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From integration to transformation

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From integration to transformation

The integration of instruction about academic skills into subject curricula has become widely recognised as an effective means of teaching students about discipline-specific academic skills; however, integration can achieve much more than this. It can involve the learning developers and discipline teaching team in collaborations that lead to such things as a rethinking of assessment types and assignment tasks, staging of assignment tasks, revision of assignment questions, redevelopment of marking criteria, provision of marking workshops for the teaching team, the development of staff marking handbooks and more specific instruction focussed on learning strategies. When integration involves this amount of redevelopment, increased student learning about disciplinary writing is only one of many positive outcomes. This paper will report on this kind of collaborative integration at the University of Wollongong, through a number of case studies. The paper will argue that integration at its most collaborative and strategic is not simply integration of skills instruction but is curriculum redevelopment that has the capacity to achieve transformation of teaching and learning.

Keywords: collaborative integration, transformation, multi-disciplinary knowledge

Introduction

Around Australia, many learning centres have broadened their teaching of academic skills from the typical generic, decontextualised courses in the centre to discipline-specific, more contextualised, teaching (Hicks & George, 2001). Many have integrated this teaching into the curricula of mainstream subjects, ie. made the teaching of language and literacy an intrinsic component of a content subject. Such contextualised, integrated teaching is seen as effective and equitable, giving all students within a subject the opportunity to develop skills that are relevant, meaningful and specific to that subject (Reid & Parker 2002; Marengo, 1999; Ramsden, 1992) and allowing students to learn, think, write and sound like an engineer, for instance, as they learn about Engineering concepts. It makes learning about language and writing more central to learning about the substantive content of 'real' subjects and also makes the teaching of writing more central to what is seen as the 'real' work of teaching disciplinary knowledge. Effectively, this kind of integration is bringing us into closer relationships with discipline academics and disciplinary curricula.

Teaching in this way, in close collaboration with discipline academics, means we have opportunities not afforded us in teaching in traditional ways in the Centre. Of course, it also means we lose opportunities, such as those that come with working only with students.¹ But overall, these new opportunities are useful ones that allow us to use our understanding of

¹ These are such things as greater opportunity to see the impact we make on individual students' development and the time to implement innovative mass workshops.

learning, language and literacy to the fullest. Close collaboration provides opportunities to work on a broad range of tasks related to the development of good curricula; these can include a rethinking of assessment types and assignment tasks, staging of assignment tasks, revision of assignment questions, redevelopment of marking criteria, provision of marking workshops for the teaching team, the development of staff marking handbooks and more specific instruction focussed on learning strategies. It becomes, in effect, curriculum development. At an even more strategic level, it can include development objectives across a whole degree program: at each year level in a single discipline or major, or across each of the different disciplines in a 1st year degree program (see Percy & Skillen, 2003, for a description of this kind of strategic integration across a 1st year program).

When integration involves this close collaboration that results in curriculum development, increased student learning about disciplinary writing is only one of many positive outcomes. As well as this improvement in discipline-specific writing (Skillen, Trivett, Merten & Percy, 1999) are outcomes such as improved student success and retention (Hampton, 2002), and, we would argue, the sharing of knowledge and understanding between learning development and discipline academics, not to speak of general feelings of collegiality that are of utmost importance. This collaboration allows for what Lee (1997) has termed a “co production of knowledges” about “what counts as learning [and literacy] in specific sites...” (p.67)

Integration can achieve transformation: transformation of people’s knowledges and skills, of their practices and their values: the ‘people’ here are of course both discipline academics and learning developers. Collaborating in integration can allow us to act as “transformers” of curricula (Webb, 2002, p.15) or “change agents” (Skillen & Mahony, 1996) for institutional practice. In fact, working in this way may lead us towards what Webb (2002, p. 18) hoped learning developers might be known as: "catalysts for systemic change, facilitators of organisational learning, [and]...partners in the transformation of university teaching and learning". This paper will describe two integration case studies using dialogues between learning developers and discipline academics to explore how and where transformation is taking place. The case studies make apparent the transformative processes at work in such collaborations, suggesting that in working together we can become “partners in the transformation of university teaching and learning”.

