Work-integrated Learning in Music Technology: Lessons Learned in the Creative Industries

Paul Draper,* Matt Hitchcock
Queensland Conservatorium Griffith University
PO Box 3428, South Brisbane, Queensland 4101, Australia

Received 31 August 2006; accepted 18 September 2006

Music technology students at Griffith University study sound recording and production. Graduate employment opportunities exist in a wide range of creative industries which have a potential for wealth and job creation through individual creativity and the generation and exploitation of intellectual property. This paper examines a pilot work-integrated learning program in music technology and reveals common student intern work experiences, their significance for the local learning community and implications for the underpinning curricula. The paper concludes with suggestions for further research, seeking to improve the placement program through the streamlining and integration of administrative workload, curriculum design and research imperatives. (Asia-Pacific Journal of Cooperative Education, 2006, 7(2), 33-40).

Keywords: creative industries; knowledge transfer; music technology; work-integrated learning; Australia.

The term Creative Industries was introduced in 1998 by the British government as an entry to understanding aspects of rapidly evolving global economies (Cunningham, 2006). The UK’s Creative Industries Task Force subsequently defined this as those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property (Department for Culture, Media and Sport, 2005). This included many self-starting and less well understood occupations such as in design, art, film, media and music. However, the issue of definition continues to be important one not only within the margins, but now more widely across the economic mainstream (Florida, 2002).

Industry and government priorities are being redefined through the availability of new information technologies together with globalization pressures and workplace reforms (Florida, 2005). The modern rhetoric abounds with references to intellectual capital and employment opportunities that increasingly depend on people who can work creatively in fluid, fast-changing landscapes. Concepts about knowledge work (Drucker, 1994) and knowledge transfer (Department of Education, Science and Training, 2005) have come to the fore as earlier labor theories of value are being rapidly superseded by knowledge value systems – the Fordist employee model of old is replaced by that of the creative professional, where the project becomes the new business model as recently noted by Frederiks and Sedita (2005):

... creative intensive industries ... [reflect] a work structure based on temporary workers mainly involved in projects, which are exchanged in the market through networks of creativity, not simply driven by the will to achieve a better position in the employment ladder or social status, but by the objective to increase personal reputation and get in touch with always more interesting projects and team working opportunities (p. 28).

Thus, education has a critical role in an evolving world order where knowledge is seen as the key to wealth and the engine of social change. By implication, universities are under increased pressure to produce fast knowledge workers through revised educational delivery formats. As university teachers, our engagements with both professionals and students alike indicates that there is an overturning and displacement of value systems as a one-size-fits-all logic is rejected – more and more workers create their own styles of employment (Draper, 1999).

Research Context: Music Technology at Griffith

Training in music technology has been delivered at Queensland Conservatorium Griffith University (QCGU) since 1985. The orientation originally catered to the needs of...
a specialist profession: recording studio sound engineering, that is, equipment operators and technical personnel. More recently, international degree offerings have expanded in response to the evolving face of digital musicianship, for example: some 298 programs now exist in the UK alone (Universities and Colleges Admissions Service, 2006) while QCGU delivers undergraduate, postgraduate and research programs in music technology to c.100 students per year.

Yet in our experience, many students continue to maintain preconceived ideas of just what professional music technologists do and how they make a living. While the 1970s styled, star-driven picture of the record company, the artist and the multi-million dollar recording studio no longer exists in such a romanticized form, as evidenced by our alumni, the range of work opportunities for audio specialists has increased exponentially to include television, film, gaming, ICT, music therapy, forensics, arts management and other independent industries (Hartley, 2005). Therefore perhaps it should come as no surprise that students do not necessarily identify with the professional workplace and often experience integration difficulties upon graduation. Additionally, longstanding university learning and teaching structures may tend to compartmentalize students’ educational experiences where programs are divided into courses, modules and year levels; students may be separated from the rest of the cohort and the ambiance of social and intellectual communities (Smith, MacGregor, Matthews & Gabelnick, 2004).

