undergone a complete technical rebuild of its code-base that affects its performance in a variety of ways. The software has also been developed into serviced packages for *Social* and *Business* scenarios, although for the purposes of this discussion, it is the Education (or E-learning) package that is described and illustrated. Since, 2008, the *Omnium Software* has also been made available as an open-source project.<sup>315</sup> The remainder of this chapter describes the latest *Omnium Software (2009)* version and its most recent alterations and developments.

### ***Omnium Software (2009)***

The *Omnium Software (2009)* version now operates as a powerful e-learning tool that not only facilitates online interaction, discussion, collaboration and assessment but also allows students and teachers to communicate with ease and transparency. In addition, it now makes provision for use by external institutions and clients.

In terms of its structure, *Omnium Software (2009)* is intuitive, simple to use and easy to navigate. Its features are divided into four main categories: *communal-features*, *individual-user features*, *team-features*, and *live-features*, with the majority (communal) accessible from any page of the user-interface. The secondary level features are accessed either through the user-lists (*Students* and *Teaching Staff*) or the *Team* areas where *Team Talk and Feedback*, *Team Notices*, *Team Pin-Up Walls* and *File Sharing* options can be selected (Figure 4).

A full interactive tour of the software, including its user-interface and all features are accessible from the *Omnium Software (2009)* website.<sup>316</sup>

---

<sup>315</sup> The *Omnium Software (2009)* product is available in four distinct packages for: *Education*, *Social* and *Business* purposes, as well as an *Open-Source* option where the complete code-base can be accessed and downloaded at no cost. The descriptions throughout the following pages are for the *Education* package that is aimed specifically at visual arts and design programs, courses and projects (or any other discipline that relies heavily on the use of graphic images, moving images, animations and/or sound).

<sup>316</sup> *Omnium Software* website: <http://omnium.net.au/software/education> - accessed 28/08/09

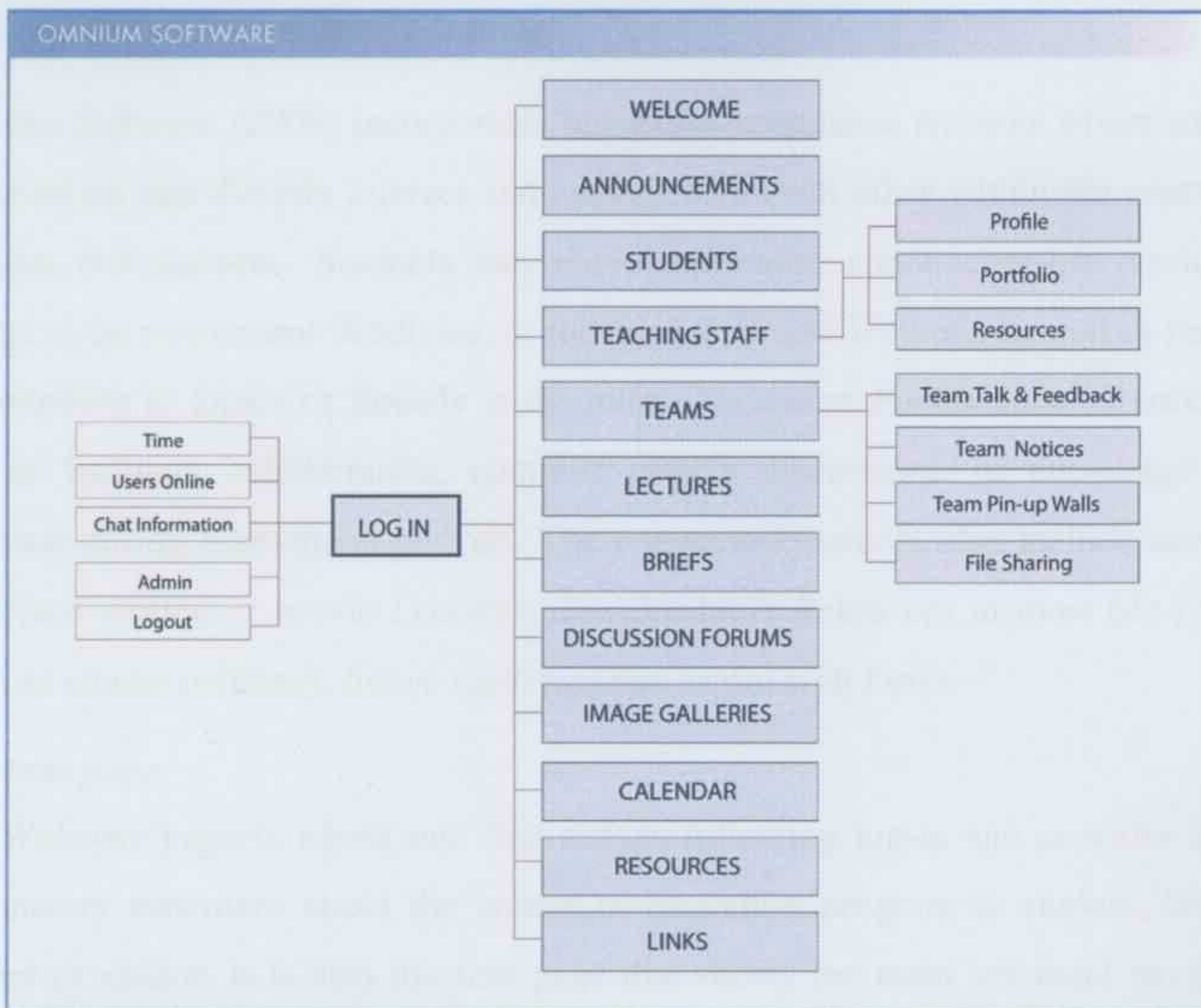


Figure 4 – Omnium Software (2009) structural site map showing ‘communal’, ‘individual user’, ‘team’, and ‘live’ features.

The most significant new area of technical development in the *Omnium Software* (2009) version’s code-base has focussed on its modular structure, to allow for greater flexibility in the administration of a course or project. One of the motives for such a shift in design has been the need to respond to a growing demand from external clients to use the software for their own online creative projects and E-learning courses. This meant *Omnium* needed to custom build interfaces for external clients who each have subtle differences in the way they wish to use the software. This is not a sustainable method of production and by programming the code-base to allow its features to be modular enables an external client, and their course or project administrators, the freedom to alter and set preferences for each feature. This includes: switching features on and off, renaming features, as well as determining the access allowed to each feature by the variety of user types.

In addition, the code-base of the *Omnium Software* (2009) version allows clients to choose and select different visual appearances for their own *Omnium* user-interface. For instance, they can easily apply the branding of their own institution or company to the software template, as well as choose from one of eight colours to personally customise the appearance of the user-interface.

## *Omnium Software communal features*

*Omnium Software (2009)* incorporates numerous *communal features* where students and teachers can directly interact and engage with each other within the creative e-learning environment. Students can view communal announcements, such as a change in an assessment deadlines, or the release of new lectures, as well as requests to contribute to topics or threads in the main *Discussion Forum* area - a successful way to facilitate collaboration, continue project discussions, or encourage peer-feedback during assessment periods. The *communal features* also include access to illustrated written or movie *Lectures*, downloadable *Resources* in most file formats (such as course outlines), *Image Galleries* and useful web *Links*.

### *Welcome page*

The *Welcome* page is where one first arrives following log-in and provides a brief explanatory statement about the course or education program to student, lecturer, teacher or visitor. It is also the first page that shows the main left-hand navigation panel giving access to all the *communal features* (Figure 5). Unlike previous *Omnium software* versions, the content within this page can now be fully managed by the site administrator by adding their own introductory text and image.



Figure 5 – Welcome page giving brief description of project or course and access to main communal features through the main left-hand navigation panel.

### *Announcements*

As in previous software versions, the new *Announcements* area (formerly called *News*) shows messages posted by the teacher, lecturer or site administrator relating to daily activities and other events relevant to an educational project or course. The

messages can include an image to accompany the announcement and in the 2009 software version, revisions have been made to allow increased and easier communication between project facilitators and participants. Three new methods have been included: first, the entire message content (including image) can be automatically sent via formatted emails to students and all other registered users; second, the page now includes RSS feeds<sup>317</sup> that a user can choose to send directly to their own 'feed' aggregator as soon as an announcement is posted, and third, a subscription option now exists that allows users to subscribe for announcements to be sent direct to their own email address as soon as they are posted (Figure 6).



Figure 6 – News & Announcements page where posts made by lecturers are sent to the emails of students or received through RSS feed

### Discussion Forum

The *Discussion Forum* area has always been *Omnium Software's* main communication tool. It is typically used for discussions that occur over a longer period of time and are relevant to the entire community as a whole (for example, responses to a lecture). Previous threads can be reviewed at a later date or simply act as a means of archiving proceedings. Similar to the *Announcements* area, improved communication devices have been included that allow users to choose specific threads to follow and to receive email notifications every time a new reply is posted. An RSS feed feature is also available.

<sup>317</sup> RSS - most commonly translated as *Really Simple Syndication* (but sometimes *Rich Site Summary*) is a web feed format used to publish frequently updated works — such as 'blog' entries, news headlines, audio, and video — in a standardized format.

In addition, new icons have been added that indicate to a user whether there are posts within any threaded discussion that they have not read. Yellow message icons appear to alert users to any new material that has been added since their last visit to the interface. This device was included in response to project evaluations that indicated users spent considerable time searching through the many threads to see if there was anything they had not read (Figure 7).

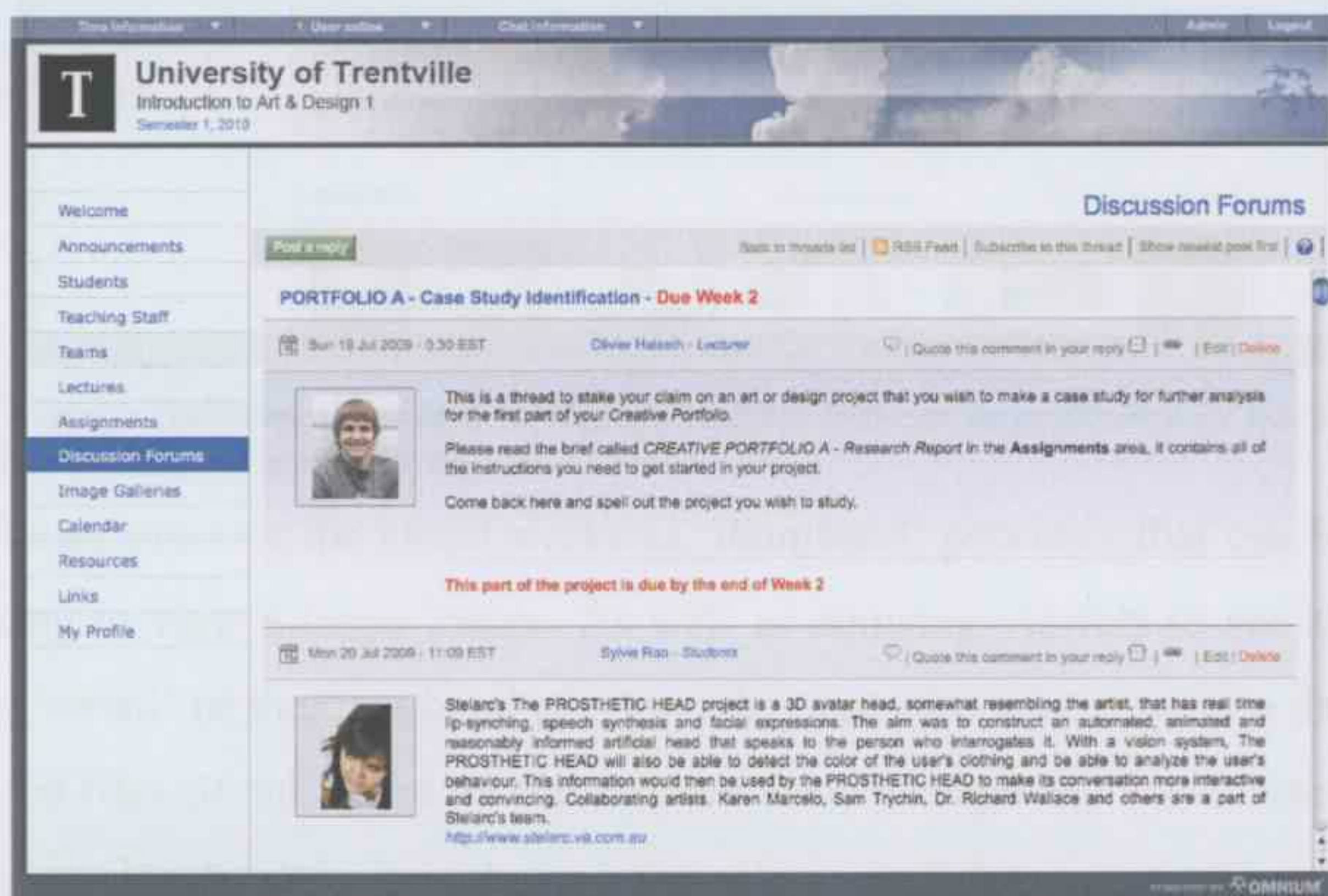


Figure 7 – Discussion Forum (sometimes referred to and named ‘Message Board’ area) showing individual threaded posts, complete with an automatically placed image of the person posting

### Image Galleries

Undoubtedly, the unique feature of *Omnium’s* software has always been its *Image Gallery* areas. The ability to easily self-create, manage, edit and delete galleries of work that can include almost all types of graphic, photographic, animation, movie, sound and text files is unparalleled. Of course, other applications are freely available to form galleries of images and movies (*Flickr, Facebook, YouTube, etc.*) but none offer the flexibility, functionality and variety that *Omnium Software* provides, and, certainly, none exist with e-learning applications at the same level of functionality.

*Image Galleries* can act as either public or private viewing spaces (depending on the desired access determined by teachers and project administrators) where staff or students within an online community can showcase selected visual images (and other file types) within a series of presentation galleries (Figure 8).