Case Studies

These case studies explore the partnerships and practices that are at the heart of successful collaborative integration and thus at the heart of transformation. To assist in identifying how and what kind of transformation is taking place, a series of questions (adapted from Lee, 1997 following Yeatman, 1996) to do with relational issues and curriculum issues were asked of both the learning developer and the discipline academic. These were:

Relational What precisely did you want out of the collaboration?
How were you able to negotiate what you wanted to achieve?
What has the partnership contributed to each others’ knowledges and understandings?

Curriculum What changes in the curriculum resulted from the collaboration?
What were the results of those curriculum changes?

Collaborative Integration in a 2nd Year Accounting subject

This is a core 2nd year subject that deals with Accounting concepts such as consolidation. Collaboration in this subject is the result of a long relationship with both the faculty and the discipline.² The focus here is a small part of the collaboration earlier this session that aimed to complement work that has been done previously in the subject and to meet the particular needs of mid-session assessment. These needs were identified as learning strategies suitable for very complex concepts and the multiple choice assessment task set for mid semester exams. Further collaboration is continuing in this subject.

Learning Development (LD) academic

I was expecting to provide teaching or resource development to do with writing – meeting students' learning needs in relation to a written assessment task. Generally, though, I wanted to feel that we were able to make a useful contribution to student learning inside 201 and was ready to be guided by what Helen saw as her and her students' needs.

In a very informal way, over coffee, we were able to work out where there was opportunity for me to make a contribution and where there was opportunity for Helen to add something useful to her curriculum. We discussed the details of the subject's assessment strategy, what students found difficult about concepts in the course, what they found difficult about the assessment tasks and what sort of productive strategies Helen had been using (perhaps unconsciously) in her teaching. In talking through these issues (and getting excited about the opportunities in the collaboration to impact on learning) we worked out what sort of intervention could be useful and what sort of strategies would be needed. This was done with lots of discussion, concept mapping and excitement. Following this, we worked collaboratively on producing teaching materials and devising the details of the teaching strategies to be implemented.

I feel I have gained a better understanding of what this subject is about, what the learning and teaching difficulties involved in the subject are, and what the learning and teaching possibilities are. I've acquired another disciplinary perspective on multiple choice assessment that adds to my understanding of MCQ usage across the university. Most importantly, I've extended my understanding of how and why concept mapping works in the specialised type of MCQ questions used in Accounting and, because of Helen's very clever use of it in her teaching, of how it can be more effectively used as a teaching strategy.

What precisely did you want out of the collaboration?

How were you able to negotiate what you wanted to achieve?

What has the partnership contributed to each others' knowledges and understandings?

Discipline academic

I met with Jan initially with a somewhat vague idea of what I wanted. I knew she had expertise, and I wanted to be able to tap into that in order to assist my students in their learning. Our second year accounting subjects had had high failure rates (about 30%), so this was an issue for us as lecturers and as a school. As Jan and I talked, the conversation moved in such a way that I came up with two very clear aims of what I wanted to achieve in my collaboration with Jan. These were 1. to improve my students' learning of the two topics I had chosen for examination in my mid semester multiple choice exam and 2. to help them develop their skills at doing multiple choice exams, because I knew some of them did not really like that form of testing. So my aims were two-fold, to improve students' learning and understanding of the topics and to help them to achieve better results in the mid semester exam.

Jan and I met to discuss ways she might be able to assist me. We had already talked about the writing project I'd set, and I explained to her the difficulty we had in our second year accounting subjects, with a high failure rate. Through conversation about this, Jan told me what she did with students in another faculty to help them to improve their results, and she mentioned the ideas of both focus groups and concept mapping. The idea of concept mapping interested me, and the conversation moved along those lines, until after a while we came up with a plan for putting together a special lecture before my students' mid semester exam, in order to assist them to understand the topics (through concept mapping) and to give them an understanding of how to tackle multiple choice questions and provide them with concrete examples of how to do that, applying concept mapping.