Griffith University has built a number of strategies and policies around the notion of developing essential, transferable skills in its students. The Griffith Graduate website (Griffith University, 2004) promotes the characteristics and aspirations it has for its graduates in order to be able to succeed and prosper in the contemporary world. As its Vice-chancellor and Policy Advisor recently noted, “the best strategy to deal with the future is not to fix institutions in unchanging roles but to give them the flexibility to try different ideas” (O’Connor & Moodie, 2006; p. 37). In its Academic Plan, Griffith commits to the inclusion of work-integrated learning (WIL) as a core component of this vision:

Griffith aspires to being distinctive by offering work-integrated learning as a signature experience in its undergraduate programs. The Strategic Plan includes work-integrated learning in programs ... and sets a target of 70% of undergraduate programs having an identifiable work-integrated learning component by 2010. (Dewar, 2005; p. 15)

WIL and the Music Technology Learning Community

For some years now, a distinctive feature of QCGU Music Technology has been the use of mechanisms which encourage students to become part of a larger learning community, to increase their interaction across year levels, degree cohorts, alumni and more recently, with external industries. Rather than only being accountable for personal academic performance, students are encouraged to be responsible to their peers in work and study groups. Therefore, responsibility is not simply between teachers and individual students but is shared between students (Tinto, 2000). Interaction across disciplines and social structures aids an essential need, “not for more professional knowledge from external sources, but for greater self examination skills and higher levels of self awareness to appreciate the skills they already have” (Grainger, 2001, p. 2). To do so, the Music Technology department provides options which span the boundaries of segregated class-work, including:

- cross-year teams in problem-based learning projects (Boud & Feletti, 1997)
- the virtual MuTek Bulletin Board, a web-based discussion group (Hitchcock, 2005)
- the face-to-face, weekly Music Technology Forum to facilitate informal, robust and honest interactions between students, alumni and industry professionals, and
- contract-based assessment options in later years where this often links to career development opportunities (QCGU coursework known as Project Studies).

The Music Technology learning community has continued to extend more deeply into the workplace. Most graduates now stay connected to the MuTek Bulletin Board and communicate about their work experiences. Indeed, many alumni now are the industry and often return to the campus to offer workshops, tips and job links. Therefore, by way of natural evolution and led by a small start-up grant, QCGU’s first WIL offering was devised, known locally as the Music Technology Industry Affiliates Program (MTIAP). Drawing upon the 14 year WIL experience of Griffith’s Industrial Affiliates Program (Patrick, 2006) located within the Bachelor of Electronics in Microelectronic Engineering, Music Technology has partnered with this unit, while offering in return, insight into aspects of knowledge transfer in the freelance workplace. In 2006, the MTIAP was launched as a single-semester, 13-week placement for final year undergraduates.

Implementing the Music Technology Industry Affiliates Program

In its first iteration, the program aimed to be both manageable and capable of producing high quality outcomes. To this end, we drew upon Griffith Law faculty’s Semester in Practice course (Giddings, 2006), where a quota of 10 work-placements is offered on a competitive basis. This approach allowed the MTIAP to better match student skills with a given position description while allowing time for the two academic coordinators to maintain personal contact with the industry supervisors. Another reason was that preliminary industry interviews indicated considerable dissatisfaction with earlier WIL program management by another local university (Draper & Hitchcock, 2005).

To prepare students for their work-placements, a number of short workshops and individual consultations were arranged before start of semester. A range of orientation materials were drawn upon to provide advice on job application and curriculum vitae skills, an overview of the placement process, responsibilities and legal requirements, assessment structures and overall timetable, indicated in Table 1.
### TABLE 1
Music Technology Industry Affiliates Program: Structure and timetable

<table>
<thead>
<tr>
<th>Location</th>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-week</td>
<td>Orientation</td>
<td>Projects and position descriptions are offered; more than one student may apply for each project; students may apply to more than one position description</td>
</tr>
<tr>
<td>Week 1</td>
<td>Interviews</td>
<td>Industry partners are provided with a list of students for interview; students will not accept a project offer until they have attended all their industry interviews</td>
</tr>
<tr>
<td>Week 2</td>
<td>Placements commence</td>
<td>Once industry partners have interviewed all applicants, they are free to make an offer and arrange start date</td>
</tr>
<tr>
<td>Weeks 4–5</td>
<td>Student Viva Voces</td>
<td>20 mins each, see Appendix A</td>
</tr>
<tr>
<td>Weeks 4, 6, 8, 10, 12</td>
<td>Fortnightly supervision reports</td>
<td>Student meetings with academic supervisors; academic meetings with industry supervisors; Records are kept and signed off; student is responsible for maintenance</td>
</tr>
<tr>
<td>Weeks 11–12</td>
<td>Student /industry Seminars</td>
<td>40 mins each, see Appendix A</td>
</tr>
<tr>
<td>Week 13</td>
<td>Final week of placements</td>
<td>Academics meet with industry supervisors to review placement and administer surveys</td>
</tr>
<tr>
<td>Study week 14</td>
<td>Final Written Report</td>
<td>c.1000 words, see Appendix A</td>
</tr>
<tr>
<td>Exam week 16</td>
<td>Debrief and Student Survey</td>
<td>Workshop-led survey, see Appendix B</td>
</tr>
</tbody>
</table>

Students were not guaranteed a place, but were offered the full range of (anonymous) position descriptions to apply for and were then asked to justify the reasons for their choice(s). After consultation with an academic supervisor who possessed a local knowledge of the student’s track record and skill set, interview applications were subsequently approved for the placements, including those at an independent record label, several television and radio broadcasters, and two well-equipped private schools. The process commenced early enough so that in a class size of 15 students, unsuccessful candidates could still enrol in an alternative elective course, but were encouraged to apply again for WIL in the second semester, armed with post-interview feedback from the given industry interviewer.