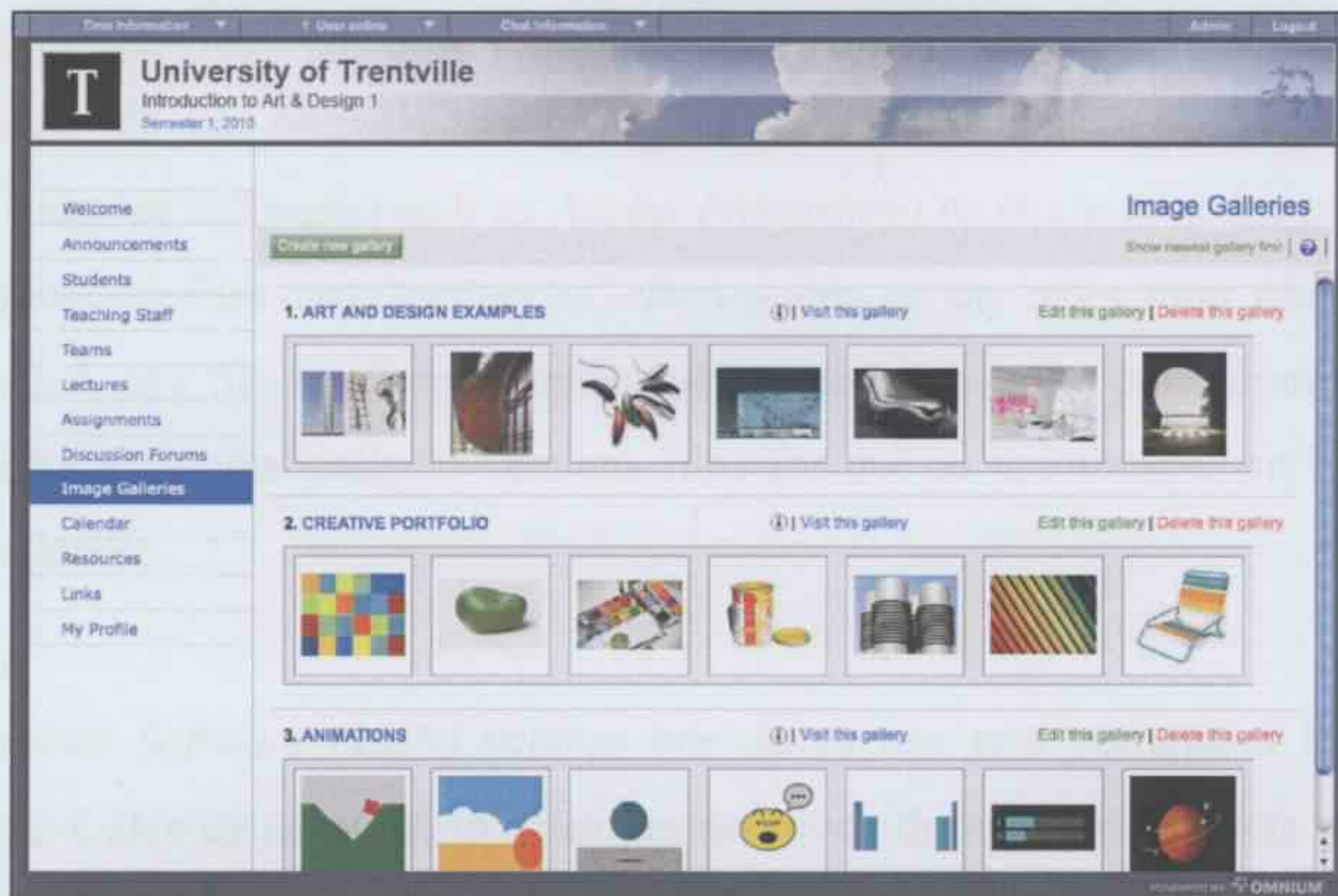


Figure 8 – Image Galleries showing a variety of file-types that can be organised by teachers for view by anyone accessing the user-interface

The software presents the visual works as ‘thumbnail’ previews that can be selected by clicking to view a larger image. As well as allowing viewers to see a clear and enlarged ‘detail’ of the thumbnail preview, they can also access written descriptions of selected files (if submitted by the original user) through the *View Details* button. This feature also, by default, includes information about the person who uploaded the file, the date and time the file was uploaded, and the file size and type. In addition, viewers can download the original full-size file of any selection to their own desktop (Figure 9). *Omnium’s Image Galleries* are often used within a project as a focus for further discussion and critique through the communal *Discussion Forum*, or within *Team Talk & Feedback* areas.



Figure 9 – A detail from Image Galleries showing an enlarged view of a file and options to view more file details, written descriptions, and download the original file.

To reiterate the importance of usability, the *Image Galleries* within the *Omnium Software* do not rely on users having high-level technical knowledge or skills using graphic imaging software (such as *Adobe Photoshop*) to resize or reduce file sizes. When uploading files into *Omnium's Galleries* area, or any other areas where images are included, any file size maybe uploaded by the user, as the programming within the code-base automatically re-versions files for use as thumbnails, previews, and enlarged details.

### Calendar

The *Omnium Software (2009)* version introduces one new communal feature: an interactive *Calendar* to assist in planning activities throughout a project or course. Teachers and administrators can post upcoming events to students (and any participant) such as assignment due dates, lecture times, tutorials, holidays and more. New events can easily be added and managed on the calendar. Users can view more information on any event by simply clicking on any of the date squares. The details of a particular event appear in a column on the right side of the page (Figure 10).

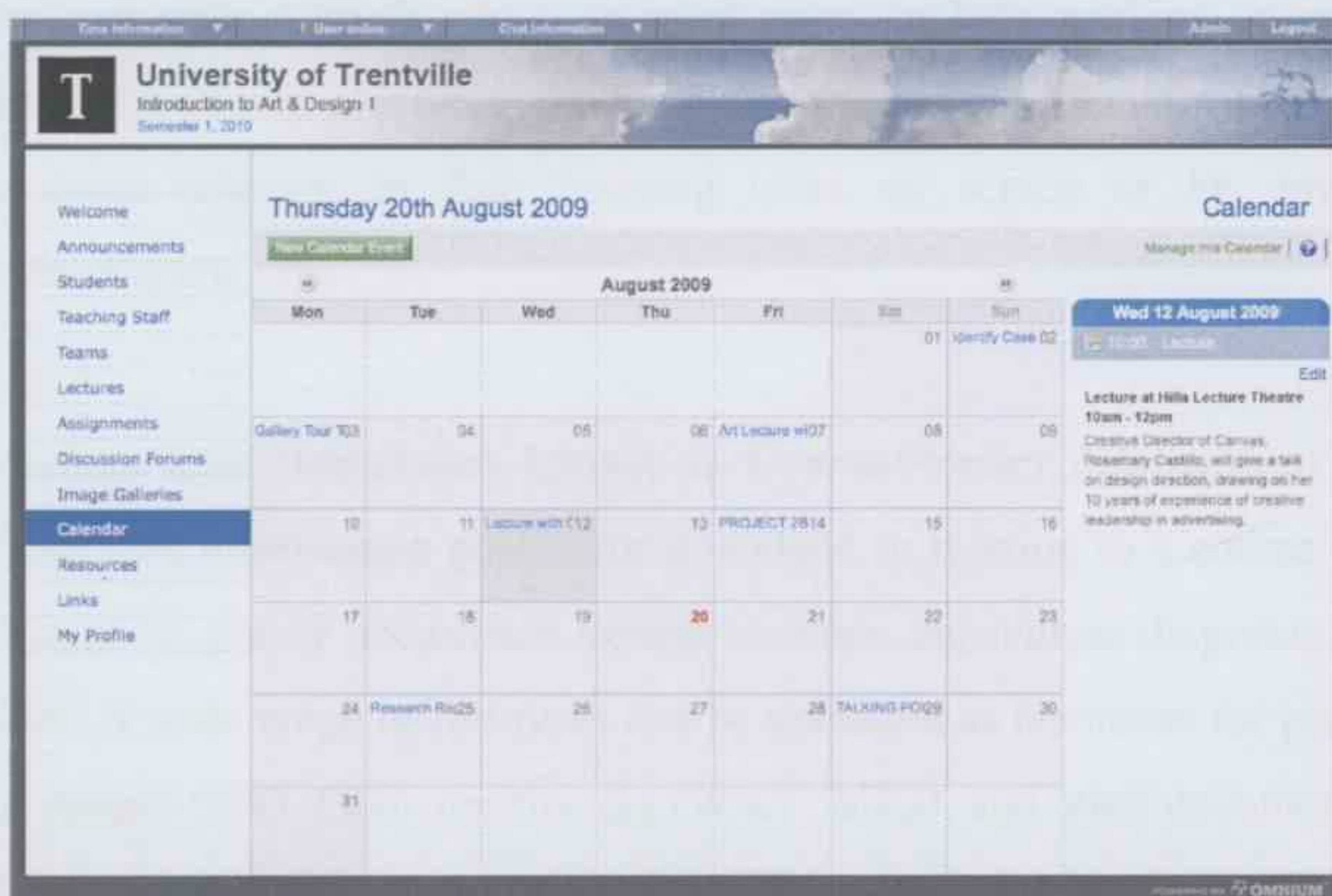


Figure 10 – The interactive Calendar shows important dates, such as assignment due dates and upcoming events, which can be clicked on to reveal further information

The remaining *communal features* generally have the same functionality as in the previous 2007 version. However, in most cases, functional technicalities have been improved as well as their visual appearances. The previous software versions are detailed throughout the case-studies in earlier chapters so, to avoid repetition, I briefly refer to the remaining communal features below.

### *Lectures*

The *Lectures* feature is an area used by teachers and administrators where they can post complete illustrated lectures, abbreviated lecture notes or additional readings for a course. Full written lectures often contain a number of hyperlinks, which link to other relevant sites as well as thumbnail images that can be viewed full-size when clicked. *Lectures* can be read directly from the screen or, downloaded as a PDF/DOC version for printing, and, if required, a teacher or administrator can also attach an accompanying file for additional download, for example a *Microsoft Powerpoint* document or *Adobe PDF* attachment.

An unregistered visitor to the interface, who enters the *Lectures* area, will only receive an abstract of any of the lectures. The full lecture, images, and links contained within a lecture are not available to the public in accordance with university copyright agreements (Figures 11 and 12).

### *Assignments (or Briefs)*

The *Assignments* feature allows teachers and lecturers to upload details about assignments or project briefs which, in most cases, include marking criteria for the assessments of a course or project. Students can find out specific information, criteria and due dates relevant to their learning tasks on screen or by downloading attachments (Figure 13).

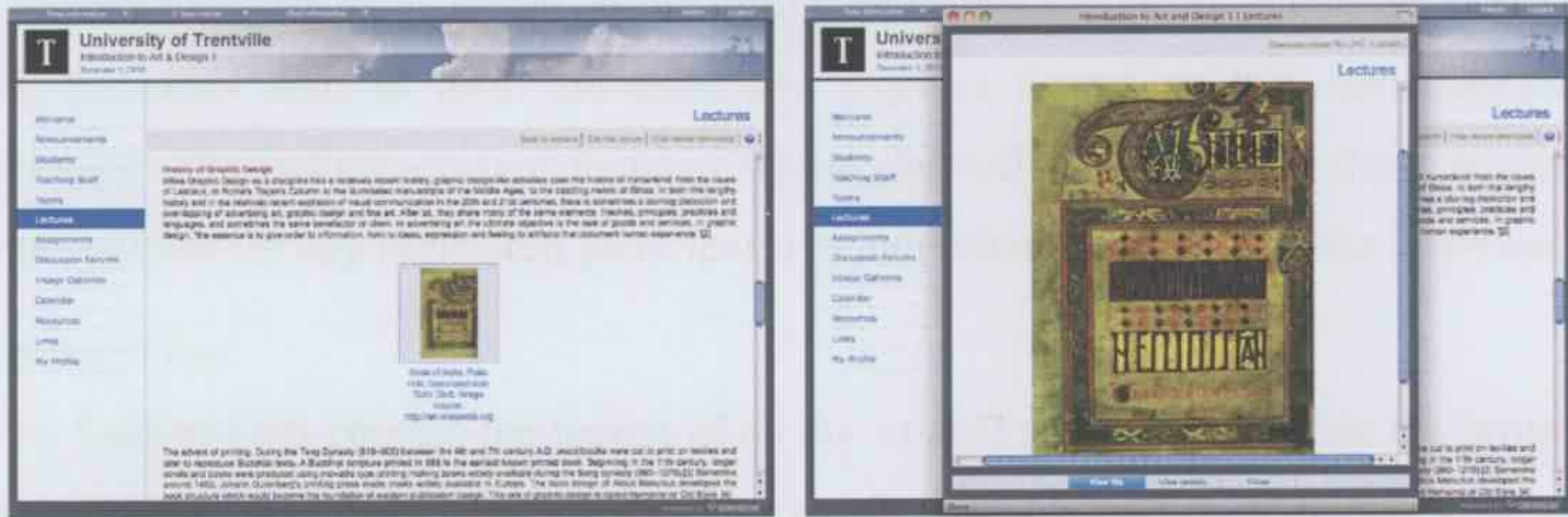
### *Resources*

The *Resources* area (sometimes known as *Course/Project Information*) is where students can find information posted for download in relation to a course's specific activities such as; policy documents, course outlines, curriculum diagrams and other information. A wide range of file-types can be uploaded as resources for participants, including images (JPG, GIF), multimedia (WAV, MP3), and other documents (DOC, PDF). *Resources* can also be organised into folders and reordered up and down the page by using sophisticated 'drag and drop' technology (Figure 14).

### *Links*

The *Links* area is a space where teachers and project coordinators can provide links to websites that are relevant, helpful or interesting to the community of registered users. Users can also suggest web links to be included in this section. Students' suggested links do not automatically become visible to everyone until they are

approved by those running the project. This limitation is useful in preventing repeated links and inappropriate or irrelevant links being published (Figure 15).



Figures 11 and 12 – Lectures can appear as full written essays with associated illustrations and images, hyperlinks to external sites, and a downloadable attachment that accompanies the lecture. All images can be clicked to enlarge and written details of the image included.