I have learned a lot from Jan through this exercise. While I do tend to think in terms of concepts myself, and use them in my lectures, I am now much more aware of them and see them as a valid teaching strategy to help students to learn more deeply the topics I'm introducing them to. I now more consciously build those ideas into my lectures. Just yesterday, having finished the "official" part of my lecture on a particular topic, I had some time to spare, so got the students to do a concept mapping exercise to express their understanding of the topic we'd just covered. I walked around the lecture room, and was able to discuss with them their drawings and diagrams, and to make suggestions. Finally, after they had had about 7 minutes to work on their concept map in groups of 2, 3 or 4, I drew something for them to consider. As to what I've contributed to Jan's

² At Wollongong, each learning developer has been responsible for fostering relationships in at least one faculty. In this case, it has been fostered over a number of years by Alisa Percy.

This was a very small project/collaboration so the main change was the addition of a team-taught lecture/workshop that gave students key tips and strategies for dealing with learning in this subject and with a major assessment type in the subject. Because we first modelled how one might tackle the concept-mapping of accounting concepts and the assessment tasks involved in the subject and then gave the students an opportunity to have supported practice in these activities, I feel this was a very useful addition to the curriculum.... I think we should see what was done as a change to the content of the curriculum: what was taught changed to include knowledge about skills that are quite specific to Accounting and that complement and facilitate an understanding of more factual aspects of Accounting.

I think Helen might be more aware of the value of her very intuitive concept-mapping as a teaching and learning strategy. Although the results probably haven't been assessed in terms of student learning yet, I feel that students will have gained useful knowledge about and practice in learning strategies that are key ones in accounting.

The results of the collaboration overall, I think, are already really positive. Helen's suggestion that we work together to run focus groups etc. is heading in a direction that could be very productive.

What changes in the curriculum resulted from the collaboration?

What were the results of those curriculum changes?

understanding, I couldn't say. The topic was accounting consolidations, and I think she may not have much use for that! However I think she probably has a better understanding of the complexity of some of the subjects that I am trying to communicate [to] the students.

The curriculum did change slightly, because having decided to do a special lecture, I rearranged my set program in order to fit this into the schedule of lectures. We timed it just before the mid semester exam, so it would be fresh in students' minds, but so that they would still have a week and a half to use the concepts they'd learned as they prepared for the exam. There was no change to the actual content of the curriculum, just to the way in which it was presented.

The result of rearranging the lectures was to give the students exposure to a learning experience that I believe helped them greatly. I now have the results of the mid semester back and I am very happy with them. While the failure rate was almost 20%, the mean was 60%, and about 6 students attained high distinctions, two getting 29 questions correct out of 30. I thought the results were most encouraging. I think that students did better overall, with a higher than usual percentage of HDs, Ds and Cs.

As a Postscript: our school is now arranging to use the Learning Development team (not Jan, since she is on leave) to investigate the high failure rate in second year, and to try to improve that, using focus groups and possibly other strategies. This will be an ongoing attempt to have an improvement across all accounting subjects in second year.

Collaborative Integration in a 2nd Year Informatics subject

This is a core subject in a number of undergraduate degree programs offered by the faculty of informatics and is also offered at post-graduate level. The subject attracts a large number of students, including a large cohort of international students. It is offered on multi-campus. The subject deals with the information technology industry and issues of citizens' rights in matters of data surveillance, freedom of access to information and ownership of intellectual property.

LD academic

Learning Development has worked with the subject lecturer for IACT201/ITCS 908 over a number of years. My own involvement with the subject began about two and a half years ago. LD's earlier work in IACT had been along the lines of integration, beginning with guest lectures and then moving into embedded tertiary literacy and language instruction alongside the subject curriculum. What I saw was possible in this new phase of the collaboration with Holly was the opportunity to work with someone who saw learning in a much bigger way than simply being able to deal with the written texts of the subject. Holly has had the experience of being a student in this subject, a tutor, and now, the subject lecturer and coordinator. I think that this has meant that Holly not only has the expertise of a lecturer but still has a close understanding of the students' experience of the subject. I also think that this means that Holly sees learning as more than students' pass/failure rates, number of HD's etc. This is also how I see learning. I saw this collaboration with Holly as the chance to do more than annotate texts to teach students how

What precisely did you want out of the collaboration?

