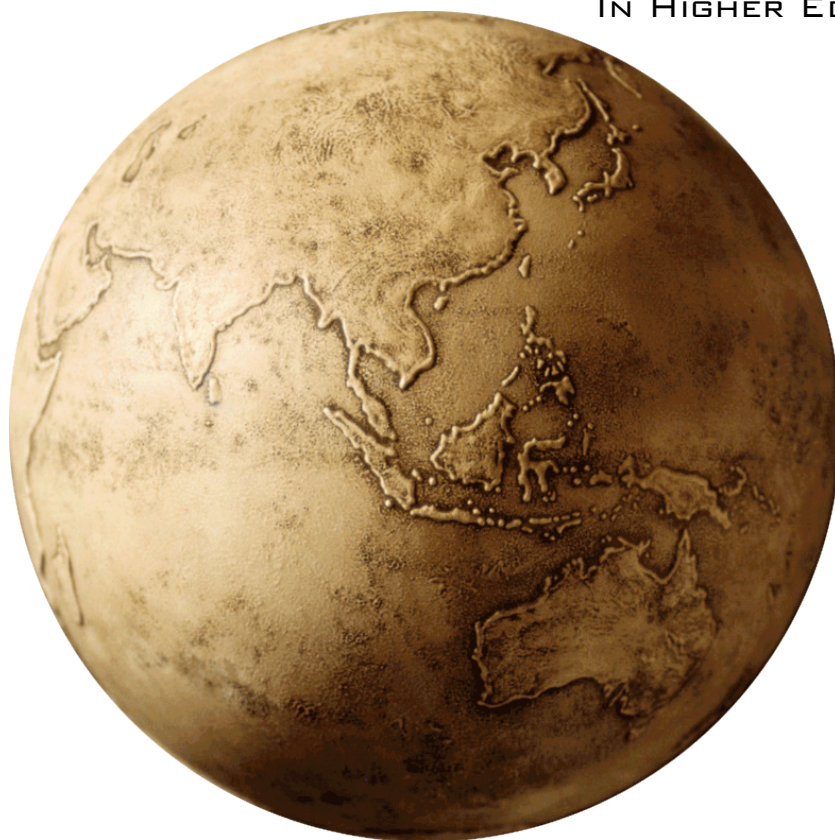


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The International Journal of Teaching and Learning in Higher Education (ISSN 1812-9129) provides a forum for the dissemination of knowledge focused on the improvement of higher education across all content areas and delivery domains. The audience of the IJTLHE includes higher education faculty, staff, administrators, researchers, and students who are interested in improving post-secondary instruction. The IJTLHE is distributed electronically to maximize its availability to diverse academic populations, both nationally and internationally.

Submissions

The focus of the International Journal of Teaching and Learning in Higher Education is broad and includes all aspects of higher education pedagogy, but it focuses specifically on improving higher education pedagogy across all content areas, educational institutions, and levels of instructional expertise. Manuscripts submitted should be based on a sound theoretical foundation and appeal to a wide higher education audience. Manuscripts of a theoretical, practical, or empirical nature are welcome and manuscripts that address innovative pedagogy are especially encouraged.

All submissions to IJTLHE must be made online through the Online Submission Form. In addition, all manuscripts should be submitted in English and in Microsoft Word format. The following Submission Guidelines pertain to all manuscript types, that is, Research Articles, Instructional Articles, and Review Articles. Ultimately, authors should follow the guidelines set forth in the most recent edition of the Publication Manual of the American Psychological Association (APA).

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Developing Quality Online Dialogue: Dialogical Inquiry

Helen Bound
University of Tasmania

Dialogue is “at the heart of the e-learning experience” (Littleton & Whitelock 2004, p.173). It is the means to building mutual understanding, encouraging the construction of personal meaning and ensuring engagement. Inquiry requires dialogue. If we value processes of inquiry, then it is at our peril that we ignore the complex issues and aspects of designing and facilitating in online environments for inquiry processes. How do we design online learning experiences that encourage dialogue and a process of inquiry? A phenomenological inquiry using student postings, student interviews and survey data from an online undergraduate course is undertaken to explore the dynamic interrelation between design, facilitation, tools and learning. As part of the analysis, a heuristic device was developed – the *Map of aspects of dialogical inquiry*. In this article, this device and the dynamic interrelation between design, facilitation, tools and learning are discussed, and implications for practitioners teaching in online environments are explored.

Dialogue is “at the heart of the e-learning experience” (Littleton & Whitelock 2004, p. 173; Garrison & Anderson, 2003). It is the means to building mutual understanding, encouraging the construction of personal meaning and ensuring engagement. Dialogue, meaning a process of inquiry, investigation and questioning, is a crucial element for online development of new concepts, knowledge construction and internalization of learning (Bird, 2007). In online learning environments, dialogue and the creation of online learning communities are multi-faceted; the choice of platform, the role of the lecturer and the student, the structure and nature of the learning materials, institutional expectations, affordances, and limitations are all part of the complex web of interactions that mediate the online learning environment. For example, knowledge-creation processes through posting, responding, self-disclosure, and posing questions set up implicit norms (Ziegler, Paulus & Woodside, 2006) that reflect the nature of the task. Being comfortable with difference is a “norm” that the author believes is important for dialogical inquiry and developing reflective practice – whatever your discipline. As Hung, Chee Tan & Chen (2005) note, dialogue in online learning environments is a matter of tapping into the distributed expertise in the group, ensuring tasks are contextualized and requiring reflection, argumentation, and evaluation.

In addition, there are now studies that point to student anxiety, lack of confidence (Askell-Williams & Lawson, 2005), and alienation in online discussions (Mann, 2005). All of these are factors to be considered in the design and facilitation of online learning.

If we value processes of inquiry, then it is at our peril that we ignore the complex issues and aspects of designing and facilitating it in online environments. There are a number of factors that are markedly different in creating dialogical inquiry, the focus of this

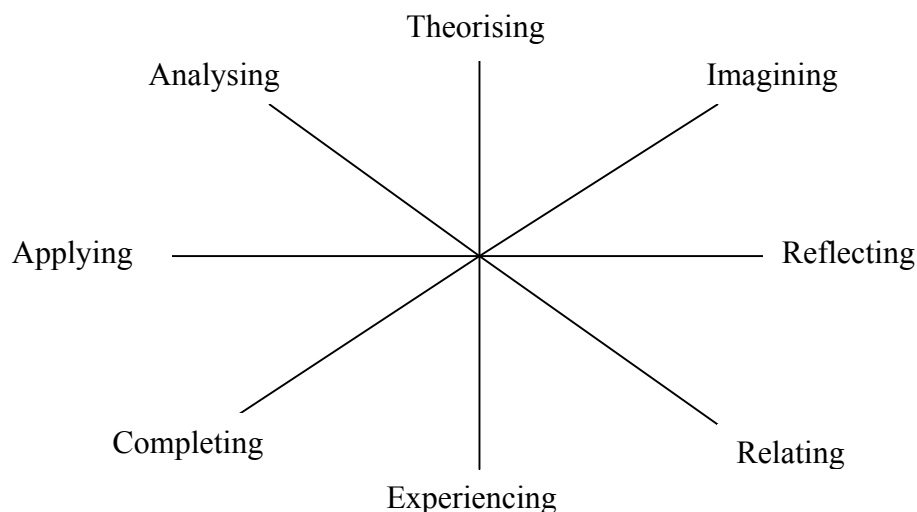
paper, in online environments compared to face-to-face environments. For both learners and designers these include: the asynchronous nature of online interaction; access issues (including learning new programs and navigating online for first time users, and addressing time issues when learners are in different time zones); the need to be very explicit to avoid confusion; and the limitations of the technological interfaces. The question is, how do we design learning experiences that not only encourage dialogue but a process of inquiry? A process of inquiry meaning to be curious, to be speculative, to ask questions, to experiment, to challenge, to investigate, analyze, conjecture, imagine. In the context of developing professionals, as in the case explored in this article where adult and vocational educators make up the student body, we also want our practitioners to be reflective, to examine assumptions (Brookfield, 1995), to construct knowledge of oneself and one’s practices, and to observe. The ability to question taken-for-granted practices is important in handling change, ensuring practitioners are responsive and flexible (Dadds, 2009; Webster-Wright, 2009).

All of these processes require dialogical inquiry. The purpose of this article is to explore the dynamic interrelation between design, facilitation, tools and learning, and then to examine the implications for practitioners interested in encouraging their learners to engage in dialogical inquiry.

Conceptualizing Dialogue and Inquiry in Online Environments

The processes of inquiry and dialogue are unified; inquiry cannot happen without dialogue with self and others. Inquiry can be defined as the process of examining, to “explore, delve into, catechize, query, question, quiz, investigate, probe, search scrutinize, interrogate, and study” (Martinello & Cook, 2000, p. 3).

Figure 1
Aspects of Scientific Inquiry (From Stack, 2007)



Wells (cited in Audet, 2005, p. 5) states that inquiry must be seen as an approach “in which the posing of real questions is positively encouraged whenever they occur and... all tentative answers are taken seriously.” When we inquire, we move across different ways of thinking, often experiencing the accompanying emotions and sense of body. Inquiry may range from posing questions and experimenting with possibilities to challenging long held assumptions. Inquiry, therefore, encounters difference and a sense of being comfortable with difference.

Implicit within the definition of inquiry is the need for dialogue. Bakhtin (1986) writes about the mechanism of dialogue, one aspect of which is the appropriation of meanings, requiring interpretation and making the meaning your own. This is a process of filtering through prior experience, knowing, and negotiation of meaning (Hung, Tan, & Chen, 2005, p.38). These processes take place through psychological signs, symbols, and other tools that mediate (Vygotsky, 1978) the meaning making process. The language used, the mental models, past experience, interpretation of intent of others, and expectations of the lecturer are all part of the dialogic process within educational online discussions. Inquiry is therefore a socially negotiated process, requiring personal and collective/community meaning-making.

Tools of inquiry can be specifically taught. Stack (2007), for example, found that by asking four critical thinking questions in her physics classes, her 16 to 17 year old students moved from being teacher dependent to owning the inquiry process themselves. When posing these four questions, Stack used an experiential, problematising approach. She asked students to apply

the four questions below to the explanations they and others arrived at when solving problems. The four critical questions were:

- Is it intelligible? (What further explanations or experiences can help me understand it?)
- Is it plausible? (How is it convincing, logical, relevant, trustworthy, fit into a bigger picture? What might be the flaws or limitations?)
- Is it useful? (How does it have greater explanatory or predictive power over other models? How does it fit into other ways of explaining the world? How is it significant?)
- Is it believable? (What are my underlying beliefs and values about the world and how do these new ideas interact with these?)

Students took on responsibility for critical thinking because they were given tools to work with and were expected to take responsibility for the inquiry process.

Stack (2007) suggests that good dialogue requires bringing a “state of being” to the process of dialogue and inquiry. She defines that “state of being as “a state of tentativeness, a state of willingness to look deeply, to be open to surprise, to nurture those who are tentative” (p. 328) and involves an engagement in “insight making” (p. 330). Often we enter the inquiry process through a particular aspect(s); the challenge is to encourage movement across multiple aspects of the inquiry process and not remain at our starting point. Drawing on the work of Atkin’s whole brain learning model (Atkins, 2000), the Kolb (1984) experiential learning model, and McCarthy’s 4MAT system (McCarthy, 2007), Stack developed an eight-sectioned

model she called *Aspects of scientific inquiry*, as shown in Figure 1.

Drawing on particular learning style theories and approaches, this model provides a tool for educators in any field to encourage learners to move across and through different ways of thinking and being. It is contended that this will promote deep learning where learners are open to difference.

However, in online environments there can be a tendency for lecturers – designers/facilitators – to value evidence of engagement that may be supportive of each participant but not necessarily result in deep learning. Mann (2005) posits that a “failure of communication” (p.45) in online environments results in a tendency to restrict spaces for questioning and critique and closes off possibilities to being open to difference and what is “other” (ibid). Openness to difference and critique are critical aspects of inquiry. Being comfortable with difference is not just being argumentative; it requires “socially shared, relationally responsive, perceptible understanding” (Shotter & Billig, 1998, p. 25) between those involved. Debate, identifying places and points of difference yet being responsive and mindful of others, is part of the process of developing a robust online community that is “relationally responsive.” The findings of the case study analyzed in this paper lead the author to posit that openness to difference, dialogue, and inquiry needs to be designed into learning experiences and actively facilitated. This may seem obvious, but as designers and facilitators we are not always aware of the outcomes of the processes and experiences that we design for our learners.

Methodology

The unit investigated in this case study is part of an undergraduate degree in adult and vocational education that is delivered 100% online. Students are geographically dispersed, with some in remote locations. Students are mature aged; most are working in the field of adult and vocational education in settings as diverse as emergency services, Technical and Further Education (TAFE) institutions, defense, government agencies, private Registered Training Organizations and recruitment agencies, coordinators of online centers and neighborhood houses, and literacy educators, amongst others. Students receive a CD of readings and a hard copy of their unit outlines. Learning modules and other support materials are placed online, with Blackboard being the institutional interface. Students are admitted into the second year of the course, having gained credit for the first year of study. The course has a small cohort, most of whom study part time with classes ranging from 5 to 32 students. The part time nature of study often means that students do not move through as a cohort,

as they will take on different loads according to their life circumstances.

For this case study, all students in the first unit (n=20) were selected as the cohort. Unlike in other units, a deliberate decision was taken in this first level 200 unit to use only Blackboard; the second unit introduces students in a supported way to a range of other online tools, including the use of synchronous technologies. This staggered introduction to different technologies means these students can better manage what for many is a very steep learning curve when they first begin the course.

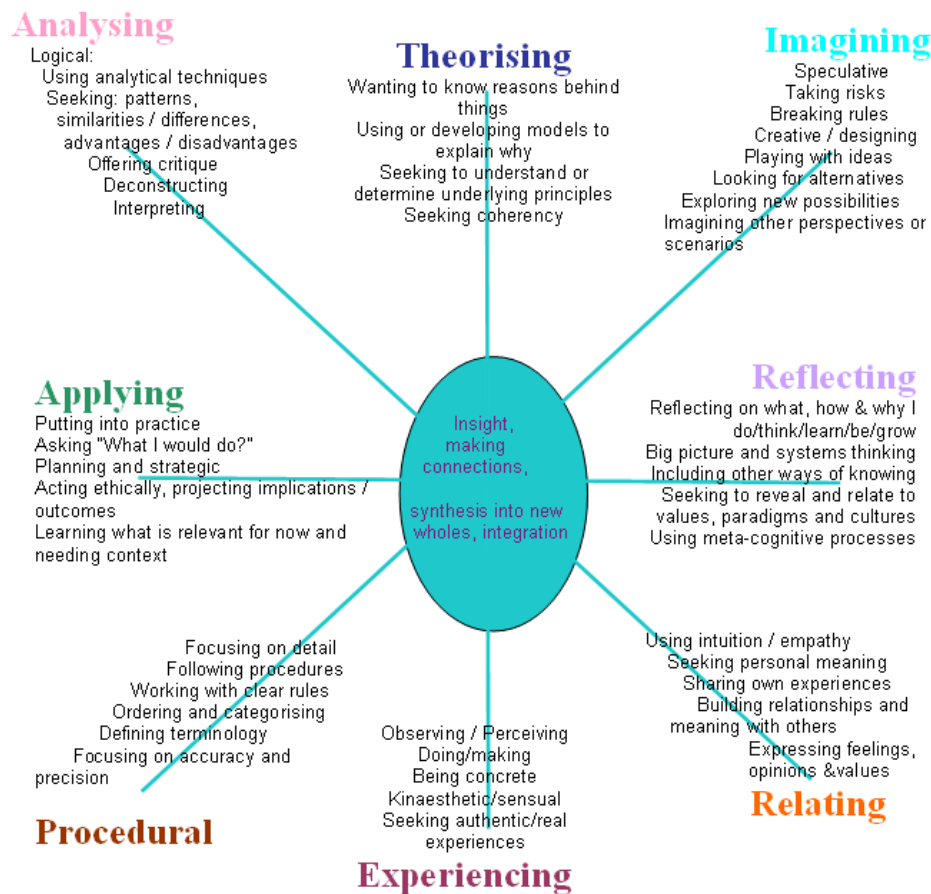
A mixed methods approach was used in this project. The data, collected in semester one of 2008, are the student postings collected for the thirteen-week semester. Postings for four level-200 units from one semester were collected, although, as indicated above, in this article, postings from the 20 students in the first unit were analyzed. The purpose of this first unit is to develop students’ academic literacy through an exploration of qualities and characteristics of effective teachers and communication skills required for teaching, identified through observing learning.

All students in the course were given the opportunity to complete an online survey, open from week 6 to week 10, which asked about access, levels of participation, confidence, and what encouraged and discouraged participation. The survey was developed with reference to literature, other online surveys, received feedback from an expert in survey design and then piloted with students, staff and friends of staff (n=6). A link to the survey was placed in each semester one unit of the course. Response rate was high with 72% of all students completing the survey.

The survey and postings data is triangulated with interview data collected through telephone interviews during the first semester, undertaken by a Research Assistant. All students were sent an invitation via email to participate in the interview. A small representative sample of students (16.5%) (n=11) based on number of years in the degree and confidence with the technology were selected. Respondents were asked about their previous online learning experience, how they learnt to use Blackboard, levels of confidence, what helped them to develop confidence, the role of others in the online environment, highs, lows, challenges, what was helpful, what was not, and suggestions for change.

Data analysis was undertaken in a number of stages. At the time of writing, the survey data had been analyzed for frequency counts. Interviews were coded by identifying themes from the data, such as perception of value of discussion, uses of discussion, strategies for engagement, support provided by peers and lecturer, structure, and assessment. Memos were written against each code. This process highlighted the need for a set of

Figure 2
Map of Dialogical Inquiry



heuristics to use for analyzing the postings. Two cuts of data from the postings from four different activities were taken. The first was a phenomenological analysis of four different activities to explore the journey of the students. The four different activities represent a range of different types of activities requiring online posts: one about week four in the semester (different perspectives), one about week five/six (everyday learning), another activity about week nine (conflict case study), and the final activity (my emerging philosophy of teaching and learning) in the last week of the 13 week semester. These four different activities were selected from a total of 15 activities. The four activities selected represent a range of different types of activity and are spread across the semester to allow for the growth of group dynamics and confidence in using the technology.

The heuristic device was developed as a result of the first cut of analysis undertaken by the author of *Aspects of scientific inquiry* (Stack, 2007). The heuristic device, which we have called a *Map of dialogical*

inquiry (see Figure 2), has the following aspects of dialogical inquiry: analyzing, theorizing, imagining, reflecting, relating, experiencing, procedural and applying. As can be seen from Figure 2, the map is very similar to the *Aspects of scientific inquiry* (Figure 1). However, each aspect was nuanced through a process of interaction between the analysis of the postings and intent of the unit, and “completing” was replaced by “procedural.” Text analysis was used to plot postings against *The Map*. Each post was analyzed for evidence of one or more aspects of dialogical inquiry, using the explanations on *The Map* in Figure 2 to identify the different aspects. One post may have multiple aspects, as shown in Table 2.

A limitation of *The Map* is that it is a device for analyzing dialogical inquiry without the power to acknowledge the context in which the dialogue is taking place. For example, the limitations of Blackboard and its affordances need to be acknowledged separately from the use of *The Map*. Institutional policy for design

Table 1
Selected Survey Responses

Survey statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Skipped Response	Total responses
I am comfortable volunteering my opinion and asking questions in the online environment	13.9% (5)	11.1% (4)	13.9% (5)	44.4% (16)	16.7% (6)	(2)	36
I feel uncomfortable responding to a student when I think they know more than me	8.3% (3)	25% (9)	25% (9)	36.1% (13)	5.6% (2)	(2)	36
If I disagree with a student I will make a posting giving my opinion	2.8% (1)	19.4% (7)	36.1% (13)	41.7% (15)	0% (0)	(2)	36
If I disagree with the lecturer I will make a posting giving my opinion	8.3% (3)	11.1% (4)	44.4% (16)	33.3% (12)	2.8% (1)	(2)	36
Often I do not understand what is expected of me in the online learning environment	0% (0)	44.4% (16)	25% (9)	25% (9)	5.6% (2)	(2)	36
I am worried that when I make a posting others may think I do not understand what is being discussed	11.1% (4)	33.3% (12)	19.4% (7)	25% (9)	11.1% (4)	(2)	36

processes and support for students and designers are also not implicitly captured within *The Map*. The facilitator/designer referred to in the findings section is the author. As a result of undertaking this study, a cycle of action research was entered into by the author. Unfortunately circumstances did not allow for collection of data on the changes implemented as a result of the research.

Findings

This section begins by providing selected findings from the survey relevant to the purpose of this article, then analyses the number of posts against each of the four activities. Each activity is further analyzed using data from the postings under separate sub-headings, making reference to Table 3, which provides numerical data on the number of responses against aspects of dialogical inquiry.

Survey items most relevant to the purpose of this article have been collated in Table 1. Although the numbers are small, they are indicative of the cohort of the whole course, including those in the first unit. Most students (61.1%) are comfortable giving their opinion and asking questions, yet the lesser percentage of those not comfortable doing this is large (38.9%). What this item does not tell us is what type of questions students are comfortable asking, such as clarifying questions or questions that challenge.

Less clear is whether students are comfortable responding to their peers when they perceive they know more than them. A significant minority indicated they were uncomfortable (41.6%), with 33.3% indicating they

were comfortable and 24% indicating they were not sure. This suggests that many of these learners feel uncomfortable when their peers appear to know more than them. It is likely therefore that these learners are less likely to challenge or manage difference.

The high percentage of learners who responded ‘not sure’ to the items asking if they disagree with a peer (36.1%) or their lecturer (44.4%) indicates that learners are perhaps not often required to engage in debate and argument where disagreement is part of the process of exchange. Alternatively, learners may consider ‘disagree’ or ‘agree’ to be inadequate to describe their processes.

The last two items in Table 1 relate to learners’ levels of confidence. There are significant percentages of learners in the course cohort who do not understand what is expected of them (55.6% included in this aggregation is the ‘not sure’ responses) and are worried that others will think they do not understand what is being discussed (54.5% included in this aggregation is the ‘not sure’ responses). This suggests that the design of online learning environments for a cohort that is returning to study after many years and for whom the online environment is new requires consideration of clarity, support structures (including peer support structures), and reassurance and encouragement. Interestingly, student unit evaluations administered at the end of semester across the course indicate a high level of satisfaction, including the unit evaluation of the author. This suggests that the survey has captured aspects of the learners’ journey.

Also of interest is the survey response to the question about the importance of the following components for learners when they were approaching a

Table 2
Number of Posts and Turns in the Selected Activities

Post	Total Number	Number of Turns (Posts Within a Thread)					
		1 Turn	2 Turns	3 Turns	4 Turns	5 Turns	6 Turns
Different perspectives	33	5	4	-	5	-	-
Everyday learning	46	4	6	4	3	-	1
Conflict case study	34	9	5	2	1	1	-
My emerging philosophy	16	2	-	1	-	1	1

Table 3
Student Responses

Aspect of Inquiry	Number of Student Responses				Total
	Different Perspectives	Everyday Learning	Conflict Case Study	My Emerging Philosophy of Teaching & Learning	
Analysing	6	6	16	2	30
Theorising	3	9	9	1	22
Imagining	9	6	7	2	24
Reflecting	3	7	1	10	21
Relating	27	43	21	19	110
Experiencing	-	-	5	2	7
Procedural	55	10	6	4	75
Applying	2	2	50	3	57
Total	105	83	115	43	346

formal assessment task. Figures in brackets indicate percentage of respondents who considered the resources provided important when preparing their assessment item.

- Learning module (94.4%)
- The readings (97.2%)
- The lecturer (83.3%).

The “learning module” and “the readings” encapsulate the end result of the design process; the “importance of the lecturer” embodies the way in which learning in the unit is facilitated. This will be discussed further into the paper.

It is interesting to consider the survey responses in the light of the number of posts in the four selected activities in one unit (as opposed to the course, as for Table 1). Table 2 presents the number of turns for each of the four activities (a turn is a message and any replies). For example, one turn indicates that no one replied to that message; three turns indicates there was a post, and two replies. The total number of posts in this unit was 770 and there were 20 students in the unit. The extent to which the number of posts and turns resulted in dialogical inquiry is discussed below.

The ‘Everyday learning’ activity elicited most turns; it was this activity that asked learners to exchange anecdotes or personal accounts of their experience. ‘My emerging philosophy’ elicited only 16 turns. This activity took place in the last week of the semester, when students were busy writing assignments and had for the most part already met their obligations for assessment of their online participation. This activity was not clearly linked into the building of knowledge and understanding that would then feed into an assessment.

The following section analyzes posts from each of the four activities: Different perspectives on learning, Everyday learning, Conflict case study, and My emerging philosophy. These posts are discussed in chronological order in which they were undertaken by learners across the 13 week semester. Each of the activities was analyzed numerically, coding posts under the appropriate aspect of *The Map* (see Table 3). The responses are greater than the number of turns shown in Table 2, as many posts showed evidence of multiple aspects of *The Map*. This numerical data will be referred to under the discussion of each activity.

Different Perspectives on Learning

In this thread, where students were asked what is similar and what is different between three different perspectives of learning, students are making meaning of the readings that have provided them with behaviorist and cognitive views of learning and a more critical perspective of traditional notions of learning.

All students summarized, picking out what was meaningful to them in the readings. Many began with the words, “What is similar and what is different ...” As indicated in Table 3, the single most used aspect of dialogical inquiry was procedural, accounting for 55 responses, followed by relating with 27 responses. Learners were following instructions and categorizing; in most instances learners were not going beyond identifying the differences and similarities. There was no comment or opinion offered. These learners were doing what was asked of them. In addition, they were relating to each

other, learning more about each other in their early time together in this unit.

A small number of students, however, did make observations and connections. For example:

- As I am currently teaching within the boundaries of a training package and using tools, which have been prepared previously, I have been thinking about which style of learning this falls under. Behaviorism is strongly represented I believe but certainly not all of it. I guess this comes back to having flexibility to cater to all styles of learning and being able to recognize that there may be another way of doing things. Keeping our minds open to this and to be able to recognize the needs is something that I am sure will come with practice. (*aspect of inquiry: reflective voice, speculating about how to categories*)
- Terms I would associate with the role of facilitator would be directs, organizes, challenges, formulates, structures, scaffolds, monitors, interacts, plans, assesses, models and most importantly learns. I guess we model learning by being learners and modeling learning skills. Every interaction we facilitate is also something by which we learn.... We must be aware of the development of the learner to further it, to encourage responsibility for one's learning, hence the importance of teaching with developmental intentions (Taylor, Marienau, & Fiddler, 2000). (*aspect of inquiry: seeking to understand by using the model from Taylor et al 2000 to explain why*)
- The views on Engestrom (1994), Eggen and Kauchak (1996) challenge us as educators to consider the following points: Are our roles Facilitators or Lecturers? (*aspect of inquiry: analysis; asks question for analysis and sets challenge for deconstruction*)

Unfortunately, these uses of other aspects of *The Map*, making connections and deeper inquiry, were the exception, not the norm, in this activity. Another notable feature of this activity was that although students were making many similar responses, they were acknowledging the posts of others in a very limited way. It would appear there was no point or purpose of connection between them. Students interpreted the task as an individual one of making meaning and putting it 'out there.'

The unit facilitator rarely invited learners to extend their thinking, looking mainly for responses to the question asked and providing positive reinforcement.

Everyday Learning

Having undertaken some reading about socio-cultural perspectives of learning, which understand that we learn through everyday activity and that the context we are in mediates that learning, students were asked to provide an example of learning as an everyday activity. For some students, the concept of learning through everyday activity was new. Responses ranged from giving personal family experience, examples from work, learning as a parent, cultural experiences overseas, and learning to catch a train. In many posts these anecdotes were not explicitly linked to the theory in an exploratory way; that is, the anecdotes did not move beyond examples of everyday learning. The anecdotal nature of these posts and exchanges between learners placed many responses under the relating (n=43) aspect of dialogical inquiry.

However, there was some evidence of students appreciating the contextual and temporal nature of everyday learning. For example, one student used big picture thinking (reflecting) when asking, "How much does the social economic culture we come from affect the way we learn, the learning style we use, and what we learn." Four students shared very personal stories, using the language of self-disclosure. One such student theorized at the end of his story:

It is impossible not to be always present in this learning environment, with so many opportunities for development should we be receptive enough to engage them. Simply by living and moving within a society, we are constantly immersed in a context for social learning.

This post was followed by a response from a fellow student, acknowledging the self-disclosure, an example of relating typical of the many relating posts in this unit:

This is a really interesting post. You have a remarkable self-awareness and a fabulous ability to articulate, you paint great pictures with your words, there's a nice honesty in your writing; it makes for a good connection.

What the facilitator had seen at the time she was facilitating were the number of posts, evidence of exchange between learners and the sense that learners had understood their introduction to socio-cultural theory. She typically provided positive reinforcement, was confirming, would restate the essence of the example and its relation to the theory, and in a number of posts posed questions to prompt further thought, but she did not do this consistently. What she seemed to be valuing was the exchange of stories /anecdotes and

connection to the theory rather than additional aspects such as reflection on and analysis of the theoretical perspective under discussion. Interestingly, despite this activity having the highest number of posts (see Table 2), there were fewer responses as shown in Table 3. The responses were more consistently in one aspect of *The Map*, perhaps because of the nature of the exchange of stories and anecdotes.

Conflict Case Study

In the conflict case study, students were asked what they would ‘do,’ how they would respond as a teacher and as a learner to a classroom scenario where a racist remark had been made by a student called John. Suggestions included: establishing ground rules, splitting the group, organizing a break immediately to create space to talk quietly and separately to each party, suggesting the ‘offender’ be asked to apologize, using the ‘event’ as a teachable moment, and ideas for follow up activities to develop cultural awareness and celebrate diversity. These are examples of applying as described in *The Map*.

The language used varied considerably in this discussion thread, with greater variation in types of responses (see Table 3) despite the number of responses being coded as proportionately *less* than in the other three activities. There was also evidence of students responding to each others’ posts and following the discussion trails (see number of turns in Table 2) to a greater extent than in the other three activities. The nature of ‘relating,’ expressing opinions and building meaning with others, had greater depth, more so than in the other three activities. This was typified by comments such as:

- I agree with [name of fellow student] about not embarrassing John (name of perpetrator in the case study) but being firm and making a stand
- I considered the suggestion of others of delivering a discussion on discrimination... but on further reflection,... again I think this would only ...
- I have to agree with you about ...
- I agree that and ... I would not necessarily get into the situation of ...
- A very good point ...

A number of students used the language of ‘doing’ – ‘what I would do’ – without exploring the issue any further. These responses used assertive language and labeling such as referring to John – the perpetrator in the case study – as a “bully.” These learners were operating strongly in the “applying” aspect of *The Map*. However, quite a number of students moved beyond this immediate response and beyond the labeling (see

Table 3) by hypothesizing about John’s background, imagining the experience, and discussing why some of the proposed approaches may not work by projecting possible outcomes and implications. There was also a challenge to the idea of labeling and needing to be aware of stereotyping. The quote below from one student typifies the thinking about various conditions that can mediate possibilities for responses to the conflict scenario:

Conflict can be handled with both a proactive and reactive approach. It is also very situational – often depending on relationship between teacher and students and within the student body. Ease of handling this situation can also be dependent upon what phase the group has reached (formal, informal or self managed). Consider the following: Teachers introduction ‘sets the scene’, use body language to give important non-verbal communications, emphasize respect – acknowledge everyone is ‘different’ however basic human rights can override this. Encourage free thinking and freedom of speech but emphasize what is morally or accepted in the eyes of the law. Highlight dangers associated with generalization/stereotyping. Relate it into the topic and gather ideas. Peer viewpoint often will support the Teacher’s viewpoint. One on one discussions in a break/Call break if needed Empathy – try to understand where each is coming from’ If possible or appropriate, link in humor e.g. ‘walk a mile in their shoes - and if nothing else at least you have their shoes.’ Follow up – this type of situation is not just forgotten after class. “To neither suppress our feelings nor be caught by them, but to understand them-that is the art.”(Jack Kornfield) “They may forget what you said, but they will never forget how you made them feel.” (Carl W. Buechner)

What is interesting about this quote and other similar posts is the consideration of a range of factors, from stage of group development, relationship between students and lecturer, the implicit need for empathy, a strong moral stance, and the use of simile. However, there is no evidence of analyzing the conflict case study to identify the issues (remember learners were not asked to ‘do’ this), and although it is tempting to identify the post as including an imaginative aspect of dialogical inquiry, the post is written in an authoritative voice and as though from experience (this learner was experienced in handling conflict from a position of authority), suggesting that the learner is using experience to apply theory and put forward solutions. But, what is the problem the solutions are addressing?

Another student in the unit noted the age of John, the person in the case study who made the remark (60

years). This student postulated about the values John would have grown up with and related relevant historical events and policies of the time. The same student also stepped into the shoes of 'Joanna,' the Aboriginal student, commenting that the moments following John's remarks would have seemed "like an eternity." This was a reflective post that also showed that this student was relating strongly to the characters in the scenario, relating to other ways of knowing and the experiences of others.

Students challenged each other, for example: "Do you think you are being slightly too aggressive with John? He might not respond in the way you desire if you speak to him so directly." The response to this challenge was to clarify intent and meaning. Other students picked up this discussion, agreeing or disagreeing and explaining why. At this point, particular strategies were unpacked and the impact of these strategies explored. For example, "Splitting the group may have had the effect of saying their group and our group," and "I can't think of any positives of splitting the group, as [name of student] states it would put a spotlight on Joanna," and

Speaking from personal experience, coming from a different cultural background, it would have made matters worst by splitting Joanna and others into groups. This will throw a spotlight to the class that there are differences between the groups. We have to learn to live with diversity and accept our cultural difference.

The extent of discussion resulted in one student changing her mind from her first post after considering the various viewpoints and ideas put forward. Unlike the previous two activities, the language in this activity was conversational, there were no formal academic posts using references; rather, there was evidence of exchange and working through issues in a very conversational way. Students were feeling much more comfortable to challenge each other and put forward different viewpoints, to postulate, to explore alternatives and weigh these up. They were deconstructing arguments, suggestions and discussing the advantages and disadvantages of various proposals. This can partly be explained by the timing of the activity two thirds of the way through the semester. However, this is only a partial explanation; what was it about this activity that led to a greater range of the aspects of dialogical inquiry and had learners prepared to challenge and respond to each other much more than in the other activities? This will be addressed under the section 'Mediating factors.'

My Philosophy of Teaching and Learning

This activity was initiated by the facilitator modeling the type of response required by telling a story of an event that had led her to question some of her assumptions.

I had cause to reflect on my teaching today as I watched some second year [pre-service teacher education] students give their group presentation for an hour. They did a fantastic job, incredibly well planned. I was wondering why they did not draw out and emphasize what was important in the discussions they initiated - and there were great discussions. I had thought of this as a point of weakness. I had not been part of the group work, as I was observing in order to give feedback and assess, and did not get to see a number of their activity sheets. When I asked them at the end if they thought they met their objectives, they supported their claim of yes by showing me, on my request, their activities as the students had experienced them. This group of student teachers were working on the basis of providing an experience and then providing an opportunity to think/talk about it. They did this about three-four times, building in depth and complexity each time and culminating with a jigsaw activity (where you have an expert group, then each expert group is dispersed into a different group and everyone teaches everyone else). I realized that I have increasingly been moving over the years to enjoy the power of being the one who pulls ideas together, and that in so doing I rob learners of the opportunity to think deeply for themselves ...

This set the scene for this thread. Although the thread had far fewer posts than others (it was the last thread for the year and was when assessments were due), learners who did post either reflected on the unit and their 'take aways' or applied the learning from the unit to ponder their role as teacher, and how they had, prior to undertaking the unit, taught in certain ways without question. Others picked up specific points about technique and reflected on these. Examples of phrases used by students include:

- I too have had a chance to reflect on my teaching over the past semester. ...
- Thanks for your reflections...I enjoyed the insight.
- I need to turn off the informative brain, and watch them [her learners] a lot more, and find out where they are at! Its all good though, I tell anyone who is new to teaching that you learn tremendous things about yourself, and it is such an amazing journey of self discovery, rediscovery of the amazing traits of other ...

As expected and hoped for, quite a number of responses ((n=10) see Table 3) from those who participated in this activity did reflect on their teaching. However there was also a predominance of relating

(n=19). Given that it is no easy task to critically reflect and uncover assumptions and that there was limited participation in this activity, the facilitator reported that she was more than happy with the responses. As indicated previously, the limited number of responses can be explained by the timing of the activity in the last week of semester. However, if reflecting was an important outcome for learners in the unit, then the timing of such an activity would need to be considered carefully and integrated into other activities, thus building the skills of reflection.

Discussion

Although there was movement across the different types of inquiry in each activity, each activity strongly privileged one aspect of inquiry. In *everyday learning*, most posts were in the “relating” aspect: feelings, sharing a personal experience, relating to another respondent, and positively reinforcing the posts of another or others. The *conflict case study* saw most postings focus mainly on the “applying” aspect of dialogic inquiry. When you consider that the question asked of them was “What would you ‘do’ and say as a teacher and as a student?” this is not surprising. Typically students would say what they would do, predict what might happen, and look at the implications of actions. However, it is also interesting that “relating” and “analyzing” received significant posts, although less than half the posts than did “applying.” In “analyzing,” students would critique, infer, discuss variables, and /or weigh options. In “relating,” students would agree with another response, provide positive reinforcement to others, expand on the meaning of a post, ask a question to help another expand their thoughts, and express their own opinion.

Table 3 shows that, across the four different activities, the “relating” aspect scored highly, indicating a strong sense of community and support. Notably though in the *case study*, there was evidence that some learners moved from building relationships with each other, as in the previous two activities, to greater meaning making with others through more robust expression of opinions and values.

Across the four activities, “procedural” and “applying” also scored relatively highly. If we look at where these aspects fall on *The Map*, we see that they are in the lower half. The design on the four activities analyzed in this article show there was limited activity in the upper half of *The Map*: “theorizing,” “imagining,” “analyzing,” and “reflecting.” So why was it that the lower half of *The Map* was over represented and the higher order thinking and inquiry processes were under represented? Below I propose that the answer to this question lies, at least in part, in the dynamic mediation between learning, design, and facilitation.