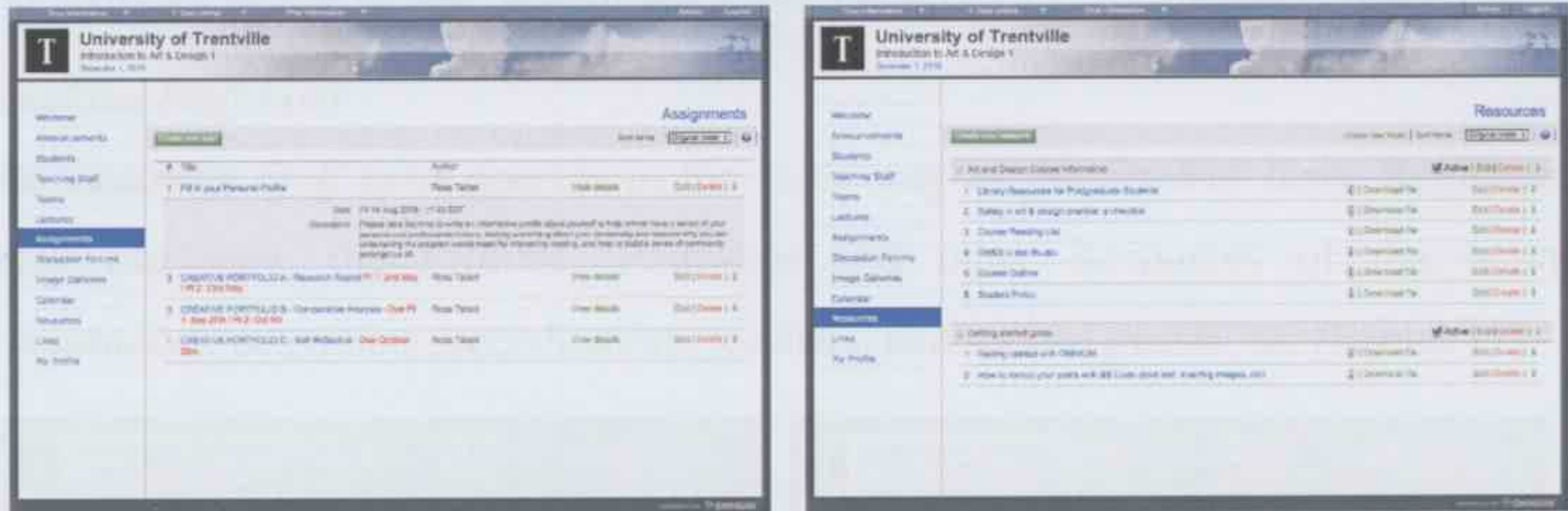


Figure 13 – Assignments (also sometimes known as Briefs) area is where students can access details about tasks they are set to complete throughout a project or course.

Figure 14 – Resources area (also known sometimes as Course Information) showing downloadable files grouped into categories using folders named by the teacher or administrator.

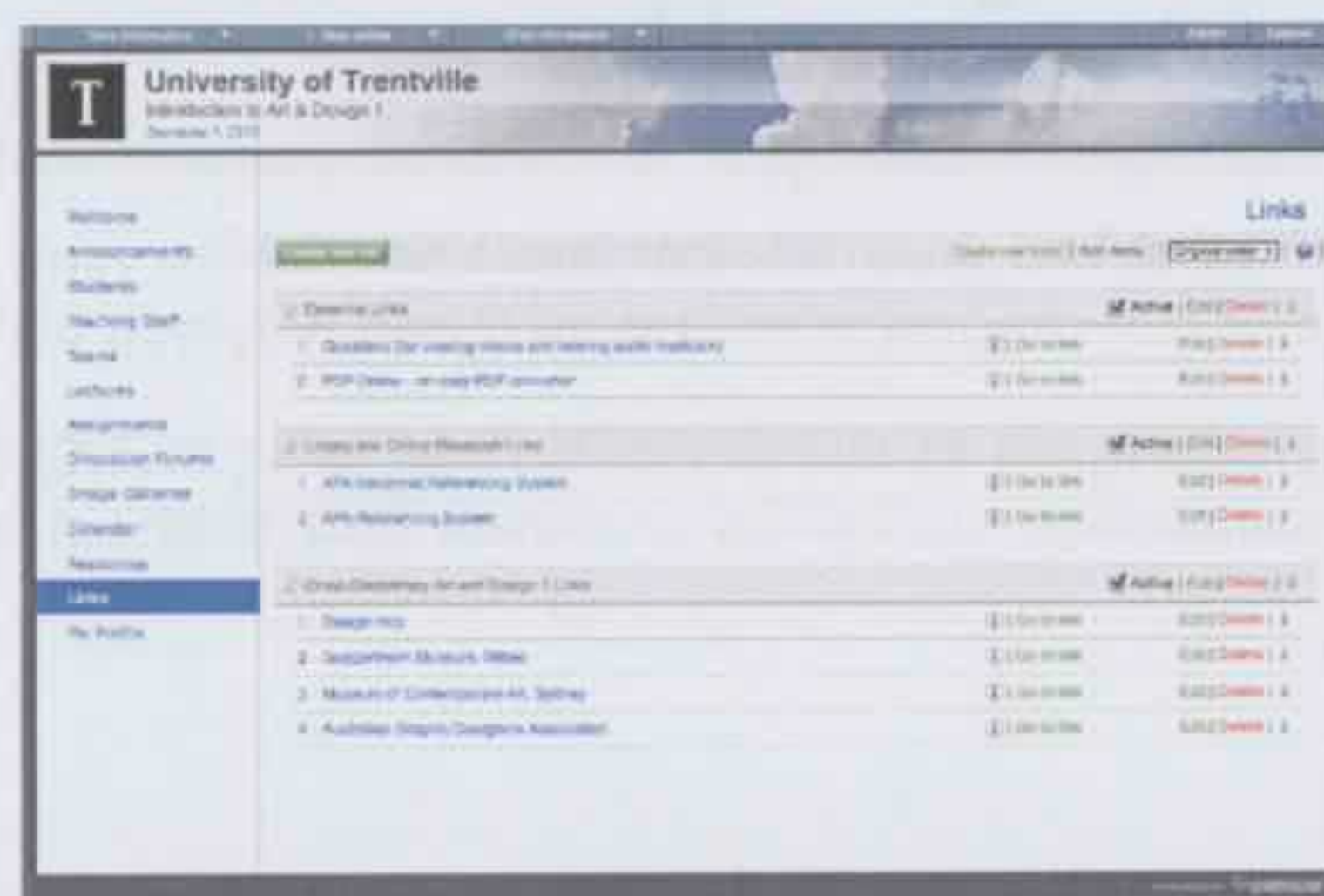


Figure 15 – Links can be categorised and reordered easily by teachers and administrators, and any user can suggest links to be displayed after approval.

## *Omnium Software individual-user features*

Every registered user who is included within an online project or course that uses the *Omnium Software* as its technical platform automatically appears in one (or more) of the user-lists and, in turn, automatically receives access to the *individual-user features*. The *individual-user features* within the software interface allow teachers and students (or any registered participant) to individually personalise the interface.

### *Student Lists*

The *Student Lists* contain the names of all the student participants within the project. By clicking on a name the viewer is directed to a page where they can view the individual *Profile* of the selected student. The list also contains details such as the student's name, their photograph, study year, global location, personal website, etc. and provides access to each individual's own *Portfolio* and Resources (Figure 16).

### *Teaching Staff Lists*

The *Teaching Staff Lists* operate in the same way as the *Student Lists*. Registered users can view the Profiles, Portfolios and other Resources of the online community's convenors, coordinators, teachers, and special guests, etc (Figure 17).



Figure 16 - Student List page where users can view the team and location of each student, and are given access to each student's profile, portfolio, resources and external websites if provided

Figure 17 – Teaching Staff List gives users direct access to the profile, portfolio and resources of their lecturers and other teaching staff members, as well as information about their location and websites

### *Profiles*

The *Profiles* area is where teachers and students can display an image of themselves and written information to introduce themselves to the community (Figure 18). They provide a simple way for members to get to know each other online and help to build a strong sense of community amongst all members.

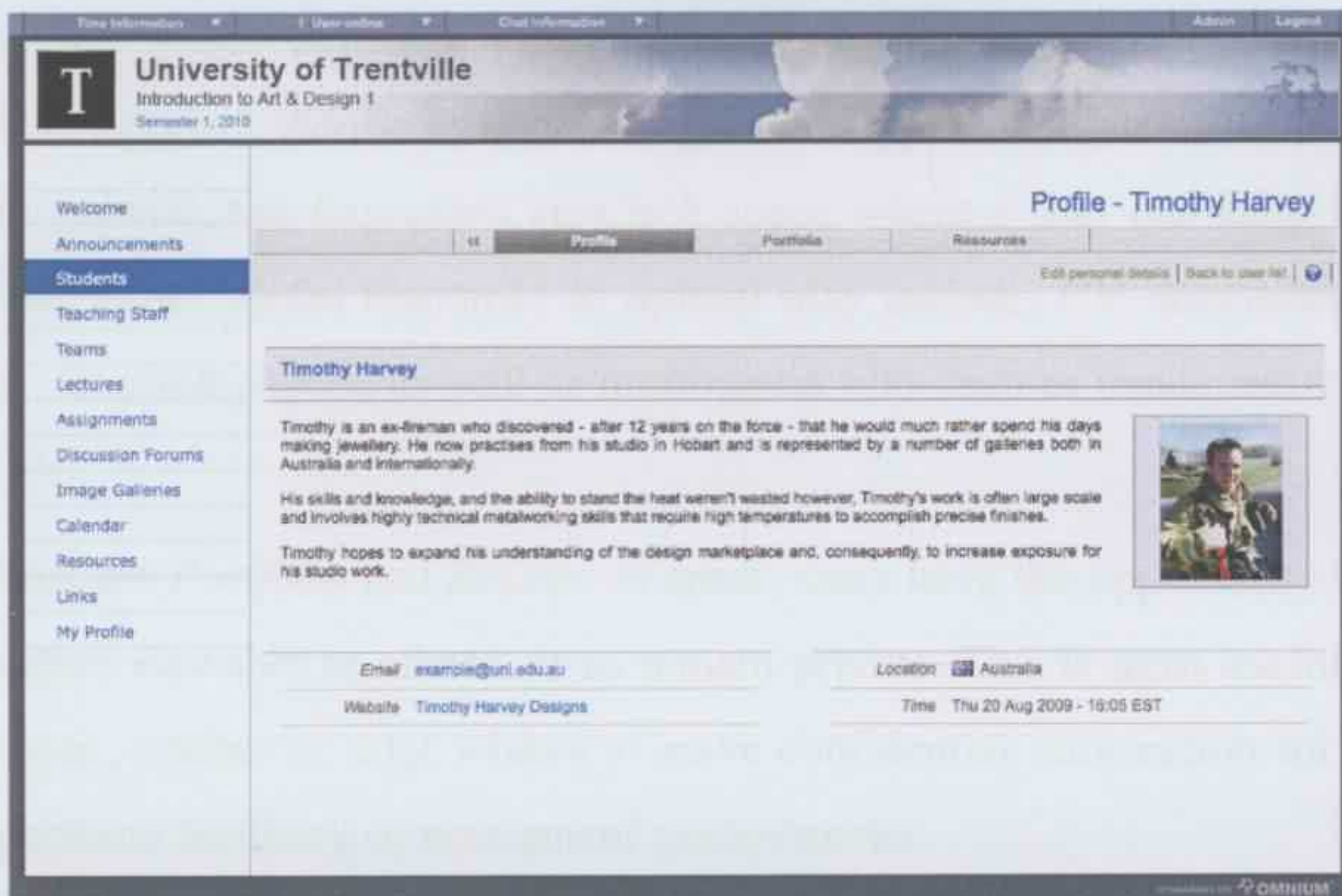


Figure 18 – Profile page is where students and staff can add further information about themselves, including a representative image, to bring the online community closer together

### Portfolios

Within the *Portfolios* area, teachers and students can upload images, photographs and movies and categorise them into any number of individually titled *Portfolio* galleries (Figure 19). The functionality of the *Portfolio* areas is identical to the communal *Image Galleries* and therefore visual files displayed can also be downloaded to one's own desktop.

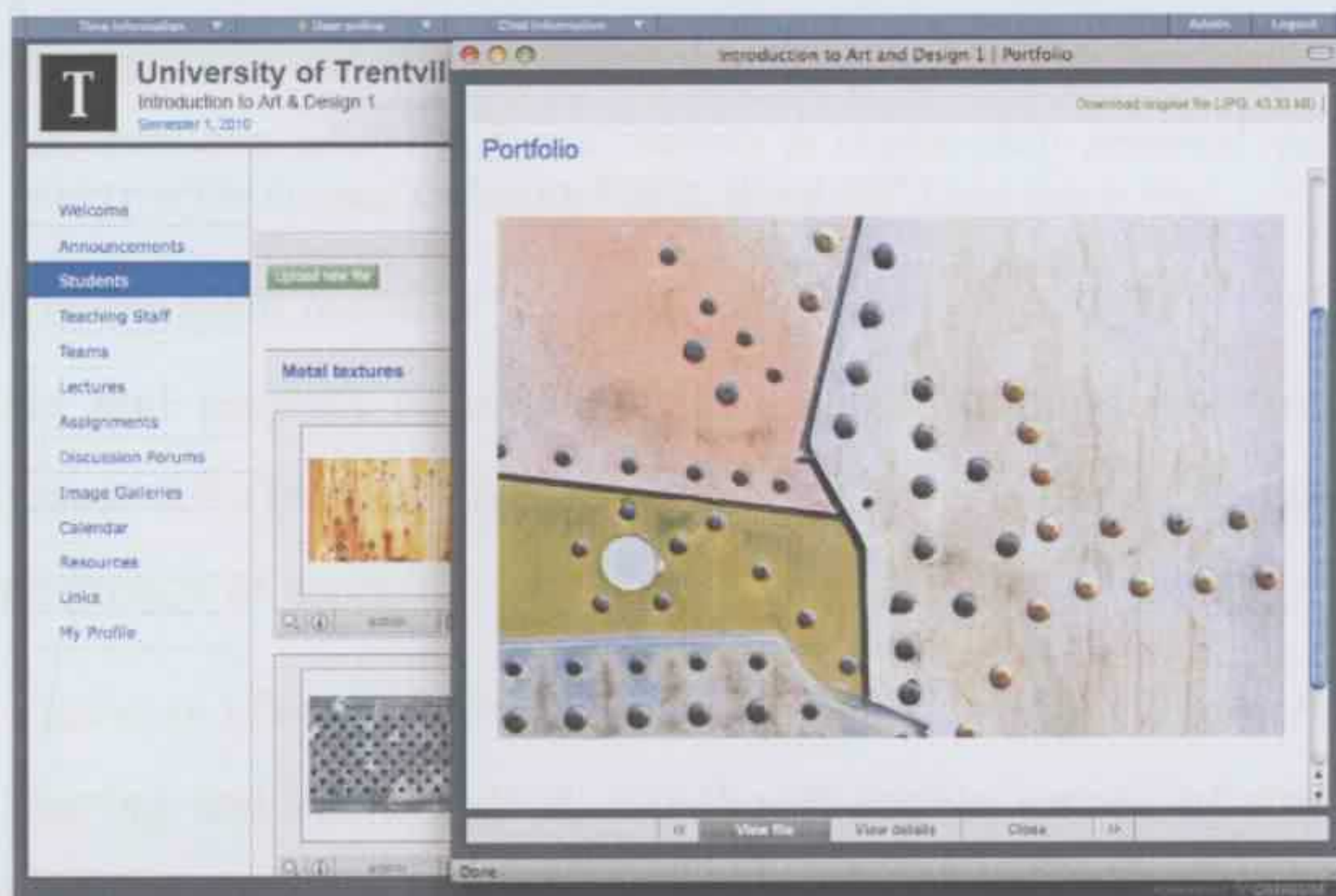


Figure 19 – Portfolio area allows staff and students to display their personal work and images to the rest of the community as a way on enhancing visual interaction within the community

### Resources

The *Resources* area is a new addition which allows staff and students (or any registered user) to upload resources to their own Profile area, in a variety of file

formats. This would normally include file types such as *Microsoft Word* (.doc), *Powerpoint* (.ppt) or *Adobe PDF*, although most types of digital files can also be stored. In general, the *Resources* area is a space where a user can keep their non-visual files. Other useful resources to upload may include: CV documents, project proposals, research papers, as well as multimedia files such as music and video clips (Figure 20).