Discipline academic

I am an early career academic with an interest in improving the learning experience for the students I teach. I knew I lacked the experience to redesign learning activities completely on my own, but knew that the LD team and their experience would be able to help me achieve change. LD had been involved with the 2nd year Information Technology subject for a number of years, so there was already some work done. Through conversations with Bronwyn, I was able to determine two skills I wanted to focus on in the subject: to develop students ability to logically analyse issues, evaluate different options and viewpoints and implement decisions, and to find effective ways of assessing this. The second skill was to improve basic literacy skills, including, reading for meaning, sentence and paragraph structure and referencing techniques. These two issues had been identified as areas that would build skills in students, and at the same time, award them through better marks as their skill set improved.

to build up their own texts in the subject in order to do well on the assessment items. I saw it as a chance to be involved in a curriculum that was being reworked to make learning more exciting and challenging for the students. I also saw that what Holly was wanting to achieve in this subject was very much linked with how students could use the 'ways of thinking' generated by this subject in the work place. By this I mean that Holly wanted to encourage students to think- not to rote learn. She wanted them to be able to know the facts, but also to be able to use them to negotiate some tricky international trade agreements that required more than just facts. These negotiations required an understanding of how to analyse and work with cultural differences, cross - national legislation and find enough commonalities to broker trade agreements. So this involved the thinking and conceptual skills of analysis, finding differences and similarities, working out possibilities that would promote the similarities but also deal with the differences- and then communicating about all of this. I was keen to be involved in working out how we could create a learning environment that would scaffold these conceptual and communication abilities.

Really Holly took the lead here. This is typical of how I work. I see any partnership as just that- it is not about either partner trying to push a particular way of doing things. While I made suggestions about what we might do, what might work etc in terms of staging of learning, language support materials etc ultimately Holly had to feel comfortable with what she was doing and how she was doing it. Holly has the expertise in her subject area- I look to see how and where my understandings of language and learning might support this. We tried to do a number of things in this subject to teach the students how to do the sort of analysis I described above: we worked with the subject tutors and provided them with materials so that they could explicitly scaffold students' acquisition of research, analytical and writing expertise. We also provide web -based materials for students. These materials made use of the readings students were dealing with in class and they were designed to gradually build up students' knowledge and literacy skills to enable them to do the subject assignments. Holly also used web CT with the students in particular ways to help them build up their content understandings.

I would never have understood the bigger picture of the subject and what Holly was wanting to achieve if I had only worked with the assessments, and supporting students in these. Working with Holly and looking at the whole curriculum gave me a better understanding of the bigger discourses of the subject and how students might begin to understand these. I also learnt that change is risky, and requires courage and the ability to learn from student and tutor feedback. But I think this is worth it in terms of creating a more exhilarating and at the same time supportive learning environment for students.

- Some changes made to the assessment criteria to reflect what Holly wanted to achieve.
- Different types of assessment
- Assessment staging to allow feedback and building up of skills
- Subject tutors tied explicit tertiary literacy teaching (the thinking, analysing, researching, writing, problem solving) to the substantive content in tutorials
- The preparation and use of marking guides for tutors
- A parallel English Language tutorial (i.e. using the tutorial content) in one of the predominately

How were you able to negotiate what you wanted to achieve?

What has the partnership contributed to each others' knowledges and understandings?

What changes in the curriculum resulted from the collaboration?

Bronwyn and I had met previously when I was team-teaching this subject. I took some draft ideas I had developed of how to change the existing assessment structure. We used that and my two aims as a starting point and then talked through some of the possibilities. Bronwyn showed me a number of example activities that had been used across campus that had similar aims- collaboration and the idea of scaffolded learning were the two most interesting ideas we discussed. Through the concept of scaffolding, we started to develop the skeleton of a series of tutorial exercises that would frame the learning for a major assessment task. Further development of this idea resulted in the inclusion of online discussions as a forum for student collaboration, contributing to the completion of the final assessment.