Mediating Factors

Salmon (2003, p.42) suggests the setting of challenges or issues or problems that need to be made sense of, that weaving posts by analyzing posts and feeding back to students your analysis and relating the contributions explicitly to concepts and theories are useful in moving students into knowledge construction. She further suggests that to move students from knowledge construction to development, students need to be given considerable control over their learning. Rather than picking up and applying these strategies without further thought, it is important to unpack what is implied, what the likely outcomes are, and what you really want for and from students.

Wegerif (2007, p. 18) claims that:

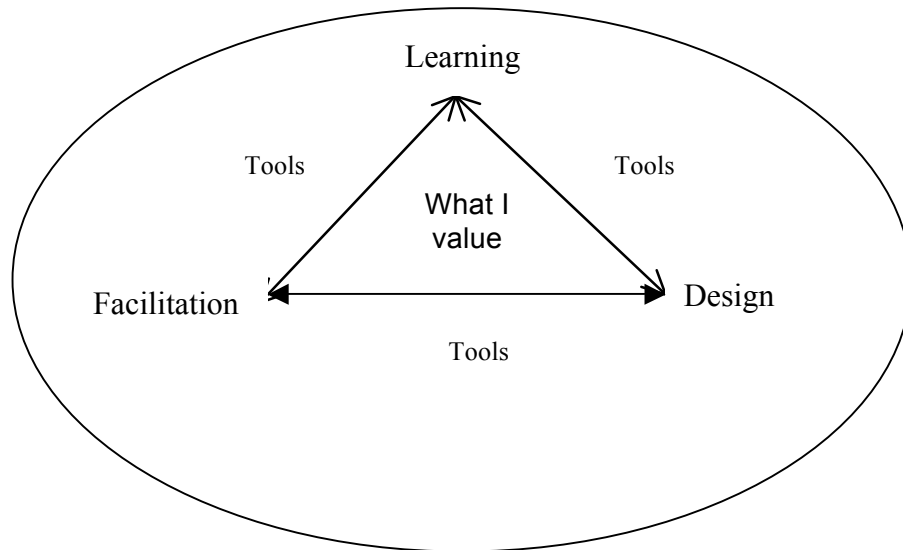
When people understand or ‘know’ something they do so dynamically in a communicative act that carves out one meaning from a field of competing possible meanings- a field of alternatives that does not exist ready-made but itself is generated by the dialogue.

The *Map of dialogic inquiry* is so called because it represents a valuing of dialogue and multiple perspectives to create meaning. Bakhtin (1986) highlights the preserving of ‘otherness,’ or difference. This valuing of difference results in dialogic as a difference or gap or opening without which there would be no meaning (Wegerif, 2007, p. 24). Dialogue requires a ‘space’ in which we make meaning (see Bakhtin, 1986). Online spaces are created first by the design of the dialogic activity, by the meaning learners make of this ‘space’ and by the ways in which we facilitate that space.

What we (as designers of online learning experiences) value implicitly informs our design of learning. How we design and facilitate online creates possibilities for students in their identification of difference, providing opportunities and structures for dialogue in all or most of its aspects, or not. Design and facilitation are closely interconnected, mediating possibilities and constraints by structuring the ‘space’ and the exchange for dialogical inquiry and thus deeper or shallower learning. What and how we design and facilitate will determine what the possibilities are for deep learning, as indicated in Figure 3.

In this case study, the facilitator explicitly valued the exchange itself rather than the nature of the dialogue, or ‘meaning making.’ Her design of the ‘space’ for meaning making limited opportunities for dialogical inquiry and thus the potential for deeper learning. For example, the everyday learning activity resulted in extensive exchanges of personal experiences. There was no point of difference for

Figure 3
Mediating Factors of Online Learning



students to move into to extend their thinking or dialogue into different ‘spaces’ such as theorizing, imagining, and reflecting. While the exchange of stories is an obvious starting point, a structured series of questions, for example, could have taken learners beyond this exchange. In the case study when learners were asked, “what would you ‘do’?” they were being pushed into the ‘applying’ aspect. Yet the case study of all the activities resulted in a greater use of different aspects of dialogical inquiry than the other three activities. This is testimony to the well-established power of the use of challenge and the setting of problems for learners that is implicit in a case study. However, the design of the case study will play a significant role in the depth of learning.

The tools used to design the learning included, amongst others, the Blackboard interface and teaching and learning strategies. Part of design is working with the tools we are given access to and being aware of their strengths and limitations. This is necessary, as often the tools we are working with are outside of our control; they are institutional decisions we work with everyday. The Blackboard interface creates a very linear exchange, unlike a Wiki, which allows opportunities for much more collaborative exchange and creation of collaboratively developed products. The asynchronous nature of online exchange is also problematic. Simple communication issues you might address immediately in a face-to-face setting, such as puzzled looks when an instruction is given, can take days to clarify in the online environment. So when designing for online environments, it becomes necessary to be very clear what the intent of the

learning activity is and to be unambiguous about instructions and processes. Thus, the tools we design with mediate our design decisions.

Figure 3 illustrates the relationships between what we value (e.g., critical debate, uncovering of assumptions, evidence of exchange, etc.), design, and facilitation, which lead to what is learned and how it is learned. The tools we use and work with also play an important role, consciously or unconsciously.

The author has applied her model in a redesign of the unit. For example, she identified her intent and what she valued in relation to the *conflict case study* activity, namely to encourage learners to identify and name the problem, explicitly link theory and practice, and reflect on similar situations they have experienced, either as a learner or a teacher. Given this intent, design decisions in the conflict case study were to first ask learners, “What is happening here?” “What are the dilemmas for all those involved?” and then to ask, “How might we address the dilemmas?” To facilitate this would require, for example, summarizing the learning points and inviting learners to explore the link between their responses; knowing how they deal with and identify a number of approaches suggested by learners; and asking about the ways in which these relate to particular theories. In this example, the design and facilitation deliberately invites learners to move across “procedural,” “analyzing,” “applying,” “relating,” “reflecting,” and “theorizing” aspects of dialogical inquiry. These multiple aspects of dialogical inquiry provide learners with tools for becoming deeply reflective practitioners. In the redesign of the unit, the facilitator further strengthened these aspects by

introducing learners to *The Map* and designing activities to develop metacognition.

Conclusion

There is a dynamic interaction among design, facilitation, what we value, the tools associated with each of these processes, and student learning. The importance of design cannot be stressed enough. As Ziegler et al (2006) note, design sets up implicit norms; designers need to clarify what 'norms' they wish to establish. To encourage dialogical thinking across aspects of *The Map*, students first need to feel safe and to trust the lecturer and others in the group; they require support from lecturer and peers. The design of specific activities, along with the overall design of the unit and resources, was considered by students in this study as being very important, as evidenced in the survey response to the question about the importance of the learning module (94.4%), the readings (97.2%), and the lecturer (83.3%). The findings of this study suggest that identifying what we value as designers and facilitators, both at a macro level of the unit and micro level of specific activities, is an important starting point in our design and facilitation processes. This principle is one that would apply to all discipline fields, not just education. The findings from this study also suggest that *The Map of Dialogic Inquiry* is a valuable device to explore ways in which quality online dialogue can be developed and to analyze the extent to which this dialogue is developed. 'Quality' online dialogue is moving into a space for meaning making, for identifying, and making sense of difference.

Wegerif (2007, p. 55) notes that "thinking can be taught by improving the quality of dialogues." *The Map* explicates multiple aspects of dialogic inquiry. It can be used as a tool for analyzing dialogue or the extent of movement across *The Map* by learners and facilitator, and it is also a tool to use when designing and facilitating online learning. Facilitators of online learning can extend their students' movement across *The Map* by designing and facilitating for dialogical inquiry rather than leaving students remaining at their point of entry in the dialogical inquiry process.

The Map is a powerful tool for assisting designers and facilitators of online learning and also has the capacity to develop metacognitive skills for all who use it. There is also potential to use it to check for, identify, and build developmental intentions across whole courses.

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Do We Practice What We Preach? The Teaching Practices of Inclusive Educators in Tertiary Settings

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In this study, the practices and views of lecturers who teach inclusive education to trainee primary school teachers are examined in relation to their own inclusive teaching practices as they pertain to working with students with a disability. This examination draws on interview data gleaned from nine university lecturers. These data provide important information about inclusive education practices in higher education institutions generally and, in particular, education faculties. The results of the data analysis indicate that even though all the lecturers self identify as inclusive educators and adopt various inclusive teaching and assessment practices, barriers exist that impede inclusive practice in tertiary settings. Recommendations for future research and training conclude the paper.

Although the number of students with a disability attending higher education institutions is increasing (Hadjikakou & Hartas, 2008), such students continue to face a range of barriers in accessing and participating in higher education courses (Hadjikakou & Hartas, 2008; Tinklin, Riddell, & Wilson, 2004). At the same time, there are lecturers within universities who teach inclusive education to trainee primary school teachers, a subject based on the premise of equal educational opportunities for all children irrespective of individual differences arising from ability, ethnicity, culture and religion (Symeonidou & Phtiaka, 2009). This study will explore the practices of these lecturers and, in particular, investigate the assumption that such lecturers will be advocates for, and potential role models of, inclusive educational practices, with a specific focus on working with students with a disability. Potentially, these data provide valuable information about inclusive education practices in higher education institutions generally and education faculties particularly, with implications for the ongoing training of lecturers across faculties.

The prevalence of higher education students with a disability varies across countries, depending on the way that disability is assessed and/or identified. Fuller, Bradley, and Healey (2004) report that in the UK, 5% of undergraduates (26,000) self-assessed themselves as having an impairment in 2000/2001, but as there is no obligation for students to disclose, they estimate that the number is probably higher at 10%. Dyslexia was the most commonly reported impairment, followed by the 'unseen disabilities' such as epilepsy, diabetes, and asthma. In the USA, the National Council for Education Studies (1996) reported that in 1994 over 14.5 million students were enrolled in higher education institutions with just over 10% of these (1.4 million) reported to have at least one disability (as cited in Stanley, 2000). At the same time, students with disabilities are under-represented in higher education. In Australia, it has been estimated that while 19% of the

population has disabilities or impairments, no more than 2-3% of the higher education student body has a disability (Alsop, Flood, Wibberley, & Lawrence, 2000).

Students with a disability enrolling in higher education institutions are increasing in number as a consequence of several factors, one of which is public policy and legislation. In the UK, the Special Educational Needs and Disability Act (SENDA, 2001) stressed the importance of widening participation for students with disabilities (Konur, 2006), while in Australia, the Australian Disability Discrimination Act (DDA) (1992) makes it unlawful for any university to discriminate against people with disabilities, in terms of admission to and participation in tertiary courses. Other countries, including the USA and Israel, have legislation concerning the integration of students with disabilities into higher education (Fuller et al., 2004). However, achieving optimal outcomes for such students requires more than legislative change. For example, Tinklin and Hall (1999) found that the quality of higher education provision depends on the attitudes, experience, and awareness of disability among both staff and students and that such attitudinal perspectives are not necessarily dictated by legislation. Thus, lecturers are pivotal in determining the success or otherwise of tertiary students with a disability.

The access and adequate provision of education for students with disabilities is multifaceted, as it involves the availability of resources, training for academic and support staff, effective referral processes, and emotional support for students (Hadjikakou & Hartas, 2008). Farmer, Riddick, and Sterling (2002) describe three ways in which students with disabilities might be supported, the first of which involves providing personal or individualized accommodations for them (for example, Braille services or modifying teaching materials). The second approach is organizational; this could include offering appropriate professional development programs for faculty staff. The third

approach is political, referring to a commitment for the equality and entitlement of education for students with a disability. Overall, the better informed and supported that lecturers are about student disabilities, legislative obligations, and appropriate accommodations, the more likely it will be for students with a disability to achieve their full educational potential. There have been a number of guides written to support lecturing staff when teaching students with disabilities. These guides focus on teaching practice, curriculum, and field work requirements (see for example, Alsop et al., 2000; Doyle & Robson, 2002; Gravestock, 2001; Teachability, 2000). However, how lecturers might use (or not use) such guides, and what this means for their practice, has yet to be explored.

Despite these potential levels of support, numerous barriers exist for students with a disability in higher education institutions. These students identify a number of barriers, including learning in lectures (for example, having to take notes and listen simultaneously), a lack of understanding from lecturers, field work requirements, and confusion surrounding assessment expectations (Fuller, Bradley, Healey, & Hall, 2004). They also report problems in receiving support, even though some university personnel know of their disability. Confidentiality issues and poor communication between stakeholders were often the result of lecturers not knowing who among their student group had a disability. Across Scottish universities, Tinklin et al. (2004) found that assistance for students with a disability was provided at an individual but not an institutional level, involving mostly individual negotiations between students and staff. Hadjikakou and Hartas (2008) interviewed tutors at various Cypriot higher education institutions and found that support for students with disabilities was seen as an extra service that they provided and was not necessarily embedded in organizational practices. Cole and Cain (1996) revealed that social work lecturers report feeling overly burdened by the responsibility to accommodate students with disabilities. Similarly, Leyser and colleagues (2000) found that many lecturers from the USA and Israel feel inadequate in their knowledge of disability resources and how to support students with disabilities. Fichten (1995) has argued that faculty attitude and practice can create obstacles for students with disabilities that are more disabling than the disability itself. Hence, it is important to provide faculty with advice and support when developing curricula and inclusive learning for students with a disability.

In this study we investigate the views, experiences and practices of faculty teaching inclusive education subjects to students training to be primary school teachers. Inclusive education subjects in teacher education programs are concerned with preparing trainee teachers to work effectively with school students,

irrespective of their special learning needs, differences or disabilities (Moran, 2007). While the concept of 'inclusion' is complex, the basic principle of inclusion is a receptivity to and acceptance of diversity, underpinned by notions of equity and entitlement. In relation to education, regardless of the setting, inclusion can be defined as the provision of an appropriate educational experience to meet the needs of all students (Ashman & Elkins, 2005). Not only does inclusion necessitate the provision for students with diverse needs, but, as a philosophical attitude, inclusion signifies the identification and celebration of difference within institutional structures and teaching dynamics (Moran, 2007).

We would expect, though we need to reiterate that this is an assumption that this study aims to further explore, that lecturers who teach inclusive education would be advocates for and subsequent role models within tertiary settings for inclusive educational practice. At the same time however, we are also cognizant of the research that has examined the two very different contexts of schools and universities and in particular the difficulties for those who have worked in both. Murray and Male (2005) interviewed teachers who had been seconded from schools to work in education faculties. Seconded teachers are teachers selected from school or educational consultancy positions to work as a member of an educational faculty (Reupert & Wilkinson, *in press*). It was found that these seconded teachers drew on their 'first-order practitioner identity' and 'context' of the school setting whilst working with university settings and consequently experienced difficulties in meeting the demands of the 'second order context' of universities, which required a different set of pedagogical skills in relation to the teaching of adults. Murray and Male (2005) conclude by pointing out that there is no simple transfer of practices from one setting to another. Nonetheless, as champions of inclusion and special needs students, we believe that lecturers who teach inclusive education will provide useful insights into inclusive education practice in university settings.

Accordingly, given the philosophical basis of inclusive education programs, we are assuming that inclusive tertiary educators would be advocates for students with a disability, regardless of their setting, as well as appropriate role models for inclusive practice in their workplace. Together with the more general estimates of higher education students who have a disability (reported earlier), it can be expected that tertiary educators working in education faculties will have experience of working with such students in tertiary settings. Finally, we also take note of the argument that:

The same kind of issues and challenges are often faced across an institution. All too frequently within and between HEIs [Higher Education Institutions],

Table 1
Gender, Years of Tertiary Teaching Experience and
Inclusive/Special Education Qualifications of Participants

Demographics	Number of Participants
Gender	
Male	4
Female	5
Years of tertiary teaching experience	
Less than five	1
Between five and ten years	3
Between 11 and 15 years	3
Between 16 and 20 years	0
More than 20 years	2
Qualifications obtained in inclusive or special education	
Bachelor	2
Graduate Certificate/Diploma	1
Masters	8
Doctorate	3

the silo 'mentality' means there is rarely effective sharing of simple and subtle solutions to common issues (Adams & Brown, 2006, p. 1888).

Therefore, the experiences and views of inclusive educators provide potentially useful data for other lecturers across faculties.

The Research Goal

The aim of the present study was to ascertain the inclusive educational practices of inclusive educators in various teacher education faculties across Australia. Through an analysis of interview data collected from inclusive educators, we wanted to investigate how tertiary inclusive educators model and demonstrate the principles of inclusiveness in their own teaching practices (if at all). Throughout this process, factors that hinder and support inclusive practices at a tertiary level will also be highlighted. Such information is useful when developing professional development activities for higher education staff and in identifying accommodations that might be provided, as well as support services and resources that can be accessed by lecturers when working with tertiary students with a disability.

Method

Theoretical Framework

Within an interpretative research paradigm, a qualitative approach to data collection was employed as a means of identifying participants' views and experiences of inclusive education in tertiary education settings. To this end, semi-structured interviews were conducted to allow for the negotiation of meaning between the interviewee and researcher. This is in

accord with an approach recommended by Kvale (1996) when describing interview processes in qualitative research.

Recruitment and Participants

In 2008, participants were identified by Internet searching of all undergraduate primary teacher education faculties across Australia. In order to get a 'representative' sense of the inclusive educational practices across Australia, we sought to interview one lecturer from each of the eight states/territories across Australia. Most Australian states and territories have statutory bodies, called registration boards, which attempt to regulate the teaching profession (Ingvarson, Beavis, Kleinhenz, & Elliott, 2004). Hence, universities tend to work closely with their respective state or territory registration body. Given this territorial foci, we believed identifying representatives from each state and territory to be a valid sampling process. Once identified, potential participants were invited to participate in the study, via email. An information sheet and consent form was also forwarded. The total number of participants was nine, as two lecturers from one institution elected to be interviewed together about their course. Participants' gender, years of tertiary teaching experience, and inclusive or special education qualifications are reported in Table 1.

Context of the Study

There are 39 universities across Australian and, according to O'Meara and Petzall (2008), there are close to one million students enrolled in the various undergraduate and postgraduate courses these universities offer. From the early 1990s, Australian teacher education pre-service courses such as a Bachelor of Teaching (3 years), Bachelor of Education

(4 years), and Graduate Diploma of Education (1 year) have included a mandatory special education subject. This mandate was brought down by the heads of the respective Australian state/territory education departments. Initially, the main issue addressed in these special education subjects was one of *integration*, a term commonly defined as the process of moving students to a regular classroom setting or to a less restrictive (or segregated) environment (see for example, Ashman & Elkins, 2005). During the past decade, the mandatory special education subject in Australia for trainee teachers has taken another form. This change has been the result of a philosophical shift embracing *inclusion*, and a greater recognition of the principle of social justice that underpins it (Ashman & Elkins, 2005). Consequently, the traditional special education subject, which gave prominence to the study of specific disabilities, has been superseded and replaced by a subject often using the terms inclusion or inclusive education in its title. This new subject moves beyond educational issues to wider societal issues by embracing not only diversity in ability, but diversity in cultural, racial, ethnic, and social backgrounds (Foreman, 2005). It is within this context that the lecturers are interviewed for the present study.

Interviews

Individual, one-hour interviews were conducted over the telephone with semi-structured questions based on the research aims. This allowed the participants the opportunity for reflection and discussion. Sample questions included:

- What are the principles which provide the framework for how you teach in a tertiary setting?
- How do you make decisions about pedagogy? Curriculum? Assessment?
- How do you ascertain student teacher learning needs, if at all?
- How do you accommodate student diversity in your own teaching, if at all?
- What are the barriers, if any, that impede inclusive teaching practices at a tertiary level?
- What are the supports, if any, that encourage inclusive teaching practices at a tertiary level?

Interviews were audio taped (with consent) and then transcribed for data analysis. The Human Ethics Committee at Charles Sturt University provided ethics approval for the study.

Data Analysis

After the interviews were transcribed, member checks were sought, whereby interview participants were invited to review the original transcripts with an invitation to delete and/or change any material that they believed to be potentially identifying and/or incorrect and to add any information they believed was worthwhile (Merriam, 1998). Then, for each individual interview transcript, the first two authors independently used an open coding system of analysis, attaching labels to lines or paragraphs of data, and then describing the data at a concrete level (Anfara, Brown, & Mangione, 2002). Focused coding followed, which moved the coding process to a conceptual level, from which categories were created and named (Constas, 1992). The first two researchers then met to reach a consensus for each of the transcripts (inter-rater reliability: Liamputtong & Douglas, 2005). Rather than coming up with an index of agreement, consensus was reached through discussion between the two researchers, who at this point constantly referred back to the transcripts. The first researcher then conducted a cross-interview analysis of all transcripts, and through a constant comparative method, the relationships and patterns across categories were identified for the final themes reported in this paper.

Results

The following themes and related sub-themes were identified: self-image as an inclusive educator; being inclusive in tertiary settings (identifying student diversity/teaching practices/assessment practices); barriers to inclusive teaching; and supports for inclusive teaching.

Self-image as an Inclusive Educator

All the lecturers interviewed unreservedly identified themselves as inclusive educators within a tertiary setting. Sometimes, this self-identification came as a result of their teaching and/or research area, but most commonly it arose because of their ideals and general philosophy regarding student diversity and inclusivity, regardless of the educational context. For example, one participant reported, "I take a strong social justice perspective." More specifically, lecturers regarded themselves as role models for the trainee teachers whom they taught in terms of how to be an inclusive educator:

If we are teaching students about cooperative learning, we'll model cooperative learning in the way that we conduct the workshop... so there's this kind of resonant embedding in the process of teaching that means *we model what we walk* or try

to do that as best we can in the way we deliver the experience [emphasis added].

[We are] trying very hard to practice what we preach.

For several lecturers, being a role model for inclusive teaching, meant that when teaching other subjects besides inclusive education to tertiary students, they used the same principles and strategies:

I think the principles of universal design, which have become a contemporary way of looking at differentiation, suggests that those pedagogies that work to help differentiate and structure for kids with differences also work very successfully for all learners, so the principles that we've adopted and designed... we use if we're teaching elsewhere.

Such a statement also indicates this participant's belief that the principles of differentiation can be generalized across schools and tertiary settings.

Being Inclusive In Tertiary Settings

A number of inclusive teaching approaches were identified, including identifying student needs and specific teaching and assessment practices.

Identifying student diversity and needs. All lecturers acknowledged the diversity amongst their students. For example:

I have students who are recovering from post traumatic stress disorder, I have mature aged students, I have a student with obsessive compulsive disorder, I have students with Aspergers, I have students who are just overloaded, I've got students who are substance abusers ... it's a real conglomerate, and people tend to look at our students and think they're homogenous, but they're far from it.

At the same time, the manner in which students with special or additional needs were identified varied, with some describing a formal university system of registering students:

If they're of a level where they need specialist support from across the University, they would be registered as having special consideration.

It needs to be noted, however, that this same lecturer did not articulate how she might become aware of such students. Another participant indicated the formal university referral system, but pointed out that students themselves needed to initiate this process:

In this university, students who have specific learning needs are able to take themselves to a learning support unit from which they gain a level of assessment and recommendation for accommodations that might be necessary.

The pathway from support services to the lecturer is highlighted in the following quote:

[If a student has special needs they would go] through our learning support centre, which provides support for students with disabilities and medical and health needs, so they can actually have a formal document made up for them, and that's done elsewhere, and *they can bring that to me*, and that just outlines the sort of modifications they might need to help them get through the course [emphasis added].

Some lecturers reported that students need to self-identify:

I would be very up front from the beginning and say [to students] if they do have any issues they need to come and see me about the way the material is presented.

If students have particular needs, if students have particular issues, they would come and see the unit coordinator or tutor.

Well we do [try to be accommodating to student needs, but] we can only be guided by what students tell us.

I'm really dependent on students coming to see me if they have particular needs, because with such large numbers their difficulties might not be apparent early on.

One lecturer described encouraging this self-disclosure via the subject material and her role as the 'special ed. person':

Whenever I do the learning difficulties and disabilities lecture in the generic unit, invariably four or five of [the students] will come up and tell me they have anything from attention deficit hyperactivity disorder to learning difficulties and learning disabilities. I support a lot of students as the third year coordinator because they know that I'm the, if you like, special ed. person.

One lecturer used self-disclosure to encourage students to disclose their learning needs:

One of the first things I do when I'm teaching is disclose my own hidden disabilities and talk about them, which as in past years it's depended on the group; this year I've had a number of students come and actually disclose their own hidden disabilities and talk about their learning needs...

Another stressed the importance of lecturers and tutors needing to be aware:

I think it really relies on the tutor to have a really good look at... and to be sort of aware as best as they can, to pick up on any distress or additional stress that students may be going through, for a whole range of reasons.

However, this same lecturer continued by stating:

You may not be quite aware that there are some difficulties that individual students may be experiencing; you can try and double guess perhaps, but I think it's the lack of awareness [that is] maybe quite a barrier, and it's not because people aren't aware, or tutors and lecturers aren't aware, but it just seems to be the nature that it's very difficult to determine any [needs].

While there were two lecturers who described the university system of identifying students with additional needs, nonetheless, it was the responsibility of the student to self-identify and request assistance from lecturing staff.

Teaching practices. On the whole, for the lecturers interviewed in this study, inclusive education teaching in tertiary settings meant applied, interactive and authentic learning tasks or in the words of one interviewee “hands on learning”, with the following quotes as select examples of such approaches:

Students have to integrate theory and practice, but in a way that requires them to produce [a] product that ultimately is very much connected to the practice that they're involved in. So one example of that... [in] workshops [we] have the students conduct a real time meeting and then evaluate it.

I give them field based tasks where they go out with a camera and find examples of access issues around the University, and then we relate [these] to the Disability and Discrimination Act.

Some mention was made of innovative teaching practices. For instance, one lecturer described using “self-questioning, advance organization [and] peer mediation” in his teaching. Another lecturer described accessing students’ prior experiences:

[Students] would bring to the tutorial their understandings and experience and knowledge from those prior backgrounds, and then [I would] use that to engage in discussion about the material and content of the unit.

However, teaching was primarily focused around the lecture and workshop or tutorial. While many highlighted the shortcomings associated with providing lectures, these were often employed as a way of delivering information to large student cohorts. At the same time, many lecturers attempted to do this in an interactive, interesting and engaging manner.

Unfortunately we have lectures still which I loathe, but a number of us are focusing our projects on affective learning, so we're looking at ways of stimulating the feeling aspect of what they're learning, so I actually have a lot of activities that match into that.

When addressing student diversity, a number of teaching accommodations were identified, in particular providing students with more time. For example, one lecturer reported that using the internet or other forms of mediated online teaching was not that useful for students who were struggling, and instead indicated that:

Offering time was a better time efficient model of giving support than trying to deliver things online for them, when students don't find online learning all that simple really.

Others described providing information in multiple mediums, such as handouts of lectures, mind maps and diagrams. Similarly, various resources were utilized, including DVDs, case studies, guest speakers (including people with a disability to discuss their school experiences) and print (text book and journal articles).

Assessment practices. Similar to the teaching practices identified by lecturers, assessment was applied and authentic. Many lecturers described providing choices about which assessment topics and/or avenues students might use, as can be seen from the following two excerpts:

I try and create a great deal of flexibility so we have different sorts of tasks; one is the sort of written task that's fairly standard. We have presentation tasks that our students present in all sorts of different ways, and we encourage them to be extremely creative, so some people go off and develop videos, some people go off and develop

teaching materials, some people run a lesson, some take us out and make us actually experience disability, so we encourage them in their own teaching and learning styles to develop that.... so they have free reign on how they follow up on it to express their response to those sort of processes.

There's quite a lot of flexibility in terms of how they demonstrate their understanding: there is an opportunity to respond in a verbal presentation, there are written options, there's also an opportunity to present information visually in a kind of poster.

One lecturer did note, however, that:

Because of the laws of the University I'm required to give them an exam, so they do a multiple choice exam which is based on the text book and it's an open book exam.

Accommodations for assessment were made in terms of flexible deadlines:

My deadlines for example are extremely flexible... I tend to say, look if there are lecturers who are less flexible, please do their assignments first, because I figure that way we're going to have less chance of losing our students.

Lecturers also provided assessment support to students by looking at draft pieces of work and spending more time discussing assessment requirements with individual students. Capturing some of the themes as well as barriers reported here, the teaching and assessment practices of the lecturers can be best summarized in the words of one participant who stated:

We try and practice what we preach, and we try to be fairly accommodating for different student needs, but obviously there are certain requirements of the course, and students need to fulfill those requirements in order to pass it, and so even though we are flexible to some degree, nevertheless we don't compromise the integrity of the course by making too many changes.

Barriers to Inclusive Practice

Lecturers identified a number of barriers to teaching inclusively in tertiary settings. These barriers tended to involve university guidelines regarding assessment and teaching:

All our assessment has to go through a curriculum like many universities... We used to send them out to do a case study in real life, but ... the University decided that they wanted us to prove that they weren't copying from each other... [instead] the University thought it would be nice to have exams.

I'm always getting castigated that my students have high marks, but I think if we teach them well enough they all should. I think a ... principle of mark allocation is really it doesn't represent whether it's good teaching as far as I'm concerned, we don't do that in our classrooms in primary schools; for example, kids who do well get their marks. [Many universities in Australia have policies on the allocations for grades, and scaling may occur to meet these policies. This means that a certain percentage of students may achieve high marks, regardless of a student's raw mark.]

Similarly, another lecturer made the comment that university systems generally are not adaptable to inclusive practice:

I think the biggest barrier... would be in the extent to which the University - while it would probably be very supportive of everything I've said - is actually in its organizational design not ready and prepared for this kind of work.

Teacher accreditation bodies were another issue for some:

Actually the whole sort of framework for that unit has kind of been laid down by what the [teacher accreditation body wants]... so if I change that very dramatically, they won't accredit it, so that will stay as it is.

Physical layout and accessibility were other barriers impeding inclusive practice:

It's always a challenge particularly when you're working in lecture theatres, and first of all not physically accessible.

A large student cohort was another issue, with one lecturer pointing out that "it's very hard to differentiate learning in a big lecture," and another reported:

It's very difficult with big groups to build a true social cohesion. I despair of teaching... I didn't want to teach any more groups of 30, it's wrong it's flat out wrong to teach 30 people in a tutorial.

Other lecturers' understanding of disability or lack thereof was a hindrance:

I find we have lecturers who are still well behind the times in their understanding of disability... [their] understanding of the nature of disability is a real issue.

One lecturer more bluntly stated that "the understanding of my university is the biggest barrier" to teaching inclusively. Even though barriers were identified, many participants described creative ways of working around university regulations, for example, delivering lectures but not making attendance at lectures compulsory, and providing many ways of assessing students within the guidelines established by the University.

Supports for Inclusive Teaching

Personnel that provided support included library staff, the unit convenor, colleagues, and teachers coming in from schools. These personnel were useful when developing and accessing resources including electronic media, assessment, moderating grades, ideas for tutorial activities, and unit design. Problems with existing sources of support include the lack of specialized professional development:

I don't know about professional development in the area because it's available on a broad basis but not terribly useful.

In like manner, another lecturer reported:

My actual support base is very limited if you look within [the] context of the University.... So I think I've had to be proactive and find out for myself.

Lecturers were clear that support for inclusive practice was required at all university levels:

I think it's important to ensure that there is some element of leadership given, you know, from the Dean, even right through to the Vice Chancellor statements, you know, from time to time; we've got all the equity policies at the University, like most universities have, but, it really needs to be supported from people on high, within the academic structure of the University, to give it some credence and some power.

While current sources of support for lecturers centered on other staff, lecturers also saw the need for support from university leaders when supporting students with a disability.

Discussion

All the lecturers in this study identified themselves as inclusive educators and, in particular, emphasized they were role models of inclusive teaching. They also acknowledged the diversity of needs within the student group and the need to vary and accommodate their teaching and assessment practices. Strikingly, one participant reported that she tries "very hard" to practice what she preaches, indicating that, while the will is there, inclusive teaching is not always possible. Many lecturers, for instance, describe using lectures and exams but highlight the shortcomings of both approaches as effective teaching strategies generally, and particularly for students with a disability. This finding is consistent with the work of Fuller et al. (2004), who reported that 44% of the students they surveyed felt that learning in lectures was a major barrier to learning, and 30% of the same students identified examinations to be another barrier.

Even though two lecturers described a formal university process of identifying students with special needs, the typical practice described by the lecturers interviewed in this study was for students to self-identify and request assistance and support from lecturers themselves. One of the students surveyed by Fuller et al. (2004, p. 313) reported that "I did not like the fact that it was all up to me to make arrangements [for learning support] as ... I had enough on my plate." These researchers point out that there was no mechanism within their institution for information regarding a student's disability status to be relayed routinely to tutors. It is difficult to ascertain from the data whether there are mechanisms within the various Australian universities for identifying students with additional needs, though the lecturers here did not, overall, describe such a process. It would appear that while issues regarding confidentiality need to be considered, there also exists a requirement for a sensitive and mutually agreed upon process by which students with a disability are identified, and then supported, within higher education institutions.

While some innovative and inclusive teaching practices such as self-questioning, advanced organization, and peer mediation were described, on the whole, the lecturers interviewed described inclusive practice in terms of 'hands-on' or applied teaching and assessment strategies. There is some tentative support for experiential teaching and learning (Smith, 2002), though courses with a strong element of practice and applied information, such as teaching, are perhaps more appropriately placed to use this teaching strategy than other, more theoretically-oriented courses. In addition, while typically highlighted as an inclusive teaching strategy, it is not the only strategy or teaching tool that tertiary educators should be employing when working

with students with a disability (Alsop et al., 2000; Doyle & Robson, 2002; Gravestock, 2001). Indeed, there would be some students with mobility issues for whom experiential ‘hands-on’ strategies would be inappropriate.

It was evident that many of the lecturers attempted to individualize their instruction and tailor assessments to meet the needs of individual students with additional learning needs. At the same time, such accommodations appeared to be provided on a one-to-one basis, negotiated between the lecturer and the student, and were not embedded in university frameworks. This result is similar to other studies of lecturers in social work faculties (Cole & Cain, 1996) and lecturers in Cyprus (Hadjikakou & Hartas, 2008), the USA, and Israel (Leyser et al., 2000). Such arrangements appeared to be provided on an ad hoc basis rather than proactively or in a systematic manner.

In terms of assessment practices, the lecturers interviewed in this study describe providing assignment alternatives (e.g., written assignment or an oral presentation) as well as accommodations, principally in terms of providing more time. Such strategies have caused much debate throughout higher education (Sharp & Earle, 2000; Stowell, 2004; Zuriff, 2000). Sharp and Earle (2000), for example, argue that alternative forms of assessment constitute a violation of the requirement that assessment should be valid tests of specified competencies. On the other hand, Stowell (2004) argues that many traditional assessments prevent students with a disability from being assessed in the same way as their non-disabled counterparts. At the very root of such arguments is the often perceived tension between the maintenance of academic standards and the policies of equity and subsequent widening participation of students with a disability in higher education. The participants in this study also highlighted the need to maintain the ‘integrity of the course’ and follow university guidelines. When one participant tried to challenge the moderating system that is in place in many Australian universities, he was, in his own words, ‘castigated.’ Consequently, rather than challenging the status quo or instituting systemic change, participants here provided individual support to students who they considered required additional support.

It is apparent from most interviews that there is a strong pressure to conform to the dictates of outside authorities as well as the University. Within the University, many felt obliged to use lectures and examinations, even though many lecturers reported their frustrations in having to teach this way. Thus, while lecturers want to ‘practice what they preach’ and report various creative ways of working around these requirements, these same barriers also impede inclusive practice. Other barriers identified by lecturers

concerned the physical layout of the University and large student groups. Additionally, the attitudes of lecturers and others within their respective universities constituted a major obstacle.

At the same time, however, there appears to be a tension between lecturers’ self-perceptions as inclusive educators and their actual practice. While many are strong advocates for inclusive education, their practices demonstrate real shortcomings in terms of inclusive educational practice, not all of which can, we believe, be accounted for by institutional barriers. For example, when asked what inclusive educational supports they used in their teaching, lecturers provided very little information about the resources and support services available at a university level such as assistive technologies, interpreters and scribes, and the University’s Disability Officer or Centre, resources which typically exist in each Australian university. Staff turnover in academic and support positions could be the reason why information is not consistently relayed between stakeholders. Another reason could be a lack of time for lecturers to collaborate with disability supports. Overall, however, an acute lack of insight regarding the broader dimensions of inclusive practice is evident from the interviews conducted. What is apparent is that the lecturers tend to be narrowly focused on their dealings with students in an ad hoc, individualistic manner. This is particularly concerning given that these lecturers were approached as potential role models for inclusive practice within higher education institutions and thus highlights the need for specialized training and support for university staff in disability and access issues. Raising the awareness of staff about what support is currently available and how university supports might be accessed and most effectively employed would need to be incorporated into such training programs.

An obvious limitation of the current study is that the views and practices of the interviewees could not be verified. In order to remedy this shortcoming, future studies could observe the practices of lecturers and gather data from their respective students as a triangulation exercise. The importance of the lecturer’s attitude has been highlighted in this study, though it demonstrates at the same time that having the ‘will’ does not always translate into inclusive educational practice. As disability legislation is transforming our student cohorts, universities need to respond in proactive and strategic ways that not only focus on broader institutional barriers and requirements (i.e., being flexible around the way information is delivered and students are assessed) but also work with individual lecturer attitudes and practices. As disability per se does not appear to play a significant role in predicting student attainment (Richardson, 2009), it is essential to sensitize institutions, faculties, and individual lecturers

to the barriers that impede inclusive teaching practices and to highlight the practices across all levels that best accommodate the needs of all students

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Empowering Student Leadership Beliefs: An Exploratory Study

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Leadership beliefs contribute to behaviors and attitudes. The purposes for conducting this study were 1) to gain an understanding of undergraduate students' leadership beliefs, 2) to implement three distinct leadership modules into an introductory textiles and clothing course, and 3) to assess the modules' effectiveness in promoting empowering leadership beliefs. The study used quantitative and qualitative methods ($n=76$). Findings suggest undergraduates' perceptions of leadership encompass trait and situational perspectives of leadership. The modules influenced students' understanding of the varied definitions of leadership and empowered them to consider that the behaviors, beliefs, and attitudes of leadership were attainable.