Within both the *Portfolio* and *Resources* areas, users have the opportunity to declare files as either viewable to others, or to remain private. This is most useful when an administrator, teacher or tutor wishes to leave confidential information for a student such as personal feedback or assessment grades/marks.

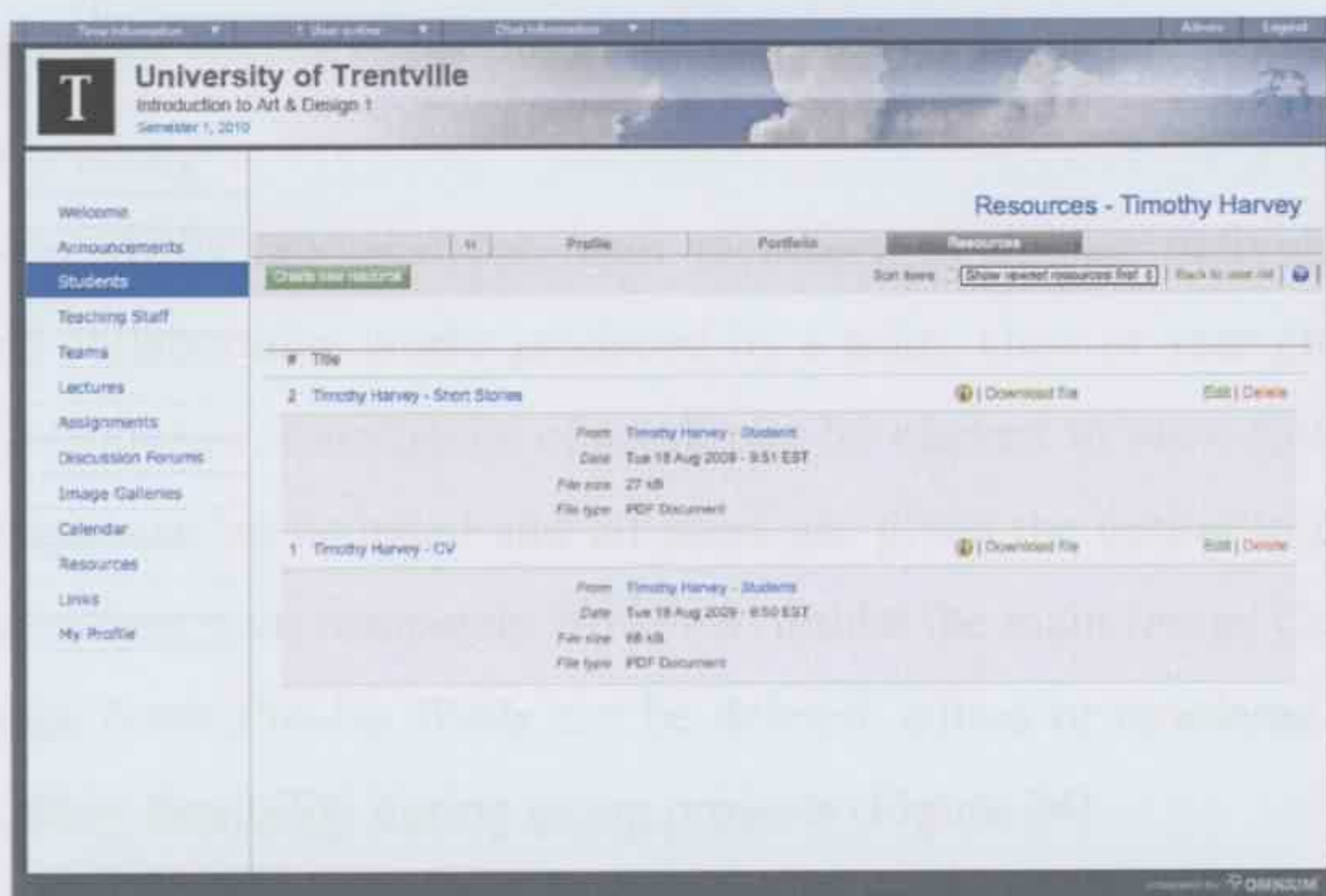


Figure 20 – Resources area allows staff and students to display their personal resources, such as their CV, in a variety of file formats including PDFs, Word, MP3 and movie files.

### ***Omnium Software team features***

Many courses and projects require that students be divided into smaller groups, teams or classes. All *Omnium Software* versions have included the ability to form small or large groups of users.

Five *Team Features* (*Team Notices*, *Team Members Profiles*, *Team Pin-Up Walls*, *Team File Sharing* and *Team Talk & Feedback*) enable groups of students to have spaces to communicate, collaborate and exchange ideas in more secluded and private areas than those that are open to the entire online community.

### ***Team Lists***

This is a list of all teams, years or tutorial groups and their members within the online community. Participants can view which members belong to each team

through a drop-down menu. Generally, access to other team's *Team Features* is restricted and only given to the members of particular teams (Figure 21).

#### *Team Notices*

The teacher, lecturer or administrator can post regular notices and announcements to all teams or just to their specific team. This allows team-specific news to reach classes and groups within a larger online community. As with the communal *Announcements* feature, the *Team Notices* content is automatically sent to students' email accounts and can be subscribed to via RSS feeds (Figure 22).

#### *Other Member's Profiles*

Team members can get to know each other on a more personal level by viewing each other's individual Profiles, Portfolios and Resources areas (Figure 23).

#### *Team Pin-Up Walls*

*Team Pin-Up Walls* are used for team members to upload individual works in progress and collaborative works produced by a team, class or year group. Like the main *Image Galleries*, thumbnails of work can be clicked to view full-size. Details about an image can be included and all users are given the option to download the original file to their own computers. However, unlike the main *Image Galleries* areas, images within *Team Pin-Up Walls* can be deleted, edited or reordered by any team member to allow flexibility during group projects (Figure 24).

#### *Team File Sharing*

*File Sharing* provides a communal storage area for each team for essential working files (images, text, sound, multi-media). Works in progress and completed tasks can be stored and so keep everyone up to date with projects and other communal activities. In the *Omnium Software (2009)* version, team members can now post different versions of the same file for backup and review and each version of a file is recorded and can be accessed (Figure 25).

#### *Team Talk and Feedback*

*Team Talk and Feedback* is an area where team members can review, analyse and discuss outcomes of specific issues, projects and other topics related to their team. It is a private area specific to each team in which members can communicate with each other and plan team-specific collaboration. The functionality of this area works in the same way as the main communal *Discussion Forum* area (Figure 26).



The screenshots below show the visual layout of each of the team functions described above.

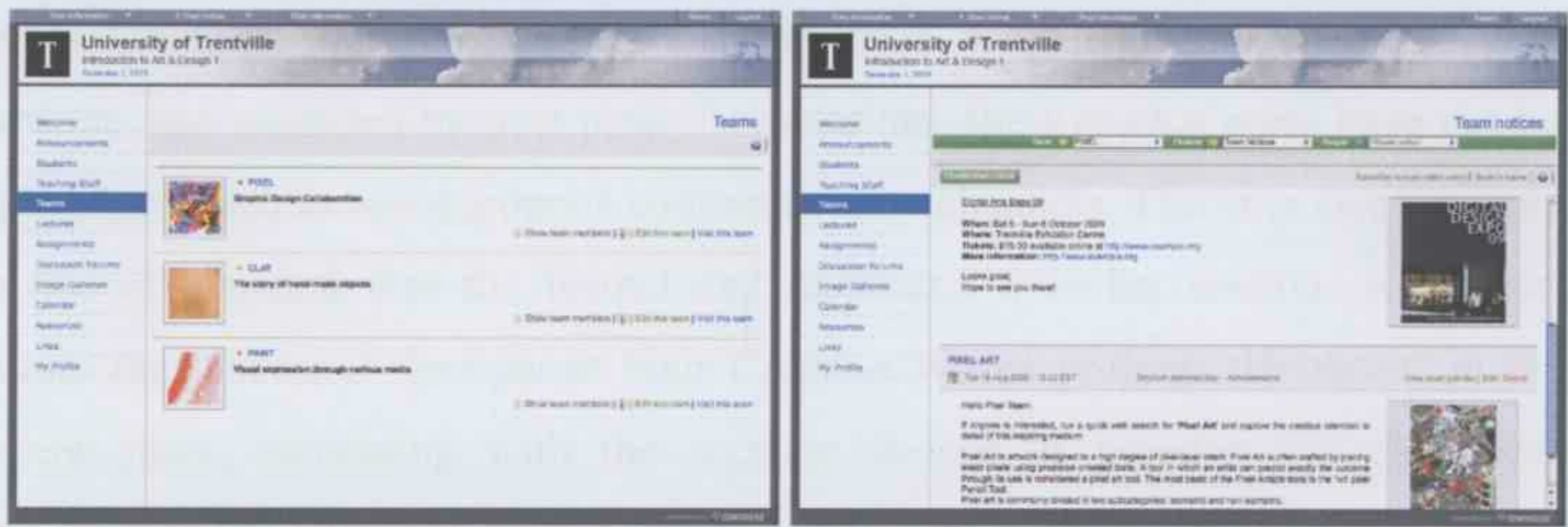


Figure 21 – Team Lists are where students can access the Notices, File Sharing area, Talk & Feedback forum and Pin-Up Wall exclusive to their own team.

Figure 22 – Team Notices allow administrators to post news and announcements to any team's private Notices board, allowing for team-specific information to be relayed.



Figure 23 – Member Profiles can be accessed by team members as a way to get to know one another with their private Team area.

Figure 24 – Team Pin-Up Walls are spaces where members of a team can display images for one another to access and view in relation to group work, team discussions and individual feedback.



Figure 25 – Team File Sharing areas allow team members to upload working files, useful documents and final projects and assignments to share with members of their own team

Figure 26 – Team Talk & Feedback is a private discussion forum where members of a team can get to know each other on a more personal level and collaborate together on group projects.

### *Omnium Software live features*

Since the inception of *Omnium* projects in 1999, the viability and effectiveness of live interactions between participants has been a questionable issue. In earlier projects, and validated by post project evaluations, the live-chat areas have not been utilised as much as asynchronous communication channels. The only clear exception to this observation was the formal and facilitated live-chat sessions with special guests that occurred throughout both *Creative Waves* projects. However, in more recent years, coinciding with the increase in use of popular live chat instant messenger (IM) systems such as *Yahoo IM*, *Facebook* and *Windows Live MSN*, *Omnium's* live chat rooms have been used more extensively in projects and courses. Evaluation data suggests that the majority of live communications are used more for socialising than they are for project work. However with *socialisation* activities now granted formal status within the latest *Omnium five-stage creative process model*, I considered it worthwhile to revise the live features offered users. For example, the live features now have redesigned aesthetics to simplify communications, the functionality to 'invite' any user online to chat, and chat-rooms for each working team (available only to specific team members).

*Omnium Software's Live Features* enable students and teachers in different global locations to chat, exchange ideas or feedback and collaborate in real-time. The *live features* foster a personal and interactive online learning environment and cohesive working relationships between teachers and students. There are four features that constitute the *Omnium Software (2009)* live feature options:

#### *Time Information & Comparison*

This feature is particularly useful when participants are working together from various locations around the world. Users can compare time differences between their location and that of other users. This functionality is particularly important when teams are organising times to meet online in real time to have collaborative discussions. This is a unique *Omnium software* feature and is not available as an integrated tool in any other software package (Figure 27).

#### *Users Online*

The *Users Online* indicator allows users to see at a glance those who are currently online and indicates how many visitors are currently logged into the interface. This is a standard feature on many interfaces of such a nature but the *Omnium software*

*Users Online* feature also allows a viewer to know which team a user online is a member of, and gives them the functionality to invite a person online to join in live chat (Figure 28).



Figure 27 – The Time Information & Comparison feature displays a user’s time zone information as well as a default project time so that they can co-ordinate projects, chat sessions and due date effectively.

Figure 28 – Users Online displays a list of which users are currently online, as well as their user type (e.g. students) and to which team/s they are members (if the Teams feature is being operated).

### Chat Information and Invitations

This feature gives users an indication of participants’ chat availability. Students and staff members can access the live-chat features directly through this area and a user can set their own settings to available or unavailable to chat (Figure 29).

### Live Chat Rooms

The *Live Chat Rooms* enable users to engage in synchronous (real-time) text-based conversations. Live Chat is not a private area, and in turn permits wider discussions within larger communal groups. However, the live chat area can also be set by project administrators to include individual team live-chat rooms where only team members of specific teams can access their own live-chat room (Figure 30).



Figure 29 – Chat Information allows users to set their chat status to ‘available’ or ‘not available’, and gives those available for chat direct access to the Live Chat area.

Figure 30 – Live Chat is an area where users can participate in synchronous (real-time), text-based conversations with each other – individually or as a group.

## *Omnium Software Administration*

Recent increased demand in self-management of *Omnium Software* for external clients necessitated that we completely redesign and develop its 'back-end' *Administration* area - an area that to date had always relied on *Omnium* staff to operate.

The main *Administration* area has been completely technically redeveloped and includes two levels of access; *Administrators* - who are authorised users for an interface such as project and course convenors, plus other selected users such as teachers and tutors, and *Super-Administrators* who remain *Omnium* technical staff. The *Super Administrator* access allows changes to the code-base and advanced settings whereas the *Administrator* access allows coordinators to 'add' and 'edit' new participants, issue login usernames and passwords, create new teams, determine permission settings, and name the primary navigation buttons.