I have learned a lot through collaboration with Bronwyn. Although scaffolding was an idea I had come across, our work together really showed me how to make it work and work effectively. I was much more conscious throughout the semester of ensuring I highlighted links in lecture notes to the assignment topic, and made sure I had tutorial plans in place, so that all tutors would be aware of the 'scaffolding'. Bronwyn has helped me to develop a deeper understanding of how to create learning environments that are conducive to student involvement and acquisition of skills. I know Bronwyn has learned a lot about privacy and information technology. The major assignment we developed the scaffolded exercises for taught both of us a bit about the workings of an international body such as the OECD!

The assessment structure for the subject was changed, with the removal of end of session exam the most significant of those changes. I changed the order of lectures and changed the content of tutorials. Time needed to be set aside for the completion of the scaffolded exercises. To do this, some readings were changed to ones more appropriate for the exercises

international student tutorials- team taught by the content tutor and an LD lecturer.

Holly might be the best one to talk about some of the other changes she made. Some of these arose out of discussion between us, but Holly also talked with other staff before making those changes

I'll leave this one to Holly to answer.

What were the results of those curriculum changes?

The result of rearranging lecture, tutorial and assessment was to give the students a more structured approach to the subject. I believe the students benefited from the changes. There was a significant increase in writing ability by the end of semester. The marks across the subject were distributed more evenly than in previous years. The changes that were made this year, have formed the basis of a more comprehensive overhaul of the subject for delivery in 2004. This is part of a four phase development cycle for the subject. Student response has been excellent, with a number of students volunteering to participate in the development and review of new material.

Discussion

Transformation of the relational inside Learning Development

When we first conceived of this paper, we did so from a number of perspectives. The perspective flagged most explicitly in our abstract deals with the transformational practices which we are suggesting make up a significant part of what we do at the University of Wollongong. The relational aspect of these transformational practices is implied as being between and among the relationships which 'we' in Learning Development form with 'the wider university community'. Before we go into this broader discussion, however, we want to look at a more localised and situated aspect of relational transformation. We want to look first at what we wanted to achieve for 'us' as learning developers working at the University of Wollongong, by working on a paper like this for the LAS conference.

What has become evident for us as group is a need to revisit with each other *how* we work and *why* we work in particular ways³. We need to do this as part of our own "phylogenesis"⁴ as distinct from Webb's (2002) use of the term 'ontogenesis'⁵ to describe the development of the 'the professional body' or organism that is known variously in Australian contexts by names such as Learning Skills Units, Learning Development, Academic Skills Advisors. By using the term phylogenesis, we are trying to capture the notion of the organic and evolving sense of how we, at UoW, might rework or transform our own notion of 'tribe', or "community of practice" (Wenger, 1998, cited in Webb, 2002). This reworking seems to us essential as we expand not only in terms of numbers but also in terms of the diversity of our backgrounds, experiences, and expertise. Because of our diversity, we are indeed richer and also, as Garner, Chanock, and Clerehan (1995:p.5, cited in Webb, 2002) have suggested, experiencing a time when "each new member of the field is likely to be asking what is it we do and why..."

³ Learning Development at the University of Wollongong has, over the last 12 months, experienced a most welcome increase in staff. Our 5 full-time academic positions have been expanded to 8. Some of these full time positions are occupied by part - time lecturers, and, at the time of our writing of this paper, these 8 positions translate into 10 staff.

⁴ "...phylogeny' or evolution of the tribe..." (Webster's Revised Unabridged Dictionary 1996, 1998, MICRA, Inc. <http://dictionary.reference.com>

⁵ "the history of the individual development of an organism; the history of the evolution of the germ; the development of an individual organism,- in distinction from phylogeny or evolution of the tribe". Ibid.

So, part of the motivation for this paper has been our desire to explain for and to each other what we as a group of learning developers are engaged in. By doing this, we want to both give meaning to our practices and so, to negotiate again or transform our own community of practice. Rather than demonstrate 'a how to' template of practice, we hope that this paper will open up our practices to systematic scrutiny both from within our tribe or phylos (ie. Learning Development at UoW) and also from within our broader professional grouping of Language and Academic Skills Advisors at this conference. One of the references made by Webb at the last LAS conference (2001) to Wegner's (1998, p.229) description of what communities of practice are about seems to provide a useful context for understanding *how* and *why* we work in particular ways:

Communities of practice are about content- about learning as a living experience of negotiating meaning-not about form. In this sense, they cannot be legislated into existence or defined by decree...