Leadership development is a focus of schools, universities, and businesses, yet "there are almost as many different definitions of leadership as there are persons who have attempted to define the concept" (Stogdill, 1974, p.7). Research on the topic has taken many approaches, with a plethora of models, theories, and perceptions seeking to define and explain the leadership concept (Gregoire & Arendt, 2004; Shertzer & Schuh, 2004). Leadership, while not clearly defined, is a sought-after trait among employers searching for job candidates and a necessary ability once students are employed (Frazier, 2007). The importance of leadership qualities such as creating and managing change, learning to learn, and interpersonal skills such as collaboration are firmly established in the literature (Kouzes & Posner, 2007; Wheatley, 1992; Johnson & Johnson, 2003).

According to *The Partnership for 21st Century Skills*, which is a consortium of business, education, and media groups, there is deep concern among U.S. employers that young people are not adequately prepared with the skills to compete and thrive in the global economy (2006). An overwhelming 81% of employers polled indicated that leadership was "very important" for new entrants with a four-year college diploma. For both two-year and four-year college graduates, lack of leadership was the second most frequently reported applied skill "deficiency" (Partnership for 21st Century Skills, 2006). Although many authors and employers have stressed the need for strong leadership skills for workforce readiness, a clear definition of leadership remains elusive (Frazier, 2007).

A student's definition of leadership may play a significant role in whether the student perceives herself as a leader (Shertzer & Schuh, 2004). Astin and Astin (2000) contend that some perceptions of leadership promote constraining beliefs that limit student participation in leadership experiences. They conclude that leadership development programs should focus on instilling empowering beliefs in college students, and

they define empowering beliefs as liberating thoughts that allow a student to believe that she can have an influence and make a difference. These empowering thoughts encourage students to become involved as leaders in their home, work, and school communities (Astin & Astin, 2000; Shertzer & Schuh, 2004).

But how do you teach leadership? Similar to management techniques, leadership can be learned through experience and education (Arendt & Gregoire, 2005; Cress, Astin, Zimmerman-Oster, & Burkardt, 2001; Strategic Direction, 2008; Tuleja & Greenhalg, 2008). Current leadership theories suggest that leadership development is a learning process (Brown & Posner, 2001; Komives, Lucas, & McMahon, 1998; Mezirow & Associates, 2000). Despite the difficulty in teaching leadership, students benefit from exposure to the diverse perspectives of leadership theory and practice (Anderson, 2007).

The importance of leadership education for today's undergraduate students cannot be underestimated. In their future careers, undergraduate students will experience the unpredictable global market of today's work-environments (Kunz & Garner, 2007). To succeed, students will need these aspects of leadership: the ability to find and synthesize diverse sources of information, to manage self, and to empower others. Thus, models of leadership education, integrating theory, training, and experience are necessary (Hartman, Conklin, & Smith, 2007; Molt, 1995). Although many undergraduate students will become leaders in their profession, there are limited opportunities for leadership development and education (Walker, 2006). As such, a more deliberate and intentional focus on leadership development could provide undergraduate students with perspectives and motivations to take full advantage of leadership opportunities, which can be limited at this stage of their lives.

The researchers' purposes for conducting this study were 1) to gain an understanding of undergraduate

students' leadership beliefs, 2) to implement three leadership modules into three recitation sections of an introductory textiles and clothing (TC) course, and 3) to test the modules' effectiveness in promoting empowering beliefs of leadership. The authors developed three modules, one for each of three recitation sections based on the evidence that learning occurs through experience, critical reflection, and discussion regarding beliefs (Merriam & Caffarella, 1999; Stenger, 2004). The study was approved by the University's Institutional Review Board. Funding for the project was received from the Miller Scholarship of Teaching and Learning Institute, Center for Excellence in Learning and Teaching (CELT).

Review of Literature

The leadership literature includes more than 10,000 books and articles seeking to describe, define, and assess leadership theory, practices, and processes (Yukl, 1994). Two of the most widely accepted leadership propositions offer distinct perspectives. One is that good leaders must have the "right" qualities or traits to lead including vision and commitment. The other perspective holds that leadership is situational, dependent upon the people and the setting involved (Bolman & Deal, 2008). Researchers have produced an abundance of studies on effective leadership. While no characteristic is universal in these studies, some show up more often, such as the importance of articulating a vision, creating focus and direction, and showing commitment or passion (Clifford & Cavanagh, 1985; Collins, 2001; Kouzes & Posner, 2007).

Beyond vision, passion, and trust, agreement amongst scholars dissipates. The leadership literature has generated a long list of attributes associated with effective leadership: self-confidence, various interpersonal skills such as friendliness and kindness, intelligence, decisiveness, authenticity, etc. (Bolman & Deal, 2008). Kouzes and Posner (2007) found that honesty was first on a list of traits people most admired in a leader. Some research suggests that the best leaders are smarter and work harder than others (O'Reilly & Chatman, 1994). Komives, Lucas, and McMahon maintain that the most effective leadership occurs through a relational process of people working together to accomplish a common goal (1998). A few studies have even suggested that beauty could be a hindrance in attaining leadership positions (Horton, 1985).

Some scholars argue that women bring a "female advantage" to leadership by demonstrating concern for others and a willingness to share information (Rosener, 1990). Popular press literature has also trumpeted women's leadership skills with stories such as "Women smash business myths" (Miniter, 1994). For the most part, however, the available evidence suggests that men

and women in comparable positions are more alike than different (Bolman & Deal, 1992; Bolman & Deal, 2008; Komives, 1991).

Despite their similarities, women represented less than seven percent of senior executives and 2 percent of CEOs in *Fortune's* Global 100 companies (Bolman & Deal, 2008). Numerous scholarly and popular studies have investigated the many factors (e.g., gender-role stereotypes; lack of mentors; discrimination; greater home and family commitments) that contribute to or inhibit the success of women in upper echelon careers (Belkin, 2007; Brescoll & Uhlmann, 2008; Keeton, 1996). The non-profit advocacy group Catalyst reported in their 2007 study, "The Double-Bind Dilemma for Women in Leadership: Damned if You Do, Doomed if You Don't," that gender stereotypes can create several predicaments for women leaders. Because they are often evaluated against a "masculine" standard of leadership, women are left with limited and unfavorable options, no matter how they behave and perform as leaders (Catalyst, 2007).

People learn leadership skills and behaviors in many ways, namely through experience, observation (with reflection), and education. Kouzes and Posner (2007) and Howell and Costley (2001) report that people learn to lead through trial and error, observation of others, and education. The Center for Creative Leadership found that in addition to experience, observation, and formal training, successful executives learned leadership through reflection and discussion of hardships they had endured (McCall, Lomardo, & Morrison, 1988). Thomas and Cheese (2005) conclude that an experience-based approach combining on-the-job experience, life experience, and specific skill development can assist career and leadership development. Watson (2001) suggests students and academics need to bring together their accounts of the various experiences and observations (from practical experience or research work) and, where appropriate, use academic concepts and theories to better understand leadership concepts (Watson, 2001).

Methods

To achieve our goals of better understanding undergraduate students' leadership beliefs, we created a questionnaire that asked students to state their agreement with adjectives describing leadership. Students were instructed that their participation in the leadership activity was a part of their involvement in the course, but that their participation in the survey was voluntary. All students in the course participated in the activities and the survey. We utilized the questionnaire during the first class period and again following the implementation of the leadership modules. The three recitation sections participated in three distinct

leadership experiential activities. The post-test included a section designed to measure students' perceptions of the leadership modules. Results of the survey were shared with course instructors, students in the class, and at two university CELT sponsored-events for faculty interested in the scholarship of teaching.

Participants

Participants included students enrolled in an introductory class in the TC undergraduate program. The two-credit course, entitled Professional Development for the Fashion Industry, was offered for the first time in spring 2007 and provided an overview of the apparel industry. Content information included career exploration, presentation and professional skills, professional behavior and standards, and the building of teamwork, collaboration, and cooperation skills. The introductory nature of the course and the emphasis on teaching applied skill sets lent itself to the topic of leadership development. The course was team-taught by two academic advisors/lecturers in the TC program. They allowed the authors, their colleagues, the opportunities to meet with the class, first to distribute the pre-test during a combined class session and then to meet with the students during their recitation sections to administer the modules and the post-test. There were seventy-six students in the course registered at the beginning of the semester. Students enrolled in the class met for a one-hour combined class session and one of three one-hour recitation sections.

Demographic Information

Table 1
Demographic Information

Demographic Information	Number	Percentage
Classification		
Freshman	52	68%
Sophomore	13	17%
Junior	11	15%
Gender		
Female	75	99%
Male	1	1%
Age		
18 years old	49	65%
19 years old	16	20%
20 years old	11	15%
Ethnicity		
Caucasian	72	95%
African-American	4	5%
Classification within Major		
Merchandising	42	55%
Design	30	40%
Undecided	4	5%

The majority of students included in the seventy-six-person course were freshman Caucasian females, aged 18 years old and enrolled in the TC Program.

Approximately 10 of the 76 students had transferred to the university from local community colleges or geographically near-by universities. Further demographic information may be found in Table 1.

Survey Instrument

The questionnaire developed for data collection included a list of forty-five adjectives relevant to leadership and compiled from the existing literature (Gregoire & Arendt, 2004; Komives et al., 1998; Northouse, 2001). These sources provided information regarding the changing notions of leadership, from simplistic definitions of traits to more complex explorations addressing leadership within both personal and professional relationships. These sources were used because they reviewed the leadership literature from 1900 to the late 1990s and early 2000s. Traits such as honesty were consistently mentioned across the leadership literature, yet other skills such as creativity and knowledge and social adeptness such as friendliness were mentioned as key leadership abilities by some but not all authors. Synonyms of words were used to avoid potential problems with semantics and the potential vocabulary limitations of entering students. The list of words was reviewed for clarity by a three-person panel of leadership and scholarship-of-teaching experts in CELT. They recommended limiting the list to 45 adjectives to avoid student fatigue that may be experienced with long surveys.

Students were asked to rate the extent to which the 45 words described leadership. The items were placed in alphabetical order, and each was given a five-level response option: (1) rarely, (2) slightly, (3) moderately, (4) considerably, and (5) extremely. An example of the wording was, "To what extent or degree is it important that a leader is accepting?" The pre-test asked students to select the five most and the five least essential characteristics of leadership. The third section requested demographic information to determine if it influenced leadership perceptions.

Procedure

Following the pre-test, the researchers implemented three leadership modules into the three recitation sections of the introductory TC course. The purpose of the modules was to instill empowering beliefs into college students, primarily that each of them possessed some leadership skills and that leadership is multi-faceted and learnable. The students were asked to read three chapters in Komives, Lucas, and McMahon's *Exploring leadership: For college students who want to make a difference* (1998). Chapter one, entitled "Leadership for a changing world," included the concepts that leadership development is of

concern to all of us, leadership can be exhibited in many ways, and leadership qualities and skills can be learned and developed. Chapter two, "The changing nature of leadership," provided an overview of leadership theories and beliefs of the twentieth century. Chapter eleven, "The mind, body, and soul of the leader," discussed the importance of renewal and reflection in leadership development.

Following their reading of the chapters, students were instructed to attend their recitation session with written responses to the following questions adopted from the text:

- Which definition of leadership [described in the *Exploring Leadership* book] best describes your personal philosophy? Explain.
- What motivates you to demonstrate leadership in your (school, home, work) life?
- What daily activities would cause renewal in your own life?

Within the recitation sections, students were led in small group discussions of the readings by the researchers and were then asked to critically examine how the readings reinforced or influenced their beliefs regarding leadership. In addition to this reflection, students participated in leadership modules that included elements of experience, critical reflection (the examination of long held beliefs), dialogue, and individual development. The distinct modules included a panel presentation (section 1 met on Monday), a leadership assessment inventory (section 2 met on Wednesday), and a guided discussion (section 3 met on Friday).

The first module presented in section 1, a panel presentation by four community and peer-leaders, included the president of the local downtown shopping district's "Main Street Cultural District," a merchandising coordinator for a corporate clothing chain in Chicago, a state representative of the Family, Career, and Community Leaders of America, and an elected student producer of the annual TC fashion show. Panelists provided an overview of their educational and professional lives and responded to prompts from the instructor such as "What is your leadership philosophy?" "How did you develop your leadership skills during college?" and "What advice do you have for students currently enrolled in the program to strengthen their leadership capabilities?" Panelists also answered questions from students within the class. Themes expressed by the panelists included the importance of involvement in leadership posts within organizations, interest in a wide-variety of extra-curricular activities, and the

significance of leadership traits such as dedication, honesty, commitment, persistence, and courage. Many of the leadership terms, traits, and behaviors identified by the panel were identical to those listed in the pre-test.

The second recitation session (section 2) completed a leadership assessment inventory, "As I see myself behavior style profile," created by The Effectiveness Institute (2007). The profile was a self-scoring assessment that measured and summarized the strengths and challenges of four behavior styles: controller, stabilizer, analyzer, and persuader. After completing the assessment, students were placed into groups of similar behavior styles and answered questions such as "How does your behavior style contribute to your preferred leadership style?" and "What strategies could you use to work collaboratively with other behavior styles?" Students then worked in two groups in the completion of an experiential activity, moving a small ball on metal poles across the classroom without touching the ball. Upon completion of the activity, students discussed the influence of their behavior styles on their participation.

In the third recitation session (section 3), students explored their perceptions of leaders and leadership styles. Divided into groups of three to four students, each member of a group listed the names and characteristics of ideal leaders whom they admired and then the names and characteristics of leaders society admires. They then compared answers within their small groups and, after twenty minutes of discussion, developed one list of leaders and leader characteristics that they mutually admired. This exercise was adopted from Johnson and Johnson's *Joining together: Group theory and group skills* (2003, p. 177). This recitation section further completed a leadership development plan in which they identified a goal related to their leadership development and then created a strategy for achieving the goal. Following participation in the modules, all of the students completed a post-test including the 45-adjective list of leadership terms, questions evaluating the modules, and the question "What did you find most surprising about the leadership modules?"

Results

Students' Leadership Beliefs

The results of a paired sample t-test comparing students' initial leadership beliefs ($m=3.94$) with their leadership beliefs on the post-test ($m=3.80$) indicated a significant decrease in students' agreement with the leadership statements ($t\text{-value} = 2.25$; $p\text{-value equals } 0.00$). Descriptive statistics for the responses to the adjective lists are presented in Table 2.

Table 2.
Descriptive Item Statistics* for the Pre- and Post- Student Responses **

Pre-Test Adjectives to Describe Leaders*	Pre-Test <i>M</i>	Pre-Test <i>SD</i>	Post-Test Adjectives to Describe Leaders*	Post-Test <i>M</i>	Post-Test <i>SD</i>
1. Dependable	4.79	0.44	1. Dependable	4.59	0.80
2. Ambitious, motivated	4.74	0.49	2. Honest	4.50	0.76
3. Honest	4.58	0.84	3. Ambitious, motivated	4.46	0.93
4. Hard-working	4.58	0.57	4. <i>Confident</i>	4.40	0.89
5. Committed, loyal	4.57	0.72	5. Committed, loyal	4.40	0.89
6. Optimistic, positive	4.51	0.84	6. Hard-working	4.38	0.85
7. <i>Organized</i>	4.47	0.80	7. Motivational	4.37	0.76
8. Alert, attentive	4.47	0.62	8. Optimistic, positive	4.35	0.90
9. Motivational	4.46	0.79	9. <i>Decisive, determined</i>	4.33	0.68
10. <i>Ethical</i>	4.43	0.69	10. Accepting, tolerant	4.32	0.70
11. Accepting, tolerant	4.42	0.67	11. <i>Enthusiastic</i>	4.22	0.76
12. <i>Personable, friendly</i>	4.40	0.96	12. Alert, attentive	4.22	0.83
13. <i>Confident</i>	4.39	0.92	13. <i>Organized</i>	4.21	0.97
14. <i>Decisive, determined</i>	4.38	0.65	14. Collaborative	4.21	0.77
15. Collaborative	4.38	0.86	15. Experienced	4.20	0.75
16. <i>Enthusiastic</i>	4.37	0.74	16. <i>Ethical</i>	4.20	0.88
17. Experienced	4.30	0.65	17. <i>Personable, friendly</i>	4.16	0.97
18. Educated	4.24	0.87	18. Kind	3.99	0.87
19. Active, energetic	4.14	0.74	19. Active, energetic	3.95	0.86
20. <i>Intelligent</i>	4.12	0.73	20. Punctual	3.95	0.98
21. Kind	4.09	0.93	21. Educated	3.93	1.06
22. Mature	4.03	0.91	22. <i>Current, up-to-date</i>	3.91	0.98
23. Punctual	4.03	1.05	23. Charismatic	3.88	1.09
24. <i>Creative</i>	3.97	0.78	24. Mature	3.86	0.93
25. <i>Calm, composed</i>	3.91	0.98	25. Adventurous	3.84	0.92
26. <i>Assertive</i>	3.91	0.83	26. <i>Intelligent</i>	3.83	0.99
27. Charismatic	3.88	0.96	27. <i>Visionary</i>	3.82	1.02
28. <i>Current, up-to-date</i>	3.87	1.09	28. <i>Dominant</i>	3.77	1.09
29. Adventurous	3.85	0.83	29. <i>Creative</i>	3.76	0.94
30. <i>Volunteer</i>	3.82	1.10	30. <i>Calm, composed</i>	3.76	0.99
31. Empowering	3.82	0.98	31. Empowering	3.72	0.90
32. <i>Visionary</i>	3.79	1.09	32. Reflective, insightful	3.70	0.92
33. Articulate	3.76	0.87	33. Articulate	3.65	0.87
34. Reflective, insightful	3.72	1.04	34. <i>Assertive</i>	3.63	1.00
35. Authentic	3.67	1.13	35. Authentic	3.45	0.90
36. Managerial	3.65	1.13	36. Analytical	3.45	0.99
37. <i>Dominant</i>	3.61	1.13	37. Managerial	3.40	1.17
38. Analytical	3.57	0.99	38. <i>Volunteer</i>	3.30	1.18
39. Entrepreneurial	3.43	1.12	39. Entrepreneurial	3.30	1.11
40. Formal	3.33	0.98	40. Formal	3.20	1.14
41. Humorous	3.21	1.09	41. Ecologically-minded	3.20	1.05
42. Ecologically-minded	3.08	1.04	42. Humorous	3.05	1.19
43. Celebratory	2.98	1.11	43. Celebratory	2.70	1.08
44. Controlling	2.72	1.12	44. Controlling	2.42	1.15
45. Good-looking	1.78	1.00	45. Good-looking	1.74	0.97

*Rank-ordered from highest to lowest mean

**Words that experienced the greatest movement between their pre-test and post-test positions are italicized.

T-tests were used to determine the significance of the difference in means from pre- to post-test. Each of these t-tests showed significant differences. While the ranking of most of the words to describe leadership remained within two positions from the pre- to the post-test, there were some noteworthy changes. Words that experienced the greatest improvement in students' stated agreement included the words confident, decisive, and enthusiastic. The ranking of other words decreased in significance from the pre- to the post-test. These included the words organized, ethical, and personable/friendly. Table 3 presents the words with the

greatest differences in rank from the pre- to the post-test.

It is noteworthy that the means of the majority of the adjectives decreased from the pre- to the post-test. This suggests a growing understanding of the multi-faceted nature of leadership and the difficulty in defining the term leadership and its many characteristics. In spite of the lower scores for almost all terms between the pre- and post- tests, the results are consistent with those of previous literature that says leaders are perceived to be dependable, honest, ambitious/motivated, hardworking, and committed/ loyal, and that leadership is perceived to

Table 3
Greatest Differences in Ranking of Words from the Pre- to Post-Test

Word	Rank Pre Test	Rank Post Test	Difference
Confident	13	4	+9
Dominant	37	28	+9
Current, up-to-date	28	22	+6
Decisive, determined	14	9	+5
Enthusiastic	16	11	+5
Visionary	32	27	+5
Creative	24	29	-5
Calm, composed	25	30	-5
Organized	7	13	-6
Ethical	10	16	-6
Intelligent	20	2	-6
Assertive	26	34	-8
Volunteer	30	38	-8

be least related to being good looking, controlling, celebratory, or humorous. Several other terms (active/energetic, articulate, and authentic) remained at a similar ranked position between the pre- and post-tests.

Module Effectiveness in Promoting Empowering Leadership Beliefs

Following the modules, students were asked to reflect on their participation in the leadership modules and rate the modules' effectiveness in promoting empowering leadership beliefs. Students responded to statements: 1) I am more willing to cooperate with others when they are in a leadership role; 2) I possess some of the skills related to leadership; 3) I am interested in developing my leadership skills while taking courses or participating in organizations; 4) I feel more confident about myself as a leader in work, school, home, and other leadership situations; and 5) I understand there are many definitions of leadership and opportunities for leadership to occur. Responses were provided via a five-level response option: (1) strongly disagree, (2) somewhat disagree, (3) neither agree nor disagree, (4) somewhat agree, and (5) strongly agree. Table 4 presents the mean scores and standard deviations for the responses to the questions regarding the effectiveness of the modules.

Total means for the five questions demonstrated agreement with the idea that the modules promoted empowering beliefs such as willingness to cooperate with others, and that students possess skills related to leadership, are interested in developing their leadership skills, have increased confidence about their leadership capabilities in diverse environments, and understand that there are many definitions of leadership and many opportunities for leadership to occur. The modules' effectiveness was not dependent on the demographic factors related to age ($F(1, 75) = 1.6931, p=.095$), gender ($F(1, 75) = .402, p=.950$), classification ($F(1,$

$75) = 2.293, p=.020$), transfer-student status ($F(1, 75) = 1.649, p=.106$), high school graduating class size ($F(1, 75) = .908, p=.538$), or option area within the TC program ($F(1, 75) = .665, p=.765$).

Table 4
Module Effectiveness with Means and Standard Deviations

Questions	Mean	SD
1) I am more willing to cooperate.	3.99	0.86
2) I possess some of the skills related to leadership.	4.42	0.75
3) I am interested in developing my leadership skills.	4.10	0.90
4) I feel more confident about myself as a leader.	3.97	0.78
5) I understand there are many definitions of leadership.	4.62	0.71

Student written comments supported the quantitative results of the leadership modules in the undergraduate classrooms. This was especially true regarding the possession of skills related to leadership and understanding that there are many definitions of leadership and opportunities for leadership to occur. Student comments included the following: "I thought it was interesting to see the evolution of the meaning of leadership from the 1800s until now," "[I was surprised] that leadership comes in so many forms and ways. I didn't realize there were so many definitions of leadership, but when I think about it, it's true," "It is interesting that you can actually put leadership into categories and how many different people, past and present, fit into the different categories," "I realized that everyone has leadership potential in some capacity," "I have some qualities of leadership that I never

considered as important to leadership, such as honesty,” “I realized you can be a leader in any area in your life,” and “I am surprised to discover that I'm going to be a pretty great leader someday after all.”

Discussion

The results of this study provide interesting points for discussion. First, the agreement with characteristics of leadership did not change significantly from the pre- to the post-test. This suggests that undergraduates' perceptions of leadership encompass trait and situational perspectives of leadership. These results reinforce past research that suggests leadership is not easily defined and is very dependent upon personal experiences, beliefs, and understandings (Shertzer & Schuh, 2004). Further, the decreased means for the words from the pre- to the post-test suggest students were less convinced that specific terms signified leadership traits, skills, and behaviors. The authors believe the reading of Komives, Lucas, and McMahon's *Exploring leadership* book may have influenced students' more fluid and nuanced understanding of the concept of leadership.

There was overwhelming agreement with the notion that the leadership modules influenced students' understanding of the varied definitions of leadership. The modules empowered the students to consider that the behaviors, beliefs, and attitudes of leadership were attainable. While the specific activities of the modules were distinct in the three recitation sections, in all three sessions, theory was integrated within the process of dialogue, experience, and reflection. Students gained exposure to leadership theories, experienced leadership through observation and/or participation, and were provided the opportunity to reflect on their past and current leadership beliefs. The results of this study reinforce the idea that leadership is a process of self-reflection, dialogue, critical reflection, and individual development (Merriam & Caffarella, 1999; Stenger, 2004). While we did not assess students' actual changes in leadership skills, it is vital for college instructors to understand that a student's definition of leadership may play a significant role in whether the student perceives herself as a leader (Shertzer & Schuh, 2004). The results of this study suggest that exposure to leadership concepts are the first step in encouraging students to consider themselves as leaders in their home, work, and school communities (Astin & Astin, 2000; Shertzer & Schuh, 2004).

Due to women's limited leadership roles in the highest echelons of business and government, it is vital that institutions of higher education, especially programs that are predominantly female, consider ways to incorporate leadership development throughout the undergraduate experience. Respondents' overwhelming

agreement to the statement “I possess some of the skills related to leadership” suggests students need to be made aware that they already possess significant leadership traits and behaviors.

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Preparing Scholars of Teaching and Learning Using A Model of Collaborative Peer Consulting and Action Research

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The Scholarship of Teaching and Learning (SoTL) Fellows Program at Southeast Missouri State University supports an annual cohort of 10 faculty Fellows to evaluate, through individual research projects, the effect of teaching on student learning of two or more of the university's General Education objectives. Designed around practical action research and collaborative peer consulting, the SoTL Fellows Program creates a multidisciplinary community of peers who meet approximately monthly (seminar schedule included). Subgroups within the seminar address sequenced questions about research processes and then collaboratively consult with one another as they apply the research processes to their specific projects. The Fellowship year culminates in a presentation of project findings to the University community. The Program is well supported by the Administration. Fellows receive up to \$1500 for research and travel. Analysis of 3 cohorts of Fellows showed that 66% of the projects had clear results showing enhanced student learning. The surveyed Fellows affected over 4500 students in 100 courses. Most of the projects emphasized a new teaching approach, new curriculum materials, integrated applications, and active learning. Fifteen projects were presented at conferences and 7 were published in peer reviewed journals to date. Participation in the SoTL Fellows Program is viewed positively in promotion and tenure decisions, with Fellows reporting a variety of intrinsic rewards as well.

As a comprehensive regional university already committed to the Teacher Scholar model in its tenure and promotion processes, Southeast Missouri State University (Southeast) has deeply supported that commitment by initiating, funding, and continuing a faculty development opportunity called the Scholarship of Teaching and Learning (SoTL) Fellows Program. Now in its fifth year (2009-2010), the SoTL Fellows Program has three main goals: to improve student learning, to strengthen faculty skills and dossiers in the scholarship of teaching and learning, and to develop and reward a community of faculty members with expertise in the scholarship of teaching and learning. In addition, this program facilitates the incorporation of learning objectives from our general education program into courses that might not otherwise deliberately address such objectives. Faculty members selected for participation in the year long-program are called "SoTL Fellows."

The Southeast SoTL Fellows program is centered on action research projects proposed by the SoTL Fellows. Fellows attend a seminar structured around a practical model of action research (Mills, 2003). Using a sequenced set of open-ended questions about the research process, small groups of Fellows and program leaders (designated "SoTL Associates") consult with each other during seminar time using a process we call "collaborative peer consulting." This method of peer consulting is used to help the Fellows develop and shape their projects, interpret findings, and prepare presentations.

In this paper we will situate our program in the context of SoTL concepts and projects elsewhere,

describe our program, and report results of a study of the first three cohorts.

Background

In 1990, Ernest Boyer encouraged universities to broaden their definition of scholarship to include not only the scholarships of discovery, integration, and application but also the scholarship of teaching. Based on Boyer's work, many universities and colleges have implemented Scholarship of Teaching and Learning projects.

Much of the SoTL movement focuses faculty on discussion, peer review, and research to improve teaching strategies – an emphasis on the faculty side of the equation. Some of these programs promote scholarly research of learning; however, much of this research involves literature review. For example, Albers (2008) found that action learning groups (learning with the intent of changing one's practice) helped faculty members define their own pedagogical problems and solutions to improve teaching and learning methods. In another setting, McGovern and Miller (2008) used published instruments on teaching behaviors to help faculty identify classroom behaviors amenable to modification. This self-assessment stimulated faculty thinking about ways to modify teaching and learning strategies. Faculty Learning Communities on focused on effective teaching practices were also useful in encouraging faculty to reflect on their own practices and to attempt to develop more interactive learning environments for students (Cox, 2004; Walker et al., 2008; Smith et al, 2008).

The Southeast SoTL Fellows Program embodies some elements of Faculty Learning Communities (FLC) but not others. For example, the SoTL Fellows Program is designed to

- Build university wide community through teaching and learning
- Nourish the scholarship of teaching and its application to student learning
- Broaden the evaluation of teaching and the assessment of learning
- Increase faculty collaboration across disciplines
- Increase financial support for teaching and learning initiatives
- Create an awareness of the complexity of teaching and learning.

All of these are FLC attributes, according to Cox (2004, p. 10). Despite these commonalities, The SoTL Fellows Program is not an FLC.

FLCs are commonly centered on communicating or investigating the literature of best practice and may be organized by faculty's academic level or teaching topic (Cox, 2004). Unlike an FLC, the Southeast SoTL Fellows Program is not designed to help faculty explore a body of content about teaching and learning (although in preparation for presentation and/or publication after the SoTL year, Fellows do situate their projects in the literature of action research and best practice). Further, in every cohort, SoTL Fellows represent every academic rank, a wide range of disciplines, and dissimilar projects. Instead of an FLC, the SoTL Fellows Program is a group of inquirers learning to do research on student learning within their own courses, a group that becomes a collaborative community as a result of ongoing peer consulting.

In addition to programs and learning communities emphasizing learning about best practice, the broader SoTL movement also encourages and validates the importance of educational research conducted by educators within their own classrooms and disciplines (Burman & Kleinsasser, 2004; Smith, 2008) and highlights the "often overlooked" opportunities for incorporating experimentation into the scholarship of teaching and learning (LoSchiavo et al., 2008). There are SoTL programs, including Southeast's, which focus on faculty research projects, with most of these projects falling into the category of action research (sometimes called classroom research).

Generally, action research is done with the goals of "gaining insight, developing reflective practice, effecting positive changes in the school environment ... and improving student outcomes" (Mills, 2003, 5). Action researchers conduct systematic and evidence-based

inquiries about teaching and learning in their courses and "are committed to taking action and effecting positive educational change based on their findings" (Mills, 2003, 3). Classroom-based action research projects have been found to be a very successful strategy for improving teaching and learning in K-12 education systems, with the involved teachers showing marked change in professional growth (Rathgen, 2006). Charlevoix (2008) described the benefits of classroom research for the student, teacher and community at large and reported over 70 discipline-specific journals devoted to SoTL publications.

SoTL programs using an action research approach include, for example, Grauerholz and Zipp (2008), who found that workshops were useful to help faculty develop ways to transform their own classroom experiences into research. Classroom assessment techniques (Angelo & Cross, 1993) have been used widely for researching classroom learning. Walker, Baepler, and Cohen (2008) implemented a three-year program that offered a large team of experts to faculty members teaching large classes. The experts helped faculty formulate research questions, gather data, devise an intervention plan, implement changes in their course, and evaluate results. In Australia, an action research SoTL program within a college of science, engineering and technology engaged faculty teams in group projects and connected the teams to educational consultants (Gray, Chang & Radloff, 2007).

In contrast to these examples, the SoTL Fellows Program at Southeast focuses on projects conducted by individual faculty (or rarely, pairs of faculty) to determine the effects of teaching on student learning related to the University Studies learning objectives (listed in Table 3 below). It uses a goal-oriented seminar built around a practical action research model and makes frequent use of collaborative consulting among peers, within the seminar, on the projects and research processes. This seminar facilitates the formation of a collaborative community (Twale et al., 2002) of SoTL researchers from across many disciplines. In their research on formation of collaborative community among multidisciplinary groups of graduate students, Twale et al. define community as "belonging, mattering, sharing, bonding, and committing to be together as a group" (2002, p. 114). The structure of the SoTL Fellows Program gives the Fellows a sense of identity, a shared experience, shared goals, and a structure that encourages bonding within small groups.

Development and Design of the SoTL Fellows Program

The SoTL Fellows Program is administratively located in the Center for Scholarship in Teaching and Learning (CSTL). The CSTL was formed in 1985. Over

time, the Center has changed from its original function as the home for a variety of activities on improving teaching to a more complex center using a multifaceted approach to enhance student learning.

A CSTL advisory group, the Teaching Associates, was formed in 1996 with a faculty representative from each of Southeast's five colleges, one school, and the library. One of the initial activities, and key to the success of the SoTL Fellows Program, was the development of a working model of the Teacher-Scholar, published online at (http://www.semo.edu/facultysenate/correspondence/index_16439.htm). This document was approved by Faculty Senate and is often used as a guide to developing and revising departmental promotion and tenure criteria. This was an important step in promoting the scholarship of teaching and learning because it has allowed a more learner-centered shift in promotion and tenure criteria to occur, a shift that Shapiro (2006) says is fundamental. Formalizing the Teacher-Scholar Model was also important because it clarified the concept of the scholarship of teaching and helped faculty close the gap in their perceptions, now realizing that scholarship of teaching could be evaluated for tenure, promotion, and merit increases (Buch, 2008).

As an institution committed to the Teacher-Scholar Model, the University holds the value that teaching and learning are strengthened by the integration of scholarship, including the scholarship of teaching. Further, as a recognized leader in the Carnegie Academy for the Scholarship of Teaching and Learning, the University has committed to supporting and enhancing the scholarship of teaching and communicating the results through presentations and publications.

The CSTL Teaching Associates developed and initially implemented the SoTL Fellows Program in 2005. The proposal for the program was chosen by the Provost as a University Teaching Initiative and was funded within Missouri's Funding For Results program. Based on the positive results attained in the first three years, the SoTL Fellows Program continues to receive support from the highest administrative levels and is funded for the next five years. The CSTL continues to provide administrative and logistical support for the Program.

The objectives of the SoTL Fellows Program are to:

1. Enhance the quality of instruction by examining how changes in instruction foster student learning,
2. Develop and reward a skilled and knowledgeable community of faculty focused on scholarly inquiry into learning and teaching,

3. Support SoTL Fellows in preparing and disseminating their findings at professional meetings and via publication,
4. Provide opportunities for SoTL Fellows to participate as leaders with the next cohorts of SoTL Fellows, and
5. Promote the integration of University Studies objectives into courses beyond those in the University Studies program.

Program Description

The SoTL Fellows Program supports cohorts of up to 10 faculty members in carrying out action research projects on the effectiveness of their teaching on student learning. To become a SoTL Fellow, any full time faculty member at Southeast, whether on tenure track or not, is eligible to apply by submitting a two-page application describing the teaching approach to be evaluated, the students and course in which the project will occur, and the potential ways data on learning might be collected. In addition, the SoTL Fellows Program requires that at least two learning objectives from among the nine that form the basis of our general education program, called "University Studies," be incorporated and evaluated in each project. The proposed action research projects are planned for completion within one academic year. This application form is necessarily general to accommodate faculty members without educational research or action research skills. The committee leading the SoTL Fellows program, called the SoTL Associates, reads the applications (names removed) and selects the cohorts of Fellows.

The SoTL Fellows program also provides tangible external rewards to SoTL Fellows, with professional development funding up to \$1500 awarded at the completion of the project and distributed as follows: each Fellow receives \$500 to use at his or her discretion for professional development and up to \$1000 to support travel to present the findings of the Fellow's project at meetings. Up to half of the travel money is from the University Studies Program. The Dean of University Studies provides support for the SoTL Fellows Program because SoTL projects integrate University Studies learning objectives into the courses under study.

The format for facilitating these action research projects and creating a collaborative community of faculty is a yearlong seminar that meets approximately monthly for two hours, including dinner. It begins in April of one year and ends in June of the next, with more meetings scheduled at the start of the fall semester to get the projects underway in a timely manner (Table 1).

Table 1
SoTL Fellows Program Seminar Schedule and Topics

Date	Time	Agenda
Late April	6:00-8:00 p.m.	New SoTL Fellows Orientation Meeting. Brief introductions, Presentation on Action Research Cycle, overview of data gathering methods, design vs. methods, and human subjects requirements. A series of questions to think about over summer.
Early May	5:00-9:00 p.m.	Public PROJECT PRESENTATIONS of Current Cohort: dinner symposium. New Fellows attend , as well as Provost, Deans, Chairs, prior Fellows and others in university community.
Early September	6:00-8:00 p.m.	Introductions, Updates on human subject applications, progress over summer. Initial peer group meetings with SoTL Associates. Collaborative peer consulting, using open ended questions on project goals, ideas for gathering data, how each type of data contributes, timeline for project
Late September	6:00-8:00 p.m.	Drafts of designs to be discussed. Collaborative peer consulting on refining variables, developing data gathering tools, peer review of newly developed instruments, and of any changed plans, designs, or instruments.
Mid October	6:00-8:00 p.m.	Data gathering instruments to be drafted by this date (if not before for some projects). Collaborative peer consulting on refining data gathering tools, results of pilot studies
Mid November	6:00-8:00 p.m.	Mini presentations by within-Program experts, on quantitative and qualitative data analysis. Collaborative peer consultation, with new groups formed on basis of types of data being collected, to discuss specifics.
Mid February	6:00-8:00 p.m.	Distribute requirements for final reports and guidelines for public project presentations. Collaborative peer consultation on activities since November, and issues within projects as needed by each Fellow.
Late March	6:00-8:00 p.m.	Whole group collaborative peer consulting on the draft presentations, discussing findings. Suggestions for strengthening the project for publication, information on SoTL journals.
Early May	5:00-9:00 p.m.	Public PROJECT PRESENTATIONS (as above). Some of these projects are still collecting data, since final exams have not happened yet.
June 30		Final written reports due.

In the seminar, the Fellows give progress reports, engage in collaborative peer consulting on project design, develop evaluations of student learning and other project outcomes, prepare their work for presentation, and discuss and present their findings. Formal presentations by SoTL Associates are kept to a minimum (e.g., a one hour overview of action research and procedures for human subjects approval at the outset of the year, then brief information on the schedule, formats for reports, etc. throughout the program) unless the Fellows request information about which an Associate or Fellow has expertise.

The seminar sessions are based on a framework organized around processes incorporated in the action research cycle (Calhoun, 1994) and addressed via a series of open-ended questions that are linked to the cycle. We used a Practical Action Research model (Mills, 2003) that focuses on methods and approaches to designing studies, gathering data, and analyzing data.