The new modular structure of the code-base has been programmed throughout the last year to allow greater flexibility for external administrators to set preferences for each feature without impacting on associated features. For instance, previously, if a setting was determined for the maximum file size of an image that could be uploaded, this setting would apply throughout all visual features of the software. Now, in the latest code-base for *Omnium Software (2009)*, a setting only affects the feature to which it is applied. This allows user administrators to switch on and off features as required without impacting on other features.

In addition, the visual look of the *Administration* area has been completely reworked to now allow users to access this area, whereas, previously only *Omnium* staff could have access (Figure 31). Again, this has the great advantage of allowing external users and project coordinators to maintain their own interfaces without relying on communication with *Omnium* staff to make back-end alterations.

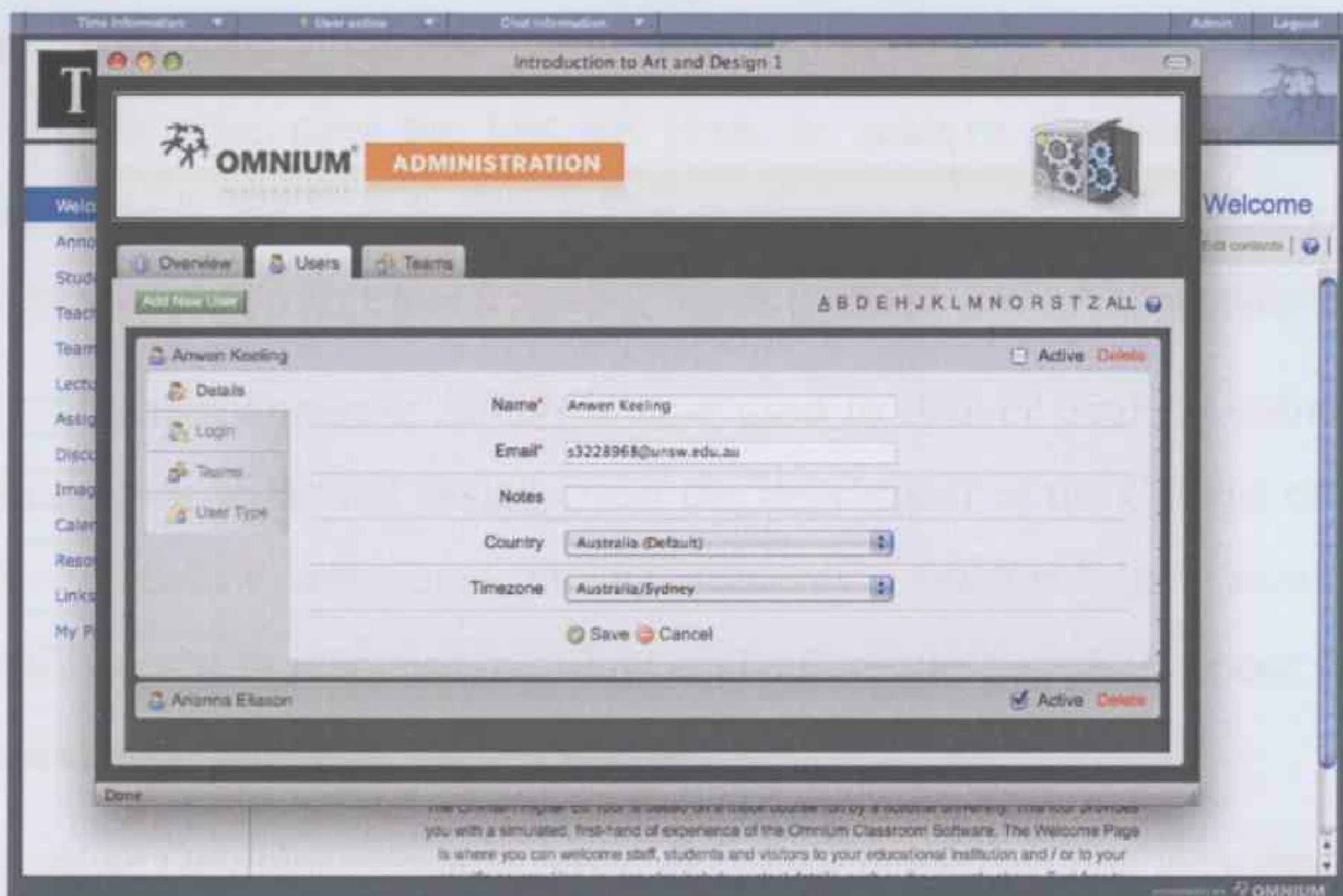


Figure 31 – Omnium Software (2009) Administration area now be accessed by external administrators and authorised teaching staff to add and manage users, teams, permission settings and the many features of the user- interface.

## Summary of Omnium Software (2009)

Within an education context, unlike most other e-learning platforms, *Omnium Software* strives to provide a comfortable technical environment in which users can work and study. *Omnium* does not consider itself an online ‘learning management system’ (LMS) where emphasis is placed on academic management and links with institutional administration. Instead, it is an ‘online learning environment’ (sometimes referred to as virtual learning environment – VLE) where the learning and teaching experience is placed above issues involving administration and management of students and teachers.

No other software package is currently available which allows such freedom, flexibility and simplicity in displaying visual, sound and movie files. *Omnium’s* many sophisticated features, that enable online studio practice or learning and teaching activities to take place, cannot be found in any other software package. Indeed, the uniqueness of the software is that it congregates otherwise dispersed features needed for *online collaborative creativity*, especially in an e-learning context, into one coherent and easy-to-use interface.

This is a crucially important difference and is the reason why *Omnium’s* software continues to be commended by students and teachers alike. Merely the fact that the user-interface ‘looks nice’ is perhaps the most common feedback from users and an

important design aspect in itself; one which *Omnium's* graphic designers have spent a great deal of time over the last ten years to achieve. Furthermore, its simple navigation reflects the face-to-face studio environment and provides easy access to information about a project that a teacher needs to make available to students.

The latest *Omnium Software (2009)* is now used to deliver over 30 online General Education courses in art and design under the imprimatur of the College of Fine Arts (UNSW).<sup>318</sup> Below are some of the students', teachers' and administrators' comments received in response to online evaluation questionnaires about *Omnium's* software and user-interface:

*This online Omnium system is great. Very well organised and very thorough. I don't get as much value in some of my face-to-face classes compared to this! (Student feedback)*

*The fact that the course is completely online is very convenient – the Omnium set up is great, easy to use and interesting. (Administrator feedback)*

*It was easy to navigate around and was all set out very well and very user friendly. Good, quick responses were made available from my tutors. (Teacher feedback)*

This chapter has discussed the outcomes from the research and experimentation I have undertaken since 2004 to develop the final (to date) *Omnium five-stage creative process model* and the latest *Omnium Software (2009)* version. It is these two outcomes that conclude this thesis and offer solutions for others who wish to engage in online creative projects. And, in particular, for those who believe that the collaborative working processes that computer technologies enable, are an important aspect of contemporary practice and crucial for the future in both professional and educational contexts.

---

<sup>318</sup> The College of Fine Arts at UNSW (Australia) uses the *Omnium Software* to deliver all its online courses at undergraduate and postgraduate levels. Full details of all the courses can be found at - <http://cofa.unsw.edu.au/schoolsunits/schools/cofaonline/gened.html> (accessed 25/07/09)

---

## - CONCLUSION -

---

The main aim of this thesis has been to propose and present two new developed areas of knowledge for visual artists and designers who wish to engage in *online collaborative creativity*:

- A *five-stage creative process model* to apply to projects when working collaboratively and online.
- An effective web-based *technical platform* (software application) that is available as both free (and open-source) and licensed (serviced) products.

The thesis was initially framed by contrasting quotes made during the latter decades of the 20<sup>th</sup> century by two creative luminaries, American designer, the late Paul Rand, and UK born visual artist and designer, John Warwicker. While Rand believed the creative process to be a uniquely individual endeavour, only a decade later Warwicker argued that the world had changed dramatically and that collaboration was the key to future creative practice.

My intention was to document my research about *online collaborative creativity* and in doing so gauge the viability and effectiveness of the Internet as a working environment for visual practitioners.

Throughout the thesis I refer to *Omnium*, a research project I conceived in 1998, that has since become a formally recognised research group comprising academics, writers, artists, designers, computer programmers and computing system administrators based at the College of Fine Arts (COFA) at the University of New South Wales. *Omnium's* many research activities, both formal academic studies and practical online creative projects, developed from my initial observation of a split between design students' education and the professional practices of some creative industries. *Omnium* is an online art and design initiative that has responded to concerns expressed by contemporary students regarding the way they wish to study. Its objective is to better align art and design education with new collaborative methods of working that professional practice is increasingly adopting.

From the late 1990s, *collaborative* working approaches, facilitated by the use of information and computer technologies, were emerging as common practice in

commercial creative projects. I maintained that similar collaborative creative practices should, therefore, be embedded in art and design education curricula (whether they be face to face or online). I felt that within an education context, the concept of learning and teaching collaboratively by using the Internet as an addition to more familiar and established individual approaches was crucial.

Consequently, my research aims to provide a more flexible, holistic and responsive online learning culture in a time where increased access communication technologies characterises the way we live our lives.

*Chapter One* reported the responses of 80 students studying the Bachelor of Design at the University of New South Wales (UNSW) through a five-point *Transition, Orientation & Motivation (TOM)* survey that I conducted in 1998. The intention of the survey was to *formally* canvass their opinions about their learning environment. The results indicated a set of negative issues that students felt were detrimental to their studies. These included:

- very heavy (even unmanageable) workloads that caused stress
- concern regarding the amount of feedback they received in limited class times
- the amount of individual time available for discussion with teaching staff
- a general lack of encouragement received from teaching staff
- timetabling issues regarding classes and project submission dates
- frustration with teachers discouraging the use of computers
- their need for employment and its affect on their study time
- travel implications to attend lectures and studio classes
- age - intimidation effect of older or younger students
- more time needed for social, academic & institutional orientation
- the detrimental nature of competitiveness and comparison between students

Furthermore, I was *informally* hearing students discuss that they required more flexibility in the delivery of their courses to suit their busy lifestyles. I began to consider ways in which Internet technologies could offer additional options to suit the ways they wished to study.

In response to these observations, I developed and implemented *Omnium: [vds] '99* - the first global online art and design project I hosted, in 1999. As Chapter two discusses, the project aimed to respond to positive suggestions made by students via



the *TOM* survey, and suggestions put forward in informal discussions that they felt would enhance their learning. These included:

- encouragement toward collaboration rather than individual competition within coursework projects
- increased awareness of international and cultural diversification
- encouragement and recognition of cross-disciplinary approaches to designing
- inclusion of contributions from design practitioners and reference to professional
- industries within classes and projects
- stronger dialogue and interaction between staff and students
- greater use of new technologies to facilitate design programs
- less prescription and predetermination of set design projects

As a consequence, I designed the work within the *Omnium: [vds] '99* project to:

- be un-prescribed and un-predetermined (yet not confusingly ambiguous) through an unraveling series of creative briefs
- involve strong creative dialogue and interactive components through written and visual communications
- contain a cross disciplinary approach to designing
- encourage collaboration rather than competition between students
- involve international and cultural diversity

The *Omnium: [vds] '99* project was the first of its size and structure to occur within a graphic design discipline and aimed to begin the ongoing development of two research outcomes that this thesis claims are fundamental to achieving effective *online collaborative creativity*:

- A *creative process model* that focuses on exploring the generation of visual concepts and outcomes - collaboratively, digitally and across distance via the Internet.
- A *web-based technical platform* that reflects the online creative working process: an online user-interface with features that assist users in undertaking *collaborative creative work using the Internet as their classrooms or studios*.

*Chapter Three* reported a second survey I designed with a colleague in 2003, for *visual arts and design students and included responses from 549 students from*

colleges in the Sydney region. The survey: *Examining Levels Of Collaborative Study Within Higher Education Curricula In Visual Arts and Design*, aimed to confirm or dispel my perception that visual arts and design education was becoming 'dislocated' from collaborative working approaches that I had observed emerging within professional creative industries. By comparing and combining the responses from both surveys (Chapter One and Chapter Three) it was evident that more flexible and collaborative approaches to learning and teaching were not as common within education institutions as they would have us believe.

To my mind, the Internet held great potential and appeal for contemporary students and included advantageous characteristics that made it an undoubted future option for [art and design] education. I identified a 'top ten' series of characteristics that would make the Internet a popular interactive space for learning and teaching:

1. anonymity / removal of inhibitions
2. speed of communication - email / 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 (using data-bases)
7. option to work in a variety of formats (text / movies / still images / sound)
8. an entertaining / enjoyable context
9. economical and sustainable to the environment
10. the excitement of working with innovative technology

With these characteristics in mind, *Chapter Four* compared traditional studio practice in the visual arts and design, and early 'virtual' studio initiatives that used the Internet as their basis. The comparison between the two studio settings (traditional and modern) gave me additional insights into how to adapt my new online studio practice based on aspects of traditional studio practice.

The Chapter discussed theorists who represented each area, Professor Donald Schön and Professor Thomas Kvan. My aim was to identify the practicalities needed to experiment with new approaches to teaching and learning in visual arts and design education. A brief review of early virtual design studios I undertook revealed that in many cases, they were somewhat unsuccessful. However, this gave me the advantage of discovering what not to attempt or include in plans I had for my first online design

studio. However, through a far more extensive review I undertook in 2004, I discovered positive aspects and influential directions. I was able to include and apply these influences in the *Creative Waves* project series I produced in 2005 and 2007.

Another important aspect to consider was the culture within academia towards such radical and new approaches to learning and teaching. Chapter Five discussed early myths, fears and misconceptions towards online education and factors that caused such apprehension. In particular, it looked at two early ‘drivers’ for online education, economics and technology, that for the first decade (mid 1990s to mid 2000s) I argued were detrimental to effective online learning. The findings from researching early e-learning examples and strategies identified the following points to be cautious of when planning any online learning projects or courses. Online education should not be seen as:

- A cost cutting approach to learning and teaching.
- A time-saving approach to learning and teaching.
- A replacement for face-to-face learning.
- The latest interpretation of distance-learning.
- A place where students can teach themselves (disguised as peer-learning).

Likewise, the attitude of students to technology is an important consideration. The second half of the Chapter gave insights into the new generation of students – a generation that is technically-savvy and focused in what they *need* to learn to benefit their life after university.

The chapter concluded by stating that if the result of the first decade of online education, was that it formed a series of myths, insecurities and negative opinions about online learning, it must be the aim of the next decade to dispel them as misconceived. It is now the task for online educators to develop courses and programs purposely tailored for the online context and for institutions to express credible and clear reasons for adopting online education profiles whilst incorporating new technologies and social interactions *within* education. Furthermore, any online projects or courses need to not only take into account the lifestyles of the current generation of students, but also the online social experiences they are accustomed to outside of their college commitments.