Transformation of the Relational between LD, the disciplines and the wider university

The term 'community of practice' has wider applications beyond Learning Development at UoW. What we have been suggesting in this paper is that Learning Development is one partner in a broader community of practice where the "practices... [are] the property of a kind of community created over time by the sustained pursuit of a shared enterprise" (Wenger, 1998, p. 45, cited in Webb, 2002). The community we refer to here is made up of: both subject lecturers and learning developers, some of whose stories appear as case studies in this paper, and the broader university community. Key to Wegner's definition are the notions that community is developed *over time* and through *shared enterprises*, and is "a living experience of negotiating meaning" (p.229).

Subject Lecturers and Learning Development lecturers

Both of the case studies we have described here give an indication that the time taken to develop the collaboration was as important as identifying from early on in the collaboration exactly what the shared enterprise was to be. In both case studies, the negotiation of meaning at this early stage of collaboration is evident:

Case Study 1

Subject lecturer

As Jan and I talked, the conversation moved in such a way that I came up with two very clear aims of what I wanted to achieve in my collaboration with Jan. These were 1. to improve my students' learning of the two topics I had chosen for examination in my mid semester multiple choice exam and 2. to help them develop their skills at doing multiple choice exams, because I knew some of them did not really like that form of testing.

LD lecturer

In a very informal way, over coffee, we were able to work out where there was opportunity for me to make a contribution and where there was opportunity for Helen to add something useful to her curriculum...In talking through these issues...we worked out what sort of intervention could be useful and what sort of strategies would be needed.

Case Study 2

Subject lecturer

Through conversations with Bronwyn, I was able to determine two skills I wanted to focus on in the subject: to develop students ability to logically analyse issues, evaluate different options and viewpoints and implement decisions, and to find effective ways of assessing this. The second skill was to improve basic literacy skills, including, reading for meaning, sentence and paragraph structure and referencing techniques.

LD lecturer

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terms of staging of learning, language support materials etc ultimately Holly had to feel comfortable with what she was doing and how she was doing it.

The broader university community

The case studies also provide some indicators of how Learning Development is part of a shared broader institutional enterprise that has a focus on student learning and academic literacies. Comment such as those in Case Study 1:

our school is now arranging to use the Learning Development team... to investigate the high failure rate in second year, and to try to improve that, using focus groups and possibly other strategies. This will be an ongoing attempt to have an improvement across all accounting subjects in second year

suggest a shared understanding, real collaboration and the sharing of enterprises seen as valuable for both groups.

Collaborations and shared enterprises such as these, multiplied numbers of times in each of the faculties across an institution, create a critical mass of people across the institution with shared knowledge and understandings and perceptions of teaching and learning. This critical mass of people has the capacity to transform teaching and learning practice.

In addition, Learning Development at UoW has a voice in a number of key committees and policy making bodies. At the institutional level, for example, LD is represented on Academic Senate, and is an integral part of the Academic Staff Development Committee and the Quality Assurance Sub-Committee. At the faculty level, Learning Development is represented on every Faculty Education Committee, and is invited to participate in strategic reviews of curricula.. Thus, *how* we fit within the broader institutional framework feels markedly different from the insider/outsider experiences referred to by LAS advisors, both here and overseas (see Webb, 2002, particularly reference to Grimm).

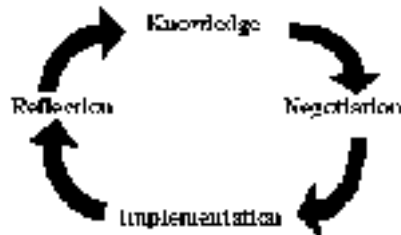
Co production of knowledge resulting in transformation of teaching and learning-

What happens in the process of collaboration and co-production could also be described as the development of trans-disciplinary or multi-disciplinary knowledge, where each person acquires knowledge that belongs neither solely to one discipline nor the other but is an amalgam of both. Lee (1997) has called this activity the co-production of knowledges about what counts as literacy and learning in specific sites. This leads to a focus on teaching and learning which includes more than the written texts of the discipline.