The seminar schedule also, and importantly, provides a structure of deadlines for intermediate goals and defined outcomes (Table 1). The disparate levels of Fellows' experience with action research, the need for some Fellows to be ready to collect data in fall semester, and the varied nature of the projects necessitated that the framework of these sessions be flexible.

The seminar heavily uses a unique form of small group peer consulting. Our model differs from the

common practice of peer consulting in which mentors are assigned and/or a list of willing peers with expertise is made available to call on when needed (Cox, 1999; Walker, Baeppler, & Cohen, 2008; Gray, Chang & Radloff, 2007). In the SoTL Fellows Program, collaborative peer consulting occurs frequently in small groups of SoTL Fellows and SoTL Associates. Each cohort of Fellows is assigned to groups of three to four Fellows, based on when data needs to be collected, level of experience with educational research, and discipline (the goal is to mix up expertise and disciplines). Each group is initially assigned one to two SoTL Associates, who might switch groups depending on need. The purpose of each group is to promote peer consulting by pooling the expertise of the diverse group members. As projects progress, groups may rearrange membership to facilitate work on a specific topic (e.g., interviewing or qualitative data analysis).

To keep projects moving, the groups work on open-ended questions about different aspects of the action research cycle. As an example, Fellows are asked to differentiate their methods from their design and to justify how their design will help answer their questions. They are asked to show how each goal is linked to data to be gathered. In another session, they are asked to suggest methods for gathering those data. Sometimes Fellows work individually to prepare for a discussion of these kinds of questions during a seminar, and sometimes the questions are provided anew during

Figure 1
Number of SoTL Fellows within Each Academic Unit, Five Cohorts

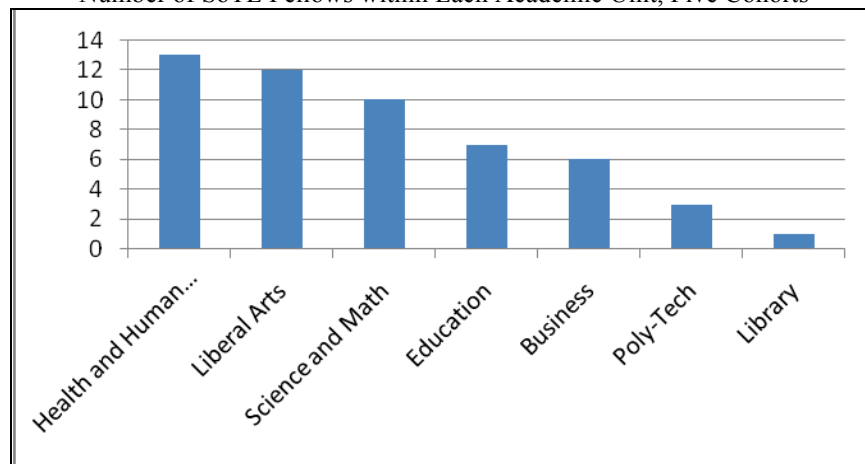
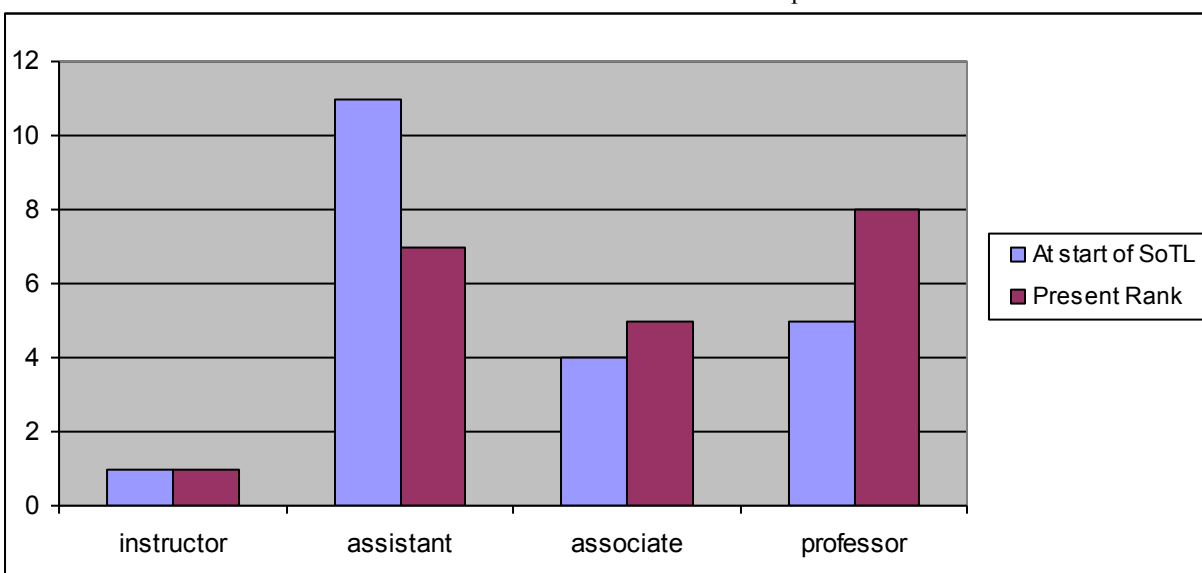


Figure 2
Ranks of the Studied SoTL Fellows at the Start of the Fellowship and at Time of the Interview



the seminar and Fellows work on them there. In either case, the questions stimulate brainstorming, friendly constructive criticism, sharing of expertise, and discussion.

As the SoTL Fellows explain their ideas, the peer consultants (all the small group members) clarify and assist with further development of the proposed projects. Expertise develops and is shared within the groups and across groups. As questions and interests evolve and SoTL Fellows request additional or specific information (e.g., qualitative methods, research design, online “Flashlight” evaluations, or Human Subject Procedures), the peer groups are asked to share any expertise they have in the area. Occasionally an outside expert is brought in when the expertise does not exist

among the seminar members. Within the framework of action research processes and collaborative peer consulting, the needs of an individual SoTL Fellow can be promptly addressed.

In addition to the reward of becoming skilled in educational action research, which is new to many faculty members outside the discipline of education, the SoTL Fellows’ year culminates in a public presentation of the projects to the university community – a visible celebration of their work. This event is attended by the Provost, deans, chairs, Teaching and SoTL Associates, prior and new SoTL Fellows, and any other interested faculty. Leadership opportunities are also built into the Program so that former Fellows may continue their development and involvement.

Table 2
Categorization of the SoTL Projects Based on the Final Reports

Type of Project	Number of projects (N = 24)*	Examples
Try a new teaching method	21	Case based learning, discovery and inquiry in math, cooperative video analysis, role plays, voice/body rhythm for dance, visual learning, online study aids, conferences with students, simulations, projects for practitioners, meditation, scaffolding for cooperative learning, photo scavenger hunt, data mining, report writing, evidence based practice.
Develop and test new curriculum materials	20	Online modules, cases, materials modified for different learning modalities, new activities for cooperative learning, new video clips, decision systems software, "clicker" activities, powerpoint study aids, discovery/inquiry curriculum in geometry, political science simulations, empathy exercises.
Had students apply knowledge to realistic situation	17	Used realistic examples, had student solve realistic problems, address case studies based on real situations; make decisions based on evidence; prepare professional development workshop materials.
Use active learning strategies	17	Case studies, simulations, role plays, collaborative problem solving, focused discussion, photo scavenger hunt.
Tried techniques to affect how students learned	10	Adapted curriculum for different learning styles/ modalities, used meditation to reduce stress, fear, anxiety; variety of methods to improve transfer of learning, voice/body rhythm methods for dance.
Tested new technology and/or applications of common technology	7	Excel for decision making, data mining in excel, powerpoint study aids, videos, streaming presentations, podcasts, online data bases, personal response systems (clickers).
Address students' belief systems (esp. about differences)	6	Professional roles, receptivity to change, use of evidence for practice, value of cooperative learning, attitudes toward criminals.
Service learning.	2	Preparing and leading workshops for nurses, criminal justice project.

*Numbers add up to more than 24 because most projects had components in several categories.

General Characteristics of SoTL Fellows

Five diverse cohorts of faculty were selected as SoTL Fellows between 2005 and 2009. Thus far, 52 faculty members have been selected (over 10% of the total faculty at Southeast), representing 23 different departments (74%) from all academic units (Figure 1). Prior experience of SoTL Fellows with formal evaluation of student learning ranged from none to completion of formal research on learning. Very few of the SoTL Fellows had ever presented or published research findings on their own teaching strategies and student learning.

Subjects of this Study

A subgroup of the 52 SoTL Fellows was the subject of this study. Membership in one of the first three cohorts (2005, 2006, or 2007) and continuing employment at Southeast were the criteria for inclusion. Fellows in these cohorts included 29 faculty members from 18 different departments across five colleges and the library, with undergraduate teaching experience ranging from six to thirty-five years.

The majority of the studied SoTL Fellows were assistant professors when they received the SoTL fellowship. As of early 2009, many of these Fellows had been promoted to associate or professor ranks (Figure 2), indicating that their involvement in SoTL research projects did not hinder their promotion. Additionally, all tenure-track SoTL Fellows surveyed (20/21) reported that they felt their participation in the SoTL program had already been, or will be, viewed positively in the tenure and promotion processes – a significant reward.

Methods

Data were collected by means of a telephone interview developed by the SoTL Associates, which was administered by university researchers who are outside the SoTL program. SoTL Fellows from the first three cohorts were contacted during the late fall of 2008 and early spring of 2009 and were asked if they would be willing to participate in this study. Only one declined to participate, four had left the university and four could not be contacted. All together, 21 of the original 29 Fellows in the first three cohorts participated in the interview.

We also analyzed a total of 24 final project reports submitted by SoTL Fellows in these three cohorts, and still at Southeast, in order to answer the following questions: What kind of project was it? Were there clear results? Which University Studies learning objectives were addressed by the project?

Results

This section is organized around the five SoTL Program objectives referred to above.

Objective 1: Enhance the quality of instruction by examining how changes in instruction foster student learning.

The teaching projects were as diverse as the groups of participants. Teaching strategies and tools that were developed and evaluated included case studies (commercial and self constructed), gaming-simulations, role-playing, clinical experiences, experiential exercises, decision support systems, videotape and film vignettes, instructional modules, service learning projects, cooperative learning, evidence-based practice concepts and databases, personal response systems, scavenger hunts, classroom meditation, project guidebooks, logarithm study aids, and voice/body/rhythm techniques for dance.

Table 2 identifies eight attributes of the projects that we perceived as we analyzed the final reports of the first three cohorts of SoTL Fellows. Nearly all projects implemented a new teaching method and/or new curriculum materials written by the SoTL Fellow for the project. Most of the Fellows examined active learning methods and incorporated some kind of application of disciplinary concepts to a realistic setting or problem. Nearly half of the projects had components intended to address the ways in which students were learning (e.g., to help them with transfer of knowledge, reduction of anxiety, or to make materials more accessible for learners with different learning styles).

The authors' analysis of the final reports showed that 16 of the 24 projects (66%) showed clear evidence of improved student learning resulting from the SoTL project innovation.

The 21 surveyed SoTL Fellows affected 101 classes with over 4750 students during the time period of and since their Fellowship. Of the 21 Fellows, 19 thought that the SoTL Program made a positive impact on their teaching that continues to the present, and 18 of the 21 were still using the technique they examined during their project at the time of the interview. Of these, nine made modifications to their technique based on their findings.

Objective 2: Develop and reward a skilled and knowledgeable community of faculty focused on scholarly inquiry into learning and teaching.

The SoTL Fellowship Program was designed to prepare faculty to conduct research on teaching and learning in their own courses by using an action research model and collaborative peer consulting. This goal was accomplished via the monthly two-hour evening seminar meetings described above, and resulted in a community of experienced SoTL scholars. The rewards for participation included the extrinsic rewards of professional development funds and travel funds, as well as publications and presentations that count toward promotion. Intrinsic rewards are described at the end of this objective.

Fellows used a variety of quantitative and qualitative research methodologies to evaluate learning associated with the new teaching strategies and materials described above. Effects on learning that were evaluated included student attitudes, perceptions, values, skills, knowledge comprehension, and critical thinking abilities. Several Fellows also evaluated their teaching methodologies by asking for student response to the new methods or materials. A variety of pre- and post-tests, observation rubrics, surveys, interview questionnaires, and self assessment tools were developed by the Fellows to measure learning and the quality of the teaching approaches used. Two Fellows used published instruments.

To illustrate the kinds of action research studies, we provide three examples. One assistant professor of leisure studies wanted to help students learn to apply theoretical concepts of leisure to everyday occurrences. The teaching innovation was a "photo scavenger hunt" for images (published or their own) that illustrate different theories of leisure. To measure student learning, the professor asked students to write an explanation of how the image represented the theory. These were scored with a rubric. In addition, final exam scores were compared for classes that did the photo scavenger hunt vs. those that did not. Finally, this professor asked students to rank different teaching methods used in class on a Likert scale of students' perceived effectiveness of each method.

Another assistant professor implemented a new way to teach tap dance based on techniques she learned at a professional workshop. Some students were advanced and already had learned tap another way. Others were beginners with no tap experience. Evaluation of students' skills was accomplished by videotaping students in rehearsal and performance and then having an outside expert score the students using a set of criteria developed by the professor. Guided observations as well as interviews with students were other methods used to gather data.

In a third example, an associate professor using commercial case studies for early childhood education wanted to see the effect of instructor-developed cases written for local contexts and conditions. Instructional methods were kept as consistent as possible, and cases were used in two courses. A rubric was developed to assess student written responses to the cases based on how the case was analyzed and resolved, students' ability to apply concepts to professional practice, ability to support opinions with evidence, and use of course concepts in case analysis. This professor used analysis of variance to test that both cohorts of students were similar at entry (they were) and then found statistical significance in scores, with students learning with locally relevant cases doing better in all parts.

As reported above, two-thirds of the projects reported positive increases in student learning. This is an extraordinary finding considering that the entry levels of action research skill for the Fellows was highly variable, with more than half of the Fellows having no experience with action research. It is also extraordinary given the fact that the projects were conducted over only one year. Several of the projects that were unable to report clear results identified small sample sizes, problems with the data collection procedures or instruments, or new awareness of variables that may have affected outcomes. Nonetheless, these Fellows learned how to gather creditable evidence about their own teaching.

Eleven of the 21 surveyed Fellows (52%) are continuing to collect data about the teaching approach that they studied as a SoTL Fellow – and several of these are doing so as a way to prepare their projects for publication.

Some of the intrinsic rewards of being a SoTL Fellow were revealed when Fellows were asked to identify the greatest benefit of the SoTL program. Fifty-seven percent responded that the opportunity of getting to know other faculty members in order to share ideas was the number one benefit. Other benefits mentioned (approx. 10% each) included that the SoTL program provided professional development opportunities, that it provided an opportunity to implement new ideas, and that it provided structure with deadlines and intermediate products. Other comments (approx. 5% each) included that the SoTL program provided for a better understanding of research, placed emphasis on the importance of teaching, or benefited students.

Objective 3: Support SoTL fellows in preparing and disseminating their findings at professional meetings and via publication.

Publication and presentation to professional colleagues are necessary steps in the promotion process, a tangible reward. The SoTL Fellows Program was

designed to support faculty in making their action research findings public. All Fellows presented their projects in draft form to their peers during the SoTL Fellows seminar in preparation for their public presentation to the university community at the end of their SoTL year. This required public presentation serves as preparation for further formal presentations outside the university. As mentioned above, professional development funds up to \$1500 are available to support research and travel.

At one of the seminar meetings, the SoTL Associates provided suggestions for conferences where SoTL presentations can be made and articles published. This information is on the Southeast SoTL website as well (cstl.semo.edu/sotl).

Fifteen of the 21 Fellows in this study (71%) presented their project one or more times beyond the SoTL program, for a total of 19 presentations by these surveyed faculty. Of these, 12 presentations were at national meetings, six at international meetings, and one at a regional meeting. Fifteen of these presentations were peer reviewed. Seven additional presentations were planned at the time of the interview by these and others of the studied Fellows who had not yet presented.

To date, seven of the surveyed Fellows (33%) had published a paper, six of these in peer reviewed sources. Nine additional fellows plan to publish a paper that includes results of their SoTL projects.

Objective 4: Provide opportunities for SoTL fellows to participate as leaders in the next cohorts of SoTL Fellows.

Having opportunities to lead a University-wide program is another kind of reward for SoTL Fellows that is both an extrinsic and an intrinsic reward. A total of seven SoTL Fellows from the first three cohorts have served in a leadership role in the program as of this writing. Originally led by five to seven members of the CSTL Teaching Associates, the transition to a Fellow-led program began in Fall 2006 when three 2005 Fellows shared their experiences and served as peer leaders with the second cohort. In the third year of the program (2007), three former Fellows officially joined the leadership team, a team now named "SoTL Associates," thereby making the leadership 40% former Fellows. By 2008 (the fourth year), the majority of SoTL Associates were previous Fellows except for two of the original leaders who served a final year. SoTL Fellows were selected to serve as SoTL Associates based on the needs of the leadership group, the expertise of the SoTL Fellow, and interest and enthusiasm of the SoTL Fellow toward the program.

SoTL Associates are responsible for selecting cohorts of SoTL Fellows, planning and implementing the seminar program, working with small groups as

Table 3
Frequency of University Studies Objectives in the Analyzed SoTL Projects.

University Studies Objective	No. of SoTL projects addressing this objective (N = 24)	No. of SoTL projects in University Studies classes doing this objective (N = 7)	No. of SoTL project in NON-University Studies classes doing this objective (N = 17)
1. Ability to locate and gather information	12	5	7
2. Capabilities for critical thinking	20	6	14
3. Effective communication skills	9	2	7
4. Understanding of human experiences and ability to relate them to the present	4	2	2
5. Understanding of various cultures and their interrelationships	2	1	1
6. Ability to integrate the breadth and diversity of knowledge and experience	11	2	9
7. Ability to make informed, intelligent value decisions	7	2	
8. Ability to make informed, sensitive aesthetic responses	2	0	2
9. Ability to function in one's natural, social, and political environment	6	2	4

collaborative peer consultants, working with individual projects as needed, and signing off on final project reports, thereby releasing professional development funds to the Fellows.

Objective 5: Promote the integration of University Studies objectives into courses beyond those in the University Studies program.

The University Studies Program is Southeast's general education program, which has just celebrated its 20th year. Students are required to complete 36 hours of lower level courses and nine hours of upper level courses that meet some or all of the nine University Studies Objectives (listed in Table 3 below). The SoTL Fellows Program specified that each project should address and evaluate at least two of these objectives, whether or not the projects were being conducted in University Studies courses. The aim of this specification was to extend the University Studies objectives deliberately into courses beyond those in the general education program. Of the 24 projects analyzed, seven were conducted in University Studies courses and 17 were in non-University Studies courses.

Table 3 shows that the University Studies objectives were able to be addressed and evaluated in courses outside those of the University Studies program. For both types of course, helping students develop critical thinking capabilities topped the list of

selected objectives for the SoTL projects. However, for non-University Studies courses, the next most used objective was the ability to integrate breadth and depth of knowledge, while for University Studies courses, the ability to locate and gather information was selected second most often.

Conclusions

The SoTL Fellows Program at Southeast Missouri State University has been remarkably successful by several measures: documented improvements in student learning, more engaged teaching and learning, disciplinary curricula connected to real world problems, number of faculty involved, representation of academic units, number of presentations and publications about the action research projects, number of promoted SoTL Fellows, the continued interest of prior Fellows in continuing their projects or starting new ones, and their interest in serving on the leadership team for the program.

To try to understand how our program is achieving its success, we looked at research on effective faculty development and effective faculty collaboration. Quinlan (1998) studied faculty collaboration around teaching and suggests several factors that she found in successful collaborations. One factor is that good sessions have a defined agenda and leadership that keeps the members working towards meeting that

agenda. Southeast's SoTL program was very project-oriented and had a seminar schedule that was well defined yet flexibly structured. We asked for intermediate products and set deadlines (flexibly met, of course).

A second factor Quinlan suggests is to connect the faculty members' discussions to specifics of teaching and learning rather than to abstract ideas. Having each SoTL Fellow work on an individual action research project and making the design and implementation of the project the focus of the seminar sessions was a way to ground teaching discussions in concrete examples and real problems.

Asking that faculty provide reasons for their decisions and actions also contributes to the effectiveness of the sessions, according to Quinlan. The process of collaborative peer consulting encouraged the Fellows to be clear about their ideas, rationales, and plans in a friendly and safe way. The open-ended questions about research processes also encouraged openness among fellows and associates about their reasons for decisions.

Another aspect of effective collaboration relates to the source of the initiative. When the collaboration is faculty led and owned, it is more likely to be shaped for the needs of the faculty, Quinlan suggests. The SoTL Program grew out of a group of faculty, the CSTL Teaching Associates, not professional faculty developers. It is based on proposals for individual action research projects. The seminar has been developed as a skeletal framework within which SoTL Fellows and Associates collaboratively consult with each other on faculty-owned projects, helping each other shape the projects and helping to meet each other's needs related to action research.

Quinlan suggests that the role of the administration is critical in validating the collaborative efforts. Our most senior administration has given unwavering support throughout the SoTL Fellows Program, from its inception, when Provost Jane Stephens declared it a major Teaching Initiative and saw to the funding, through the present, with her knowledge of individual Fellow's projects and her participation, and that of Deans and Chairs, at the annual SoTL Fellows presentations. The administrative support of the CSTL in providing meals, rooms, and materials is another way we can show validation by the administration. The access to University Studies travel funds is yet another support. Finally, the many promotions among SoTL Fellows represent a very public support for involvement of faculty in the SoTL Fellows Program.

While we have neither concrete data on the quality of the discussions nor documentation of the development of a sense of community, as leaders of this SoTL Fellows Program we have seen, within each cohort, the development of supportive small groups, the willingness of people to share their expertise and their ignorance, and

genuine warmth among the SoTL Fellows and Associates. More than half of the surveyed SoTL Fellows cited group interaction and sharing as the most important benefit of the SoTL Fellows program. In their literature review, Twale et al. (2002, p. 114) summarize how communities develop:

A sense of community develops through the creation of a group identity and through the provision of opportunities for dialogue and conscious curricular integration. It also involves a process of overcoming isolation through networking, facilitating socialization into the professional role and allowing for risk taking and active participation in the learning process. We believe we have created a program that successfully fosters these characteristics.

Looking backward with the lens provided by Twale and her colleagues, we see that the SoTL Fellows Program creates identity and visibility for its participants and provides many opportunities for dialogue. If our curriculum was learning how to do action research in a new professional role as a scholar of teaching and learning, it was consciously integrated across disciplines and across projects so that faculty members could become socialized into the realm of SoTL research.

On a typical campus, including ours, faculty members are notoriously isolated. To counteract this, the monthly meetings always included time for socializing during which much networking occurred. Also, the series of open ended questions about action research processes created a framework for faculty members to take risks, yet feel safe and supported by the fact that everyone involved was taking the same risks and sharing publicly in the process of collaborative peer consulting.

Our findings suggest that building a SoTL Fellows Program centered on action research and collaborative peer consulting, which tangibly rewards faculty for their efforts, works well to improve not only student learning but also faculty teaching and skills in scholarship of teaching. Our SoTL Fellow Program provides not only the tangible rewards of money, presentations, publications, and better success in the classroom, but also the intangible rewards of striving with a collegial group during the Fellowship year, of making friendships and partnerships with people across campus, of having one's thinking stimulated by learning that different approaches to teaching exist in different disciplines, and of knowing there are resources and a community to support further work in the Scholarship of Teaching and Learning.

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Project Panama: An International Service Project

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Participation in service learning projects is a growing phenomenon at universities and colleges. Research indicates service projects are beneficial for college students and adults. There is little data investigating developmental differences in how younger versus older participants perceive the service learning process. In this project, older adults joined high school and university students on a ten-day service mission to Panama to provide humanitarian aid. Using both qualitative and quantitative data, participants were assessed on their motivations for volunteering, their belief in a just world, and their emotional experiences from working in a service learning setting. On the Volunteer Functions Inventory, there was no significant difference between the students' and the adults' motivation to volunteer, but as evidenced on the Global Belief Scale, students were more likely to endorse the belief that life is fair and predictable and that people get what they deserve than were the older non-students. The Aids Caregiver Scale indicated younger and older participants reported similar levels of satisfaction in their work on this project. The qualitative analysis involved a paper synthesizing the experience from a strict service learning perspective. Suggestions and recommendations for similar projects are included.

Literature Review

In the last decade, collegiate service learning has become an integral part of the student experience (Kronick, 2007). Service learning involves achieving academic and personal goals through community service. Typically, service opportunities are integrated into a curriculum, along with guided reflection, to enrich student learning. Such projects can be implemented at the college level through service in the local community or through service abroad.

Universities are usually the cornerstone of their surrounding communities, and service learning helps universities fulfill civic responsibilities (Einfeld & Collins 2008). Engagement in the community also has a reciprocal effect in that the community benefits from the service, and the university benefits through an increase in the community's perception of the university as an involved community partner. The learning environment extends from the classroom to the community, where there are valuable resources fortifying student learning that cannot be obtained through participation in college classes alone (Baggerly, 2006).

Traditional Aged College Students

Research on service learning has emphasized positive outcomes in several areas. For example, an increase in civic engagement has been shown (Prentice, 2007), appreciation for diversity (DiMaria 2006) has been noted, personal growth has been reported (Ehrlich 2005), and even enhanced academic achievement has been observed (Strage, 2004; Bridgeland, Dilulio, & Wulsin 2008). Furthermore, Nazarova (2008) found

that service learning "enhances skills such as personal efficacy, ability to work well with others, as well as leadership and communication skills."

Enhancing a student's multicultural knowledge is another important learning experience associated with service learning projects. Increasing multicultural knowledge and awareness can be accomplished in the local community as well as in locations across the world. John Dewey (1933) stated that true learning only occurs when students must grapple with true dilemmas. Students often arrive at college with preconceived dispositions towards other cultures, races, or socioeconomic groups. McHatton, Shaunessy, Hughes, and Ratliff (2007) described a disposition as the tendency to act in a certain way that is defined by values, commitments and ethics that influence our interactions with others.

Service learning has the power to change student values by helping them form positive dispositions for people from many diverse backgrounds. Carney (2004) states that experiences in diverse community settings allow participants to gain a better understanding of the people within the community in quest for multicultural understanding and social justice. Experiential learning is one of the best ways for a student to face personal and societal ignorance, prejudice, and injustice (Kronick, 2007). Service learning provides these experiences and allows students to leave their comfort zone as a college student.

Multicultural awareness and appreciation can happen locally, but it oftentimes occurs through travel abroad. Learning that takes place in distant locations presents unique opportunities for student development. Pisano and Rust (2007) focus on the transformation of students participating in an international service

learning program. Their research indicates the impact of such programs to be positive, allowing students to expand upon their motivations and goals, as well as achieve insightful benefits in the areas of cultural adaptation, knowledge acquisition, values, and future career plans. King (2004) found that students involved in international service learning activities learn to critically examine their assumptions about others in society, which caused the students to raise critical questions about inequity and prejudice. These ideas are corroborated by others who study the effects of international service learning (Ngai, 2006).

Adult Learners and Service Learning

The benefits of service learning for college students are important areas of study, but service learning extends beyond the college years. Because adults want to continue learning and utilizing their skills, lifelong learning and service has emerged as an important area of an active lifestyle for adults as well (Holland & Robinson, 2008). Programs such as Elderhostel and Lifelong Learning Institutes have provided many opportunities for active adult learners to participate in service learning both in the United States and abroad (Simson, Wilson, & Harlow-Rosentraub, 2006).

In recent years there has been a substantial increase in the number of adults participating in service learning (Okun, Barr, & Herzog, 1998). This may be due in part to improved health, greater opportunity for service, and a favorable shift in society's view of aging.

There are a number of positive outcomes related to adult participation in service learning. Mudel and Schugurensky (2008) found that adult volunteers increased their leadership skills and their ability to work with others. Furthermore, many adults surveyed experienced a major shift in their attitudes toward people who were different from them. This type of transformative learning has been addressed by Mezirow (2000), who notes that such shifts in frames of reference involve experiencing a disorienting dilemma, engaging in a critical assessment of one's assumptions, exploring new roles and relationships, building confidence in those new roles and relationships, and reintegrating one's life experiences into the new perspective.

Research clearly shows the benefits of multicultural development related to service learning in a college/academic setting as well as benefits in other areas of social and emotional development. This research suggests that service learning programs should be implemented as an educational experience because of their positive outcomes and because of our changing world situation. Globalization has resulted in increased diversity throughout most of the world. Developing

multicultural competence is imperative as we find ourselves interacting with individuals who hold values, customs, mores and belief systems different from our own. Service learning may be one of the more effective tools for achieving this.

A question in the research on service learning is whether there are differences in how students and older adults perceive the service learning process. Although there have been a number of studies that discuss intergenerational service learning, these studies have focused on young people providing a service to adults. Few studies have examined projects in which college students and adults were working *together* on a service learning project. Furthermore, researchers have not looked at the differences in growth and development that might occur among different age groups participating in service learning projects.

The research appears to be clear concerning positive outcomes for those participating in service learning activities. However, there is little data that has investigated the possible developmental differences and the effect a service learning project may have (i.e., are there differences in how younger versus older adults perceive the service learning process?). To investigate this question, one of the researchers proposed Project Panama (PP). In this project, older adults joined high school and university students on a ten-day service mission to Panama to provide humanitarian aid. Both qualitative and quantitative data were examined.

Method

Participants

Participants included 13 students and 18 non-students. The students were enrolled in special topics service learning courses appropriate for their academic level. The participants included seven high school students, four undergraduate and two graduate students. All received college credit for the course. The students were 16 to 25 years old. The non-students were adults whose ages ranged from 25 to 70. All were college graduates and eight had post-graduate degrees. Their professions included business, medicine, academics, construction, and art. Students and non-students were administered the quantitative assessments, and the qualitative analysis was derived from student papers synthesizing their experiences. All were voluntary participants in the project.

Academic and Teambuilding Component

Project Panama was a college course designed around the concept of increasing multicultural understanding using a structured experiential model of learning. Six weekly 3-hour meetings/classes were held

before the trip, and two were held afterwards. The pre-trip classes included Spanish language lessons, Panamanian meals prepared by adult-student teams, and presentations by the students on the culture, history, geography, economy, educational system, health care system, and the plight of the indigenous population. The post-trip classes included students sharing from their journals (students were required to write in journals daily during the on-sight portion of the course).

Service-learning Project

The international service learning project titled Project Panama provided services in two Panamanian towns, Boquete and Bocas del Toro. The team worked with local missions and Rotary clubs in each community over the University's Spring Break. The service projects undertaken fell in two broad categories, medical and construction. The group assisted medical professionals with 5 medical clinics, providing service to 537 patients, 364 of whom were children. The group provided construction work at three schools, a mission, and an orphanage. They constructed a kitchen, dining room, a block wall fence base, and a concrete walkway. They built and installed roof trusses, cleaned and painted three schools, cleaned the grounds of an orphanage, and wired a bus garage for electricity. Participants worked and traveled together, but were all housed by and worked with ex-patriots from the US and other countries as well as native Panamanian members of the local Rotary clubs.

Procedures and Measures

Demographic information was collected and surveys were administered to the entire group immediately prior to departure. Posttest data was collected at the first meeting after the group's return. Two quantitative instruments were used to gather pretest and posttest data, and one additional quantitative instrument was used as a service follow-up measure. In addition, qualitative data was collected through students' written responses.

Qualitative Measures

The Volunteer Functions Inventory (VFI) (Clary, Snyder, Ridge, Copeland, Stukes, Haugen, & Miene, 1998) is a 30 item questionnaire. Answers are scored on a 7-point response scale anchored with *not at all important* to *extremely important*. It is designed to examine six different functions or motives that the act of volunteering can reflect. The six subscales are: values, understanding, social, career, protective, and enhancement. For the purposes of this analysis, only total scores were used to reflect the overall level of motivation

to volunteer. The Volunteer Functions Inventory has been used in other pre and posttest analyses of service learning projects in studies of motivation in paid and nonpaid volunteers (Gerstein, Wilkeson, & Anderson, 2004) and in research on the relationships among moral judgment, self-understanding, and moral actions (Derryberry & Thoma, 2005).

The Global Belief in a Just World Scale (GBJWS) (Lipkus, 1991) is a 7-item scale with responses based on a 6-point scale (*strong disagreement* to *strong agreement*). The GBJWS assesses the general belief that "people get what they deserve" in life and that the world is basically fair. The GBJWS was chosen to see if scores varied by age/student status and if the scores changed as a function of the volunteer experience. The GBJWS Scale has a higher reliability than other scales measuring just world beliefs (Hellman, Muilenburg-Trevino, & Worley, 2008).

The Caregiver Scale, also known as the AIDS Caregiver Scale (Ferrari, McCown, & Pantano, 1993) was administered after the service-learning experience to assess respondents' emotional experiences from working in a service learning setting. The two subscales comprising the scale are satisfaction, which measures personal fulfillment from helping others, and stress, which measures negative affect or depression from helping others. This is a 14-item scale with each item on a 7-point scale ranging from *strongly agree* to *strongly disagree*. Although this scale was developed for use with AIDS caregivers, it has been adapted and validated for use in many other settings (Bringle, Phillips, & Hudson, 2004). It was chosen in this study to investigate differences in consequent stress and satisfaction in older and younger participants.

All students were required to write a paper synthesizing the content gained from their pre-trip classes, the experience on the trip, and their perceived growth or change as a result of the experience. Two independent evaluators categorized student responses from the papers.

This study asked four questions: (1) To what degree and in what ways were students affected by the service learning project? (2) Were motivations and beliefs of the students different from those of the non-students? (3) Did students gain more satisfaction and suffer more stress than nonstudents from the service experience? (4) What categories of the experience were most meaningful to the students?

Results

The purpose of the quantitative analysis was to determine the differences between older and younger participants in attitudes, motivation, and response to the provision of services and to document any changes in attitudes over the course of the experience.

On the Volunteer Functions Inventory, there was not a significant difference between the students' and the adults' motivation to volunteer. Students' overall mean was 145.5 with an SE of 8.38; the nonstudents' mean score was 127.7 with an SE of 10.02 ($F=1.38$, $sig=.258$). The differences between the means were likely affected by the variability and the small sample size. Further, there was no significant overall pretest posttest difference with this instrument ($F=1.38$, $sig=.258$). The pretest mean was 135.35 and the posttest mean was 141.056. This indicates that although students and adults tend to differ in their volunteer motivation, the differences are not great enough to reach significance. Further, the group did not significantly change in their motivation from the pretest to the posttest measures, although there was a trend in the direction of increased motivation.

On the Global Belief in a Just World Scale, high scores indicate a belief that people get what they deserve, that the world is basically fair and predictable. Although there was no change in scores from pretest to posttest ($F=.028$, $sig=.869$), there was a significant difference between the beliefs of students and those of non-students ($F=7.91$, $sig=.013$). Students were more likely to endorse the belief that life is fair and predictable and that people get what they deserve than were the older non-students.

On the Aids Caregiver Scale, younger and older participants reported similar levels of satisfaction in their work on this project ($t=1.01$, $sig=.326$). However, student participants reported experiencing significantly more stress related to their service than older participants. ($t=2.17$, $sig=.046$). This may indicate that younger people do not yet have the life context into which to place their experiences.

The purpose of the qualitative analysis of the students' papers synthesizing their experiences was to determine from a strict service learning perspective how the participants conceptualized the project. All the participants recognized the increase in their knowledge of the country. They reported learning about Panamanian history and geography, the country's political and economic issues as represented by the degree of rural poverty, the Panamanian educational system and its difficulties the in educating children who are rural and poor, and the culture of the country including the food, dance and dress.

Of the student participants, all reported that their perspectives were broadened. They expressed themes of appreciation of "our circumstances in America and how much we take for granted." They observed that Panamanians demonstrated a heightened sense of family and friendship and that they (PP participants) faced obstacles they could not have imagined before the trip.

Ninety-one percent of the participants reported enhanced cultural awareness as evidenced by the recognition of the obstacles Panamanians face, "the immense divide between the wealthy and poor, the unique culture and heritage, the lack of a middle class, and transportation by horse or on foot as the rule." In reflecting on the meaning of the project for themselves, the students commented on the sense of accomplishment and pride that they felt as a consequence of the service project. Some recognized their untapped skills or abilities – a sudden awareness of "what I can do." Some said that they had changed their goals and others that they had changed their view of their own life. One wrote that she felt touched by and benefited from her service "as much as the children we helped." Half of the students remarked that they want to continue their service learning activities in the future.

Discussion

The purpose of Project Panama was to expose students and non-students to the experience of serving two communities in Central America and to assist them in learning about the culture, economics and physical reality of life in Panama. This purpose was accomplished as documented by student descriptions of what they learned about the Panamanians, what they learned about themselves, and how they were affected by the experience. As previous research has indicated, international service learning does provide the participant with a global perspective (Pisano and Rust, 2007).

In addition, the students were joined by a group of non-student adults who engaged in the same training and service components as the students. The non-students were used as a comparison group for the qualitative analysis. The students and the non-students did not differ significantly in their overall motivation to volunteer, as measured by the Volunteer Functions Inventory. They were equally motivated, and the level of their motivation did not change over the time covered by the trip. This may be too short an experience for change in motivation to occur and, because the group members were volunteers, they may have been relatively homogeneous in their motivation.

The Just World Hypothesis indicates that the students have a belief system that assumes that the world is a predictable place with causal relationships between events, e.g., if you are poor, you have done something to deserve it (Bringle, Phillips, & Hudson, 2004). Consequently, they believe that good people like themselves will experience good in their lives. This belief provides them with a defense against the belief that things happen randomly and are uncontrollable and unpredictable. In this study, although the just world hypothesis was not significantly heightened or reduced

by volunteer experiences in Panama, there were significant differences between younger people's scores and those of older volunteers. This indicates that, with age and life experiences, people come to understand the capricious nature of fate and the uncertain links between human actions and human plight.