**Research Methodology**

**Purpose of the Study**

The aim of the research was to evaluate this first MTIAP offering which was intended to engage with a somewhat unclear idea of the creative workplace, post-conservatoire. Lessons learned might then be applied to refine the program’s structure and its implementation, improve the student placement experience, and to adjust the underpinning degree curriculum where possible. To probe this, we raise the following research questions:

1. What were the most obvious and immediate effects on Griffith Music Technology students’ learning about the workplace?
2. Did the MTIAP expand students’ appreciation and application of existing skills?
3. Has our students’ understanding of career options been altered and if so, how?, and
4. What can the MTIAP participants learn about knowledge transfer?

**Research Design**

As other researchers have noted (Coll & Chapman, 2000; Grainger 2001), qualitative means of research enquiry are well suited to cooperative education and suggest that given pragmatic concerns, practitioners are well positioned to conduct action research, case studies and/or combined methodological approaches. Thus, we position this introductory semester of the MTIAP as stage one of an action research cycle – to plan, act, review (Kemmis & McTaggart, 1988) – where the emerging themes and information gathered will inform each following semester’s program design. The process will then continue across several iterations of the program as a complete action research project.

In this first evaluation, we chose a case study approach (Stake, 1994), where the data were triangulated from N=10 student presentations, written
TABLE 2
Research findings and data summary

<table>
<thead>
<tr>
<th>Theme</th>
<th>Data Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Skills</strong></td>
<td>communications, workplace etiquette, accuracy of language (technical and interpersonal) teamwork, conflict resolution, empathy, leadership, dealing with criticism or failure a sense of workflow, prioritization, time management skills and professionalism lateral thinking, problem solving, adaptability, creativity and innovation</td>
</tr>
<tr>
<td><strong>Accelerated Learning</strong></td>
<td>the term “hands-on” was often used in an attempt to define just what was different in the workplace as opposed to a university setting quickly improving technical competence through mistakes made in high profile situations (many say that they only made that mistake once) real pressures, improvisation, trying to get it right, first time attention to detail, the opportunity to prove oneself and to be appreciated by peers</td>
</tr>
<tr>
<td><strong>Self-efficacy</strong></td>
<td>measuring one’s capacities by comparison with the attainment of others in the workplace in successes (sometimes often after failures) that inspired confidence-building realization of self-worth through workplace celebration of their skills, particularly in their creative responses to authentic and/or unusual problems self acknowledgement of existing skills and the context of existing knowledge</td>
</tr>
<tr>
<td><strong>Mentoring</strong></td>
<td>training others on the job, mentoring less well trained or younger individuals acting as a specialist and informing planning and workflow decisions consultancy, background research and advice on audio-related specializations co-recognition of specialist knowledge, creative application and innovation</td>
</tr>
<tr>
<td><strong>Knowledge Transfer</strong></td>
<td>adapting existing skills in new settings, developing new skills in familiar settings co-training, mentoring and recognition of the ability for an individual to impact on the workplace through professionalism and creativity clarifying the professional identities of the music technologist, greater insight into potential creative industry workplaces understanding flexible work practices including preparation, working from home, virtual communities of practice and application of ICTs ongoing and expanding interaction with academics and student peers, bringing new meaning to the classroom work and the curriculum</td>
</tr>
</tbody>
</table>

reports and surveys. The data summary process scanned back and forth across these three different instruments and such a thick description (Geertz, 1973) allowed us to distil and categories the data set according to a number of common, emerging themes. Finally, the themes, data summary and subsequent interpretations of the data were circulated back to the survey group as a member check, using the principle of face validity (Kidder, 1982) to review and clarify the content if necessary, and to establish greater trustworthiness in the research process.

**Summary of the Data**

Overarching themes were identified, refined and confirmed by the survey group under five headings of: Generic Skills, Accelerated Learning, Self-esteem, Mentoring and Knowledge Transfer. The actual data set is presented under each of these theme headings as shown in Table 2 above.

**Discussion and Conclusions**

We now return to the research questions to draw conclusions in the light of the above data summary and emergent themes. We also draw upon the literature in some of our interpretations in order to prime the next, second stage of the action research cycle.