*Chapter Six* initially outlined two diagrammatic definitions of *creativity* proposed by Csikszentmihaly (1997); and Rothenberg and Hausman (1976) before discussing

other theorists views. The *creative process* is then addressed through a series of four and five stage models that I found particularly informative when considering my own revisions to Omnium's *five-stage creative process model for online collaborative creativity*. My original model, that formed the structure of the first *Omnium* online project, in 1999, was based purely on my own professional and teaching experience. However, literary research, between 2004 and 2007, of creativity and creative processes gave me a far more informed basis to make ongoing revisions and redevelopments to *Omnium's* creative process model.

The first influential model was proposed by George Wallas (1926) in which he defined four stages: *preparation, incubation, illumination and verification* to encompass a creative process. The second model I describe, proposed by Catherine Patrick (1937) extended Wallis' model by adding a process of *verification* within Wallas' final stage. The third model, offered by Mihaly Csikszentmihaly, (1997) extends the two previous models to include an alternative five stages: *preparation, incubation, insight, evaluation, elaboration*. Each of the three models closely refer to each other and share similar explanations for the inclusion of the stages.

The final model I referred to, which was also influential in the development of my own *five-stage creative process model*, came from the field of education. In 2000, Gilly Salmon proposed a five-stage *model of teaching and learning online through online networking*. The model, which included stages: *access & motivation, online socialization, information exchange, knowledge construction, and development*, gave me insights for later adding aspects of online socialising into *Omnium's* model. Despite not changing the formal five stages (*gathering, identifying, distilling, abstracting, and resolving*) of my own creative process model at this time (2005), the references I have cited did inform the content within the model and activities that later took place in subsequent *Omnium* projects.

*Chapters Seven and Eight* gives detailed case-studies that report two *Omnium* online art and design projects, titled *Creative Waves*, that I hosted in 2005 and 2007. The objective of both online projects was to identify and formalise criteria that could be embedded within the design of both an *online creative process model* and a *software application*. The aim was to allow artists and designers (and others) from any location to work easily together and inform a structured but creative way, free from technical hurdles that may hinder their creative collaboration. As such, the two

projects are the basis for ongoing research and development in Internet based visual arts studio education and practice.

Both Case Study reports include formal evaluations that test the design of the projects offered to over 300 participants from over 40 countries. The two projects were significant in size and production and each took a year to plan, develop and produce. Each progressed the *Omnium five-stage creative process model* and each had a completely revised and programmed *Omnium* technical platform.

On reflection, the two projects highlighted a number of areas that required consideration, clarification or modification for future projects to effectively engage students. They are:

- Technical elements of the user-interface need to be further refined for ease of use.
- They need to be clearly signposted, so that it is obvious to collaborators *where* they contribute at each point in time and *what* they contribute for each activity.
- There needs to be clear goals set - for the projects overall and also for each element or stage within the project.
- There needs to be active engagement in a socialisation stage prior to the *real* work beginning and time needs to be set aside for this.
- Both students and facilitators (teachers) need to understand and be able to commit the time required to participate.
- Teachers need to have a clear understanding of how online facilitation differs from face-to-face facilitation, including: the immediateness of feedback, how to engage or re-engage students who are not participating, how to promote peer-to-peer interaction rather than peer-mentor or peer-content interaction.
- That online collaboration is a high energy activity and so the project timeline needs to be considered carefully to avoid over-exhaustion.

Emerging as a core value from the experience of producing and hosting the *Creative Waves* projects was the increasingly apparent need to share experiences that accompanies the production of visual work and the narrative conversations and observations that support and surround the production of design outcomes.

Having reflected on the two *Creative Waves* projects, Chapter Nine, the final chapter, presents ongoing revisions of *Omnium's* two research outcomes, its *five-stage*

*creative process model* and *software package*, and their most up-to-date development. It proposes that when used in combination, they provide a strong basis to engage in effective *online collaborative creativity* in either professional or education settings.

In conclusion, the thesis argues there is a strong case to be made for *online collaborative creativity* in learning and teaching in tertiary art and design courses. For decades, self-directed learning has been a central part of reflective studio practice, while collaboration is an emerging and growing approach within professional art and design projects. This means future professionals need to be proficient in working in an online collaborative environment.

The Internet presents an ideal space for art and design education to incorporate creative collaboration by using online technologies, and to make education relevant to students for whom these technologies are part of their everyday lives. After all, the next generation of school leavers will have never known a world without the Internet and its associated communities and social interactions.

I believe that by developing a model that describes a working process that encourages online collaborative creativity *and* providing a technical system or platform that allows a creative process to take place, an additional option for art and design education has become available. Both outcomes are in touch with the wishes of contemporary students' needs and prepares them for collaborative working processes in contemporary professional industries.

I argue that the theoretical foundations, project descriptions, practical findings and quantitative evaluations discussed throughout the thesis prove my hypothesis that provision of the *Omnium five-stage creative process model* and the *Omnium Software* application, for use within education and the broader professional art and design community, is both feasible and worthwhile. In addition, I claim they are increasingly in demand from the stakeholders within both communities.

To refer again to the differing views of Rand and Warwicker, the activity of 'creating' has witnessed a definitive shift in attitude over the past decade, with more and more artists and designers from a variety of disciplines choosing to adopt collaborative working approaches when undertaking commercial and experimental projects. Such an evolution in methodology is supported by the view that contemporary designing is not just contingently, but fundamentally, a collaborative,

interdisciplinary, geographically distributed and multimedia activity. Such a notion significantly challenges and contradicts the traditional paradigm of design as a private, personal activity as supported by influential proponents of design such as Paul Rand. The traditional face-to-face design process, seen as an individual's reflective dialogue with his or her own work, no longer seems totally applicable in contemporary creative practice.

A similar evolution is already taking place within most of fields of education, although how fast changes can be made to curricula, in response to increased demand from students (and educators), is reliant on the innovation and forward thinking of university and college administrators. As Keats and Schmidt advocate:

*A new landscape for education is emerging as a result of developments in information and communication technology (ICT) in the last 15 years; community-based innovation and production models based on concepts of sharing that have blossomed in the past four-five years; and, educational pedagogies as well as institutional arrangements that are still forming. Widely known and vigorously discussed and debated among those 'in the know', this incipient educational landscape remains largely invisible to the majority of educational practitioners and participants in higher education on a global scale.<sup>319</sup>*

I think there would be no better way to conclude this thesis than with a quote from one of the thousands of students around the world who have taken part and experienced *Omnium's* online creative projects, or education courses that have applied its *five-stage creative process model* and/or *technical software platform*:

*In regard to these kind of art and design courses and projects being offered online, I think you just do things differently here. You really are forced to work as a team & you learn how effective team-work can be. I don't think you get that when you are in face-to-face settings - there's just not the continuity. I think it also draws on elements that are evident in online social networks. In my opinion people really do open up more online and tend to be more honest and give more constructive opinions. I think that's as a result of your words*

---

<sup>319</sup> Keats, D. & Schmidt, J. P. (2007) 'The Genesis and Emergence of Education 3.0 in Higher Education and its Potential For Africa', *First Monday Journal*, Vol. 12, No. 3. <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1625/1540> (accessed 03/02/08)

*being well thought out. Having the ability to re-read what you've written is unique and for some people beneficial. You also start to see how people can see things in different ways. I really do think that if you 'put into' this kind of creative approach you do get a whole new way of creating out.*

S.C. - Australia (2007)

---



**- LIST OF REFERENCES -**

Anderson, T. (2003) *E-learning in the 21st Century: A Framework for Research and Practice*, RoutledgeFalmer, London.

Anderson, T. (2004) 'Toward A Theory Of Online Learning', in T. Anderson & F. Falloumi (eds.), *Theory and practice of online learning*, Athabasca University, Canada,  
[http://cde.athabascau.ca/online\\_book/ch2.html](http://cde.athabascau.ca/online_book/ch2.html) (accessed 08/08/09)

Anthony, K. H. (1991) *Design Juries on Trial: The Renaissance of the Design Studio*, Van Nostrand Reinhold, New York.

Arkitera.com (2008) Arkitera Architecture Center, Istanbul,  
<http://www.arkitera.com> (accessed 11/11/08)

Ascilite (2005) 2005 Awards, NSW, Australia,  
[http://www.ascilite.org.au/index.php?p=ascilite\\_awards\\_2005](http://www.ascilite.org.au/index.php?p=ascilite_awards_2005) (accessed 11/08/09)

Ash, C. & Bacsich, P. (2002) *The Costs of Networked Learning*, in C. Steeples and C. Jones (eds.) *Networked Learning: Perspectives and Issues*, Springer, London.

Ashcroft, K. & Foreman-Peck, L. (1994) *Managing Teaching and Learning in Further and Higher Education*, Falmer, London.

Baingana, S. & Ros, E. (2006) 'Changing Patterns Of Disease And Mortality In Sub-Saharan Africa: an overview', in D.T. Jamison et al. (eds.), *Disease and Mortality in Sub-Saharan Africa*, 2<sup>nd</sup> edition, The World Bank,  
<http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=dmssa&part=A84> (accessed 15/08/08)

Baker, S. (1996) *Process: A Tomato Project*, Thames & Hudson, London.

Bassett, P. (1996) 'Design Education: For Whom the Bell Tolls?', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 48-53.

Bennett, R. (1998) 'Transition, Orientation & Motivation: Identifying Individual and Institutional Factors That Affect the Successful Orientation and Adjustment of Design Students Entering Tertiary Education', *First Year in Higher Education Conference Proceedings*, Vol. 1, Chapter 34, Auckland Institute of Technology (AIT).

Bennett, R. (2000) 'Om'nium [vds]: Presenting an On-Line Future for Tertiary [Design] Education', *Outline 9*, Winter Issue 9, University of Brighton Press, CTIAD, Brighton, pp 17-24.

Bennett, R. Polaine, A. & Chan, L. (2003) 'The Future Has Already Happened: Dispelling Some Myths of Online Education Australian Council of University Art and Design Schools (ACUADS)', *National Conference Proceedings*, Australian National University, Canberra,  
[http://omnium.net.au/assets/downloads/papers/2004\\_acuads\\_future.pdf](http://omnium.net.au/assets/downloads/papers/2004_acuads_future.pdf) (accessed 01/05/09)

Bennett, R. & Dunphy, E. (2004) 'Meeting Pluralist Demands With A Pluralist Response - The Omnium Project: Offering an Online Collaborative Design Response to an Increasingly Diversified, Interconnected and Pluralist World', *FutureGround International Design Research Conference Proceedings*, Monash University, Melbourne.

Bennett, R. & McIntyre, S. (2004) 'Post the eLearning Goldrush: Encouraging Quality and Purpose in Online Art and Design Education', *ACUADS Conference Proceedings*, Australian National University, Canberra,  
<http://omnium.net.au/research/papers> (accessed on 15/10/07)

Bento, J. (2004) *Collaborative Design and Learning: Competence Building for Innovation*, Greenwood Publishing, Westport.

The Beyond Distance Research Alliance (2008), University of Leicester UK,  
<http://www.le.ac.uk/beyonddistance> (accessed 10/07/08)

Biggs, J. (1999) *Teaching for Quality Learning at University: What The Student Does*, Open University Press, Buckingham.

Biggs, J. (2001) 'The Reflective Institution: Assuring and Enhancing the Quality of Teaching and Learning', *Higher Education*, Vol. 41, No. 3, pp 221-238.  
<http://www.springerlink.com/content/m2472106v357t754/fulltext.pdf?page=1>  
(accessed 02/05/09)

Bollier, D. (2001) Artists, Technology, and Ownership of Content.  
[http://www.bollier.org/pdf/ATORreport\\_All.pdf](http://www.bollier.org/pdf/ATORreport_All.pdf) (accessed 12/02/09)

Bonk, C. J. & Kim, K. (2002) 'Cross Cultural Comparisons of Online Collaboration', *Journal of Computer-Mediated Communication*, Indiana University,  
<http://jcmc.indiana.edu/vol8/issue1/kimandbonk.html> (accessed 07/05/09)

Bonk, C. J. (2006) *The Handbook of Blended Learning*, Pfeiffer, San Francisco.

Boud, D. et al (eds.) (1985) *Reflection: Turning Experience Into Learning*, London, Kogan.

Brookfield, S. D. (1986) *Understanding and Facilitating Adult Learning*, Open University Press, Milton Keynes, UK.

Brookfield, S. D. (1990) *The Skillful Teacher*, Jossey Bass, San Francisco.

Brookfield, S. D. (1995) *Becoming a Critically Reflective Teacher*, Jossey-Bass, San Francisco.

- Bryce, M. (1996) 'Sleeping With Gropius: and Learning to be a Designer', *DIA National Conference On Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 1-10.
- Buckman, R. (2000) 'Who Caused the Dot-Com Crash?' *The Wall Street Journal*, <http://www.infopoint.com/articles/dotcomcrash.html> (accessed 12/02/09).
- Burnett, R. (2005) *Essays by Ron Burnett*, Omnium Creative Waves 05, [http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec\\_id=20](http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec_id=20) (accessed 21/06/09)
- ECUAD (2009) *Ron Burnett: President*, Emily Carr University of Art & Design, Vancouver, Canada, <http://www.ecuad.ca/about/people/bio/12058624> (accessed 24/05/09)
- Cami, A. (1991) 'On The Multidisciplinary Myth', *Design Magazine*, No. 510.
- Candy, L. & Edmonds, E. (2004) 'Creative Expertise and Collaborative Technology Design', *Creative Cognition Studios*, <http://research.it.uts.edu.au/creative/COSTART/pdfFiles/APCHI.pdf> (accessed 12/02/09).
- Cannon, W. B. (1976) *The Way of an Investigator*, W.W. Norton & Company Inc, New York, pp 57-67.
- Carroll, J., Howard, S., Vetere, F., Peck, J., Murphy, J., (2002) 'Just What Do The Youth Of Today Want? - Technology Appropriation By Young People' *Proceedings of the 35th Hawaii International Conference on System Sciences*, [http://www.hicss.hawaii.edu/HICSS\\_35/HICSSpapers/PDFdocuments/ETMIRO2.pdf](http://www.hicss.hawaii.edu/HICSS_35/HICSSpapers/PDFdocuments/ETMIRO2.pdf) accessed 17/05/09
- Castells, M. (2000) *The Rise of the Network Society: The Information Age*, Blackwell Publishers, West Sussex.
- Cheng, N., Wojtowicz, J. & Kvan, T. (1994) 'Place, Time and The Virtual Design Studio', in *Re-connecting: Proceedings of Association for Computer Aided Design in Architecture (ACADIA 94)*, St. Louis.
- Coates, T. (2006) *Greater Than the Sum of its Parts*, presentation at The Future of Web Apps, San Francisco, <http://www.plasticbag.org/files/greater> (accessed 10/08/09)
- COFA (2009) General Education Courses, The College of Fine Arts, Sydney, <http://cofa.unsw.edu.au/schoolsunits/schools/cofaonline/gened.html> (accessed 25/07/09)
- Conlon, T. (1997) 'The Internet Is Not a Panacea', *Scottish Educational Review*, Vol. 29, No. 1, pp 30-38.
- Cravens, J. (2006) 'Involving International Online Volunteers: Factors For Success, Organizational Benefits, And New Views Of Community', *The International Journal of Volunteer Administration*, Vol. 24, No. 1, pp 15-23.