The similarities between the younger and older volunteers in the satisfaction gained from providing services to those who need them indicate that the group as a whole found the experience meaningful and personally fulfilling. It is interesting that the student group was more likely to find the experience to be stress-producing than the older group. Doubtless the older group members were more experienced than the younger group and had more experience in coping with the types of stresses evoked in the provision of services. In addition, they were more likely to have acquired more skills than the younger volunteers in solving the problems that they confronted.

Service learning advocates are encouraged to incorporate the pre-trip courses this project included. This component of the project ensured that participants learned about the country's culture, its people, customs, language, and food. More importantly, the meetings served the purpose of integrating a very heterogeneous group into a cohesive cohort. Several other components of the present study would also be repeated including: (1) solicit a heterogeneous group of individuals – all of whom have different skills, abilities and attitudes, (2) use qualitative and quantitative assessments that will allow both an objective and norm referenced and subjective/personal perspective.

Researchers who would like to develop international service learning courses in the future may wish to implement a prescreening in order to help determine what may be motivating the potential participant to complete a service project in a foreign country (e.g., just wanting to travel is probably not best motivation). Future researchers should also understand that there are few if any instruments that will assess the long-term impact of such an endeavor. The instruments may provide some insight into the short term changes and projected attitudinal and behavioral changes, but longitudinal research is the only way one might determine if the immediate changes observed would be permanent.

Conclusion

Today's college students are looking for opportunities to serve their communities, and many students feel they can make a difference in the local community as well as around the world. Immersing a student into this situation through service learning is beneficial to them immediately, but it is also beneficial in their future careers. Baggerly's (2006) research

focuses on multicultural competence through service learning. He concludes that "service learning is a powerful pedagogical process that may not only facilitate students' multicultural competence and civic responsibility but it may also revitalize universities, communities, and the counseling profession."

Finally, incorporating individuals of different developmental stages may be one factor that expands the benefits of service learning activities. Exposing individuals to good models of service at varying ages may have a significant effect on one's own continued efforts to serve others. Future research should continue to investigate the potential positive benefits that this model may offer.

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The Spread of ICT Innovation in Accounting Education

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This paper conveys the findings of a study conducted to evaluate the initiation of an interactive online computer-assisted learning module, called WEBLEARN, in an undergraduate introductory accounting course at an Australian university. The purpose was to aid students in the preparation of cash flow statements, a topic that from the student perspective is usually considered fairly difficult. Following the pilot of the module, student responses were collected via questionnaire in order to evaluate their perceptions regarding the WEBLEARN module. Diffusion of innovations theory was utilized as a framework for assessing student responses and to guide further development of modules in other topics within the accounting unit. The results proved to be significant in relation to all four independent variables: relative advantage, compatibility, ease of use, and result demonstrability. The combination of quantitative and qualitative findings indicates that the majority of students formed favourable perceptions regarding the relative advantage, compatibility, and ease of using the module, which further translated into positive intentions regarding prospective use of the module as a learning resource.

Strategies for facilitating the spread of e-learning innovations are important to educational administrators around the world. The surge of an 'information revolution' has forced developed economies into an era that demands effective utilisation of information and communication technologies (ICT) in education to prepare 'knowledge workers' for the 'knowledge economy' (Drucker, 1998; Maier & Warren, 2000; OECD, 1996). As a result, educational institutions must reassess their methods of practice, adapting and improving teaching and learning for the changing needs of a global, digital, and networked economy.

The literature indicates that the use of ICT in teaching and learning has the potential to enhance student learning outcomes and stimulate their motivation (Pugalee & Robinson, 1998). Furthermore, it has been argued that the application of ICT can provide a more student-centred approach, which would encourage students to take some responsibility for their learning and, through this greater autonomy, would lead to the acquisition of skills that would enhance their lifelong learning (Lage, Platt, & Tregalia, 2000; McCourt Larres & Radcliffe, 2000).

In the context of accounting education, Holt, Boyce, Carnegie, Lourens, and Bigelow (1995) suggest that the use of computer-assisted learning in accounting education will substantially contribute to the development of technical competencies and, furthermore, will allow greater emphasis to be placed upon accounting concepts, issues, and ideas within the classroom. They contend that where employed effectively, computer-assisted learning enables additional student contact time to be directed towards accounting case study deliberations and similar discussions, thereby assisting in fostering a learning environment that would promote the development of

crucial competencies such as communication, interpersonal skills, and critical and analytical thinking skills. Holt et al. (1995) argue that to be effective, computer-assisted learning software should exhibit the following characteristics: skill development orientation, being holistic/integrative, allowance for customisation, being interactive and user/event driven, providing multi-layered feedback, and making use of hypertext content-related systems. Instructional software possessing these characteristics should not be confused with commercial general ledger computer packages that are frequently utilised in introductory accounting units. Holt et al. (1995) claim that packages of the latter style typically emphasise the application of knowledge acquired in the classroom to produce financial outputs rather than concentrating on the development of in-depth understanding of the accounting processes, as can be achieved via the use of instructional computer-assisted software packages.

In response to the limited amount of existing research on the impact of ICT on student learning in accounting education, Rebele et al. (1998) and Apostolou, Watson, Hassell, & Webber (2001) called for further investigation that would address the issues of whether learning is enhanced by the use of ICT and whether students find courses that make use of this technology more interesting or informative. McCourt Larres and Radcliffe (2000) examined the extent to which computer-based instruction is effective in promoting student learning by focusing on students' perceptions regarding their experience. They found that students expressed enthusiasm for the software and welcomed the opportunity to organise their study independently. The majority of the students considered computer-based instruction to be more interesting and stimulating than alternative mediums of instruction

such as lectures and tutorials. However, they considered the software package to contain an insufficient level of technical detail, which is something that can be adjusted in the future to meet the student needs. Adopting an outcome-based perspective, Green, Reinstein, and McWilliams (2000) instead chose to concentrate upon whether or not the use of interactive courseware affected the level of student performance, with respect to students' understanding of procedural material. They found that students' interest in accounting increased in greater proportion for the group of students that used the interactive courseware than for the group that used the traditional lecture/problem-solving methods.

In response to Rebele et al. (1998) and Apostolou et al. (2001), and with the recommendations of Holt et al. (1995) in mind, we developed an online interactive computer-assisted learning module (hereafter referred to as WEBLEARN) for an introductory undergraduate accounting unit, with the view of supporting students in the process of preparing cash flow statements. The module was designed in conjunction with a commercial e-learning vendor and specialist instructional designers. WEBLEARN was an expensive and time-consuming resource to develop and we felt it important to assess students' perceptions regarding its utility, particularly in terms of whether they would respond favourably to future use of the module through its extension to other key topics in the unit.

We identified that one method of assessing whether students would respond favourably to future extensions of WEBLEARN was to utilise Rogers' (1983) Diffusion of Innovations (DOI) theory, as modified by Moore and Benbasat (1991) for an ICT context. The theoretical concepts from the innovations literature fit in well with our study since WEBLEARN, as a specific computer-assisted instructional tool targeting procedural accounting material, could also be classified as an innovation within the scope of accounting education. The main point is that the idea does not need to be novel per se but it is classified as an innovation because it would be perceived as such by prospective users (Rogers, 1995, p. 11), in this case the students. Rogers contended that response to an innovation, or intentions of its future use, depended on several attributes of the innovation: relative advantage, compatibility, complexity, trialability, and observability. By gaining insight into student perceptions of the various attributes of WEBLEARN in relation to Rogers' and Moore and Benbasat's attributes of innovations, we could work on improving the module and student perceptions of the module with respect to future use. The chief aspect of this research is to assist future developers in streamlining the spread of computer-assisted learning innovations in their preliminary adoption stage and to provide insight into

the elements that may explain initial inertia or resistance to acceptance of the innovation by the pool of potential adopters.

This paper reports the results of our assessment. Specifically, we investigate the extent to which perceptions of the attributes or characteristics of an innovation, as identified in DOI theory, explain students' self-reported intentions to use WEBLEARN in the future as a learning supplement and complement to traditional teaching and learning methods. If student perceptions of the DOI attributes or characteristics have significant explanatory power with respect to students' intentions, this will provide direction for future improvements of the WEBLEARN innovation.

Theory Development

Theory of Innovation Literature

Over the last two decades, considerable research has been conducted, in a variety of contexts, into individuals' adoption of new technology (e.g. Bradley, 1997; Davis, 1989, 1993; Moore & Benbasat, 1991; Taylor & Todd, 1995; Warshaw & Davis, 1985; Venkatesh, 1999; Venkatesh & Davis, 1996; Venkatesh & Morris, 2000; Venkatesh et al., 2003). Many of these studies focus on the manner in which potential users' perceptions of the new technologies influence its subsequent adoption (Moore & Benbasat, 1991).

Much of the research in this field draws on Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA). TRA posits that an individual's behaviour is a function of both the individual's attitude toward a specific behaviour and the social influences and norms surrounding that behaviour. Consistent with TRA, Rogers' (1995) DOI theory acknowledges an individual's attitude towards particular characteristics of an innovation as one of the major factors influencing the innovation's rate of adoption. Rogers defines rate of adoption as "the relative speed with which an innovation is adopted by members of a social system" (1995, p. 250). DOI theory posits that the rate of adoption of an innovation is influenced by the following sets of factors: (1) the individual's perception of the attributes of the innovation; (2) the nature of the communication channels diffusing the innovation; (3) the nature of the social system; and (4) the extent of change agents' efforts in diffusing the innovation. In this study we investigate the first set of factors and control for the other three by drawing our sample of respondents from the same social system, an undergraduate accounting unit in a university setting.

Rogers (1995) defines five attributes or characteristics of innovations that influence an individual's attitude towards an innovation during the adoption process. *Relative advantage* is the degree to

which an innovation is perceived as better than the idea or practice it supersedes. *Compatibility* is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. *Complexity* is the degree to which an innovation is perceived as difficult to understand and use. *Trialability* is the degree to which an innovation may be experimented with on a limited basis. *Observability* is the degree to which the results of an innovation are observable to others.

Drawing directly on DOI theory and TRA, Moore and Benbasat (1991) developed an instrument to measure individuals' perceptions of these attributes as they pertain to a particular information and communication technology (ICT) innovation. They renamed Rogers' 'complexity' construct *ease of use*, consistent with Davis (1989) as the dominant measurement paradigm in ICT research. Moreover, during the process of developing the instrument, Moore and Benbasat (1991) found that the observability attribute separated into two factors: result demonstrability and visibility. Result demonstrability "concentrated on the tangibility of the results of using the innovation, including their observability and communicability" (1991, p. 203). Visibility, on the other hand, focused on the physical presence of the innovation in the organisational setting.

Rogers' (1995) commended the Moore and Benbasat instrument as a valuable tool for research in the spread of technology innovations. He further noted that the use of consistent instruments or measures of innovation attributes across various settings will provide a significant contribution to innovation diffusion research. Rogers discussed the importance of utilising this approach in a variety of contexts and pointed out that although much effort has been spent in examining people-related differences in innovativeness, relatively little effort has been devoted to studying the manner in which the attributes of innovations affect their rate of adoption. Therefore, in this study we seek to investigate the relations between attributes of an ICT innovation and students' perceptions about future or extended use of the innovation in a teaching and learning context.

Research into the adoption of innovations is concerned with individuals' behaviour during the innovation diffusion process, as opposed to diffusion research per se, which focuses on the social system as a whole. Consequently, adoption can be viewed as a subset of the spread process, but one that takes place at the individual level rather than at the social group level. Of relevance to the present investigation is that Moore and Benbasat (1991) designed their instrument specifically to capture user perceptions about using the innovation, which differs from Rogers' (1995) DOI theory that focuses on user perceptions of the

innovation itself. According to Moore and Benbasat, "it is not the potential adopters' perceptions of the innovation itself, but rather their perceptions of using the innovation that are key to whether the innovation diffuses" (p. 196). This is because attitudes of individuals towards an object can frequently differ from their attitudes regarding particular behaviour. Hence, when considering potential adoption of an innovation, the central focus is not on the innovation itself but on what the potential adopter thinks about the use of that innovation. Thus, in the present study we are not concerned with students' perceptions regarding the primary characteristics of the ICT innovation but instead focus on students' perceptions of *using* the innovation as a complementary learning tool.

The Web as an Innovation in Accounting Education

The profound impact that ICT can have on student learning has been discussed in various literature domains. Pugalee and Robinson (1998) suggest that, in general, technology applications have been found to improve students' motivation to learn and to expand their self-confidence. With specific reference to the Web, they suggest that the Internet can provide students with a learning environment that is compatible with the way they prefer to learn. Likewise, Leidner and Jarvenpaa (1995) argue that long-term student interaction with the Web will result in: greater student control over the pace and content of learning; greater focus on knowledge creation as the purpose of instruction; a long-term impact on self variables including motivation, interest, and self-efficacy; a move towards conceptual learning as opposed to merely factual/procedural learning; and cognitive impacts leading to greater development of higher-order thinking. Pugalee and Robinson (1998) state that students are increasingly adept and comfortable with technology; it is imperative, therefore, that educators capitalise on knowledge about students' preferences. Such knowledge can stem from measuring student perceptions regarding particular attributes of an ICT innovation, as defined by Rogers (1995) and Moore and Benbasat (1991).

Specifically within the scope of accounting education, McCourt Larres and Radcliffe (2000) monitored student perceptions regarding the effectiveness of utilising ICT as a learning tool, with specific focus on taxation. They argued that the taxation software was to be used as a supplement to traditional lectures and tutorials in order to generate more enthusiasm for the subject and to promote greater student-centred study (p. 245). The findings indicate that the students perceived ICT as an effective learning tool, and their enthusiasm, along with the frequency with which they utilised it, suggests that it is a valuable

teaching resource. Furthermore, McCourt Larres and Radcliffe contended that adoption of ICT would promote students' understanding of practical aspects by facilitating repetition of practical examples in an interactive environment and would thus increase their propensity for autonomous study. This is particularly relevant to the present study, as we are attempting to facilitate independent learning in order to combat various factors, such as ever-increasing classroom sizes and overstretched teaching staff, that place a strain on the depth of understanding and learning that can be achieved in the traditional classroom environment.

The ICT innovation that is the focus of this study is an online interactive computer-assisted learning module called WEBLEARN, which we developed in conjunction with a commercial e-learning company as well as specialist instructional designers. It was decided that the topic of cash flow statement preparation in the first-year accounting course was the one in which students were most likely to benefit from supplementary online interactive instructional materials. The rationale for this choice was that the preparation of cash flow statements involves the use of a number of technical skills, and it is significant in terms of course hours devoted to it as well as its final assessment weighting. Furthermore, the topic of cash flows is generally considered fairly difficult from the student perspective.

Based on prior discussion with reference to Holt et al. (1995) and their recommended characteristics of computer-assisted learning software, WEBLEARN was designed with the following aims in mind: (1) to create improved student understanding of the content through more student-centred learning; (2) to generate higher-order discussions in tutorial workshops rather than focusing on basic technical skills, which would have been mainly supported by the module; and (3) to increase student enthusiasm and motivation towards learning due to the flexibility of the program, the immediacy of the feedback, the increased variety of problems, and the enhanced graphics used to represent these problems on Web pages.

Based on these aims, the software was developed to provide students with over 20 examples of fully worked questions ranging in level of difficulty from relatively easy to very difficult. It is logistically impossible for tutors and lecturers to provide so many examples in a face-to-face context. It would be particularly valuable in large classes, where it is often difficult to provide much individual attention. The software gives the students the opportunity to try the example and receive immediate feedback as they progress, without needing to change their location. Furthermore, it then allows tutorial time to be spent on discussion of the underlying concepts of the topic and any problems students had encountered during the

completion of the exercises, as opposed to working on the exercises from scratch. This structure would be difficult to emulate using hard-copy formats for revision.

WEBLEARN is a good candidate for Rogers' (1995) DOI analysis, and thus the Moore and Benbasat (1991) instrument for measuring the students' perceptions about utilising WEBLEARN, because it conforms to the definition of an ICT innovation. Rogers defines an innovation as "an idea, practice, or object that is perceived as new by an individual" (1995, p. 11). He points out that newness is not an objective measure based on time elapsed since the innovation's first use or discovery. Rather, it is a subjective perception: If the idea, practice, or object is new to the individual, it is an innovation. The very reason for developing the custom-made WEBLEARN module stemmed from the lack of equivalent computer-assisted packages on the market that would be suitable in the accounting teaching and learning context. Indeed, two online packages were available; one involved multiple choice question banks for students to practise, and the other involved note summaries of chapters from the various textbooks. Neither of these was recognised as exhibiting the characteristics that were necessary to support our instructional requirements for the quantitative problems involved in the topic of cash flows. Therefore, since the module could not be emulated at the time, WEBLEARN would be perceived as a new computer-assisted learning and teaching tool by individuals in the accounting education sphere.

Even though numerous scholars have advocated the benefits of ICT in education, there appears to be little research focusing on the effectiveness of ICT adoption in a practical domain or on student perceptions of these computer-assisted learning tools. Hence, the aim of this study is to provide additional insight into this area of research by monitoring student perceptions with respect to the use of ICT in accounting education.

Development of the Hypothesis

Our research proposition emerges from the preceding discussion. Specifically, we propose that one or more of the ICT adoption attributes (relative advantage, compatibility, ease of use, result demonstrability, visibility, and trialability) based on Rogers' (1995) DOI theory and measured by the Moore and Benbasat (1991) instrument will have significant explanatory power with respect to future intended use of WEBLEARN for learning purposes.

We restrict our focus to the attributes relative advantage, compatibility, ease of use, and result demonstrability because pilot studies and prior discussions with students revealed that the attributes visibility and trialability were not relevant for students

in the present context due to the WEBLEARN exercise being a compulsory component of student learning in the unit. As far as visibility is concerned, the students were made aware of the innovation in lectures, and thus it was thought inappropriate to test the visible pervasiveness of the innovation within the classroom context. The task was made compulsory, and thus it would have been evident to all the students. Furthermore, the students were not given the option of trialling the WEBLEARN module at their discretion, again due to its compulsory nature, thus making examination of trialability irrelevant in the present setting. However, it was believed that the relative advantage, compatibility, ease of use, and result demonstrability factors would be important in predicting the future 'voluntary' use of WEBLEARN if extended to other topics in the unit. Therefore, given the above reasoning for the exclusion of certain factors, the hypothesis tested in this study is posited as follows:

Hypothesis 1: The innovation attributes of relative advantage, compatibility, ease of use, and result demonstrability will be associated with students' intentions for future use of WEBLEARN for learning purposes.

Procedures

Data were gathered from an anonymous survey questionnaire administered to students in an undergraduate accounting unit at a major university in Sydney, Australia, at the end of the first semester 2003 (July 2003). The students had used WEBLEARN for learning purposes in that unit during the semester. The questionnaire was administered at the commencement of the final lecture in the unit. One of the authors was available throughout the process. The total number of students in attendance on the day of survey administration was 485. All those present completed the questionnaire, and all questionnaires were useable. Completed surveys were placed in large envelopes provided and sealed by student volunteers. One of the authors then collected the envelopes and subsequently reconciled the number of questionnaires issued with those collected. This procedure provided an acceptable sample size, ensured participant anonymity, and eliminated concerns relating to non-response bias.

Demographic data for age, gender, and self-assessed level of information technology (IT) competence were also gathered in the questionnaire. The data revealed a slight majority of female (53%) to male (47%) students. As to be expected in an undergraduate unit, the vast majority of the students (93%) were in the age bracket of 18-24 years. In terms of self-assessed competence level with respect to general use of IT, 14% of the students rated their IT

competence as 'less than average,' 45% as 'average,' and 41% as 'better than average.'

The short form of the Moore and Benbasat (1991) instrument, with minor modifications, was used to obtain multi-item measures of student perceptions for each of the four attributes of WEBLEARN expected to explain intentions for future use. This instrument has been used extensively in past research studies, demonstrating reliability and validity in a range of contexts (Bradley, 1997). However, following pilot surveys and discussions with students, minor changes were made to the instrument. The *ease of use* and *result demonstrability* scales were reduced from 4 to 3 items and from 4 to 2 items respectively to reduce repetitiveness and improve their relevance to Web use in the teaching and learning context. The redundancy of some of these items became apparent during the pilot testing of this study, and the change was also based upon student feedback. No modifications were made to the short form items measuring *relative advantage* (5 items) and *compatibility* (3 items). All 13 items (shown in Appendix A) were measured on a seven-point Likert scale with polar anchors 'strongly agree' and 'strongly disagree.' The 13 items were then factor analysed (Comry, 1973) using Principal Components Analysis with Varimax Rotation to test for unidimensionality of the variables. All items loaded onto the four expected factors.

These 13 questions were followed by three open-ended questions (shown in Appendix B) seeking more detailed feedback about various elements of WEBLEARN. Consistent with prior research using the Moore and Benbasat (1991) instrument, a single-item scale was used to measure *intention to use WEBLEARN if offered in (extended to) other topics in this accounting unit* (WEBEXTEND), the dependent variable in this study. This questionnaire item was measured on a seven-point Likert scale with polar anchors 'strongly agree' and 'strongly disagree.'

Descriptive statistics for the five variables are provided in Table 1.

Table 1
Descriptive Statistics

Variable	Min	Max*	Mean	SD
Intention to use WEBLEARN	1.00	7.00	4.74	1.53
Relative advantage	1.00	7.00	4.68	1.23
Compatibility	1.00	7.00	4.55	1.20
Ease of use	1.00	7.00	5.06	1.20
Result demonstrability	1.00	7.00	4.52	1.46

N = 485

* Both minima and maxima are equal to the theoretical range

Cronbach's (1951) alpha was used to assess the internal consistency reliability of each of the scales. These are summarised in Table 2, which also contains the alpha values obtained by Moore and Benbasat (1991). Table 2 shows that all alpha coefficient values are acceptable and are similar to those obtained by Moore and Benbasat (1991). These results indicate that although modifications were made, all scales displayed similarly acceptable results for internal consistency reliability to the original form of the instrument.

Scale	M & B 1991		This Study	
	Items	Alpha	Items	Alpha
Relative advantage	5	.90	5	.92
Compatibility	3	.86	3	.83
Ease of use	4	.84	3	.83
Result demonstrability	4	.79	2	.84

* Moore & Benbasat (1991)

Analysis and Results

Quantitative Findings

To test our research proposition, a multiple regression model was developed, regressing the four ICT adoption attributes as independent variables on the dependent variable *intention to use WEBLEARN if offered (extended) for other topics (WEBEXTEND)*. Various tests were conducted to check the regression assumptions of normality, linearity, and homoscedasticity of residuals (Tabachnick & Fidell, 2001). The tests revealed no serious violations of the regression assumptions. The results of the regression analyses are summarised in Table 3. Our interpretation of these results follows thereafter.

The full (four-attribute) model regression equation was statistically significant ($p = .000$) and explained approximately 37% of the variation in WEBEXTEND (Adjusted $R^2 = .367$). The relative advantage, compatibility, ease of use, and results demonstrability attributes were all positively related to WEBEXTEND and statistically significant with p -values of .000, .008, .002, and .027 respectively.

Overall, these results demonstrate that the relative advantage, compatibility, ease of use, and results demonstrability attributes were all important in explaining students' intention to extend their use of WEBLEARN for learning purposes if the module was extended to other topics in their program of study. Since all four variables are measured in the same units (i.e., seven-point response scale), the relative advantage variable had the most influence and the results demonstrability variable the least influence when controlled for other variables in the model. The

variables in the model can explain 36.7% variance relating to students' intention to extend their use of WEBLEARN for learning purposes if the module was extended to other topics in their program of study.

Table 3
Results of regression of ICT adoption variables on intention to use WEBLEARN if offered (extended) for other topics (WEBEXTEND)

Variables	Four- attribute model			
	Beta	SE	t	p-value
Constant	.244	0.287	.85	.394
Relative advantage	.500	0.073	6.85	.000
Compatibility	.184	0.069	2.68	.008
Ease of use	.183	0.059	3.10	.002
Result demonstrability	.088	0.040	2.22	.027

$R^2 = 37.2\%$, Adjusted $R^2 = 36.7\%$, $F_4 = 71.02$, $p = 0.000$

Qualitative Findings

The qualitative responses to the questionnaire were analysed by the four independent variables examined in the quantitative analysis. This allows us to provide cohesive evidence relating to each variable and gain insights into the relative importance of qualitative attributes surveyed in the questionnaire. They are outlined as follows.

Relative Advantage

The qualitative data indicate mixed feelings regarding the feedback component of WEBLEARN for cash flows. Although most students appreciated the feedback, it seems there was great potential for improvement in this aspect of the software. Many student comments relating to the relative advantage factor were about effectiveness in learning (Item 4 in the survey questionnaire). The majority of student responses were highly positive, as shown by comments such as:

Student comment	Item #
The feedback is very detailed and easy to understand.	2
I always check it even when I got it right.	4
The feedback is quite helpful and I did check the feedback even when right.	4
I always checked feedback. Feedback was excellent, never made the same mistake twice.	4
Very useful feedback.	4

However, other students were more critical about the usefulness of the feedback function, as illustrated by the following comments:

Student comment	Item #
Some features were good, some not so good. If right I don't check, some simply state 'you are wrong', not why you are wrong, which can get frustrating.	4
I didn't check the feedback.	4
It's quite good but could be better if you add more explanation.	4
Please give reasons for correct answers as well.	4

The students identified WEBLEARN as having certain features which surpassed those of the required text, as represented by the following excerpts:

Student comment	Item #
Provides better method of learning than the problems in the textbook. Those problems come without feedback, unlike WEBLEARN!	4
There are not enough questions and answers in the book.	4
There are solutions provided in the Web, which tell me where my mistakes are.	4

The feelings of frustration observed with the feedback function in the second category of responses indicate negative perceptions about the relative advantage of the feedback function when using WEBLEARN. To cater for the different learning requirements of our students, it seems at this stage that the feedback function needs to be improved. As suggested earlier, the aim of this module is to allow students to practise many different types of question without the assistance of our already overstretched teaching staff. As such, to improve the relative advantage of the feedback function, we will need to expand it further by providing detailed feedback for all the questions rather than for particular aspects of the questions. This process will assist in addressing the concerns of students in the second set of responses above, particularly in addressing the issue of where their mistakes originated. However, the positive observations by the majority of the students indicate that they perceived WEBLEARN as possessing certain aspects that are better than the traditional mode of independent learning, that being primarily the completion of assigned problems from the set textbook.

Compatibility

The computer-assisted learning format was thought to be compatible with the cash flows topic because it required a highly quantitative, procedural, and systematic style of learning. The topic requires much

practice on the part of students, but it also requires a great deal of detailed and targeted feedback because the thought processes are not necessarily linear. These features of the cash flows topic are not unique to cash flows in our course. Several other topics display similar characteristics and would thus be compatible with the WEBLEARN format. Due to our limited resources, however, the preparation of cash flow statements was targeted in the pilot phase due to its relative difficulty and importance.

Students' comments indicated that DOI relating to the compatibility factor were made up of several attributes surveyed in the questionnaire comprising the compatibility factor. One category of student responses indicated that WEBLEARN was compatible with cash flows and other 'practical' or quantitative topics with similar characteristics, as shown by the following comments:

Student comment	Item #
It may help overall understanding. Due to the high level of practical work in cash flows, very good for this topic. Not as good for other theoretical topics.	6
I think it should be useful if you introduce the program for perpetual and periodic inventory exercises.	7
It is quite useful for practising the steps of cash flows. It helps develop the knowledge for beginners of cash flows.	8
I think the topic of accounts receivable should be on the Web as well.	7
Other topics that could be given on the Web are non-current assets and inventory.	7
More topics, including depreciation and inventories.	7
Other topics such as inventory which are practical rather than theory-based should be introduced.	7
It shows constant progress and tutorials can be used to assist students in understanding topics more.	6

The responses above indicate that WEBLEARN is compatible with the way these students like to learn practical topics. The other topics that the students suggested by name include accounts receivable, depreciation of non-current assets, and perpetual and periodic inventory. All these topics have significant 'practical' components similar to those of cash flows. Another interesting finding that emerged from this analysis is that the WEBLEARN format appears to offer better compatibility with the tutorial component of these topics than the set textbook. The last comment suggested that WEBLEARN exercises would facilitate greater independent study by students

and hence allow tutorial time to be utilized in a more productive manner. This could encourage deep learning of the topics and their underlying concepts. Notwithstanding the positive responses from the majority of students, the following student response also questions the compatibility of the WEBLEARN format for our more advanced students:

Student comment	Item #
Random generator seemed to create numbers in the same ratio. It gets boring! Please vary also between profit and loss.	8

This student seemed to have found patterns in the generation of numbers for additional questions. The process of random number generation occurs after a student has completed every question once. This student obviously required a greater challenge than the one provided by WEBLEARN, which is an issue that will affect several of our advanced students, rendering the current format incompatible with their learning needs.

In summary, the responses in this section suggest that WEBLEARN, when used for practically oriented topics such as cash flows, is compatible with the learning requirements for the majority of the students in our sample. The findings in this section suggest that we should focus on providing additional modules for the other practical topics. However, while advanced students will generally adopt learning innovations, we need to ensure that the module provides challenging and stimulating extensions in order to maintain their interest.

Ease of use

Although one student suggested that manoeuvrability around the program could be improved, the majority found WEBLEARN easy to use. Success of the program with regard to the ease of use characteristic can mainly be attributed to the effective communication between the content experts and the instructional designers and programmers.

Result Demonstrability

Students' comments indicated that students favoured the results demonstrability factor mainly due to the apparent benefit WEBLEARN provided for their learning (Item 13 in the survey questionnaire). The students indicated that WEBLEARN assisted them in problem solving and pointed them in the direction of where they were making their mistakes. Thus they understood the advantages of having this particular learning tool and were capable of articulating these benefits to others, as the following comments illustrate:

Student comment	Item #
Explanations enhanced my understanding of cash flows. Very helpful.	13
It explains where I went wrong.	13
The Web exercises allow me to see mistakes, and then repeat the problem, so I get better at understanding cash flows each time I do the question.	13

Future Use

The analysis and discussion of our findings, notwithstanding areas identified for further improvement, portray positive student perceptions regarding the attributes of relative advantage, compatibility, and ease of using WEBLEARN as a learning resource for cash flows and other practical topics. Student responses regarding their intended future use of the module support the plausibility of the DOI framework as a valid form of evaluating the potential spread of e-learning innovations. Furthermore, the findings indicate that positive student perceptions regarding the attributes of innovations translated into positive intentions regarding future use of WEBLEARN. When asked whether they intended to use the program in the future, all but one of the students indicated that they: *will use WEBLEARN for revision purposes; would use it in other accounting subjects; would have used it in other topics in the introductory accounting course; and, overall were satisfied with using WEBLEARN*. These responses suggest that the spread of WEBLEARN would more than likely occur fairly rapidly and that our early efforts in addressing the factors of relative advantage, compatibility, result demonstrability, and ease of use were successful in this sample of initial users.

Conclusions and Future Research

In evaluating the effectiveness of WEBLEARN as a learning tool for the topic of cash flows, we utilized the theoretical framework developed by Rogers (1995). The DOI theory was applied to determine whether the students would be willing to adopt this ICT innovation in the future to supplement traditional teaching methods. The evaluation focused on student perceptions relating to the attributes of WEBLEARN as an innovation in their learning environment. As hypothesised, our empirical results show that DOI theory, as operationalized in this study, was successful in predicting the students' intention to use WEBLEARN for learning purposes.

We found that students who used WEBLEARN formed favourable perceptions regarding its relative advantage over other learning resources such as the prescribed text exercises, in particular as an effective

platform to learn. Students attributed the compatibility of the resource in the context of the cash flows topic to a multitude of reasons such as: being how they like to learn, and being compatible with their learning style and with all aspects of their learning. Students also commented favourably on the ease of using the program independently. There was positive result demonstrability, as students clearly identified the benefits that they gained from using the WEBLEARN tool. Consistent with the DOI theoretical framework, these adopter students also provided encouraging responses regarding their intended future use of WEBLEARN and their overall level of satisfaction with the program. The findings of this study are consistent with those of Pugalee and Robinson (1998) and Leidner and Jarvenpaa (1995), who commented that interaction with the Web, and in this study with WEBLEARN, results in greater student control over their pace and content of learning, and is the way students like to learn.

The qualitative results have provided us with greater insight into each of these attributes pertinent to the use of WEBLEARN from the students' perspectives. The issues identified when evaluating the responses from the student sample include: the need to expand the level of detail and scope of the feedback function; the opportunity to expand the number of topics offered in WEBLEARN format, while limiting the use of WEBLEARN to topics with a high focus on practical skills development; the need to integrate more challenging components for advanced students; and the need to form a focus group committee which will include student representatives to formally evaluate the format and layout of the various components in WEBLEARN.

The findings of this study indicate that unit conveners seeking to introduce e-learning modules can apply DOI theory and specifically consider students' perceptions regarding certain attributes associated with these modules. Unit conveners could also utilise the Moore and Benbasat (1991) instrument to assess and monitor students' perceptions of already introduced exercises, with a view to fine-tuning the learning module to ensure that it is compatible with student needs. Understanding what students perceive as important characteristics of a new learning tool is important in order to ensure that it will actually be adopted by them in a manner that supplements or perhaps even replaces traditional modes of teaching, such as practical exercises in set textbooks. Also, it is important to ensure that its introduction leads to more independent learning, which would facilitate better discussion during class time rather than focusing on reiterating the basic technical aspects of the topic.

This study investigated the spread of a Web-based learning tool from the perspective of students. Future

research employing the same methodology could also investigate other applications of technology in educational settings, such as the perceptions of teachers regarding the use of a particular e-learning tool. As the model in this study explains the 36.7% of the variance to extend the use of WEBLEARN to other topics, the same model can be examined with additional variables that can increase the model predictability. There could be further investigation into the flow-on effects in tutorials of utilizing an ICT learning tool such as WEBLEARN. For instance, does the use of such a tool encourage students then to focus on achieving more in-depth understanding of the underlying concepts related to the topic during class time, instead of spending most of the time focusing on the basic technical aspects? Finally, studies incorporating a longitudinal design may provide deeper insight into the complex underlying interactions involved during the e-learning spread process.

In summary, the theoretical framework utilised in this study provides a rich and potentially fruitful area for further research and has practical implications for teachers, educational administrators, and vendors concerned with the spread of e-learning in traditional educational institutions.

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Appendix A
Moore and Benbasat (1991) Instrument

Relative Advantage

1. Using the Online Electronic Program enabled me to accomplish tasks more efficiently.
2. Using the Online Electronic Program improved the quality of my learning.
3. Using the Online Electronic Program made it easier to learn.
4. Using the Online Electronic Program enhanced the effectiveness of my learning.
5. Using the Online Electronic Program gave me greater control over my learning.

Compatibility

6. Using the Online Electronic Program was compatible with all aspects of my learning.
7. I think that using the Online Electronic Program fits well with the way I like to learn.
8. Using the Online Electronic Program fits well with my learning style.

Ease of Use

9. My interaction with the Online Electronic Program was clear and understandable.
10. I believe that it is easy to get the program to do what I wanted it to do.
11. Overall, I believe that the Online Electronic Program was easy to use.

Result Demonstrability

12. I would have no difficulty telling others about the results of using the electronic program.
13. The results of using the Online Electronic Program are apparent to me.

Appendix B – Additional questions

Q1. Do you think that an online assessment task is a good means of adding to your assessment criteria?
Why or why not?

Q2. When you used the online exercises, how useful was the feedback when you got the wrong answer?
Did you want feedback when you got the question right?

Q3. Any other comments?

Planning, Teaching, and Assessing Elementary Education Interdisciplinary Curriculum

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This paper describes an innovative teaching collaboration between two university professors to prepare undergraduate preservice teachers for planning, designing, and assessing interdisciplinary curriculum. Specifically, we were interested in whether deliberate efforts to integrate social studies and assessment methods courses would facilitate our students' learning compared to when such courses are taught in isolation (traditional instruction). Fifty-nine undergraduate elementary education preservice teachers served as participants. Approximately half received integrated instruction, the other half traditional instruction. In both instructional formats, preservice teachers were required to design and implement interdisciplinary units (i.e., lessons, assessments) during their clinical experience. Examination of interdisciplinary units revealed that preservice teachers receiving integrated instruction outperformed their nonintegrated coursework peers in developing, assessing, and reflecting on interdisciplinary content.

Research throughout the 20th century has suggested that students from high schools that employ interdisciplinary or integrated approaches do as well or better in academic achievement than students exposed to non-interdisciplinary curriculum (Aikin, 1942; Drake & Burns, 2004; Hartzler, 2000). At the university level, there is evidence also that interdisciplinary instruction improves student outcomes (Klein & Newell, 1997). Yet despite such findings, educators still question whether interdisciplinary curriculum actually leads to *more* learning than traditional, discipline-based curriculum (Wineburg & Grossman, 2000). Additionally, it is uncertain to what extent integrating university coursework and deliberate modeling of interdisciplinary instruction has on preservice teachers' ability to acquire the knowledge and skills needed to effectively design, implement, and evaluate interdisciplinary curriculum.

As university professors assigned to teach separate methods courses in assessment and social studies (i.e., social studies as an integrated approach to studying history, geography, government, culture, and economics), we were interested in examining the pedagogical benefits, if any, of integrating such coursework. Specifically, three questions were investigated. First, we wondered whether preservice teacher skills in designing and assessing interdisciplinary content would be better if their social studies and assessment methods coursework were integrated rather than taught in isolation. Second, we were curious about what difference, if any, preservice teacher participation in integrated versus non-integrated methods coursework would have on kindergarten through grade eight students' self estimates of their perceived understanding about interdisciplinary topics. Third, we wondered if there would be a difference in preservice teacher skill at using assessment results to think reflectively about the quality of curriculum and

assessment, instructional effectiveness, and student learning.

Interdisciplinary Curriculum

The popularity of interdisciplinary and integrated curriculum has ebbed and flowed for more than 100 years. In the late 1800's, Herbart and his followers promoted the integration of studies around cultural epochs. A problem-based "core curriculum," as defined by Harold Rugg (1936, 1939) and L. Thomas Hopkins (1941, 1955), was popularized in the 1930's and 1940's. In the mid-twentieth century, integrated curriculum often examined social problems from a variety of perspectives.

In the last 20 years, numerous authors have debated the definition of interdisciplinary curriculum (Beane, 1997; Fogarty, 1991; Hayes-Jacobs, 1989). Lyons (1992) vividly describes the confusion over the meaning of "interdisciplinary" at the university level. She calls for rejecting the territory and border-crossing metaphors and instead proposes viewing "interdisciplinarity" as a stream that flows through a wider terrain of disciplines with its tributaries and currents forming a greater whole. While we liked Lyon's metaphors, we looked for more concrete frameworks to introduce to our preservice teachers.