What Were the Most Obvious and Immediate Effects on Griffith Music Technology Students’ Learning about the Workplace?

The Generic Skills theme validated much of the existing literature and confirmed the intent of recent calls by Griffith University (2004) and other education institutions to implement WIL as an effective means to promote the development of transferable skills in students. All of the work placements wrote and spoke at length re. the
importance of, and what they now appreciate about these attributes and their own personal behavior.

In Accelerated Learning, all students commented that they enjoyed the ‘real world’ pressures and that this focused and increased their abilities to put their knowledge into action; the idea of ‘fast knowledge workers’ had real meaning. However, this remains somewhat puzzling to the academics, who despite every best effort, find such an apparently desirable pressure difficult to replicate in the classroom – students continue to simply cram for exams and leave creative projects to the last minute. Problem-based learning may be part of the solution, but clearly we may be able to do better with short work (and assessment) cycles as was so often identified in the data and subsequent informal class discussion.

**Did the MTIAP Expand Students’ Appreciation and Application of Existing Skills?**

Students provided positive feedback about their growth in self-confidence and appreciation for what they had to offer as highly trained, creative workers. As other cooperative education researchers have noted (Fletcher, 1990), students’ Self-esteem had been greatly heightened. It seems that students have come to this understanding through the realization that they can be adaptable and possess valued ‘fluid’ abilities (Snow, 1980) which enable them to respond outside of an immediate area of expertise, to intelligently improvise within novel situations. Many commented on ‘workflow’, ‘getting in the groove’ or as Csikszentmihalyi (1997) puts it, having a sense of flow and centeredness that is engaged in these moments when heart, will, and mind are as one.

Paradoxically, much of the insight was concerned with working in a team, aspects of leadership, or simply pride in one’s own practice in the context of a larger picture (which may be often missing in traditional massified approaches to classroom teaching). It seems the art of independent learning may have as much to do with group skills as it is as it does with highly internalized metacognitive abilities (Resnick, Levine & Teasley, 1991). There is some sense that QCGU Music Technology may be doing right in terms of cross-year teams and the development of a learning community of practice. Many students commented on how they found these models to be representative of the workplace and/or much of what was being proposed as important in theory (that is, in the classroom) was also true in practice.

**Has Our Students’ Understanding of Career Options Been Altered and If So, How?**

There was widespread realization that being a music technologist was less about applying set skills in known situations, but more about the application of abilities in unknown situations. Students found they could do this successfully in a range of settings well outside the folklore of the trade magazines and this view was compounded through each subsequent work experience presentation. Anecdotal evidence gathered by staff in class situations and/or MuTek Bulletin Board discussion indicates that this continues to be a hot topic, particularly by impressionable first year undergraduates (largely school leavers).

Much of the Mentoring feedback presented an interesting development for us. While academics cite teaching-related careers as potentially valuable, to date, students mostly refute this, claiming no interest in such an application of their knowledge. The workplace feedback indicated otherwise (but students resolutely refused to use the word ‘teaching’). Time and again, music technologists took some role in the training of others, be it through informal advice to a co-worker who had little appreciation of sound production matters, through to managers and program directors who, based on the professionalism and growing track-record of the intern, subsequently made changes to infrastructure or work practices. Despite the earlier rejection of the notion of creative worker-as-teacher, clearly there is a role for the development of related competencies in the curriculum.

**What Can the MTIAP Participants Learn About Knowledge Transfer?**

It would seem many workplace supervisors underestimated the skill level and creativity of our students. Much of the data indicated the positive interaction and actual changes in practice that often occurred in the workplace as a result of student input. While industry partners verified this indirectly through informal discussions with the academic supervisors, their survey returns presented much like client satisfaction summaries: although the feedback was overwhelmingly positive, it was of little use to this study because it was relatively non-specific. This plainly identified the need to design better industry surveys in the future, using questions and/or other instruments which seek not simply to verify that the placement works, but to probe the revelation that such knowledge workers can actually impact on the way the creative industries do business and as some have argued (Florida, 2005; Frederiksen & Sedita, 2005; Hartley, 2005), that labour market mobility may now be one of the most important channels for growing and transferring tacit knowledge.