Creative Waves (2005) *03>04>05: An integrated graphic and photomedia project*, <http://www.omnium.edu.au/promo/creativewaves>

Crum, R. (1998) 'The Third Revolution - Michael Dertouzos is MIT's Internet Visionary', *Boston Business Journal*, <http://boston.bizjournals.com/boston/stories/1998/11/30/story3.html> (accessed 12/07/08)

Curtis, D. & Lawson, M. (2001) 'Exploring Collaborative Online Learning', *JALN*, Vol. 5, No. 1, pp 21-34.

Czikszentmihalyi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, Harper-Perrenial, New York.

Danvers, J. (2003) 'Towards a Radical Pedagogy: Provisional Notes on Learning and Teaching in Art and Design', *International Journal of Art and Design Education*, Vol. 22, No. 1, pp 47-57.

Demos (2008) *About Demos*, London, UK, <http://www.demos.co.uk/about> (accessed 10/11/08)

Dewey, J. (1997) *Democracy and Education*, 3rd ed., Free Press, New York.

Duarte, J. (1997) *Remote Collaborative Design: The Lisbon Charette*, Melbourne Institute of Technology, <http://web.mit.edu/4.199/www/class> (accessed 21/03/09)

Dziekhan, V. L. (2003) 'Out of the Dark: Photographic Practice in Light of Virtual Studio', *eLearning For The Creative Industries - Create.ed Conference Proceedings*, Faculty of Art, Design and Communication, RMIT University, Melbourne, Australia, pp 59-66.

Eggins, H. (2000) 'Costing Technology-Based Education: Research Studies From the UK, Canada, the European Community, and Australia', in Finkelstein, M. et al (eds.) *Dollars, Distance, and Online Education*, American Council on Education and Oryx Press, Phoenix, pp 63-81.

Ellison, N. B., Steinfield, C. & Lampe, C. (2007) 'The Benefits of Facebook "Friends": Social Capital and College Students' Use of Online Social Network Sites', *Journal of Computer-Mediated Communication*, Vol. 12, No. 4, <http://jcmc.indiana.edu/vol12/issue4/ellison.html> (accessed 22/05/09)

Entwistle, N., Marton, F. & Hounsell, D. (1984) *The Experience of Learning*, The Scottish Academic Press, Edinburgh.

Fischer, G. (2000) 'Shared Understanding, Informed Participation, and Social Creativity: Objectives for the next Generation of Collaborative Systems', in *Proceedings of COOP 2000 [Fourth International Conference on the Design of Cooperative Systems]*, Sophia Antipolis, France, pp 128-136.

Flew, T. (2002), *New Media: An Introduction*, Oxford University Press, UK.

- Franciscono, M. (1971) *Walter Gropius and the Creation of the Bauhaus in Weimar: The Ideals and Artistic Theories of its Founding Years*, University of Illinois Press, London.
- Frascara, J. (1997) *User-Centered Graphic Design: Mass Communication and Social Change*, Taylor & Francis, London.
- Gardner, J. & Jeweler, A. (1985) *College is Only the Beginning*, Wadsworth Publishing, Belmont.
- Gillingson, S. & O'Leary, D. (2006) *Working Progress: How To Reconnect Young People and Organisations*, Demos, London.
- Glesta, A. (1997) *Interdisciplinary Art Practice, Proceedings of the Emergent Paradigms in Design Education: Sustainability, Collaboration & Community Conference*, Faculty of the Built Environment, University of New South Wales, Sydney.
- Godin, S. (2001) *Unleashing the ideavirus*, Seth Godin, New York.
- Gokhale, A. A. (1995) 'Collaborative learning enhances critical thinking', *Journal of Technology Education*, Vol. 7, No. 1, pp 22-30.
- Gollifer, S. (2002) 'Bits & Bytes: Collaborating Together in Fine Art Printmaking', *Online Conferencing in the Arts and Humanities*, hosted by HANS, De Mountford University, Milton Keynes, UK.
- Goodyear, P., Salmon, G., Spector, J.M., Steeples, C. & Tickner, S. (2001) 'Competences For Online Teaching: A Special Report', *Educational Technology, Research and Development*, Vol. 49, No. 1, pp 65-72, <http://www.eurolinguaict.net/downloads/Barcelona/Modulo01/Competences+for+online+teaching.pdf> (accessed 21/04/09)
- Green, H. & Hannon, C. (2007) *Their Space: Education for a Digital Generation*, Demos, London.
- Hargadon, A. & Bechky, B. (2006) 'When Collections of Creatives Become Creative Collectives: A Field Study of Problem Solving at Work', *Organization Science*, Vol. 17, No. 4, pp 484-500.
- Heller, S. (2001) *The Education of an E-Designer*, Allworth Press, New York.
- Heller, S. (2009) *Heller Books: About Steven Heller*, New York, <http://www.hellerbooks.com/docs/about.html> (accessed 01/03/09)
- Hoffman, M., Richmond, J., Morrow, J. & Salomone, K. (2002) 'Investigating Sense Of Belonging in First-Year College Students', *Journal of College Student Retention: Research, Theory and Practice*, Vol. 4, No. 3, pp 227-256.
- Holden, J. (2007). *Logging On: Culture, Participation and the Web*, Demos, London.

Holt, S. (2000) 'Beauty and the Blob: Product Culture Now', in Albrecht, Lupton & Holt (eds), *Design Culture Now*, King Publishers, in association with the Smithsonian Institute, New York.

Icograda (2004) International Council of Graphic Design Associations, <http://www.icograda.com> (accessed 10/08/06)

IdN Fresh Conference - Hong Kong [DVD Package] (2000) *12 Interviews with International Flash Designers*, Systems Design Ltd, Hong Kong.

Ionescu, L. (2003) 'Michael Spiccia', *Refill Magazine*, Vol. 1, No. 1, pp 106-111.

Jacques, A. (1982) 'The Programmes of the Architectural Section of the Ecole Des Beaux Arts, 1819-1914', in Middleton, R. (ed.) *The Beaux Arts and 19th Century French Architecture*, Thames & Hudson, London.

Johnson, S. (1997) *Interface Culture: How New Technology Transforms The Way We Create and Communicate*, HarperEdge, San Francisco.

Johnson, C. M. (2001) 'A Survey of Current Research On Online Communities of Practice', *Internet and Higher Education*, Vol. 4, No. 1, pp 45-60.

Johnson, S. (2001) *Emergence: the connected lives of ants, brains, cities, and software*, Scribner, London.

Jones, J. C. (1991) *Designing Designing*, Architecture, Design and Technology Press, London.

Jones, J. C. (1992) *Design Methods*, John Wiley and Sons, New York.

Jones, C. & Asensio, M. (2002) 'Designs for Networked Learning in Higher Education: A Phenomenographic Investigation of Practitioners' Accounts of Design', in Dutton, W. & Loader, B. (eds.) *Digital Academe: The New Media and Institutions of Higher Education and Learning*, Routledge, London and New York.

The Jubilee Debt Campaign (2008), London, UK, <http://www.jubileedebtcampaign.org.uk/?lid=98> (accessed 21/11/08)

Jung, I. & Rha, I. (2000) 'Effectiveness and Cost-Effectiveness of Online Education: A Review of the Literature', *Educational Technology*, Vol. 40, No. 4, pp 57-60.

Kaplan, J. & Segan, S. (2008) '21 Great Technologies that Failed', *PC Mag*, <http://www.pcmag.com/article2/0,2817,2325942,00.asp>, (accessed 21/05/09)

Karten, T. (2007) *More Inclusion Strategies That Work!: Aligning Student Strengths With Standards*, Corwin Press, California.

Katz, P. (1994) *The New Urbanism: Toward an Architecture of Community*, McGraw-Hill, New York.

- Keats, D. & Schmidt, J.P. (2007) 'The Genesis and Emergence of Education 3.0 in Higher Education and its Potential For Africa', *First Monday Journal*, Vol. 12, No. 3.  
<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1625/1540>  
 (accessed 07/08/09)
- Kemmis, S. (1983) 'Action Research', in Anderson D. S. & Blakers, C. (eds.), *Youth, Transition and Social Research*, Australian National University, Canberra.
- Khomanani (2009) *Aids Information: Caring Together for Life*, South Africa,  
<http://www.aidsinfo.co.za/khomanani/>
- Kimball, L. (2002) 'Managing Distance Learning: New Challenges For Faculty', in Hazemi, R. & Hailes, S. (eds.) *The Digital University – Building a Learning Community*, Springer, London.
- Kolb, D. A. (1984) *Experiential Learning*, Prentice Hall, Englewood Cliffs.
- Kress, G., Jewitt, C., Ogborn, J. & Tsatsarelis, C. (2001) 'Exploring Learning Through Visual, Actional and Linguistic Communication: The Multimodal Environment of a Science Classroom', *Educational Review*, Vol. 53, No. 1, pp 5-18.
- Kvan, T. (2000) 'Collaborative Design: What is it?', *Automation in Construction*, Vol. 9, No. 4, pp 409-415.
- Kvan, T. (2001) 'The Pedagogy of Virtual Design Studios', *Automation in Construction*, Vol. 10, No. 3.
- Kvan, T. (2001) 'The Problem in Studio Teaching – Revisiting the Pedagogy of Studio Teaching, Architectural Education for the Asian Century', *Proceedings of the 1st ACAE Conference on Architectural Education*, Milton Tan (ed), Centre for Advanced Studies in Architecture, National University of Singapore.
- Laiserin, J. (2000) 'The Pre-History of Internet Collaboration', in *Cadence*, December, <http://www.highbeam.com/doc/1G1-68924417.html> - (accessed 21/05/07)
- Laiserin, J. (2002) 'Digital Architect: From Atelier to E-telier - Virtual Design Studios', in *Architectural Record New York*, January,  
<http://archrecord.construction.com/features/archives/0201da.asp> - (accessed 23/05/07)
- Lamb, R. (1994) 'Psychological Type in First Year Architecture Students: Potential New Answers To Some Old Questions' in Ryan, G., Little, P & Dunn, I. (eds.) *Research in Higher Education*, HERDSA, Vol. 16.
- Laurel, B. (1993) *Computers as Theatre*, Addison-Wesley, Reading, Mass.
- Leadbeater, C. & Miller, P. (2004) *The Pro-Am Revolution: How Enthusiasts Are Changing Our Society And Economy*, Demos, London.
- Ledger, B. (1995) 'Design Studio: A Virtual Village', *Canadian Architect*, Vol. 40, No. 6.

- Legutko, R. S. (2007) 'Face-to-Face or Cyberspace: Analysis of Course Delivery in a Graduate Educational Research Course', *MERLOT Journal of Online Learning and Teaching*, Vol. 3, No. 3, <http://jolt.merlot.org/vol3no3/legutko.htm> (accessed 07/05/09)
- Lenhart, A., Madden, M., & Hitlin, P. (2005) *Teens and Technology: Youth are leading the transition to a fully wired and mobile nation*, Pew Internet & American Life, Washington, <http://www.pewinternet.org/Reports/2005/Teens-and-Technology.aspx> (accessed 16/05/08)
- Lewandowski, D. (2007) *Paul Rand: A Brief Biography*, Atlanta, Georgia, [www.paul-rand.com/biography.shtml](http://www.paul-rand.com/biography.shtml) (accessed 17/07/09)
- Logan, C., Allan, S., Kurien, A. & Flint, D. (2007) 'Distributed E-learning in Art, Design, Media: An Investigation Into Current Practice', *Art Design Media Subject Centre – Higher Education Academy (ADM-HEA)*, p 6. [www.adm.heacademy.ac.uk/library/files/adm-hea-projects/del-1/4-findings-from-survey-research.pdf](http://www.adm.heacademy.ac.uk/library/files/adm-hea-projects/del-1/4-findings-from-survey-research.pdf) (accessed 17/4/08)
- Lupton, E. (2000) 'Fluid Mechanics: Typographic Culture Now', in Lupton, E., Albrecht, S., Yelavich, S. & Owens, M. (eds), *Inside Design Now*, Princeton Architectural Press, in association with Smithsonian Institute, New York.
- Macbean, N. (2008) "'Feel Good" University Funding Breeds Mediocrity', ABC News, <http://www.abc.net.au/news/stories/2008/10/29/2404752.htm>, (accessed 28/5/09)
- Maher, M. L., Simoff, S. & Cicognani, A. (1996) 'The Potential and Current Limitations in a Virtual Design Studio', University of Sydney, <http://www.arch.usyd.edu.au/~mary/VDSjournal#pote> (accessed 19/03/02)
- Maher, M. L., Simoff, S. & Cicognani, A. (2000) *Understanding Virtual Design Studios*, Springer-Verlag, London.
- Marginson, S. (2002) 'Education in the Global Market: Lessons From Australia', *Academe Online*, May-June Issue, <http://www.aaup.org/AAUP/pubsres/academe/2002/MJ/Feat/Marg.htm>, (accessed 28/05/09)
- Mazzarol, T., Soutar, G. & Seng, M. (2003) 'The Third Wave: Future Trends in International Education', *International Journal of Educational Management*, Vol. 17, No. 3, pp 90-99.
- McInnis, C., James, R. & McNaught, C. (1995) *First Year on Campus: Diversity in the Initial Experiences of Australian Undergraduates*, Australian Government Publishing Service, Canberra.
- McMahon, T. (1999). 'Is reflective practice synonymous with action research?', *Educational Action Research*, Vol. 7, No. 1, pp 163-169.
- McMillan, S. J. & Morrison, M. (2006) 'Coming of age with the Internet: A qualitative exploration of how the Internet has become an integral part of young people's lives', *New Media & Society*, Vol. 8, No. 1.