Aimed primarily at the kindergarten through secondary school arena, Fogarty (1991) described 10 "views" of curriculum integration ranging from connecting subtleties of a particular discipline to webbing thematic units or networking experts in different fields. Fogarty's visual representations of integrated curriculum resonated with preservice teachers searching for ways to understand integration. Fogarty's metaphor of "binoculars" as focusing the study of two disciplines' overlapping content and skills applies most directly in this study. At the university

level, social studies and assessment were merged. Assessment decisions and subsequent methods were contextualized within an interdisciplinary framework.

In the kindergarten through eighth grade context, preservice teachers used the binocular metaphor to integrate and overlap concepts and skills from social studies and other content areas such as science or language arts. Hayes-Jacobs (1989) advocated a "continuum of options" for integrated curriculum varying from sequencing the presentation of a discipline to offering independent, student-directed complete programs. Perhaps best known at the middle school level, James Beane (1997) defined integrated curriculum as organizing learning "around significant problems and issues, collaboratively identified by educators and young people, without regard for subject-area lines" (p. 19). Taken together, these models of integrated curriculum would seem helpful to inform teachers' practice in the classroom.

Although the literature is replete with descriptions of middle school units that integrate technology and social studies, science and language arts, or as many as five core subject areas (McDonald & Czerniak, 1994; Popovich, 2000; Schlenker & Schlenker, 2001), to our knowledge no study directly compares the effectiveness of integrated versus traditional instruction for kindergarten through grade eight. Special activities (e.g., field trips, reading novels) have been used to bring together a variety of disciplines as a way for children to learn overlapping core concepts, but again, research data is slim about differences in student perceptions (Erickson, 2001). A consensus seems to be forming that knowledge is becoming increasingly interdisciplinary, calling for more interdisciplinary learning (Kalantzis, Cope, & the Learning by Design Project Group, 2005; Klein & Newell, 1997). An interdisciplinary tack suggests a non-traditional approach to learning that often includes collaborative teaching and assessment and curriculum designs that are more topic, issue, place, or problem-based rather than discrete bodies of knowledge or skill-based. In our own teaching we emphasized concepts that could be approached in an interdisciplinary manner (such as change) and differing approaches to studying issues (such as examining pollution from a scientific lens, social science lens, or mathematical perspective).

Integrated and interdisciplinary curriculum have been promoted at all levels of education but rarely studied systematically at the university level in a way that is connected to kindergarten through college-level learning (Klein & Newell, 1997). Although the advantages of multidisciplinary and interdisciplinary instruction at the university level have been written about theoretically and descriptively (Klein, 1996; Klein & Doty, 1994; Kline, 1995), we wanted to preliminarily examine the pedagogical impact directly

by comparing the performance of our university students (i.e., preservice teachers) in traditional versus integrated coursework when designing, implementing, and assessing interdisciplinary curriculum in their kindergarten through grade eight field placements.

Method

Instructional Context

To gauge the usefulness of integrating social studies and assessment methods coursework, preservice teachers experienced either integrated (i.e., methods professors working collaboratively) or non-integrated course instruction (i.e., methods professors working in isolation). In the integrated format, together we planned and sequenced course content, activities, and assignments in an attempt to make the interconnectedness between social studies and assessment methods more transparent to our students. Overlapping content, and assignments in particular (what Hayes-Jacobs (1989) might define as interdisciplinary and Forgarty (1991) might call a shared instructional model), allowed for discussions to be revisited and built upon in both courses.

Preservice teachers attended their university methods courses once weekly to discuss and practice how to teach and assess social studies to 5 – 14 year olds. They examined general principles of assessment, specific applications of assessment in social studies, and unique ways of evaluating interdisciplinary learning. Models of interdisciplinary curriculum that focused on interdisciplinary issues such as the impact of the Three Gorges Dam in China and the influence of the Nile on Egyptian life and culture were examined. Preservice teachers developed lesson plans that exhibited a shared focus between two content areas (e.g. social studies and science), drawing from Forgarty's (1991) binocular metaphor of interdisciplinary curriculum.

At the university where we teach, the preservice teachers' median age is 21 years, and most are middle class white women. Toward the end of the 16-week instructional term, teacher education classes at the university go on hiatus in order that these preservice teachers can spend all day for three full weeks in kindergarten through eighth grade classrooms. During this time, preservice teachers are expected to teach and assess the interdisciplinary lessons they developed in their social studies and assessment methods courses.

Participants

Fifty-nine undergraduate preservice teachers majoring in elementary education from a large university in the Mid-Western region of the United

States served as participants. Thirty three participants were enrolled in (1) a social studies and (2) an assessment methods course in which aspects were deliberately integrated across the two courses. The remaining 26 participants also were enrolled in separate social studies and assessment courses; however, each course was taught traditionally (i.e., in isolation without integration). Preservice teachers were assigned to the social studies and assessment course sections by their professional advisors (who were unaware of the study). Participants receiving integrated instruction were exposed to interdisciplinary (shared) instruction, common assignments, integrated activities, and accountability across their social studies and assessment courses. Participants receiving non-integrated instruction completed coursework that focused on a single content area, with the social studies and assessment courses operating independently. Both groups of preservice teachers were required to create and implement grade appropriate interdisciplinary lessons during a three week clinical placement, as well as assess their students' perceived learning of such lessons.

Both groups of preservice teachers were programatically similar (i.e., completing the last of their coursework before student teaching, enrolled in the same methods courses, required to develop, teach, and assess interdisciplinary lessons during a three week clinical placement) and assigned to cohort blocks ranging from 20 – 30 persons. All students agreed to participate in this sample of convenience.

Approximately 180 elementary and middle school students served as participants in the preservice teachers' interdisciplinary instruction and assessment. Males and females were approximately equally represented among the school children.

Interdisciplinary Teaching and Assessment

Recognizing the lack of consensus in the field regarding what constitutes interdisciplinary or integrated curriculum, we operationally defined interdisciplinary curriculum as the shared planning and teaching of two disciplines to illuminate overlapping skills and concepts. In this case, we integrated or "shared" instruction by joining together to collaboratively teach undergraduate elementary education preservice teachers how to design and assess interdisciplinary lessons. We used what Fogarty (1991) called a shared curriculum because we guided the development of their interdisciplinary units using a variety of strands in the two disciplines of social studies and assessment. Although preservice teachers from our institution have long been required to create interdisciplinary lessons during their last semester of

coursework, explicitly integrating this process across methods courses is rarely undertaken.

To ensure inter-rater reliability and valid inferences about preservice teachers' skill at designing interdisciplinary lessons (i.e., to assist in drawing meaningful inferences about the effectiveness of integrated versus non-integrated instruction), together we developed a detailed scoring rubric (see Appendix A for a general overview of point apportionment across criterion). Percentage points earned on the units were used as a measure of preservice teacher skill in designing and assessing interdisciplinary lessons and were compared across the two groups. As part of modeling interdisciplinary instruction and assessment, together we evaluated and scored the interdisciplinary units, discussing and sharing our areas of expertise in the written feedback provided back to preservice teachers.

To identify their pupils' perceived estimates of learning following interdisciplinary instruction, each preservice teacher interviewed three elementary/middle school students following a structured format. Elementary and middle school students were identified by their classroom teachers and had parental permission on file. To provide a uniform way for thinking about students' *general* educational performance across the three interviews, classroom teachers were asked to identify students they consider to be "average," "above average," and "below average" in achievement.

Following implementation of their interdisciplinary lessons, preservice teachers used an interview protocol to query three elementary students (i.e., one from each of the three groups identified by the classroom teacher and with parental permission on file) about their perceived knowledge of the interdisciplinary topic taught. Preservice teachers met individually with each student in a "distraction free" area of the school.

Because articulating "what they think they know" can be an abstract activity for young children, during the assessment methods course prior to their three week clinical placement, preservice teachers learned about and practiced ways to capture elementary students' metacognition. The method used by our preservice teachers to identify metacognition in young students involved creating an assessment protocol in which a wide strip of white poster board was cut to 28 inches in length. On the poster strip, preservice teachers drew a single, straight, horizontal line 20 inches long. At the beginning and end of this line, a one inch verticle line was drawn to represent the beginning and end of the line. At the left base of the horizontal line, preservice teachers glued a small printed picture illustrating the topic of the interdisciplinary lesson taught. At the right base of the horizontal line, they placed the very same picture, greatly enlarged in size.

For example, a preservice teacher whose interdisciplinary unit was on “navigation” placed a smaller and a larger picture of a compass at the left and right end of the 20 inch line, respectively, to represent a topic within the unit. The rationale for having a smaller and much larger picture at each end of the 20 inch line was to visually present on a continuum a “less” to “more” representation about students’ perceived learning. The rationale for having the left end of the line represent “less” and the right end to represent “more” was that organizing in this way is consistent with the structure of a number line (thereby increasing the likelihood that the task would be conceptually more understandable). To identify student perceptions about learning following instruction, preservice teachers read the following prompt to each of their three students selected for interview:

[Student and preservice teacher sitting side by side at a table. Poster strip placed horizontally on table facing the student and preservice teacher. Preservice teacher pointing to the left side of the line, slowly moving index finger across the right end of the line and back says the following] “Imagine that this line symbolizes how much you know about (insert topic taught).” [Preservice teacher pointing to the right side of the line with the larger picture says] “This end of the line means that you know a lot about (insert topic taught), and [Preservice teacher pointing to the left side of the line with the smaller picture says] this end of the line means that you know only a little bit about (insert topic taught). Point to the place on this line [Preservice teacher sliding finger from left to right/right to left across the 20 inch line] that shows how much you know about (insert topic taught).”

As the script was read to the children, preservice teachers pointed directly to the horizontal line, noting both ends, so that students would better understand what they were being asked to think about. Students indicated their perceived knowledge about the interdisciplinary topic by pointing to the place on the line that represented their understanding. Once identified, preservice teachers would then draw a vertical line at the position pointed out by the student. After the metacognitive assessment/interview was complete, preservice teachers determined the “amount of student understanding about the interdisciplinary topic” by measuring the number of inches between the left end of the line (‘0’) to the place on the line pointed to by the student. To ensure that all preservice teachers were measuring in a consistent way, measurements, other than whole numbers, were rounded up to the nearest quarter inch. For example, if a student pointed to a position that measured 18 and 3/16 inches, a score

of 18.25 would be recorded. If a student pointed to a position that measured 17 and 14/16 inches, a score of 18 would be recorded. Consequently, students’ perceived “knowledge about the topic” was set to a quarter-inch interval scale ranging between 0 and 20.

After the children pointed on the poster strip to indicate their own perceptions of their knowledge about the topic studied, the children were then asked to verbally explain what they learned about the topic that the preservice had teacher taught them. The preservice teachers also asked the children to verbally share what they learned about social studies and what they learned about another content area that was integrated during interdisciplinary instruction. The preservice teacher wrote down verbatim how the children described their learning about the topic and their learning in the two content areas (e.g., social studies and science).

Although preservice teachers’ interdisciplinary lessons included both formative and summative assessments to evaluate student progress and learning, drawing inferences about elementary and middle school students’ direct learning across units based on assessment results and students’ self-reflection was not possible for two reasons: (1) created units were diverse in content area, topic, and grade level, and (2) time did not allow for baseline data regarding student metacognition to be collected during the 3-week clinical. Despite these limitations, however, we felt that having preservice teachers collect estimates of their students’ perceived self understanding was a useful pedagogical exercise to (1) underscore the importance of encouraging young students to think about their own thinking [metacognition], (2) introduce a method for quantitatively capturing metacognition, particularly for young students, and (3) gauge their own instructional effectiveness through student reflective feedback.

Finally, preservice teachers were required to submit an end-of-semester written reflection regarding their own teaching, learning, and understanding about interdisciplinary curriculum and assessment. These reflections served as an additional opportunity for the preservice teachers to synthesize their learning from their methods courses and clinical experience.

Analysis of Learning

An independent-samples *t* test was performed to compare the percentage points earned on interdisciplinary units by preservice teachers whose social studies and assessment methods courses were integrated, with those earned by their peers, whose courses were not integrated. Similarly, elementary and middle school students’ estimates about their own perceived understanding of interdisciplinary content were compared through an independent-samples *t* test (i.e., estimates by students whose preservice teacher

received integrated instruction compared to estimates by students whose preservice teachers received traditional instruction). Additionally, an independent-samples *t* test was used to compare percentage points earned on reflective essays between integrated and non-integrated instruction groups (i.e., to investigate difference in preservice teachers' ability to use assessment to make inferences about curriculum, instruction, and student learning). Finally, we reviewed the qualitative data (interview results) documenting the children's learning.

Results

The percentage scores earned on interdisciplinary units designed by preservice teachers who received integrated instruction were significantly higher ($p < .01$), indicating that their units were better in overall design. Although performance in both groups was less than would be desired, preservice teachers from the integrated course experience earned an average of 76% on their interdisciplinary lesson plans, whereas participants from a non-integrated experience averaged 65%.

Comparing elementary and middle school students' estimates of their perceived understanding about interdisciplinary topics following instruction of preservice teachers from integrated versus non-integrated methods courses revealed no significant general group difference ($p > .05$). In addition, no significant difference in estimates of perceived understanding was found ($p > .05$) when comparing demographic differences (i.e., gender, achievement level, grade) across elementary and middle school subgroups. Moreover, examination of pupils' oral interview responses about what they learned from interdisciplinary lessons showed no notable qualitative differences.

Examining the percentage points earned on the reflective essay between preservice teacher groups indicated that preservice teachers exposed to integrated methods courses were better able to use assessment results to think about curriculum, instruction, and student learning than their peers whose assessment and social studies methods courses were taught in isolation ($p < .05$).

Discussion

From an instructional point of view, it was encouraging to find that preservice teachers whose social studies and assessment methods courses were integrated created significantly better interdisciplinary units and assessments than preservice teachers without such instruction. The relatively low average scores on the interdisciplinary units suggest that developing an interdisciplinary unit with a strong focus on assessment can be a very challenging task. Because preservice

teachers intentionally exposed to interdisciplinary curriculum in their integrated methods courses likely received twice as much direct feedback about their interdisciplinary understanding than peers without such experience, we were not surprised that they designed better interdisciplinary units. Yet because we knew which students were from integrated versus non-integrated methods courses, it is possible that despite using well-designed scoring rubrics, evaluation bias may have occurred. Replication using a blind review process is recommended.

Although no significant difference was found in the children's perceived understanding of interdisciplinary topics, more research is needed to evaluate the effectiveness of interdisciplinary curriculum, particularly with respect to grade and achievement level. If teachers and their students find interdisciplinary curriculum more enjoyable than traditional instruction (a claim not tested in this study), it may be worth promoting interdisciplinary curriculum. On the other hand, considering that integrating coursework and modeling interdisciplinary instruction requires more planning and effort than discipline-specific instruction (Henning & Campbell, 2005), the lack of difference in students' perceived knowledge was disappointing.

Perhaps the finding that interdisciplinary instruction did not make a difference in the children's knowledge estimates could be explained by interdisciplinary instruction in general – exposure to multiple perspectives on a given topic. Children taught well-designed interdisciplinary curriculum may grapple with more and varying questions than students learning a “traditional” curriculum. In this way, children exposed to challenging interdisciplinary lessons may experience feelings of cognitive dissonance, recognizing that they have more to learn about a topic than children learning topics from the perspective of a single content area.

Another explanation for the lack of difference in children's perceived understanding may relate to having limited experience estimating their metacognition. Because younger children are better able to judge their skill in areas that they have more experience or are familiar with (e.g., estimating how far they can jump or throw a ball), the finding of “no difference” was not completely surprising. Moreover, perceived understanding, as an indirect indicator of learning, may not reflect *actual* understanding, unlike a more direct assessment of content knowledge through a criterion-based measure. Research examining the direct effects of instruction on student learning through pre- and post-tests comparison of achievement is recommended.

Because the purpose of assessment is to improve educational decision making, higher quality reflective essays (i.e., ability to draw inferences from data) by

preservice teachers from integrated methods courses is noteworthy. This finding suggests that the integrated experience may be useful in promoting reflection about the teaching/learning process. Moreover, the opportunity to observe their professors' collaboration may have encouraged these preservice teachers to think more deeply about curriculum, instruction, student learning, and assessment. As university professors, we found that our interdisciplinary collaboration seemed to enhance thinking about our own disciplines, the interconnection between our disciplines, as well as regard for the work of related content areas. Although not an intended goal of this study, our anecdotal impression aligns with research suggesting that interdisciplinary study promotes intellectual maturation (Klein, 1995; Klein & Newell, 1997).

Implications

While this study presents mixed evidence regarding the advantages of integrating social studies and assessment methods coursework within teacher education programs, we believe that more deliberate investigations of interdisciplinary curriculum and instruction is warranted. Ideally, a control group of elementary and middle school students receiving instruction from preservice teachers receiving traditional instruction would be compared to elementary and middle school students receiving instruction from preservice teachers who had benefited from more intensive interdisciplinary instruction.

For faculty members in higher education who are invested in interdisciplinary curriculum and instruction, this study suggests that explicit modeling, collaborative instruction, and integration of social studies and assessment methods course content has promise for making a positive difference in preservice teachers' ability to conceptualize, develop, and reflect upon interdisciplinary curriculum. In light of the greater reflection scores of preservice teachers who experienced shared interdisciplinary instruction, we encourage education faculty to seek opportunities to create and teach courses that model and promote interdisciplinary instruction. Along with this interdisciplinary collaboration, we advocate for administrators of higher education to support these curricular changes because although interdisciplinary instruction was rewarding, administrative support is needed due to the additional time and scheduling requirements. Adopting Lyon's (1992) metaphor of a "stream" of interdisciplinarity, we found that the currents in social studies and assessment flowed together well, providing a greater level of clarity for us as well as our students. Based on the study findings, interdisciplinary teaching appeared to improve our preservice teachers' ability to develop and reflect on

curriculum, instruction, and assessment. Additionally, interdisciplinary teaching increased our collegiality (Henning & Campbell, 2005) as we negotiated the waters of the tributaries of our two curricular areas.

Further research is needed to investigate the potential benefits of interdisciplinary curriculum and instruction on preservice teachers' development within elementary education programs. A criticism of teacher education programs is that they are fractured and incoherent (Fullan, Galluzzo, Morris, & Watson, 1998; Goodlad, 1990; Zeichner & Conklin, 2005). Perhaps interdisciplinary curriculum and pedagogy in teacher education programs could develop more unity among faculty and university students seeking coherency. Our research suggests that systematic comparisons of more "traditional" programs with interdisciplinary ones may show increased outcomes for interdisciplinary approaches.

Finally, this study attempted to measure elementary students' perceived understanding of interdisciplinary topics following instruction. While no significant difference was found in perceived knowledge about interdisciplinary topics between groups, a direct study of children's actual interdisciplinary learning is recommended. As Beane (1997) has argued, most people approach life in an interdisciplinary manner, drawing on numerous areas of knowledge in a seamless way to solve problems. Standardized tests tend to compartmentalize knowledge in a way that may not adequately represent what children know or the way in which they put things together. Better measures of how children learn and process interdisciplinary problems are recommended for future research.

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Appendix A

Rubric Overview for the Interdisciplinary Unit Project

Unit Criteria	General Description	Points Possible
<i>Unit Rationale</i>	Content and value of unit is explained. Justification for real-world application identified. Connection to National Council for the Social Studies & Illinois Learning Standards made.	10 points
<i>Unit Objectives</i>	Goals of unit are identified and aligned with Illinois Learning Standards. Higher levels of Bloom's taxonomy predominate. Maximum of five unit objectives.	10 points
<i>Unit Web</i>	Overview of unit activities and interdisciplinary concepts (consider using the freeware from inspiration.com).	10 points
<i>Lesson Plans</i>	Five – eight lesson plans included. Clearly identifies and implements at least five different methods of teaching (e.g., inquiry, guided discovery, role play). Plans and details all elements of lessons including objectives, materials, introduction/motivation, sequence of lessons, closure related to objectives and appropriate assessments related to lesson/unit objectives. Please be sure your lesson plans are easy to read and follow a common format.	60 points (20 points each, grades will be averaged and converted to 60 points)
<i>Culminating Assessment</i>	Developmentally appropriate summative unit assessment. Assessment has evidence of alignment with both unit objectives and Illinois Learning Standards. Rubrics and/or answer keys for scoring are included, and are clear, relevant, and aligned to objectives – content and level.	20 points
<i>Resources</i>	Includes at least 15 multi-media (e.g., books, Internet, A-V kits, field trips, community) resources, complete with annotated bibliography. Resources balanced between children's and adult-level sources. APA, 5 th edition used.	20 points
<i>Originality</i>	Project is original, interdisciplinary, organized, and neat. Personality of authors reflected.	10 points

Developing Skills for Effective Academic Presentations in EAP

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This study focused on training students in skills essential to making oral presentations based on original and independent research work as part of their English for Academic Purposes (EAP) course. As a result of the training, students showed an increase in the successful use of research-related skills and a great improvement in their ability to present their findings in English. Students appeared to have a better grasp of their subject matter, to be more at ease, less reliant on their notes, and better able to address their audiences directly. Students' oral presentations not only illustrated a greater ability of students to use appropriate formats and structures in English but also a willingness and ability to adopt new methods of learning. This would seem to suggest that the preference for 'rote learning' so commonly attributed to Hong Kong students is indeed the result of expectations and experiences in previous learning situations rather than the intrinsic and inherent characteristics of the learners themselves.

There has been much discussion about whether English teachers should and could productively teach academic skills that are transferable from EAP courses to other subjects (Currie, 1999; Atkinson, 1997). This paper addresses an area that is gaining importance for many English language learners and their educators at the university level: how to develop academic skills that are necessary to perform academic tasks such as research-based oral presentations. The issue of socializing ESL/EFL students into academic discourses has been examined from a variety of theoretical and methodological perspectives. However, there has been a relative shortage of research into the acquisition of oral academic discourses and skills compared to the considerable body of research into the acquisition of written discourses and related literacy skills.

The oral presentation has been an integral part of most EAP courses, but only some of its aspects, such as assessment --teacher, peer and self assessment -- have been relatively well covered in the literature (Penny et al., 2005; Reitmeier & Vrhota, 2009; Fahey & Fingon, 1997; Langan et al., 2008). While the teaching of the language for oral presentation has been discussed by Boyle (1996), Zareva (2009), Murphy (1991;1992) and others, most of the literature dealing with the methodology concentrates on the delivery style of the oral presentations (Chirnside, 1986; Richards, 1989; Koh, 1988). It is increasingly important for teachers to learn more about what makes a presentation effective in school and how explicit instruction can help prepare students for the kinds of presentation activities they will need in academic and professional settings.

This study was borne out of experiences gained over several years in teaching EAP to first-year university students in Hong Kong, where tertiary education is predominantly taught in English, and a desire to develop more effective ways of helping students acquire the skills for critical thinking and successfully delivering research based, oral

presentations in English. Although we did not attempt to teach within the disciplines of our students, the researcher's belief was that we could create a program that taught our students general enquiry strategies, rhetorical principals, and other transferable academic skills.

Previous studies show that at the outset of tertiary study, Hong Kong students are unaccustomed to carrying out individualistic, research-type work and that they are unfamiliar with the use of library resources which are generally regarded as essential to such work (Bankowski, 1999). It would appear instead that, throughout their secondary schooling, students have adopted learning methods appropriate to the examination-based system that prevails in Hong Kong, "rote" or "surface" methods which are not necessarily suited to the style of tertiary study (Hamp-Lyons, 1998).

Hong Kong students in EAP classes display little confidence in the use of English in the academic context. Further, they appear generally unprepared for the rigors of independent study and are often unable to present their work or ideas in original or creative ways. The self-direction and active participation demanded by a challenge such as the research and delivery of an academic presentation causes some students to react with anxiety, confusion, and lack of understanding.

These patterns of attitudes and behaviour have been noted by many researchers and have become the subject of considerable research in Hong Kong (Chu, 1998; Flowerdew, 1998; Pierson, 1996). It would appear that these behaviours are strongly grounded in the culture of Hong Kong and are particularly problematic when students are required to make radical changes in their learning styles as they move from secondary to Western-modelled tertiary level education. Previous research confirms the observations outlined and points to a number of complex contributory factors. These serve to limit students' progress at the tertiary

level and appear to hamper the application of Western-based styles of teaching and learning – approaches that tend to emphasize active student involvement and independent inquiry (Atkinson, 1997). These factors include primary and secondary educational systems based on repetition, memory, examinations, acceptance of authority and fear of failure (Hamp-Lyons, 1998; Teather, 1998; etc.). Many of these aspects of education stem from long-standing societal values related to Buddhism and Confucianism (Murphy, 1987; Salili, 1996). Confucian teaching is influential in maintaining “the important role of textbooks, rote learning, examination-orientation, and students’ submissive role in the classroom...” (Tong, 1997:75). The value of silence and passivity in the classroom may be seen as a reflection of Buddhist tradition and the belief that knowledge, truth, and wisdom come to “those who allow the spirit to enter” (Andersen, 1985:162). Kaplan (1996) noted that compared to the Platonic-Aristotelian system of thought sequencing that English has, with a linear communication of ideas marked by a sequence of topic sentences with further subdivision, Oriental writing is, in contrast, marked by indirection, with thoughts moving in circles or “gyres” around a subject. In addition, Benesch (2001) points out that Hong Kong students need to be given the skills that will demystify learning and enable them to realize that they can speak up in class when they do not understand an issue and expect their questions to be taken seriously, thus allowing them to fully participate in the academic community.

As the Hong Kong vernacular is Cantonese, students generally have limited exposure to the English language and limited motivation to challenge themselves and move beyond the level of English required for performing in the curricular subjects (Llewellyn et al., 1982). Added to this, the common practice of mixing languages in the teaching of English and other subjects has hindered students’ progress to the point that most Hong Kong students are not sufficiently proficient in English to deliver an oral presentation with confidence (Ozog, 1990).

It was envisaged that the special training programme involved in this project would result in a development of those skills required to successfully deliver academic presentations, as well as pave the way for students themselves to take charge of the learning process and become autonomous learners.

Methodology

The overall aim of this project was to design a specific training programme in academic oral presentation skills, deliver it to 217 year-one Arts and Social Sciences students as part of their EAP classes, and evaluate its effects through observations of the

selected students. Fourteen students majoring in Religious Studies, History, Geography and Sociology were randomly selected from three classes to be observed in the experiment. The details of the training are presented further in this paper. It was anticipated that the learning that occurred as a result of this training programme would be evident in the oral work produced by students.

Students were required to give two oral presentations of 15 minutes duration: one before the training, early in the first semester, and one after the training at the end of the academic year in the second semester. Each of the two presentations was to be based on two different topics chosen from a list of 35 very broad topics and narrowed by the students themselves. For example, a broad topic listed as *Tibet* resulted in a presentation entitled *To what extent does the Chinese government suppress human rights in Tibet?* delivered by one student, and *Lhokha –history of one Tibetan Tribe* presented by another student.

The purpose of the observations was to demonstrate changes that might have occurred in the students’ use of skills and strategies during their first year at university. Seliger and Shohamy (1989) identify two types of techniques for analysing qualitative data: an inductive procedure in which categories are derived as a result of dealing with data, and a deductive procedure in which the system of categories has already been established and was derived from a conceptual framework. In our analysis of the oral presentations, a combination of both techniques was used. Criteria based on categories used in similar situations in the past were added to categories derived from the conceptual analyses of the teaching syllabus. The list of different skills and strategies was then tested on a small sample of oral presentations and some additional criteria were identified in the process, resulting in the development of the Oral Presentation Evaluation Form used for the assessment purposes in both presentations (see Appendix 1).

Observations of the presentations were made by a research assistant who had no involvement in teaching and did not know the students. It was made clear to students of the three observed classes that the observer was not connected with the assessment procedure. In order to obtain some indication of the reliability of the analysis and the categories, the students were simultaneously rated by the researcher as part of the continuous course assessment. The comparison of the results revealed a high degree of agreement between the researcher’s and the assistant’s rating, which established an indication of the reliability of the analysis used.

The performance of students was then assessed according to those criteria, and a comparison of their first and second presentations (before and after training) was made. Comments on each student’s performance

were recorded on an evaluation sheet and included the level of accuracy at which the skills were displayed as well as the presence or absence of certain strategies. Changes that were apparent but did not fit into the standardised form were also noted.

The Training Programme

To facilitate learning of the skills and strategies, a specifically designed training programme was carried out for about 15 hours as part of the mandatory EAP course. The training process consisted of three parts:

- Training of research steps, which took place in the computer labs and in the library,
- Training in analytical skills, and
- Training of presentation skills.

It was important to ensure that students' background knowledge of their subject area was sufficient to cope with the task. This involved guiding students to ensure they knew how to find information and how to access required resources by giving them training sessions on locating resources as well as motivating them to have an interest in the topic.

Most students had little idea of how to limit or extend their searches in order to identify relevant information, and they needed encouragement and help to carry out appropriate forms of Internet search. For example, they seemed to regard the use of key words, narrower subject headings, bibliographical details or other known materials to locate information as new and challenging methods of research.

Students were encouraged to make use of a number of on-line indexes to locate articles related to their chosen topics in professional journals, as well as instructed how to find hard copies and older bound issues of periodical publications in the library. The orientation session also introduced students to bibliographies and cross-referencing to help identify other useful sources and to make use of chapter headings and sub-headings to determine possible ways of narrowing or directing their research. Assistance was provided when any student became "stuck" at some stage of the process. Many students were successful in finding suitable articles on their topics, while others actually changed the narrowed topic for their presentations as a result of seeing other headings and subheadings that held their interest more or provided a number of suitable references.

The students needed guidance and training not only in research and expanding English language structures and vocabulary but also in analytical and critical thinking skills that would encourage and lead to the development of creativity. To enhance these, various activities were carried out in the class, and work was assigned outside the class to provide opportunities to practise the following:

- Evaluating resources, generating and organising information
- Finding relations, causes and effects, comparing and contrasting ideas
- Interpreting data and results
- Inferring, synthesising, analysing and paraphrasing information
- Making judgements, explaining and drawing conclusions
- Discussing and solving problems

As for oral presentation skills, a decision was made to introduce many strategies and skills simultaneously, as some strategies might be built on the same basic knowledge, some could support others, or some might extend others (Chamot & O'Malley 1994). The strategies that the instructors presented were specifically relevant to the tasks that students had to perform so that the results and usefulness could be seen immediately. Mini oral presentations were often used to provide a way for students to practise and demonstrate a newly acquired skill. As part of the training, students were shown video recordings of good oral presentations as well as commercially available video resources, and these were played to students with instructors pointing out, discussing and demonstrating presentation skills. Even strategies that seemed easy and intuitive to the instructors, like the use of notes, eye contact, body language, and ways to involve the audience, were presented on the assumption that they may be obvious to some students but not to others or that it may not have occurred to the students to use a particular strategy for a particular task. At the same time, the usefulness and transferability of the strategies to other content areas, like tasks in their major subjects, were presented so that they could be seen as part of the learning process and necessary for academic success. In that way, motivation could not only be sustained but also possibly enhanced (Cohen, 1998).

Efforts were made to make students aware of the link between what they already knew, either through prior schooling or life experiences, and what they were about to learn, even if prior knowledge was acquired through Cantonese and in a different

Table 1
Score Sheet Sample: Organisation of Topic for Oral Presentation

Organisation of Topic/Introduction	Student 1		Student 2		Student 3		Student 4	
Skill/Strategy	I	II	I	II	I	II	I	II
Topic suitably narrowed	0	1	1	1	0	1	1	1
Nature of topic-descriptive / analytical	D	D	A	A	D	A	A	D
Research question clear and precise	0	0	1	1	0	1	1	0
Purpose of presentation defined	1	1	1	1	0	1	1	1
Organisational principle presented	0	1	1	1	1	1	1	1
Introduction outlined ideas presented	0	1	1	1	0	1	0	1
Strategy used to “grab” attention	1	1	1	1	1	1	0	1

cultural setting. It was important that students should see the strategy as being useful, important, and applicable, not only to the classroom activity or the oral presentations but also to other academic tasks that they may have encountered or might be asked to perform in their future academic or professional career.

With the introduction of each new skill, the instructors tried to apply various techniques to appeal to as many learners as possible. To achieve this, the tutor often elicited information from students, made notes, charts, graphs on the whiteboard, gave mini lectures and used various practical exercises that included self-assessment. Students were given numerous examples modelled by the tutors and presented in the videos on how to make a successful presentation, giving them a chance to observe and practice the following presentational skills:

- how to introduce a topic to the audience, outline ideas and grab attention;
- how to follow an outline and involve the audience;
- how to stay focused and use references;
- how to use notes, eye contact, and voice, and how to hold attention;
- how to construct visual aids and use them effectively.

Students received a part of their training in research and presentation skills prior to making their first presentations. By the time they gave their second presentations, they had the benefit of their previous oral presentation experience and their instructor's thorough feedback given in the form of a written report and an individual consultation outside of class time. This feedback was reinforced by further, more specific classroom and library training and ad hoc individual and small group advice — all of which should have served to make them more aware of and able to apply the skills to their preparation and delivery of the oral presentations.

Results and Discussion

During each of the two oral presentations, the use of appropriate skills and strategies by each student was assessed on a score sheet (see sample Table 1) filled by the observer. Generally, skills were judged as being present (1) or absent (0). In terms of nature of the topic, some students chose more challenging analytical topics (coded “A”) while others decided to go for descriptive topics (coded “D”). For example, the topic *Daily life of Aborigines in the northern part of Australia* would be classified as descriptive, while the topic *The societal and economic impact of the Kobe Earthquake – was it all bad?* would be considered analytical.

The instances of use of each skill or strategy were totalled and presented in a series of tables so that changes in the number of skills displayed between the first and second semesters could be observed across the group of students.

Table 2
Application of Oral Presentation Skills: Organisation of Topic/Introduction

Introduction-Organisation of Topic	Semester I Number of Students	Semester II Number of Students
Topic suitably narrowed	10	11
Nature of topic-descriptive/analytical	9D / 5A	5D / 9A
Research question clear and precise	4	7
Purpose of presentation defined	11	12
Organisational principle presented	12	12
Introduction outlined ideas presented	4	10
Strategy used to “grab” attention:	7	13

Table 2 above shows the effective use of introductions in the students' presentations. In the first

semester, while the majority of students began their talks by presenting outlines giving their thesis statements, introductions, sequences of their main points, and conclusions, a significant number then went on to present information which either failed to address their topics or did not follow their outlines. The introductions given and conclusions drawn (see Table 3) were often extremely brief and only loosely related to the main body of their presentations. Only two students succeeded in presenting conclusions that were both appropriate and a continuation of the material presented in their talks. Although 11 out of the 14 explained the purpose of their presentations in their introductions, only four outlined their research questions and the main ideas to be presented.

In the second semester, it can be seen that while some students still experienced difficulty in presenting comprehensive introductions and conclusions, many were able to link them more firmly to the purpose and content of their presentations. In contrast to the first semester's presentations, students followed their outline in the body of their talks, making better use of reference material and providing better support for their main points. In the second semester, all but one student followed their outlines in presenting their talks. Only one student failed to provide adequate support for statements made in the presentation, as compared with eight who failed to do so in their first presentations.

Table 3
Application of Oral Presentation Skills:
Organisation of Topic/Conclusion

Conclusion Organisation of Topic	Semester I Number of Students	Semester II Number of Students
Presentation followed outline	9	13
Talk addressed the research question/ thesis statement/topic	7	13
Some form of conclusion attempted	11	14
Conclusions followed on from content of talk	5	13
Appropriate and logical conclusion	2	7
Recommendation/ inferences made (appropriate)	1	8
Only the main ideas presented summed up	2	8
Effort made to involve audience	5	12

That a considerable number of students still had difficulty in the second semester forming appropriate conclusions, summing up their speeches and making recommendations (Table 3) may be an indication of the comparative difficulty of these tasks. In their

programme evaluations, students indicated that drawing conclusions, supporting statements, and summarising were among the skills they least understood. It could also be seen to be a function of the type of topic chosen by students and related to apparent difficulties in formulating or presenting research questions. Over half of the topics chosen by students in the first semester were descriptive (D) by nature (Table 2). By having no analytical content, they did not lead easily to research questions or to evaluative conclusions. In the second semester, five students still selected descriptive topics. These choices meant that most of these students had only a limited opportunity to practise skills normally associated with analytical research.

Table 4
Application of Oral Presentation Skills:
Progression of Ideas

Content of Presentation	Semester I Number of Students	Semester II Number of Students
Main statements supported	6	13
Use of reference materials apparent	10	14
Student thinking while speaking	4	8
Progression of ideas/ordered sequence of subject matter e.g. old to new, basic to complex	8	13
Flow of argument/ description logical	9	13

Table 4 above shows the use of the delivery skills during the presentation. In the first semester, more than half the students failed to provide support for their main statements, and 4 presentations showed no evidence of the use of reference material. Six lacked progression and linking of main ideas, leading to presentations that were not cohesive, did not flow logically, and had no real central point or theme. By contrast, in the second semester only one presentation had no apparent progression or sequence. Only one student failed to provide support for main ideas, and all presentations showed evidence of having been based on reference material.

Another area in which students appeared to experience difficulties in the first semester was the way in which they delivered their presentation (Table 5). With the exception of a few students, most appeared nervous and very reliant on their notes, making eye contact with others only occasionally and reading for much of the time. Ten of the students read their notes throughout their talks, with five relying on them to such an extent that they scarcely looked up from them. This

Table 5
Application of Oral Presentation Skills:
Presentation Delivery

Presentation/Delivery	Semester I Number of Students	Semester II Number of Students
Use of strategies to hold attention	5	11
Well prepared	9	14
Rate of speech appropriate	8	12
Voice well modulated	9	3
Eye contact (on scale 1 = poor, 2 = good, 3 = excellent)	Level 1 (5 students) 2 (7 students) 3 (2 students)	1 (0 students) 2 (8 students) 3 (6 students)
Use of notes (on scale 1 = poor, 2 = good, 3 = excellent)	Level 1 (5 students) 2 (5 students) 3 (4 students)	1 (2 students) 2 (8 students) 3 (4 students)
Use of own words (on scale 1 = poor, 2 = good, 3 = excellent)	Level 1 (4 students) 2 (3 students) 3 (7 students)	1 (0 students) 2 (2 students) 3 (12 students)

could have been due to lack of preparation, unfamiliarity with the topic or subject matter, and/or a general lack of confidence in their spoken English. In some cases, the language used by students was clearly not typical of their true level of spoken English; in a few, the wording of the presentations was beyond that of their written English abilities as well, suggesting that the work presented was not their own. These observations are perhaps to be expected, given students' perceptions of paraphrasing and presenting ideas creatively as skills they least understood.