There was also good evidence about the positive impact of the work placement experiences across the Music Technology learning community: intern presentations and viva voce were well attended by students and staff from across the department; question time was highly interactive and engaged while the momentum of these events continues to propagate throughout the community, although largely via rhizomatic and subversive means. In this first iteration of the MTIAP, no direct data was collected from the peer-group and now we have come to question the role of the Viva Voce and the Presentation (Appendix A) – while the process clearly aids in the development of thinking in the student interns, the data collected is similar to that of the Written Report (Appendix A) and the Student Survey (Appendix B). Just as in the lack of direct industry knowledge transfer, we wish to know more about the effects on the Music Technology learning community and so, now aim to devise specific instruments to map this out more clearly in the future.
Implications and Recommendations

Implications for the Curriculum

To summarize, as a result of this investigation we understand the next priorities for the Music Technology department to be as follows:

- continue to promote external experiences by students and alumni across the learning community; validate and promote curriculum values or adjust where necessary
- develop a framework to better gather, disseminate, and archive knowledge transfer for the benefit of the learning community
- examine ways in which to further enhance the impressionable first year experience
- review curriculum work cycles to resource and include formative, short-turnaround assessment practices, and
- examine the potential for implementing teaching and consultancy-related learning opportunities including: the design of short courses, presentations, project management and professional advice scenarios for non-specialists.

Monitoring and Improvement of the WIL Program

As per the research design identified earlier, we aim that this document should provide a starting point for an action research project which seeks to monitor and continuously improve the MTIAP over time. While this case study revealed highly useful data, it was somewhat limited in that it drew exclusively upon the student intern experiences. In order to increase our understanding about knowledge transfer across the Music Technology learning community and the workplace, we will have to do more.

However, there is also another pragmatic and pressing need – such a program should become sustainable and embedded in the parent curriculum and this should be undertaken in a realistic way that workload pressures do not increase further. Like many other WIL experiences (Orrell, 2004) we found that the MTIAP required greatly increased academic commitment in securing and maintaining the placements, negotiating with industry about position descriptions, terms, legal requirements, contracts and attending to other such ongoing administrative matters. Research into this area then proved to be yet another significant commitment, verified elsewhere at QCGU where it drew exclusively upon the student intern experiences. In order to increase our understanding about knowledge transfer across the Music Technology learning community and the workplace, we will have to do more.

Clearly, we need to get smarter about WIL. In response to this, we suspect there may be useful correspondence between program design, data collection and research publication imperatives (until now, we considered somewhat independent of each other). Therefore for the next phase of the research, we propose that existing ICTs, learning community assets and assessment design be integrated in order to better enable the streamlining and subsequent sustainability potential of the MTIAP.

References


Tinto, V. (2000). What we have learned about the impact of learning communities on students? Assessment Update, 12(2), 1-2.

Appendix A

Student Assessment: Two Presentations and One Written Report
(Table 2)

Guidelines

One, 20 minute viva voce (mid-placement), one 40 minute seminar and one c.1000 word report (end placement), describing:

- the value of the activity
- the professional benefits gained
- learning outcomes, including skill development and knowledge transfer
- potential for further work opportunities, and
- for Presentations – a concluding short question time and discussion.

Presentation Assessment Criteria

Content: quality; relevance to the subject matter; coherence
Delivery: clarity of communication; time management; organisational skills
Outcomes: evidence of learning; demonstration of high order awareness (transference, best practice, professionalism); capacity to respond to questions.

Report Assessment Criteria

- Does the report observe all the requirements specified in the course documents?
- Has the student provided evidence of at least 50-60 hours of high quality involvement?
- Does the report display an understanding of the project benefits and learning outcomes?
- Does the report reflect the intentions of the WIL contract and position description?
- What is the quality of the personal written assessment in terms of thoughtful reflection on the usefulness and significance of the project to the student?
- Is the report careful and accurate in its collection, presentation, editing and content?

Appendix B

End of Placement Student Survey
(Table 2)

About the Work Placement:

1. What was the most significant learning experience for you?
2. What were the most positive aspects of the WIL program?
3. How did your placement enhance your understanding of your chosen career aspirations or your identity as a professional?
4. Comment on your particular placement, e.g., would you advise placing another student in this organisation?
5. Did the WIL program meet your expectations?

About the MTIAP Program Design:

6. Estimate the time you spent on all WIL activities this semester
7. How does the workload of your WIL placement compare to the workload of a traditional, on-campus 10 Credit Point course?
8. What is your opinion regarding the WIL program length, i.e. – too long, too short
9. Please indicate the importance of the university supervisor to the success of your WIL placement experience?

About the Future of the MTIAP:

10. What is your overall opinion of the usefulness of WIL as a learning experience?
11. What areas or subjects would you like to see included in lectures and workshops during the WIL placement program?
12. Were you offered continuing paid employment or work experience as a result of the WIL placement?
13. If, as a future professional, you were in a position to take a final year project student – would you?
14. What advice you would offer future students commencing the WIL program?