- Meyer, P. (2008) *Short Biography: Pedro Meyer*, Mexico, <http://www.pedromeyer.com/biography/biography.html> (accessed 03/04/09)
- Ministry of Culture and Communication (1995) History of l'Ecole Nationale Supérieure des Beaux-Arts, Republic of France, <http://www.culture.gouv.fr/ENSBA/founding.html> (accessed 15/03/08)
- Mitchell, W. J. (1990) 'The Design Studio of the Future', in McCullough, M., Mitchell, W. J. and Purcell, P. (eds.) *The Electronic Design Studio: Architectural Knowledge and Media in the Computer Era*, The MIT Press, Cambridge.
- Moore, J. C. (2003) *Elements of Quality Online Education: Practice and Direction*, Needham, MA.
- NABUUR.com (2008), *A Global Neighbour Network*, Netherlands, <http://www.nabuur.com> (accessed 10/10/08)
- Newman, R. (1996) 'Seamless Paradigms: A Crisis in Design Education', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 11-25.
- Nicol, D. J., Minty, I. & Sinclair, C. (2003) 'The Social Dimensions of Online Learning', *Innovations in Education and Teaching International*, Vol. 40, No. 3, pp 270-280.
- Niederhelman, M. (2001) 'Education Through Design: A Review of the Re-Inventing Design Education Conference', *Design Issues*, Vol. 17, No. 3, pp 83-87.
- Norman, K. (1998) 'Collaborative Interactions in Support of Learning: Models, Metaphors and Management', in Hazemi, R. & Hailes, S. (eds.) *The Digital University – Building a Learning Community*, Springer, London.
- Oldham, B.E. (1988) 'The First Year: Make or Break Year', *Journal of Further and Higher Education*, Vol. 12, No. 2, pp 5-11.
- Oliver, R. (2001) 'Assuring the Quality of Online Learning in Australian Higher Education', in Wallace, M., Ellis, A., & Newton, D. (eds.) *Proceedings of Moving Online II Conference*, Southern Cross University, Lismore, pp 222-231. <http://elrond.scam.ecu.edu.au/oliver/2001/mocpaper.pdf> (accessed 11/04/09)
- Omnium (2003) *Visualising the Science of Genomics*, University of New South Wales, Sydney, [http://au.omnium.net.au/tours/vsg\\_2003s1/base/menu.php.html](http://au.omnium.net.au/tours/vsg_2003s1/base/menu.php.html) (accessed 16/07/09)
- Omnium (2007) *Visualising Issues in Pharmacy (VIP Project)*, University of New South Wales, Sydney, <http://creativewaves.omnium.net.au/vip/modules/forum>
- Omnium (2008) *Creative Waves: Collabor8* website <http://creativewaves.omnium.net.au/c8/outline> (accessed 28/08/09)

Omnium (2009) *Creative Waves: Triune Uganda*, University of New South Wales, Sydney,  
<http://creativewaves.omnium.net.au/triune/outline> (accessed 28/08/09)

Omnium (2009) *Omnium Software*, University of New South Wales, Sydney,  
<http://omnium.net.au/software> (accessed 28/08/09)

Omnium (2009) *Omnium Outreach Projects*, University of New South Wales, Sydney,  
<http://omnium.net.au/oop> (accessed 10/08/09)

Open Source Initiative (2009) *The Open Source Definition*, OSI, San Francisco,  
<http://opensource.org/docs/osd> (accessed 10/08/09)

O'Reilly, T. (2005) *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software*,  
<http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>  
(accessed 29/5/09)

Oviatt, S. (2002) 'Multimodal interfaces', in Jacko J. & Sears (eds.) *A Handbook of Human-Computer Interaction*, Lawrence Erlbaum, New Jersey.

Palloff, R. M. & Pratt, K. (1999) *Building Learning Communities In Cyberspace*, Jossey-Bass, San Francisco.

Pascarella, E. & Terenzini, P. (1980) 'Predicting Freshman Persistence and Voluntary Dropout Decisions from a Theoretical Model', *Journal of Higher Education*, Vol. 51, No. 1, pp 60-75.

Pascarella, E. T., Terenzini, P. T. & Wolfle, L. M. (1986) 'Orientation to College and Freshman Year Persistence/Withdrawal Decisions', *Journal of Higher Education*, Vol. 57, No. 2, pp 155-175.

Patrick, C. (1937) 'Creative Thought in Artists', *Journal of Psychology*, Vol. 4, pp 35-73.

Platt, W. & Baker, R. A. (1931) 'The Relation of the Scientific 'Hunch' to Research', *The Journal of Chemical Education*, Vol. 8, No. 10, pp 1969-2002.

Polaine, A. (2003) 'The Erosion of Process: Difficulties in Digital Media Education', *Desktop Magazine*, No. 185.

Polaine, A. (2005) *Collaborative Design in a Small World*, Omnium Creative Waves 05,  
[http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec\\_id=19](http://creativewaves.omnium.net.au/030405/mod/lectures/lecture.php?lec_id=19)  
(accessed 21/06/09)

Prentice, R. (2000) 'The Place of Practical Knowledge in Research in Art and Design Education', *Teaching in Higher Education*, Vol. 5, No. 4, pp 521-534.

Quinlan, A., Murray, P. & Merton, M. (1995) 'Facilitating First Year Students Transition Into University and Disciplinary Cultures', in Hewson, L. & Toohey, S. (eds.), *UNSW Education '95 Conference Proceedings*, The University of New South Wales, Sydney.

Quinsee, S. & Hurst, J (2005) 'Blurring the Boundaries? - Supporting Students and Staff within an Online Learning Environment', *Turkish Online Journal of Distance Education-TOJDE*, Vol. 6, No. 1, pp 1-8.

Ramsden, P. (1992) *Learning to Teach in Higher Education*, Routledge, London and New York.

Rand, P. (1993) *Design, Form and Chaos*, Yale University, New Haven and London.

Raschke, C. (2003) *The Digital Revolution and the Coming of the Post-modern University*, RoutledgeFalmer, London and New York.

Rheingold, H. (2003) *Smart Mobs: The Next Social Revolution*, Perseus Books, New York.

Roberts, T. S., (2004) *Online Collaborative Learning: Theory and Practice*, Idea Group Inc, Hershey, PA.

Robey, M., von Kinsky, B. R., Ivins, J., Gribble, S. J. & Cooper, D. (2006) 'Student Self-Motivation: Lessons Learned from Teaching First Year Computing', *Proceedings of the Frontiers in Education Conference, 36th Annual Frontiers in Education Conference*, San Diego, pp 1-2.

Rogers, C. R. (1976) *Toward a Theory of Creativity*, in Rothenberg, A. & Hausman, C. R. (eds.) (1976) *The Creative Question*, Duke University Press, Durham, North Carolina.

Rothenberg, A. & Hausman, C. R., (eds.) (1976) *The Creative Question*, Duke University Press, Durham.

Salmon, G. (2000) *E-moderating: The Key to Teaching and Learning Online*, Kogan Page, London.

Salmon, G. (2002) *E-tivities: The Key to Active Online Learning*, Kogan Page, London.

Schön, D. A. (1983) *The Reflective Practitioner. How Professionals Think In Action*, Temple Smith, London.

Schön, D. A. (1985) *The Design Studio: An Exploration of its Traditions & Potential*, RIBA Publications Limited, London.

Schön, D. A. (1988) *Educating the Reflective Practitioner*, Jossey-Bass Publishers, London.

Sclater, M., Sclater, N. & Campbell, L. (1997) 'ICON: Evaluating Collaborative Technologies', *Active Learning*, Vol. 7, pp 41-46.

<http://cvu.strath.ac.uk/courseware/cvds2/visitors/icon1.html>

Sclater, M. (2001) 'Freedom to Create: Computer Supported Collaborative Learning in Art and Design Education', in *Proceedings of the CADE (Computers in Art and Design Education) Conference*, Glasgow School of Art.

Scrivener, S., Ball, L. & Woodcock, A. (eds.) (2000) 'Collaborative Design', *Proceedings of CoDesigning*, Springer-Verlag, London/Berlin/Heidelberg.

Seldin, P. (1980) *Successful Faculty Evaluation Programs: a Practical Guide to Improve Faculty Performance and Promotion/Tenure Decisions*, Coventry Press, New York.

Shea, P. (2006) 'A Study of Students' Sense of Learning Community In Online Environments', *Journal of Asynchronous Learning Networks*, Vol. 10, No. 1, pp 35-44.

Shrivastava, P. (1999) 'Management Classes As Online Learning Communities', *Journal of Management Education*, Vol. 23, No. 6, pp 691-702.

Sifry, D. (2007) *The State of the Live Web*, Technorati, <http://www.sifry.com/alerts/archives/000493.html> (accessed 14/11/08)

Smith, M. K. (2001) *Donald Schön: Learning, Reflection and Change*, The Encyclopedia of Informal Education, [www.infed.org/thinkers/et-schon.htm](http://www.infed.org/thinkers/et-schon.htm) (accessed 16/09/09).

Smith, M. K. (2001) *David A. Kolb on Experiential Learning*, The Encyclopedia of Informal Education, <http://www.infed.org/b-explrn.htm>. (accessed 15/09/09)

Stephens, H. (1996) 'Design for the Real Person', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, Victoria, pp 42-47.

Stephenson, N. (2003) *In the beginning ...was the Command Line*, Harper Perennial, New York.

Sulek, E. (1994) 'A Virtual Design Studio: Today's Opportunity for Effective Electronic Creativity', *Design Management Journal*, Vol. 5, No. 3, pp 15-20.

Swann, C. (1996) 'Life After Graduation: Do Australian Designers Continue to Develop', *DIA National Conference on Design Education Proceedings*, Design Institute of Australia, Hawthorn, pp 26-33.

Tapscott, D. (1998) *Growing up Digital: The Rise of the Net Generation*, McGraw-Hill, New York and London.

TED (2009) *Stefan Sagmeister: Graphic Designer*, TED Conferences, New York, [http://www.ted.com/speakers/stefan\\_sagmeister.html](http://www.ted.com/speakers/stefan_sagmeister.html) (accessed 01/03/09)

Thompson, P. W. (2003) Preface, in Lupton, E., Albrecht, S., Yelavich, S. & Owens, M. (eds.), *Inside Design Now*, Princeton Architectural Press, in association with Smithsonian Institute, New York.

- Thorne, R. (1994) 'Can the Deficiencies in the Education of Architects and Some Other Design Professionals Ever Be Overcome', in Ryan, G., Little, P & Dunn, I. (eds.) *Research in Higher Education*, HERDSA, Vol. 16.
- Tinto, V. (1988) 'Stages of Student Departure: Reflections on the Longitudinal Character of Student Leaving', *Journal of Higher Education*, Vol. 59, No. 4, pp 438-455.
- Tomato (2009) An Art Design Collective, London, UK, <http://www.tomato.co.uk> (accessed 10/07/07)
- Torrance, E. P. (1976) 'Education and Creativity', in Rothenberg, A. & Hausman, C. R. (eds.) (1976) *The Creative Question*, Duke University Press, Durham, North Carolina.
- Tripp, D. H. (1990) 'Socially Critical Action Research', *Theory into Practice*, Vol. 29, No. 3, pp 158-165.
- UCLA Extension (2008) The Regents of the University of California, <http://www.uclaextension.edu/> (accessed 09/10/08)
- Van Gennep, A. (1909) *The Rites of Passage*, trans. Vizedon, M. B. & Caffee, G. L. (1960), The University of Chicago Press, Chicago.
- VDS (1998) Virtual Design Studio Research: Reference Material and Research into Virtual Design Studios, <http://www2.arch.ubc.ca/research/vds/index.html> (accessed 09/05/08)
- Wallas, G. (1926) *The Art of Thought*, Harcourt Brace Jovanovich Inc, New York.
- Warwicker, J. (1999) 'A Virtual City in a Global Square', *Eye*, Vol. 9, No. 34, pp 38-44.
- Webber, P. (2005) *Webber Training: Teleclass Education for Healthcare Professionals*, New York, <http://webbertraining.com> (accessed 19/05/05)
- Wenger, E. (2000) 'Communities of Practice and Social Learning Systems', *Organization*, Vol. 7, No. 2, pp 225-246.
- Whitford, F. (1984) *Bauhaus: Masters & Students by Themselves*, Thames & Hudson, London.
- WHW Design (2009) *William Harald-Wong & Associates: Company Profile*, Kuala Lumpur, [http://www.whwdesign.com/pdfs/whw\\_Profiles.pdf](http://www.whwdesign.com/pdfs/whw_Profiles.pdf) (accessed 24/05/09)
- Wild, L. (1996) 'That Was Then, This Is Now: But What Is Next?' *Émigré*, No. 39, Republished in Beirut, M, Drenttel, W & Heller, S. (2002), *Looking Closer 4: Critical Writings on Graphic Design*, Allworth Press, in association with the American Institute of Graphic Arts, New York, pp 136-150.

Wild, L. (1999) *Katherine McCoy: Expanding Boundaries*, AIGA, New York, <http://www.aiga.org/content.cfm/medalist-katherinemccoy> (accessed 01/03/09)

Williams, C. (1982) *The Early Experiences of Students On Australian University Campuses*, University of Sydney, Sydney.

Wingler, H. M. (1969) *Bauhaus: Weimar, Dessau, Berlin, Chicago*, MIT Press, Massachusetts.

Wojtowicz, J., Davidson, J., & Mitchell, W. J., (1992), 'Design as Correspondence', *ACADIA '92 Conference*, The Association of Computer Aided Design in Architecture, pp 114-119.

Wojtowicz, J. (ed.) (1995) *Virtual Design Studio*, Hong Kong University Press, Hong Kong.

Wojtowicz, J., Seebohm, T. & Wright, R. (2001) 'Project 3E: Computational Support Mechanisms for Spatial Literacy in Education: Evaluating Computer-Assisted Spatial Literacy Learning Environments', [http://n-rhino.ald.utoronto.ca/vds\\_site](http://n-rhino.ald.utoronto.ca/vds_site) (accessed 12/06/06)

YouTube (2006) *YouTube Fact Sheet*, [http://www.youtube.com/t/fact\\_sheet](http://www.youtube.com/t/fact_sheet) (accessed 08/10/07)

**RARE BOOKS LIB.**

- 7 APR 2000

UNIVERSITY OF SYDNEY LIBRARY



000000613710701



[www.thesisonline.com.au](http://www.thesisonline.com.au)  
9212 4144  
Shop 1, 180 Broadway BROADWAY  
702 Harris St ULTIMO 9280 4244