All of the students appeared to use their own words most of the time and, in contrast to the pre-training presentations, most made a clear effort to gain the attention of classmates and to involve them throughout their talks through the use of questions, comments, relating information to Hong Kong student life, and so on.

Finally, considerable change was evident between the first and second semester presentations in the use students made of visual aids (Table 6).

The great majority of students used some form of visual aid in both their presentations. However, in the first semester, all but a few students simply used photographs related to the topic that were lifted from the Internet. While some students linked these well to the subject matter of their talks, using them to support and illustrate their statements, about half presented pictures that, though topical, were sometimes irrelevant or only loosely connected to the points made and contributed little to the purpose of their presentations.

In the second presentations, all of the students made better use of the visual aids, explaining them more fully and linking them more effectively to the subject matter of their presentations. Further, many students, particularly those who had used visual aids appropriately in their first talks, used a greater variety of material in their second presentations.

Findings

In the second presentations, however, most students seemed far more at ease, less reliant on their notes, and better able to address their audience directly. Only two appeared to read their notes throughout the presentation. Six were able to speak using their notes for reference only, while two used no notes at all, referring only to their visuals.

The researcher recognised that assessment of the research-related skills employed by students was made more difficult by the interplay of factors such as personality, confidence, and ability in spoken English, which, for most students, is below the level of their written English. Nevertheless, the observations of oral

Table 6
Visual Aids Employed

Visual Aids Employed	Semester I Number of Students	Semester II Number of Students
Used photograph	11	13
Used table /graph	2	5
Showed a map	0	8
Students' own construction visual	0	2
Visual aid effectively used to illustrate or support statements	7	13
Tables and graphs explained adequately	1	6

presentations from the group of students show that they acquired many research and analytical thinking skills as a result of their classroom training and research practice.

All students showed an increase in their overall use of skills, with most showing some change in each of the major areas of organisation, content, and delivery. While the degree to which individuals employed skills in the first presentations varied considerably, results were much more uniform in the post-training second semester, with the majority of students applying the skills acquired through the training to their work. From the tables it can be seen that changes occurred over the semesters in the way in which students organised and prepared their presentations and in the degree to which they were able to successfully link or integrate their outlines, introductions, and conclusions to the main content of their assignments.

The use of some skills (i.e., 'topics suitably narrowed,' 'organisational principles presented,' 'purpose defined,' 'reference materials evident,' and 'conclusion attempted') appears to have changed little, the table showing them as apparent in most presentations in both the first and second semesters. Though the usage of these skills increased slightly in the second semester, the data demonstrate that at least ten students used the skills even in their first semester presentations. This pattern of skill use may reflect the course requirements and direct input of instructors, rather than showing that students had acquired or mastered those skills at an earlier time. In both semesters, topics should have been suitably narrowed since students were required to submit them for the lecturer's approval before preparing their presentations. Similarly, there was a requirement that students use a minimum number of references in preparing their assignments and present, for marking, outlines and the overall structure of their work, clearly giving their introductions and conclusions. Despite these requirements, three presentations were based on topics that were too broad, as students strayed from the approved topics, and four were delivered without mention of the outline or overall form that the presentation would take.

In a small number of instances, some students appear not to have utilised strategies in the second semester that were evident in their first semester's presentations. The reasons for this can only be surmised, as no real pattern is apparent across these presentations. However, it is possible that some of these changes were due in part to differences in the types of topic selected in the first and second semesters. One student who regressed (see Table 1, student 4) chose a more descriptive topic in the second semester, and he might have found it harder to formulate research questions and conclusions for his second topic. Another student who chose analytical topics in both

semesters was able to formulate research questions, introduction and conclusion more easily in the first semester; he could have found his second area of research less familiar and far more challenging, with the result that he performed worse.

The differences described above could also simply reflect the general inexperience of students in this type of task and the fact that these presentations represent only the first stages of skill acquisition and practice. Students would require many more hours of supported practice to master these skills and to use them in a systematic and comprehensive way.

It is evident that all university students in Hong Kong gain exposure to English and experience in Western style presentation and scholarship during their first year at university. Most year one students are required to carry out some form of research project and give oral presentations during the year – aside from those set in EAP classes. The observations of the oral presentations of 14 students do not alone provide conclusive evidence of the effectiveness of the training, but they do serve to illustrate the changes that occurred in these students' use of research and presentation skills and strategies during their first year of study. To be able to establish comprehensively the effect of the EAP training, a control group of students who were offered no training would have to be established. The nature of the sample population employed in the study was largely determined by administrative procedures and ethical issues. It would be unethical to deprive one group of students of the training that constituted a component of a credit-bearing course subjected to the allocation of the final grades.

Conclusions and Recommendations

It is clear that Hong Kong students are willing and able to adopt new methods and keen to follow their individual interests in creative study, but they require guidance and help from their lecturers to make the transition from prior learning practices to the inquisitive and individualistic style of tertiary education. Strategy training and guided, step-by-step, instruction play an important role in raising students' awareness of the learning process, thereby increasing the confidence and level of skills with which they tackle academic tasks. The nature of the tasks required in such training is important in determining the success of such programmes; students must perceive work as interesting to them personally, connected and useful to other areas of work, and relevant to their longer-term goals.

It is hoped that this study will provide encouragement and assistance to teachers as they endeavour to help current students make the demanding transition to tertiary level study and from one style of learning to another. Hopefully these results can be used

to guide the development of similar programmes for use not only in service courses such as EAP but also in other core tertiary courses and will thereby encourage the curiosity, independence of thought, and skills needed for life-long learning in future students.

The changes evident in the work and confidence of those students involved in the programme suggest that this programme does indeed provide a means by which students can be successfully encouraged to pursue independent study, leading to successful oral presentations. Results indicate that, despite their lack of experience and confidence and the obvious difficulties faced, the students show a willingness and ability to adopt new methods of learning. This would seem to support the notion that the preference for “rote learning” so commonly attributed to Hong Kong students is indeed the result of expectations and experiences in previous learning situations, rather than the intrinsic and inherent characteristics of the learners themselves (Kember, 1996; Biggs & Watkins, 1996).

This training programme, then, appears to provide a means by which students with little or no prior experience can acquire both the skills and confidence required for oral presentation. With support and guidance, students have been able to tackle relatively difficult and demanding tasks. As a result of their training, they are better able to utilise resources, to choose and investigate topics, to compare, collate and analyse information from different sources, and to present findings in cohesive and original ways. Thus, they should be able to make better use of learning opportunities that present themselves in future years.

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Appendix 1

Oral Presentation Evaluation Form

1. Content

1 2 3 4 5

	Yes	No	Comment
The presentation answers the research question			
a. Main ideas are clear.			
b. There are enough details/facts/examples to support or illustrate the ideas.			
c. All ideas are directly related to the topic.			
d. The presentation is logically structured.			
e. The presentation flows smoothly.			
f. The introduction evokes interests.			
g. The conclusion is effective.			

Other comments: _____

2. Method of presentation

1 2 3 4 5

	Yes	No	Comment
a. The presentation is on the whole interesting.			
b. Suitable aids are used (e.g. audio-visual aids; gestures; blackboard notes...)			
c. The speed is appropriate.			
d. You are well-prepared.			
e. The presentation is timed well.			
f. You maintain sufficient contact with the audience(eyes, poise).			

Other comments: _____

3. Language

1 2 3 4 5

	Yes	No	Comment
a. Effective use of language			
b. Sophisticated range of vocabulary.			
c. Correct or semi-correct pronunciation.			
d. Correct use of tense.			
e. Sentences are well structured.			

Overall comments on English accuracy.

Emotional Engagement Through Drama: Strategies to Assist Learning through Role-Play

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When students are involved in a classroom activity designed to promote the learning of specific concepts, it is more likely they will understand and retain these concepts when they engage emotionally in the learning experience. The difficulty for teachers involved in higher education is how to engage students in their learning in an emotionally challenging way while maintaining a classroom environment in which students feel safe. In the following instructional paper, the use of role-play as a pedagogical approach for enhancing learning through emotional engagement will be discussed. The paper highlights how the author makes use of role-play to provide genuine emotional challenges for students in a tertiary setting while still providing a safe learning environment.

Much education practice operates at a safe neutral level without the space for emotional engagement, yet the idea that emotion plays a crucial role in learning has been discussed by many educational researchers (e.g., Jensen, 2008; Nimmo, 1998; Nuthall, 2000). Literature and personal experience reveal that drama could be an effective catalyst for genuine emotional engagement with issues of human concern, which could in turn be the beginning of an emancipatory learning process (Booth, 2000; Cohen, 1994; Courtney, 1998; Martello, 2001; Walkinshaw, 2004; Wilhelm, 1998).

The use of role-play in adult and higher education has been examined in numerous educational contexts. Researchers and practitioners from a range of disciplines have found that the use of role-play as a learning activity has improved learner understanding and engagement (Bolton & Heathcote, 1999; Craig & Bloomfield, 2006; Cutler & Hay, 2000; Harris & Daley, 2008; Luca & Heal, 2006; Rabinowitz, 1997; Raphael & O'Mara, 2002; Van Ments, 1999). However, there is little written on how teachers in higher education can engage their students emotionally in role-play while maintaining a safe classroom environment.

The author has used dramatic role-play in teacher education to make pre-service teachers' learning immediate, real and emotional. In reflecting on my practice, I recognised there were role-play sessions where a high level of emotional engagement had occurred and other sessions where emotional commitment to the drama work was completely absent. In the successful role-play sessions, there seemed to be a commonality of strategies used to commit students to the emotional world of the drama that were not used in the less successful classes.

In this paper, a theoretical framework is proposed that attempts to establish the impact of emotions on learning and the potential of drama-based teaching approaches to engage learners emotionally. A description of the author's use of role-play in pre-service teacher education courses is then provided,

concluding with specific strategies that have proved successful in assisting students to emotionally engage in the unfolding dramatic world of role-play. The strategies discussed will provide teachers in a variety of higher education contexts with practical ways of making the use of role-play a rewarding learning experience for students and teachers alike.

The Theoretical Framework

Evidence of Emotional Engagement Enhancing Learning

The notion that emotional engagement in a task assists learning and particularly memory is well established. Researchers in the fields of psychology and neuroscience have demonstrated that, when strong emotions are experienced, the events associated with these emotions will be more accurately and readily remembered than more emotionally neutral experiences (Berry, Schmied & Schrock, 2008; Buchanan, 2007; LaBar & Cabeza, 2006; Sotgiu & Galati 2007; Zull, 2002). Neuroscientists have identified the particularly powerful role the amygdala area of the brain has in assisting memory by imbuing remembered experiences with meaning through associating emotion with experience (Jensen, 2008). Of particular interest to educational researchers is the relationship between emotions, learning, and social learning activities. Caine, Caine and Crowell (1999) make the relationship between emotions and understanding explicit in their contention that students' understanding is affected by the emotional nature of their interpersonal relationships. They argue that it is the emotional nature of social experience that secures meaningful learning and shapes concepts. Similarly, Nuthall (2000) suggests that when students work together inclusively and co-operatively they are not merely learning social skills but rather the associated emotions of these social experiences, which are stored as integral parts of the scientific or

mathematical procedure about which they are learning. It would seem that the emotions associated with the social interactions that occur in learning activities are fundamental in securing the long-term retention of the actual concepts being studied.

While it is commonly accepted that those involved in education should try to promote a positive emotional learning environment, there is evidence that providing opportunities for students to experience emotions commonly perceived as negative could also be beneficial to learners. Reisberg and Heuer (2004) provide evidence that events associated with both positive and negative emotions are more likely to be recalled in greater intensity than emotionally neutral experiences. Zull (2002) suggests that feelings of anxiety during a learning experience often lead learners to recall the detail of these experiences clearly. Similarly, recent advances in neuroscience show that both positive and negative emotional experiences can enhance both the encoding and retrieval of these experiences (Buchanan, 2007; LaBar & Cabeza, 2006). A recent cross-disciplinary study by a historian, a cognitive psychologist, and a biopsychologist demonstrated that the use of emotionally disturbing photographs increased the ability of college history students to recall associated information provided in the form of written text (Berry, Schmied & Schrock, 2008). The idea that robust emotional experiences play a crucial role in cognition is an important principle of the Reggio Emilia early childhood centres. Nimmo (1998) argues that many educators in the Anglo-American cultural tradition steer learners away from dealing with strong emotions and, in doing so, miss important learning opportunities, as moments of strong emotion in a social context can become part of the shared memory. He suggests that schools would gain much from adopting a Reggio Emilia approach that does not “shy away from controversial or emotion-laden themes such as children’s fear of crowds or being lost” (p. 462). It is argued here that learning activities in higher education settings should aim to engage students in strong emotions rather than remaining safe, sanitised, and emotionally neutral, as is often the case.

Often learners will experience strong emotions such as anxiety and confusion when ideas being introduced through particular learning activities come into conflict with their preconceptions. The cognitive conflict experienced by learners when their ideas are challenged by others is central to Piagetian theories of cognitive development (Hamilton & Ghatala, 1994). Studies of group interactions in classroom settings show that the cognitive conflict that occurs between peers when they approach an issue from different perspectives is highly conducive to cognitive development (Ames & Murray, 1998; Levine & Resnick, 1993). Drawing on Vygotskian learning

theory, New (1998) describes how, when teachers encourage exchanges of multiple perspectives, increased knowledge construction occurs. She attributes this increased knowledge construction to the notion that learners have to work through the emotional confusion and disturbance engendered by differing views. Others also argue that the socially constructed nature of knowledge necessitates that teachers elicit conflicting perspectives so that learners engage in sustained, thought-provoking dialogue rather than mere repetition of a single dominant viewpoint (Alton-Lee, 2003; Lyngard & Mills, 2002). If strong emotions incited by conflicting perspectives are likely to lead to lasting learning, the challenge for higher education teachers is to create an environment for such learning to occur while protecting the emotional well-being of students. I find that use of drama, and more specifically, role-play, has been successful in balancing the need to maintain a learning environment where students feel safe from personal ridicule and find a space where they can engage in genuine, strong emotions.

Evidence of Drama Enhancing Emotional Engagement in Learning

The ability of drama to engage spectators and actors in a transformative process that connects the physical to the emotional was recognised by Aristotle some 2400 years ago. In his theory of *catharsis*, Aristotle asserts that audiences to a Greek tragedy would emotionally participate in the drama through their empathy with the tragic hero central to the play (Cohen, 1981). For him, such emotional participation was the objective of theatre, as this engagement has a purifying effect on the audience as they are purged of unwanted emotions (Courtney, 1988).

More recently, educators working in the field of drama-in-education recognise that the emotional nature of drama is important when drama is used as a pedagogical tool to facilitate change and understanding in students. Martello (2001) describes the unique power of drama to involve the emotions of learners to enhance lasting learning. Others have argued that the power of drama in teaching literacy lies in its ability to bring about emotional interactions with characters from literature in the fictional world of drama (Booth, 2000; Wilhelm & Edmiston, 1998). Similarly, Walkinshaw suggests that emotional participation in drama can lead students to gain a greater comprehension of a character’s motives and a willingness to change opinions as a result of this involvement (Walkinshaw, 2004). While the emotional potency of drama is well established, Courtney (1988) provides insight into how emotional engagement in drama is also a safe experience for learners. He observes that when drama engages the emotions, it becomes a genuinely educative

act, as participants are given the opportunity to adapt to emotionally difficult situations within the safe confines of a fictional world that offers little by way of repercussions in the real world.

While it would seem that drama can provide opportunities for learning through emotional engagement, the task of achieving this level of engagement is problematic for teachers using drama as a pedagogical tool (Bolton, 1992; Somers, 1994). Somers (1994) warns that when emotions are externally imposed by the leader, the resulting drama can be superficial and melodramatic. He argues that the emotional engagement promoted above occurs only when "emotions emerge as a result of the life conditions being explored" (p. 57). Bolton (1992) contends that more improvised forms of classroom drama, such as role-play, have far more potential to allow participants to genuinely engage in the emotions of their role than more scripted forms of drama, as participants get the feeling of living moment by moment. He observes that when participants are working from a script, they work within a "descriptive mode" that demands they focus on the technical skills required to deliver their lines in a plausible manner, rather than being able to engage in the actual emotions felt by their character as the scene unfolds. Bolton argues that when participants in a drama are able to engage at an emotional level with their character, they are operating in an "existential mode." Within the "existential mode," participants are more likely to engage emotionally with their role and the roles played by others, as they are spontaneously living through the experience in real-time (Heathcote, cited in Wagner, 1979). Bolton advises that this type of existential engagement, where there is a focus on the immediate fictional reality, can only occur when a participant "submits to and trusts the situation in order to experience it" (Bolton, 1992, p. 11).

A Description of Practice: Role-Play as an Approach for Achieving Emotional Engagement in Higher Education Contexts

Setting the Scene and Committing to Role

As a lecturer on pre-service teacher education professional practice papers, I have experimented widely with the use of drama as a pedagogical tool to explore the content of these courses. Pre-service professional practice courses require student teachers to inquire into the complex role of the teacher and explain how this role is mediated by political, social, cultural and economic factors beyond the four walls of the classroom. Experimentation in these courses ranged from using drama conventions as a small part of an overall teaching session to delivering entire lectures

through role-play. The author has found role-play particularly useful in assisting students in gaining an understanding of multiple perspectives on issues concerning the practice of teachers at both macro and micro levels.

The structured role-play used by the author usually involves three to five key organizational groups that have a vested interest in a controversial issue relevant to the course of study. In the case of educational issues of concern to pre-service student teachers, these groups could include a teachers' union, a parent lobby group, government education officials, or university academics. Students are then assigned to one of these organizational groups and informed that all members of the group are to take on the same collective identity, such as a group of teacher union delegates, while developing an individual role within the broader group. I have found that the use of group roles reduces the anxiety students often have about role-play, as they feel supported by their fictional colleagues.

Before students take on their role, they must be made aware of the issue that is central to the role-play, and then they must research how their group would respond to this issue. At this stage the students are provided with source materials that give them information on the perspective their group holds on the issue. Information can be provided in the form of press releases, newspaper articles, relevant web sites, academic journal articles, television news items, and press photographs. When the research has been completed, the students are informed of the scene and setting of the role-play. For example, the setting may be a community hall, and the scene could be a public meeting to discuss the central issue. Students then spend some time making small props that signify the setting. For example, if the setting was to be a school staffroom, then students may make up a mock staffroom notice board complete with messages to staff about upcoming social events and teacher playground duty rosters. It is at this point that students are put into roles through a ritual that signifies they have now entered the dramatic world. Examples of such rituals could be pouring a cup of coffee or putting on a fictional name badge complete with the group/organization they represent.

Informal Role-Playing

The beginning of a role-play is usually informal, with students in role milling around meeting members from other groups. I find it useful to assign two or three possible topics of conversations to have during this informal discussion time. The first topic to be discussed informally with a member of another group is usually very general, such as the weather or the latest political scandal. The final topic should be the controversial

issue under discussion. It is important to note that, at this stage of the role-play, all students are participating simultaneously, so there is no sense of audience. It is also important that students are aware that the teacher has taken on a role. I have found it important to take on roles that are not overly important but still give some control over the direction the role-play will take. A good example is one where the scene is a public meeting, complete with an official delegation from the State Department of Education. The teacher would not take on the role of a state education official, as this immediately places them in a very powerful position compared to other roles. A more useful role to take in this situation would be that of a member of the local school Parent Teacher Association who has volunteered to be the chairperson at the public meeting, as this role has no real power within the dramatic world but does allow the teacher some degree of control over the way life will proceed within the fictional role-play world.

Structured Role-Playing

At some point in the informal chat stage of the role-play, the teacher-in-role calls for the more structured stage of the role-play to begin. This could be an announcement from a state official regarding a proposed policy related to the central issue of concern followed by submissions on the policy from each group. It is at this point that more “drama confident” students within each group may begin to openly voice their organization’s disagreement or support for the ideas being put forward at the meeting. While the comments made during this stage of the role-play are improvised and unscripted, they are still well informed, as students had prepared earlier for their roles by researching the source material provided by the teacher. It is important to note here that it is the teacher’s task to carefully consider what information will be disclosed to each group so as to allow for spontaneous conflict to occur when participants are challenged by perspectives they may not have considered or even be aware of.

Reflecting on the Role-Play

When the role-play is over, it is important to provide opportunities for students to reflect on understandings that have emerged through the drama experience. The teacher guides group reflection through asking questions that prompt a review of the role-play experience. Discussion questions should center on arguments put forward in the role-play that were particularly compelling, surprising, and well supported. At this point students are usually keen to read or view the source material that was until this point only privy to other groups in the role-play. (The author has found that a beneficial side-effect of being involved in a role-

play is the increased motivation that students display towards their course reading). Following discussion and reading of all the available source materials, students are encouraged to share and justify their own perspective on the issue explored through the role-play.

Learning through Role-Play Not About Role-Play

Bolton and Heathcote (1999) suggest that role-play allows leaders greater control than more open forms of “process drama” where students decide on the direction of the drama. It is important to note that the type of role-play described above is not traditional role-play where students simply simulate a real-life work problem with an audience, focusing on the authenticity of the simulation. Rather, the learning that occurs *within* the context of the role-play is of critical importance. Bolton and Heathcote (1999) allude to this emphasis on role-play serving an educational purpose when they state that the focus needs to be taken “off role-play as a form of behavior of interest in itself (to be ‘pointed at’), and steer it towards a meaning making act of contemplation” (p. ix).

In utilizing the structured role-play strategies outlined above, I have found that participants regard such drama experiences as meaningful, emotionally engaging, and safe. In reporting on a small-scale research project into the use of role-play in a teacher education context, I found that participants perceived that the emotional nature of the role-play assisted in the retention of key course concepts and enabled students to reflect on how they had come to construct their own perspective on the issues explored through the role-play (Heyward, 2008). Furthermore, the study participants assisted me in clarifying the lecturers’ strategies that facilitated emotional engagement while maintaining a safe learning environment. It is these strategies that are explained in greater detail in the remainder of this article.

Strategies that Assist Students to Emotionally Engage in Role-play

When using structured role-play, it is important that students, if they are to commit emotionally, feel that all participants believe in the dramatic world. I have found that it is crucial that participants are not rushed into roles but are gradually introduced to the dramatic world by taking time to establish the time and space in which the role play is to exist and clarifying the social conventions of this fictional space. O’Neill (1995) argues that, if participants are to take a drama seriously, it is important that they work hard at creating the social context of the drama and then live by the rules of this context. The importance of building belief in the dramatic world is central to the practice of the

drama-in-education pioneers Dorothy Heathcote and Gavin Bolton. According to Bolton (1992), if educators want students to move beyond a descriptive mode of drama, where they artificially signal the feelings of their character, to the existential mode, where they can feel emotionally engaged with their role, then students must be “protected into emotion.” Heathcote believes that the only way to protect children into emotion, and thus free them from the self-consciousness brought about by the silliness of others, is to encourage all participants to believe in the “big lie.” Agrees Wagner, “Everyone must at least try to accept the one big lie that we are at this moment living at life rate in an agreed upon place, time, and circumstance and are together facing the same problem” (1979, p. 67). The illusion of the imaginary world (O’Neill, 1995) relies on participants colluding in the conspiracy of the big lie (Wagner, 1979). Research demonstrates that the taking on of a role by the leader is crucial in accelerating this collusion (Bolton, 1992; O’Neill, 1995; Wagner, 1979).

If all participants are to believe in the fictional world of the role-play, it is crucial that the teacher also demonstrates commitment to the drama by taking on a clearly defined role alongside the students. Bolton (1992) suggests that the strategy of teacher-in-role is crucial in helping students become more committed to the idea that something important will happen within the drama because they see that their teacher clearly believes in the fictional world. Bolton labels this feeling of expectation as the “imperative tension.” Bolton and Heathcote (1999) found that when teachers commit to a role, students feel more protected within the drama, as the burden of establishing a social context in real-time is now shared with the teacher. Although the use of teacher-in-role is central to the practice of many drama-in-education practitioners, O’Neill (1995) cautions that the purpose of using teacher-in-role is not to give a performance but rather to establish the atmosphere and rules of the fictional world from within the drama.

If participants are to feel safe within the dramatic world of the role-play, they must be clear on when they have entered and exited this fictional world. For learning through drama to occur, teachers must facilitate participants’ entrance to, existence in, and exit from the dramatic world. I have found that a group ritual such as the picking up of a coffee cup can clearly signal the beginning of a role-play, and a similar action can signal the conclusion of the drama. In devising entrance and exit rituals it is important the lecturer ensures all participants are fully aware of these signifiers. O’Neill (1995) discusses how entry into the dramatic world is largely up to the leader, as he or she must find a way to engage participants with the event and encourage them to add to the establishment of the dramatic world. Correspondingly, Bolton (1992) argues that it is the teacher who must “bear the burden of

establishing the fiction so the participants, freed from that particular burden, can submit to the existential experience” (p. 35).

Researchers and practitioners in drama education also point to the importance of leaders making it clear when participants have departed from the dramatic world. Wagner’s (1979) analysis of the practice of Dorothy Heathcote highlights the important distinction Heathcote made between the real and fictional worlds by always clearly signaling when she was in and out of role. Similarly, O’Toole and Dunn (2002) discuss the importance of providing clear opportunities for participants to de-role and de-brief.

While the aim of structured role-play should be to engage all participants, it is important to recognize that some will find it more difficult to commit to the “big lie” than others. The leader must therefore be sensitive to an individual participant’s willingness to take on a role. I find that students appreciate their lecturer’s awareness of those who were likely to want to take a more passive role within the drama and those who would be comfortable with more prominent roles (Heyward, 2009). Bolton (1992) has similarly observed that in drama, as in real life, there must be room for participants to feel they can take on either an active or a passive role. I have found that when participants are not forced into high-profile roles against their will they are far less likely to make explicit their disbelief in the dramatic world, and therefore it is more likely that the remainder of the group will maintain their belief in their roles.

In maintaining emotional engagement in the drama it is important the lecturers consider how they disclose information to move a role-play forward. Lecturers need to acknowledge the power they hold in the unraveling potential of drama as an educative experience. O’Neill (1995) suggests that in using dramatic pre-texts (the source of the drama process) such as photographs, newspaper stories, or journal articles, leaders of a drama should distort or rework the material so that it leads to exploration, not explanation. Although the author finds some students felt frustrated that they were not presented with all the information at the outset of a role-play (although this was revealed subsequently), this withholding of “truth” and the distortion of the dramatic pre-text is crucial in ensuring that participants engage in the explorative “existential mode” rather than the explanatory “descriptive mode” (Bolton, 1992; Heyward, 2010). The deliberate withholding of truth is a useful strategy to enhance emotional engagement.

Conclusion

If teachers in higher education are to take the opportunity to enhance their students’ learning through

role-play, it is important that they are cognizant of the following strategies to protect students both in and out of role:

1. The establishment of the fictional world and roles within this world must be worked towards slowly and deliberately.
2. Belief in the fictional world can only occur if the teacher submits to this world through the taking of a role.
3. Participants in a role-play need to be clear when their existence in the fictional world begins and ends.
4. The teacher must maintain an awareness of the differing levels of participation students feel comfortable with. The role-play should therefore be structured to allow for varying levels of commitment.
5. The dramatic pre-texts used to stimulate dramatic action within the fictional world need to be carefully disclosed so as to create tension between the various groups in the role-play.

In this article, the author has argued that possibilities exist to enhance the learning of students in higher education contexts by eliciting genuine, strong emotions. The notion of engendering feelings of anxiety, fear and anger runs contrary to the deeply held beliefs of most higher education teachers that learning occurs most effectively in a safe and trusting learning environment. It is the contention of the author that the use of role-play offers a unique opportunity to both engage students emotionally in the fictional world of the drama and maintain a safe learning environment. It is within the fictional world of role-play that students are free to openly express the feelings of their given character with the security of knowing their words and actions will not have repercussions for their ongoing relationships in the real world of the higher education classroom.

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Reflections on Learning in Interdisciplinary Settings

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In the present article, we will reflect on some didactic challenges and possibilities that emerge when teaching in interdisciplinary settings, and we will use and discuss the journey as a metaphor for learning. We argue that teaching in interdisciplinary studies rests on movements between different understandings, and that it gives ample opportunities for beneficial learning processes. This does not only apply to interdisciplinary studies. The metaphor of taking a journey can be used to illustrate the learning process and the dimension of personal change associated with moving between different understandings and discourses of knowledge. Some of the questions we will raise are: In what ways can differing disciplinary backgrounds be of help or create a hindrance? What are the specific didactic challenges one faces? What happens to one's understanding of one's own subject after having been confronted with something new and different?

Becoming Involved in Interdisciplinarity- A Background

The ways in which one becomes involved in interdisciplinary pursuits may vary. In our case, we became involved in such pursuits in our early days as doctoral students, owing to our interest in feminist philosophy and theory. Åsa Andersson's subject was History of Science and Ideas, while Hildur Kalman's subject was Philosophy of Science. We both approached the Centre for Women's Studies at our university to gain access to its courses and seminars. Our involvement there then ran parallel to our doctoral studies and gave us, as well as many others at that time, dual competencies. Early on, both our interests and dual competences led to engagement in teaching at the graduate level, not only at the Centre for Women's Studies but also at the Centre for Interdisciplinary Studies, also part of our university.

When teaching at other faculties and in other contexts, such as the Medical Faculty and Social Services in the public sector, we were increasingly asked to contribute knowledge based on our specific disciplinary competences, i.e., the academic subjects that we were pursuing in our PhD studies. Besides the academic studies we were engaged in at the time, we both had a background in the health care sector, one as a registered psychiatric nurse and the other as a registered physiotherapist. This of course helped to widen the arena in which our multidisciplinary knowledge was in demand, as we were expected to be well-read not only in our current academic subjects but also on issues and questions concerning the health care sector.

Once we had completed our doctoral degrees, we already had a fair amount of experience of teaching in "gender plus something else," which meant that the teaching we could offer was even more in demand. Our educational background in the history of ideas and

gender studies, and philosophy and gender studies, respectively, also led to invitations to hold seminars/workshops for colleagues and doctoral students in different contexts, not only at Umeå University but also at other Swedish universities.

Reconsidering Interdisciplinary Teaching

Encountering groups of undergraduate students and doctoral students with differing disciplinary backgrounds may create didactic difficulties and challenges. In what follows, our aim is to discuss such challenges and difficulties, asking our readers to reconsider common assumptions about interdisciplinary teaching. The assumptions we refer to here concern the notion that teaching interdisciplinary subjects is something problematic and that it entails taking on an extra workload. Some of the questions we will raise are: What are the didactic challenges and benefits one faces as a teacher? In what ways can the differing backgrounds be more of a help than an obstacle in the learning situation? What happens to one's understanding of one's own subject after having been confronted with something new and different?

Didactic Challenges

One of the main challenges to be aware of when teaching in the field of interdisciplinary studies is that the students, as well as you yourself, will have to deal with something unfamiliar. Further, the unfamiliar is not always found in the circumstances or forms one expects to find it. As a teacher, preparing for this involves some additional effort. The effort comprises, for instance, more comprehensive preparation compared with teaching a more academically established subject, where the borders and main questions are supposedly given. To concretize, when preparing to teach, one has to consider the specific

context one is about to teach in as well as the backgrounds of those whom one is about to teach. The canonical tradition and curricula cannot simply be passed on. It is thus of great importance to contextualize the body of knowledge one is about to impart to others. This may be connected to what Ference Marton and Shirley Booth call creating structures of relevance (Marton & Booth, 1997, p. 143 ff).

Another challenge is to reach the students and to raise their awareness of the general issues one is working with in their respective environments. This requires that the teacher take on a very dialogic approach. How then should this key didactic challenge be met? In the main, we suggest two differing approaches. One is an approach that we identify as being, to a certain extent, representative of our educational background in the humanities. The other approach is to look upon the teaching situation as an opportunity for didactic experiment. Both of these approaches aim at enhancing the skill of reading, in the sense of really comprehending, texts from different academic areas.

Enhancing the Skill of Interdisciplinary Reading

An indispensable cornerstone for developing competence in the field of interdisciplinary engagement is the ability to read and comprehend. This ability is not to be taken for granted, even when working in an academic setting! It so happens that one particular problem has caught our attention: Many students, even doctoral students, are deficient in the skill of reading texts carefully (cf. Lattuca, 2001, pp. 120, 126). How can this be? Our interpretation is that, upon entering university, many students are too hasty in acquiring the so-called critical eye, something that is a constitutive part of the academic tradition. As we understand it, many students acquire this critical eye to such an extent that they become less open and receptive. In the end, this can lead to a loss of critical ability, as one has difficulties comprehending matters that are unfamiliar or not part of the basic standpoint of one's academic subject.

With this in mind, the first approach we suggest is to enhance the capacity for interdisciplinary reading in one's classes, regardless of the academic level of teaching. This can be done by giving students thorough instructions together with some basic principles to apply when reading texts slowly and carefully – regardless of what scientific or cultural field the text emanates from. These principles are then put to common practice. The goal here is to help students read with an open mind and thus become sensitive to the underlying assumptions and the main message of a text. Understanding the errand and the premises is an

essential prerequisite for advancing to the next step, where one might criticize the text. In this connection, we have been inspired by Lancelot R. Fletcher's instructions for slow and empathic reading. Fletcher warns against "a rush to interpretation and judgment strongly encouraged by most of our educational practices" (2007, p. 2).

As regards the second approach, we suggest role play, as we feel it is a fruitful method. Using role play, students are sensitized to the important difference between understanding a text and criticizing the text in question. In a role play situation, one is given the task of defending or criticizing a certain text and its arguments, given its contextual premises – regardless of one's own personal beliefs or preferences. The contextual premises of a text might be factors such as time and space, as well as cultural, scientific or theoretical backgrounds.

The Academic Setting: Working with Presuppositions

It is a well-known fact that every discipline or subject has presuppositions that are taken for granted to the extent that they are very seldom, or indeed never, articulated or clearly spelled out. These presuppositions are not necessarily bad in themselves, but in certain situations it is essential to identify them and make them the focus of attention in order to convey them to others. Otherwise they may become hindrances to understanding for all parties involved. Teaching in a well-established and traditional subject seldom requires such efforts to the same extent. Furthermore, a well-established subject contains and rests on "natural," self-evident or well-known references to which the teacher can relate in a number of ways. However, for the purposes of learning in an interdisciplinary setting, it is of utmost importance to carefully choose one's landmarks and compass bearings so that these can work as clear examples or references for a group of students with a mixed academic background. Of course, in one's position as a teacher, it is important to reflect not only on other academic disciplines and their assumptions but also on one's own discipline. It is, naturally, just as filled with tacit assumptions as any other academic subject.

Enhancing Meta-theoretical Reflexivity

One's academic background, however, may also work to facilitate cross-disciplinary efforts and help create possibilities. A common feature of our own backgrounds is that we have been trained in what could be called the relatively unconditional reading of text. The aim of an unconditional reading is to read with an open mind and try to put the message of the text in focus. We see training in this particular skill as an

important contribution from the academic tradition of the humanities. To give a clear example: If one is reading, say, a text on illness among women that dates from the 19th century, the text must be read with a certain awareness of the gendered medical and biological explanations of that time as well as the debate on women's nature and standing in society at that time (see, for example, Apple, 1990; Drinka, 1984). Transferred to an interdisciplinary setting, this means that neither teacher nor students can ever count on things being "business as usual." As a teacher, one has to stay alert and open-minded and work to help the students contextualize.

However, encounters with the unfamiliar should definitely not be seen as solely problematic. On the contrary, one general experience we have had is that learning in interdisciplinary settings often evokes surprise, recognition, and joy in class. Part of the enjoyment is the growing awareness of the common features and attributes of all scientific knowledge production and the methods by which they are taught, regardless of the fact that they take on different forms of expressions and routes.

In an optimal learning process in the interdisciplinary setting, one can enhance reflexivity to a meta-theoretical level by introducing the hermeneutic underpinnings of the process of reading and interpreting. Here we are referring to the relationship between the reading subject and the text. In the act of interpreting, the reader partly constitutes the object of interpretation. In other words, understanding always presupposes the "inner voice" of the reader, and in the act of reading, the content of meaning of the text is completed (Gadamer, p. 110; Ricoeur, p. 64). This helps students become aware of how they bring their own academic being with them to their reading of the text.

What Counts as Ways of Establishing Knowledge

Differences in attitudes, especially those that challenge taken-for-granted assumptions, may prove difficult to understand or even accept. We are not referring here to the attitudes of individual students, but rather to the comportments and attitudes that exist in different disciplines as regards what counts as knowledge and what counts as legitimate ways of establishing knowledge. Such general comportments and attitudes are often implicitly present in seminars. On occasions such as these, questions like "Is it possible to do that in your discipline?" may arise.

Academic training largely involves the appropriation and embodiment of ways of thinking, reading and understanding – particularly the ability to recognize what counts as a problem (Polanyi, 1969, p. 148). Such comportments and attitudes are

incorporated into the academic subject, i.e., the student/teacher/researcher, to the extent that questioning or resisting these incorporated ways of thinking is simply dismissed, or perceived as an aggressive attack on one's own discipline and even on one's scholarly and personal identity (cf. Lattuca, 2001, p. 36). In the role of teacher, it is therefore crucial to be aware of the delicacy of these situations, as they represent a challenge both in didactic terms and in terms of putting one's tolerance to the test.