This development of trans or multi-disciplinary knowledge has been noted by Harper (1998) as occurring in those instances when different disciplinary cultures come into contact and where that contact space allows for reflection and discussion. This idea of contact space is a useful and explanatory one: it names that place where we encourage discussion and reflection, and it becomes a learning space in which this new trans-disciplinary knowledge is created. This knowledge creation or learning is both circular and iterative, with the possibility of deepening learning with each small collaboration (see Figure 1, a replica of Kolb's learning circle). The partners in a collaboration begin with their own knowledge and understandings about a particular issue, but the process of negotiation and implementation begins the co production of trans-

disciplinary knowledge (see Case Study excerpts below) which is then fully realised if the space allows a reflection phase. Reflection allows for the completion of the learning circle in a disciplined way⁶ and is essential to the notion of transformation.

Figure 1: The evolution of knowledge and understanding in a learning circle



Case Study 1

LD lecturer

I feel I have gained a better understanding of what this subject is about, what the learning and teaching difficulties involved in the subject are, and what the learning and teaching possibilities are. I've acquired another disciplinary perspective on multiple choice assessment that adds to my understanding of MCQ usage across the university. Most importantly, I've extended my understanding of how and why concept mapping works in the specialised type of MCQ questions used in Accounting and, because of Helen's very clever use of it in her teaching, of how it can be more effectively used as a teaching strategy.

Discipline lecturer

I have learned a lot from Jan through this exercise. While I do tend to think in terms of concepts myself, and use them in my lectures, I am now much more aware of them and see them as a valid teaching strategy to help students to learn more deeply the topics I'm introducing them to. I now more consciously build those ideas into my lectures...As to what I've contributed to Jan's understanding, I couldn't say. The topic was accounting consolidations, and I think she may not have much use for that! However I think she probably has a better understanding of the complexity of some of the subjects that I am trying to communicate [to] the students.

Case Study 2

LD lecturer

I would never have understood the bigger picture of the subject and what Holly was wanting to achieve if I had only worked with the assessments, and supporting students in these. Working with Holly and looking at the whole curriculum gave me a better understanding of the bigger discourses of the subject and how students might begin to understand these. I also learnt that change is risky, and requires courage and the ability to learn from student and tutor feedback. But I think this is worth it in terms of creating a more exhilarating and at the same time supportive learning environment for students.

Discipline Lecturer

I have learned a lot through collaboration with Bronwyn. Although scaffolding was an idea I had come across, our work together really showed me how to make it work and work effectively... Bronwyn has helped me to develop a deeper understanding of how to create learning environments that are conducive to student involvement and acquisition of skills. I know Bronwyn has learned a lot about privacy and information technology. The major assignment we developed the scaffolded exercises for taught both of us a bit about the workings of an international body such as the OECD!

That the contact space in these case studies has brought about a transformation of practice and the creation of some kind of trans-disciplinary knowledge is testimony to what Pratt (cited in Harper, 1988) has called the "arts of the contact zone". Because these spaces can be sites of "colonialism" as well as "dialogic exchange" (cited in Harper, 1988, p.1), the creation of real dialogue and the development of trans-disciplinary or multi-disciplinary knowledge is something to be valued. It reminds us that the collaboration involved in our work in integration is more

⁶ Disciplined' as in setting in writing one's responses to the reflective questions posed in this paper after or during each collaborative venture – and then using the responses for further discussion.

than a set of steps to be followed: it's also an art. It's one that is based on respect for the other person and their needs and insight about the issues in which we are involved. It is knowing when it's time to talk or to listen; trusting in the other person's integrity because each is putting him or herself on the line to some extent; and having confidence in each other's ability to come up with solutions.

Conclusion

We would suggest that integration, in the sense that we've been talking about it, ie. collaborative, involving co-production of knowledge, focused on student learning generally, combined with more traditional LAS practices, such as generic workshops and one-to-one consultations, provides a rich model of practice. But it is the collaborative practice of integration that makes it possible for learning developers to act as "catalysts for... change, facilitators of organisational learning and partners in the transformation of university teaching and learning". We'd also suggest that at Wollongong, we are beginning to make this a reality.

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