Transforming a Challenge into an Opportunity

Let us assume that, as a teacher, one is faced with such a situation of impending conflict, where different academic backgrounds create tensions and obstruct constructive dialogue. How can such a difficult situation be drawn upon and used as an opportunity? As we see it, the challenge of transforming the situation in a constructive way consists of several steps. First, one has to recognize such situations in order to stop for a moment and readdress the discussion. The next step is to aim at exposing and visualizing the contexts and assumptions from which both parties are proceeding. Through this move, the group is indirectly invited to take a collective step back and, furthermore, to try to identify and visualize in what sense these "threatening" questions could be addressed in a productive manner. We would argue that this is important and even essential in situations that threaten to become destructive. Otherwise, there is a risk that an instructive dialogue will come to a halt prematurely, thereby strengthening or cementing the differing standpoints. If this occurs, only distance has been established between what is perceived as common and uncommon ways of thinking and doing science. The outcome may then be that the goals of learning are simply not achieved. In other words, the task at hand is to make the students distance themselves from the familiar perspectives that they hold to a certain degree and to encourage them to try to align and evaluate the different perspectives on an equal basis.

This task applies to all levels of learning, but it takes on different forms. At lower educational levels, the learning outcomes concern gaining knowledge about and insight into a number of scientific traditions and their differing approaches. At the advanced and postgraduate level, students are expected to be able to assess how different perspectives might influence their own research. At the senior level, there is even more to be added. When senior researchers meet in interdisciplinary seminars, one should not only aim at an awareness of differences and mismatches, but also strive for the ability to relate to the spaces and gaps between different views on knowledge.

Gaps are a reality, and they need to be both identified and assessed. Sometimes one has to admit

that one's tolerance is more than put to the test. This is a crucial point at which one has the opportunity to argue for the importance of tolerating other views, even when one does not agree. However, gaps may also be a tool for understanding and learning about oneself and one's own academic worldview, not only about the views of others. Here we identify what really is the core of the learning process: to move beyond the well known and in some sense to make a journey.

The Learning Process as a Journey

It is common to use the journey as a metaphor for learning. One might here mention everything from classical fairy tales and educational novels – the bildungsroman – to philosophical, historical and pedagogical essays (sá Cavalcante Schuback, 2006; Gadamer, 1997; Gustavsson, 2003; Klein, 2005; Liedman, 2001). What is there in the making of a journey that can be associated with the learning process? We suggest that it is the fact that travelling is primarily about moving from the familiar, the well known, to the unfamiliar, the unknown. One has to dare oneself to a certain extent – put oneself on the line – to be able really to see, hear, and incorporate the hitherto unknown. Philosopher Marcia sá Cavalcante Schuback discusses the choice Odysseus made in exposing himself to the song of the sirens, and she thereby also points to what may be experienced as a risky enterprise: that of surrendering to the unknown (2006, p. 90; see also Lattuca, 2001, p. 153). Still, Odysseus chooses to be tied steadily to the mast of his ship in order not to give in completely and abandon himself to the sirens. This relates to a matter we discussed earlier, namely, the way in which one's identity and worldview may be experienced as being put under threat in the process of learning.

Similar ideas are revealed in social anthropologist Gísli Pálsson's discussion of Icelandic metaphors derived from sailing and experiences at sea – images that are used to describe stages and leaps in the process of learning. In these metaphors, critical stages in learning are linked to bodily involvement, where one changes depending on one's experiences of the world. Pálsson claims that this suggests "some kind of othering." One of the metaphors that has been commonly used across the ages, and is still in use today, is that of "having sailed." It refers to those who have been abroad and are perceived to have undergone change after having been exposed to, and having first-hand experience of, foreign customs. The experience of nausea is a similarly used metaphor, representing above all else a temporary, transitional and possibly beneficial phase for Icelandic fishermen. The nausea combines emotional and cognitive aspects. Being seasick is to be unfamiliar with the rocking movements of the world.

Recovering from seasickness, Pálsson writes, may be compared to having taken a leap in the learning process: one has acquired "one's sea legs" (Pálsson, 1995, p. 10; cf. Kalman, 1999, pp. 41, 77, 94).

But using the journey to illustrate a learning process is primarily a matter of pointing to a process through which one becomes aware of contrasts. While on home ground, such contrasts are hardly visible. It is not until a person is confronted with the unknown and strange that he or she becomes aware of differences and contrasts. To begin with, he or she may be occupied with regarding the new with curious or even suspicious eyes. At the beginning of such a process, the well known remains self-evident and taken for granted, more often than not in a very normative sense. But by and by, the hitherto well known may, from a distance, come to be seen through somewhat foreign eyes. On returning home, the traveller's gaze not only recognizes the homely and well known, but is estranged to something that has come to be perceived as narrow and limited. Hence, it is only after truly coming into contact with that which was previously foreign that the ways of viewing the "home of one's childhood" may come to change significantly.

Related thoughts may be associated with philosopher Hanna Arendt's reasoning on the importance of contrasts in the process of perceiving existence. In short, her discussion points to how understanding is promoted when human perception makes shifts and distinctions between sameness and difference. This is what makes it possible to perceive and define *the being* (Arendt, 1998, p. 237). We suggest that what follows from this is that the faculty of human understanding benefits from moving between different understandings of the world.

Reciprocity in Learning

To conclude, we wish to stress that the most important cornerstone in interdisciplinary studies is that of reading texts from different traditions. We further claim that the learning process is about contrasts and contextualization, and that the learning process benefits from moving between different understandings. This accounts for the process undergone not only by the students but also by the teachers. Teaching in an interdisciplinary setting is truly illustrative of this reciprocal learning process. This process takes place not only between students but also between students and teachers. Hence, as a teacher one also learns.

Thus, in the long run, engaging in interdisciplinary studies as a teacher does not merely amount to an extra workload. It should also be recognized as a rewarding project with the added value of gaining knowledge (cf. Lattuca, 2001, pp. 134, 160). The knowledge gained is the trained skill of applying a meta-theoretical gaze to

texts from different fields of knowledge and to certain academic disputes. Of course, also of importance is being in an environment that allows for true intellectual dialogue, as educational enterprise in the scientific community rests on there being a benevolent social climate (cf. Hollingsworth & Hollingsworth, 2000). As the Swedish historian of science and ideas Sven-Eric Liedman puts it:

Man is a social creature also when engaged in the learning process. He is learning together with others, spurred on by others, awakened to insight by others, competing with others. The joy of knowledge is about sharing it with others, and also to possess a knowing to impart to others (p. 359, our translation).

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Promoting Noticing Through Collaborative Feedback Tasks in EFL College Writing Classrooms

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Though the concept of noticing has been extensively addressed in the SLA literature, few studies suggest promoting noticing through collaborative feedback tasks (CFTs) in an EFL college writing classroom. To fill this gap, this paper attempts to provide a framework for promoting noticing through CFTs using three sequenced and interrelated CFTs: (I) *pre-noticing stage* that aims at instructing the students on how the feedback task functions and what its purposes are, (II) *while-noticing stage* that is based on two interrelated feedback tasks, namely *contrastive-critical framing* and *transformed practice*, and (III) *post-noticing stage* that is aimed at helping students reflect on what they have learned during the entire feedback process. To begin with, the article provides definitions of noticing. It then discusses how noticing and feedback are closely related to facilitate second or foreign language writing learning. In what follows, it discusses how noticing and CFTs complement one another in order to facilitate critical and focused noticing to help students enhance their writing accuracy and fluency. Lastly, the article examines some challenges in promoting noticing through CFTs in an EFL writing classroom.

Noticing as a phenomenon that arises while paying attention to language input and output in the field of second language acquisition (SLA) has been widely examined and discussed by researchers (e.g., Ellis, 1991; Robinson, 1995; Schmidt, 1990). However, there are very few studies that have addressed noticing through collaborative feedback tasks (CFTs) in EFL writing classrooms (e.g., Qi & Lapkin, 2001; Riddiford, 2006; Tang & Tithcott, 1999). Even those few studies that have addressed noticing through CFTs were based only on asking students to compare their original pieces of writing and the revised ones at the end of the feedback process. Nevertheless, issues on how students find gaps and sources of the gaps in their pieces of writing, negotiate those gaps, and re-notice the revised versions of writing were not addressed, particularly on a pedagogical level. For this reason, this paper provides a framework for promoting noticing through CFTs in an EFL college writing classroom by using three sequenced and interrelated CFTs: (I) *pre-noticing stage*, which aims at instructing the students on how the feedback task functions and what its purposes are, (II) *while-noticing stage*, which is based on two interrelated feedback tasks, namely *contrastive-critical framing* and *transformed practice*, and (III) *post-noticing stage*, which is aimed at helping students reflect on what they have learned during the entire feedback process. It is worth noting here that the two tasks (contrastive-critical framing and transformed practice) at the while-noticing stage serve as scaffolded input for enhancing students' uptake of feedback and fostering their awareness of feedback issues like 'form' (e.g., linguistic items like grammar, vocabulary, and mechanics), 'content' (e.g., idea development, logic, and coherence), and 'organization' (e.g., the way ideas are organized into an introductory

paragraph, body paragraphs, and a concluding paragraph) in writing. The main goals of CFTs are to help student-writers gain an informed awareness of their writings and know how to find gaps and sources of gaps in their pieces of writing. These CFTs are also aimed at helping students negotiate those gaps and re-notice the revised versions of their writing to augment awareness, reformulation, and production, which in turn help them achieve considerable skills in learning to write in a second language.

Before discussing how promoting noticing through CFTs can be implemented in EFL writing classrooms, this paper addresses theoretical and empirical accounts of noticing, feedback, and collaborative feedback tasks in writing. First, this paper provides the operational definitions of the noticing concept to give audiences a clear understanding of the concept. It then discusses how noticing and feedback are closely related to facilitate learning to write in a foreign or second language. In what follows, the paper presents noticing and collaborative feedback tasks in writing to demonstrate how collaboration as a social mediation of feedback tasks can promote noticing and in turn help develop students' accuracy and fluency in writing. It then addresses how promoting noticing through CFTs can be implemented in EFL writing classrooms. Lastly, the paper addresses some challenges related to promoting noticing through CFTs in EFL college writing classrooms.

Literature Review of Noticing, Feedback and Collaborative Feedback Tasks in Writing

Noticing

The term "noticing," and other related terms—"attention" (e.g., Leow, 1997), "awareness" (e.g.,

Tomlin & Villa, 1994), “understanding” (e.g., Schmidt, 1990), and “memory” (e.g., Robinson, 1995)—are sometimes used interchangeably in the second language literature, thereby making it difficult to compare theories and results from different studies (Schmidt, 1995). The occurrence of such different related terms to noticing might be due to the inherent subjectivity in defining those concepts. Batstone (1996), for example, defines noticing as “the intake of grammar as a result of learners’ paying attention to the input” (p. 273). Further, Qi and Lapkin (2001) view noticing as awareness of a short-term memory-oriented stimulus, which refers to anything that recalls one’s attention to language input or output. As Qi and Lapkin conclude, “noticing as a result of producing the target language (TL), as in the context of L2 composing, also has important roles to play in L2 development” (p. 279). Noticing also refers to a phenomenon that occurs by paying attention to language input and output; Leow (2001) has perceived it as a means whereby learners take control over information or input received. The above definitions for the concept of noticing suggest that the process occurs when a learner intentionally allocates attentional resources to certain aspect of linguistic features (e.g., grammar or vocabulary) or content (e.g., ideas).

Thus, in this paper the term “noticing” is defined as a strategy of recognizing gaps, problems, mistakes, or errors in a particular piece of writing. As a result of noticing processes, students should be able to consciously refine any gaps or problems in their writing in order to achieve accuracy and fluency. For the sake of consistency, the terms *gaps* or *problems* are used as substitutes for the term *errors*. This is because the term error is problematic and derogative in meaning. Moreover, as students are potentially capable writers, the use of the terms gaps or problems is more positive than the term errors.

In a practical sense, researchers (e.g., Riddiford, 2006; Schmidt, 1990) assert that noticing is vital in second language (L2) acquisition, and it allows for uptake or outcome when learners recognize a particular feature of language. Ellis (1991) supports the importance of noticing in L2 acquisition and adds that to gain awareness of a language feature, students should go through three main stages: (I) students notice a certain structure of the input, (II) they move to compare the structure in their own version of the same feature in order to notice whether there is a gap in accuracy, and (III) they improve by incorporating the feature into their language. This process of noticing is perceived as a key to success in subsequent language learning, because a specific aspect of noticing, noticing the gap, occurs when the learners receive corrective feedback (e.g., in writing) and notice that it differs from their original output. The next section will elaborate on the

relationship between noticing and feedback in writing in detail.

Noticing and Feedback in Writing

Adopted from Ellis’s (1999) idea, in writing, students are expected to gain awareness of feedback features like form, content, and organization. In doing so, they should go through three main stages: (I) students notice a particular form, content, or organization in their writing, (II) they proceed to compare the features in their original drafts to their revised ones to identify a gap or problem in both original and revised drafts, and (III) they improve their subsequent written drafts by incorporating the solution(s) into them. After receiving feedback either from their peers or from their teachers, students need to notice gaps or problems found in their pieces of writing. These processes suggest that promoting noticing through feedback tasks in EFL college writing classrooms can help students observe or notice the targeted features of writing such as form, content, and organization, which in turn helps improve their writing learning.

Before discussing how promoting noticing through feedback tasks in EFL college writing classrooms can help students improve their writing proficiency, it is important to briefly discuss the two contentions for the use of feedback in second or foreign language writing. This discussion is intended to show how collaborative feedback can raise students’ awareness of correct versions of writing. Those who argue against such feedback about students’ writing contend that it is ineffective and may de-motivate students in revising processes because students might see themselves as weak writers (Polio, Fleck, & Leder, 1998; Truscott, 1996). Further, they argue that feedback on writing does not provide long-term effects on students’ language accuracy in writing. Students will continue making language mistakes in their subsequent drafts although they receive considerable feedback because peers, for example, are not able to address the accuracy of language forms.

On the other hand, those who argue for feedback in students’ writing (e.g., Bitchener, 2008; Ferris, 2008) maintain that although providing students with feedback “in the form of written commentary, error correction, teacher-student conferencing, or peer discussion” (Hyland & Hyland, 2006, p. xv) may not help students avoid making mistakes, it can raise students’ awareness of correct versions of writing. In this regard, it seems clear that, as other researchers (e.g., Ferris, 2008) contend, mistakes always take place while learning to write in a foreign or second language. Even with a high level of proficiency, writers cannot avoid language errors. As writing teachers, we cannot

assume that students will automatically notice their gaps or problems without the social mediation of both teachers' and peers' feedback.

Instructional scaffolding feedback facilitates students in gaining awareness of their gaps or problems in writing, and in turn they can refine their writing based on the feedback given. Feedback in writing is one of the means of negotiating students' pieces of writing with teachers or peers who are considered real audiences or readers. Significant achievement in writing requires students to experience short-term revisions to particular texts as a starting point for long-term achievement in writing (Ferris, 2002). EFL students are often not developmentally ready to self-correct, and therefore they learn through feedback by teachers and peers to become adept at correcting their own errors (Aljaafreh and Lantolf, 1994). Writing teachers must take into account that individual differences are important variables while considering the successes of corrective feedback (Han, 2001). As Gue'nette (2007) suggests, "teachers must not lose sight of the fact that second language acquisition is slow, gradual, and often arduous, and that corrective feedback is only one of the many factors that contribute to that process" (p. 52). For this reason, providing feedback to students should be seen as a gradual, process-oriented, and interactional activity in which students, peers, and teachers can negotiate both the processes and the product of writing.

The argument is that feedback plays a facilitative role in L2 acquisition, and there is interplay between teacher and peer feedback with noticing and comparing processes (Naeni, 2008; Qi & Lapkin 2001; Riddiford, 2006). When noticing and feedback are implemented together, they potentially complement one another in facilitating second or foreign language writing learning. For instance, in their case study with two Mandarin ESL learners, Qi and Lapkin (2001) investigated error feedback and form-based noticing. They observed the correlations of noticing in (i) the composing stage when students wrote, (ii) the reformulation stage where they compared their incorrect versions of writing (inter-language) with their correct ones (the target language), up to the (iii) post-stage where the improvement of their written products arose. The results of Qi and Lapkin's study revealed that when students notice their correct versions of writing with understanding they are more likely to be able to improve their writing. Qi and Lapkin further conclude that the higher the level of meta-cognitive processing by students, the greater the level of understanding they will have when noticing. Therefore, Qi and Lapkin's study (2001) leads to the conclusion that when students have better understanding, they will have a higher quality of noticing, suggesting that noticing together with understanding facilitates feedback in learning to write in a second language.

In other studies (i.e., Swain & Lapkin, 2002), feedback is regarded as a reformulation technique. This allows learners to make comparisons cognitively and notice gaps between their original versions of writing and their reformulated ones. Chandler (2003) also examined the importance of feedback about error in students' writing improvement. In her study, she viewed such feedback as a medium for encouraging students to notice errors in their pieces of writing. She found that when students were asked to notice particular errors in their writing, errors decreased in a subsequent draft without a reduction in the overall quality of writing. She concluded that feedback on errors helped students identify a mismatch or gap between their original versions of writing and their revised ones. Thus, the studies by Chandler (2003) and Swain and Lapkin (2002) suggest that students will enhance their language production in writing when they notice particular language problems or gaps in their own writing.

The empirical evidence above shows that noticing and feedback help students identify the gap between their earlier drafts and later revised versions of a text. Before students are asked to revise their drafts or write in subsequent drafts, they need to notice and understand the gaps so that they gain awareness of what to revise. In order to facilitate the learning process of noticing and revising the gaps, students need to have interpersonal interactions with either their peers or their teachers. For this reason, collaborative responses to help notice particular gaps or problems facilitate feedback tasks in writing, which will be further elaborated on in the next section.

Noticing and Collaborative Feedback Tasks (CFTs) in Writing

Differentiation between peer review/responses and collaborative feedback in writing is necessary to avoid misinterpretations. *Peer reviews/responses* are seen here as pairs of students working together with the teacher's scaffolding. *The focus is often the product of writing or the final stages of writing rather than the process of writing* (Ferris, 2002, Storch, 2005). Unlike peer reviews, the term *collaborative learning* is usually perceived as joint intellectual efforts among students and between students and teachers. It is the mutual engagement of the group members in a coordinated effort to complete a particular task (Min, 2006; Yuan & Wang, 2006). This differentiation suggests that in CFTs, students are supposed to work in groups of two or more in which they mutually share knowledge and linguistic resources, negotiate for meaning interpersonally, and construct, de-construct, re-construct, and co-construct knowledge in the process of writing, with more expert students scaffolding the

novice students. Thus, in this paper CFT is defined as collaboration between students and students or students and teachers who are engaged in the act of explaining, arguing, and negotiating their ideas with their peers. This process also includes discovering ideas, drafting, revising, working collaboratively, and sharing successes.

It is worthwhile noting that though there is considerable discussion about collaborative feedback in writing (e.g., Nelson & Carson, 2006; Villamil & de Guerrero, 2006), few studies have addressed the issue of promoting noticing through CFTs, especially in EFL writing classrooms. Noticing is a means of internalizing the foci of feedback and sources of gaps or problems through self-noticing and collaborative noticing. Collaborative noticing in particular is perceived as an essential means for social mediation of internalization and development. When responding collaboratively to each others' drafts, more capable peers act as mediators for a wide range of issues on feedback like form, content, and organization in writing (Villamil & de Guerrero, 2006). In such tasks, peers will be able to collaboratively notice gaps or problems in their writing with the teacher's scaffolding. More crucially, they will be able to support one another through discussion and negotiation about the gaps or problems found in their pieces of writing.

After students receive feedback from teachers or peers, they are asked to respond to the feedback. This collaborative feedback task should promote noticing and in turn help to enhance students' uptake of feedback and foster their awareness of feedback issues. There are reasons to believe this is true. First, when students collaboratively notice or identify problem(s) in the correct and incorrect versions of drafts, they provide different noticing strategies. For example, one student may be good at identifying form problems (e.g., mistakes in grammar and in vocabulary), and another student may be good at recognizing a problem in content or logic of ideas. Such collaboration allows students to support one another in recognizing problems. Second, these tasks allow students to do critical noticing. If students have different interpretations of gaps or problems, they will negotiate them by expressing their ideas or arguments, and in turn they will justify such arguments with lines of evidence. This process helps students to build and develop critical thinking in noticing the gaps or problems in their pieces of writing. Third, these tasks help students to be aware of their own or their peers' drafts, which in turn help enhance students' awareness of the way their writings may present difficulties for a reader.

The idea of promoting noticing through CFTs in writing has been spelled out in some empirical studies. For instance, Tang and Tithecott (1999) examined the value of collaborative feedback tasks in a college

writing classroom. They reported that students' writing accuracy improved even though students had some concerns about the collaborative task: some students felt less comfortable and others found it hard to criticize their peers' work. According to Tang and Tithecott, students' language accuracy improved overall because they were engaged in the socio-cognitive activities, which enabled them to notice the difference between what they want to say in their drafts and what they had written. Thus, as Tang and Tithecott concluded, both low and highly proficient students benefited from the CFTs. As a result, such tasks raise students' awareness and self-confidence in writing.

Similarly, Riddiford (2006) investigated the use of collaborative feedback tasks in promoting noticing in a university-level academic writing class. In her study, 32 international participants at a New Zealand University were asked to collaborate with their peers and give feedback, correcting each other's errors in their weekly essays after the teacher provided indirect feedback by highlighting the errors. The findings indicated that collaborative feedback tasks in ESL writing promoted noticing because students discussed the errors. Thus, peer dialogs enhanced students' meta-cognitive processing. Despite the fact that it is seen as dialogic interaction, there are some critical issues in the use of noticing in CFTs that will be discussed in detail in the next section.

Critical Issues in the Use of Noticing in Collaborative Feedback Tasks (CFTs)

When teachers promote noticing in CFTs, they need to consider a number of issues in order to facilitate the entire process of feedback. The first crucial issue is training students how to do CFTs. The teacher should train students by clearly explaining the process of CFTs and modeling this entire process in the classroom several times. The teacher needs to negotiate feedback goals, quality, time, and pace. First, the teacher and students should talk about students' goals for CFTs. Second, the teacher and students need to negotiate what constitutes feedback value and how much time students have to spend on providing comments on others' drafts. In modeling the process of CFTs in the classroom, the teacher needs to assign students to small groups and ask them to practice the tasks and continue with scaffolding input by going around the class and answering questions, participating in different group discussions, and sharing ideas with students. This modeling process will help students acquire noticing skills with understanding.

The second important point is assigning groups for CFTs. In this regard, as Storch (2002) suggests, small groups of two or three students are more effective because they maximize the opportunities of

participation among students. It should be noted, however, that the number of students in each group depends on the class size. For example, if a class is large, with 35 to 40 students, then four or five students in each group may be necessary to complete the CFTs during a class meeting. Additionally, teachers may ask students to work in pairs or in groups consisting of more capable students and less capable students so these groups can maximally benefit from the CFTs with a more knowledgeable student helping a less knowledgeable peer (Qi & Lapkin, 2001). In assigning students into pairs or groups, both teacher and students should negotiate the choice of selecting pair or group members because such negotiation provides more opportunities for students to select their own group members and in turn work at their convenience (Jacobs, 2006; Storch, 2005).

The last important issue is related to paying attention to how well the groups are functioning. Jacobs (2006) suggests that to enhance group functioning, teachers should encourage groups to work together by “fostering the feeling of positive interdependence among group members” (p. 36) and the feeling of supporting one another in order to complete particular feedback tasks. Teachers may assign the same groups with the same members to respond to a particular piece of writing until the feedback process task is accomplished. In another feedback process task, teachers may rotate group members because interacting with different peers helps students to gain different experiences (Storch, 2005). As Nelson and Carson (2006) suggest, this rotation can be made based on the initial preferences of students, mixed genders, and mixed proficiency levels in language and writing, followed by other types of groups structured by the teachers.

Promoting Noticing through Collaborative Feedback Tasks (CFTs)

As mentioned earlier, most previous studies (e.g., Riddiford, 2006; Tang & Tithcott, 1999) on promoting noticing through CFTs addressed how students noticed a gap or problem between the original versions of their writing and the revised ones at the end of the feedback process. However, more crucial issues on how students should find gaps and sources of gaps in their writing, negotiate those gaps, and re-notice the revision for gaining awareness, reformulation, and production remains unclear on a pedagogical level. Therefore, this paper provides a framework for promoting noticing through CFTs based on three sequenced and interrelated stages: pre-noticing, while-noticing, and post-noticing stages. As mentioned earlier in the introduction, contrastive-critical framing and transformed practice, the two tasks at the while-

noticing stage, are designed to be interrelated tasks. Teachers should not treat them separately; instead, they should be used together in order to gain the intended benefits of the entire CFT process (i.e., how collaboration as a social mediation of feedback tasks can promote noticing and in turn help to develop students’ writing accuracy and fluency through pre-noticing, while-noticing and post-noticing stages).

Pre-noticing Stage in Collaborative Feedback Tasks (CFTs)

In the pre-noticing stage of CFTs, the teacher needs to train students to help them notice their gaps or problems in the while-noticing stage because CFTs may be complicated for students; for example, students may not know which aspects they need to focus on when commenting on their peers’ pieces of writing. Teacher modeling for such tasks is useful for scaffolding students’ CFTs so that they will be able to perform the tasks easily. In teacher modeling, the teacher shows the students the way to identify the three main features (form, content, and organization) in a piece of writing.

It is worth noting here that at the pre-noticing stage, teacher modeling is also intended to promote students’ positive attitudes towards CFTs, as not all students are familiar with collaborative work. Furthermore, students’ cultural beliefs and values may not place a high value on collaborative work. If students, because of their cultural values, see the teacher as the focus of the classroom, they may not readily understand that other students can help them to learn.

While-noticing Stage in Collaborative Feedback Task (CFTs)

Two interrelated tasks can be used in CFTs during the while-noticing stage: contrastive-critical framing and transformed practice, adapted from The New London Group’s terms (1996). The former refers to a task that encourages students to collaboratively compare and contrast the original and noticed versions of their writing critically. The latter is perceived as a task that urges students to collaboratively transform what they have negotiated, which contributes to possible solutions to the problems noticed during the feedback process. These two interrelated tasks are aimed at training students to be critical about meaning making in peer or teacher negotiation for students’ drafts.

In contrastive-critical framing, students are asked to respond collaboratively to each other’s drafts in groups or pairs, and the teacher acts as a reader as well. Afterwards, students and teacher notice gaps or problems; the foci of gaps or problems include form, content, and organization. Then, groups/pairs of

students are asked to recognize sources of gaps or problems. These sources can be derived from differences between their mother tongue and the target language as well as cultural differences. Regarding linguistic differences, for example, Japanese has no articles, whereas English does have articles. As another example, Arabic generic syntactic structure is Predicate + Subject + Object; on the contrary, English generic syntactic structure is Subject + Predicate + Object. These two examples may result in negative transfer of students' native languages when students compose in English. Pertaining to cultural differences, the way EFL students write in English may be partly influenced by the way they compose in their native languages. In this regard, students may be unfamiliar with organizational rhetoric of English. For example, Chinese students may write regarding a set of rhetorical norms (i.e., the 'eight-legged' or eight sections essay). This rhetorical norm has the following schematic structure: opening, amplification, preliminary exposition, initial argument, central argument, later argument, final argument, and a conclusion. This schematic structure is different from that of American English, for example, which may entail traditional five-paragraph essays with an introductory paragraph, three body paragraphs, and a concluding paragraph (Cai, Matalene, & Williams, as cited in Myles, 2002).

Table 1
A Framework of Contrastive-Critical Framing for Collaborative Feedback Tasks

Drafts	Versions	
	Original	Noticed
Foci of gaps/problems		
• Form		
• Content		
• Organization		
Sources of gaps		
• Interlanguage difference		
• Cross-cultural difference		
Noticing the gaps		
Negotiation for gaps		
• Comparing and contrasting the gaps		
• Finding solutions for the gaps		

When students are working in contrastive-critical framing in a form of groups or pairs, they are usually asked to notice the gaps between the original versions of the drafts and the noticed versions of the drafts based on the above-mentioned cross-cultural and cross-linguistic differences. Such collaboration provides a medium of negotiation for the gaps. This negotiation encourages students to critically discuss finding solutions for the gaps noticed. Moreover, conflict or

disagreement in the negotiation process provides impetus for students to re-examine their language use, arguments, and organizational clarity in their writing (Swain & Lapkin, 2002). In other words, in collaborative negotiation, students verbalize their thoughts through explaining, questioning, and defending their arguments. The entire framework for CFTs using contrastive-critical framing is depicted in Table 1.

Based on the contrastive-critical framing, students work on a transformed practice task. This task urges students to transform the negotiated solutions for the gaps identified. In the transformed practice, teachers can design their CFTs, as outlined in Table 2 below.

Table 2
A Framework of Transformed Practice for Collaborative Feedback Tasks

Drafts	Versions	
	Original	Revised
Revising drafts using a transformative strategy		
Re-noticing		
• Form		
• Content		
• Organization		
Degree of Output		
• Awareness		
• Reformulation		
• Production		

As seen in Table 2, in order to complete the process of CFTs, the next step in the negotiation process is collaborative transformation, which helps students re-notice and transform form, content, and organization. In doing so, teachers ask students to revise their drafts based on both teachers' and peers' feedback at the gap negotiation stage. Whether students take the feedback into consideration depends on how students make use of it in a revised draft. In this respect, students do not necessarily make use of the feedback directly, but they have to address how the feedback can improve their drafts of writing. After students have revised their drafts, they are asked to re-notice or re-identify the original and revised versions. This task includes noticing form, content, and organization in writing. Re-noticing is aimed at helping students gain critical awareness of possible future gaps in their pieces of writing and reformulate such gaps into their own situated writing contexts/tasks. In turn, student writers will be able to produce good pieces of writing in terms of form, content, and organization, thereby being able to voice their own ideas. In short, the main goals of transformative practice in CFTs are to help student-writers re-notice the revised versions of their writing to gain awareness, reformulation, and production, which in turn help them achieve

considerable skills of writing in a foreign or second language.

It should be noted, however, that the application of those two tasks (contrastive-critical framing and transformed practice) in CFTs might frustrate students who are unfamiliar with collaborative tasks. To address this issue, writing teachers should support students by modeling the way to accomplish those tasks. Alternatively, teachers and students may work together on the tasks. As Donato (cited in Storch, 2005) maintains, this collaboration is seen as “collective scaffolding” in which EFL writing teachers are viewed as more capable people who scaffold students so as to make CFTs much easier to accomplish. Thus, EFL writing teachers should facilitate the entire CFT to help students write better in English and see feedback as a negotiated, process-oriented dialog, not as a medium of hunting for errors or blaming students as incompetent or ignorant EFL writers.

Post-noticing Stage in Collaborative Feedback Task (CFTs)

After students go through the process of contrastive-critical framing and transformed practice at the while-noticing stage of CFTs, the teacher can ask them to reflect on what they have learned during the entire feedback process. This reflection not only helps EFL students self-assess strengths and weaknesses of their writing abilities but also offers students opportunities to better understand the changes they made during the writing and feedback process (Swain & Lapkin, 2002). One possible way to help students do reflection is by offering students reflection guides explaining the intended goals and objectives of the reflection. This reflective task enables teachers to see what their students have learned during the feedback process and what aspects they have improved on regarding their writing. Additionally, students may be asked to share their reflective notes or essays. This reflection sharing further assists students in better understanding the nature of different problems in their writings, thereby encouraging students to make informed plans for improving their drafts.

Challenges of the Framework for Promoting Noticing through Collaborative Feedback Tasks (CFTs)

In this framework for promoting noticing through CFTs, there are some possible challenges that teachers need to take into account. First, EFL students may notice the easiest focus, form, because form or language accuracy may be spotted more easily. For this reason, at the teacher modeling stage, writing teachers need to make students aware that form, content, and

organization are equally important in constituting good pieces of writing. By demonstrating the importance of both accuracy and fluency in writing, teachers will help address the challenge of orienting students in addressing the feedback they receive. Another challenge occurs when pairing/grouping EFL learners to do CFTs. EFL writing teachers should weight factors like student’s language proficiency as well as writing and pair dynamics to create more interactive collaboration that will urge students to focus on a variety of gaps or problems in the form, content, and organization of writing.

Additionally, some students or teachers may feel reluctant to comment critically on their peers’ drafts because they do not want to hurt their peers. This cultural perception or attitude may hinder CFTs. Therefore, EFL writing teachers and students need to have positive attitudes towards the tasks. One way to promote positive attitudes towards CFTs is through teacher negotiation with the students. They can demonstrate that writing is always social: subjectivity is multi-valenced and multi-voiced; writers and readers are always conditioned and interpolated by networks of social relations; and the goal of commenting critically on peers’ draft is about raising peers’ awareness on discursive formations rather than hurting peers feelings. Thus, it is important to comment on peers’ draft, interact with peers, negotiate, evaluate, share ideas/opinions, and defend ideas in order to construct and co-construct knowledge.

Regarding another cultural issue, as Nelson and Carson (2006) point out, when responding to each other’s drafts, students may be reluctant to spot some gaps or problems because (1) they would like to provide positive comments for maintaining harmony in groups, (2) they would not want to hurt others’ feelings, and (3) they would think that only teachers should provide negative feedback because they have the sole authority in assessing students’ writing. Spotting others’ mistakes or problems in others’ writing causes embarrassment. This face-threatening issue hinders students from being critical in commenting on others’ drafts even in cultures where collaboration may be valued. In this regard, as mentioned earlier, the teacher should tell the students about the fact that writing is a social practice and there is always room for negotiation. The students should develop tolerance for critical feedback, which in the long run helps them reconstruct and reform their writing practices.

The last challenge of the framework is that teachers may have limited time. This is true when institutional policies provide scant time for writing classes or writing is integrated with other skills or with other curricular agenda such as examinations. Time can be limited because class sizes are large, so teachers may have difficulty in meeting individual needs. For this

reason, these CFTs may be carried out in subsequent class periods in a sequence of process-based activities. The teacher can arrange group conferences in which more than one individual's gaps or problems can be addressed through CFTs.

In spite of these challenges, this framework is intended to provide students with interactive, process-focused feedback tasks in which errors are viewed as problems or gaps for students' further development in writing. More important, this framework provides flexible space for students to support one another in achieving informed and integrated awareness of feedback in writing, and in the long term it supports them to become competent writers.

Conclusions

Promoting noticing through collaborative feedback tasks (CFTs) using pre-noticing, while-noticing (i.e., contrastive-critical framing and transformed practice), and post-noticing potentially helps students make significant improvements in writing when they are provided with feedback either from teachers or from peers. Whether this structure leads to awareness of form, content, and organization in pieces of writing, idea reformulation in new drafts and better production of writing deserves further empirical studies into the use of noticing in CFTs and its implications for students' entire writing abilities. These strategies are aimed to better help EFL students achieve writing accuracy and fluency. The most important thing is that this framework should be redesigned based on particular writing, learning, and teaching contexts, practical implementation of the framework in specific learning/teaching contexts and goals, expectations, and outcomes for foreign or second language writing learning from student, teacher, and institution perspectives. In other words, situated collaborative feedback practices rest on institutional, curricular, cultural, and interpersonal contexts.

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Eliciting and Assessing Reflective Practice: A Case Study in Web 2.0 Technologies

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This paper focuses on the role of multimodal technologies in facilitating reflective processes and the subsequent assessment of reflectivity for students in pre-professional programs. Reflective practice has been established as a critical tool for developing identity in and on practice. This paper will focus firstly on reviewing salient literature about reflective practice and its use with pre-professional teachers. It will then report the processes and outcomes of the authors' practices, as supported by the literature. Various reflective practices will be examined and explained. The role of the E-Portfolio (Electronic Portfolio) as the vehicle for housing student reflective practice will be briefly explored and the process for using author-developed rubrics for assessing levels of reflective practice will also be shared. Suggestions for replication in other disciplines, while being implicit, will also be made explicit.

Authentic and principled reflective thinkers know how to make meaning across their experiences and use their emerging understandings to advance their learning. This paper explores the potential of rethinking pedagogy given web 2.0 technologies that allow us to question, re-imagine, and leverage the roles of audience, voice, and identity in fostering students' reflective practice. Following discussion of relevant literature across several fields, the current paper will share examples of "multimodal" reflective practice and evaluative rubrics used to assess student work and growth. Exploration will include design and application of assessment rubrics and engagement with the web 2.0 tools. Key strategies of evaluating reflective material will be identified and shared using examples from across several disciplines. The relevant literature and theoretical supports for the use of reflective practice, and E-Portfolio as a vehicle for reflective practice, will be briefly overviewed.

Review of the Literature

With the exception of progressive work in higher education in regard to improving the quality of teaching, such as the work of the International Society for Exploring Teaching and Learning, (ISETL, 2010) little information is available in regard to if, or how, faculty use reflective practice on a wide and regular basis. Some evidence in this area is found with pre-professional teacher programs that are required to show evidence of the students' journey from student-teacher to teacher for national accreditation. At the higher education level, it is tacitly assumed that all teacher education programs utilize reflective practice. Examining the support for reflective practice in both undergraduate and graduate students assists in illuminating a potential use for all faculty in higher education in an important way: namely, that faculty can incorporate reflective practice for their own students in

fields other than teacher education and utilize E-Portfolio as the conduit for examining reflective practice across several modalities. Reflective practice at its base allows faculty to examine what students think they know, understand, or experience in educational settings. It adds an additional product level of assessment for faculty to evaluate what students know and can do. Examining students' reflection gives faculty insights into metacognition, but the reflective practices and processes themselves can also be assessed and evaluated.

Van Manen (1977) initially proposed the existence of levels, or strata, within reflection. He put forward the notion of "co-orientational grasping," by which he meant "that one person partakes in the orientation of another" (p. 213). Specifically, he suggested that this practical reflection could contribute understandings and critical reflections and, furthermore, could be stratified into three levels. The first level was focused on the practical means, rather than the ends (p. 226), the second was concerned with analyzing and clarifying experiences, whereas the third, and highest level, included questioning pre-established knowledge, conventions, and experiences. It was established early in the literature that reflectivity can be pursued at a variety of levels.

Schön (1983) went on to further describe the verbal and nonverbal thinking entailed as the structure of *reflection-in-action* (pp. 128-167) and illustrated his concepts through disciplines as diverse as psychotherapy to architecture. He discussed the reframing of problematic situations (p. 129) as a process of reflectivity. In his later work, (1987) he articulates the notion of *reflection-on-action*, where one reflects upon aspects of an event after the fact. He makes the point that the professionals who receive guidance and encouragement, and who think carefully about what they do while they are doing and experiencing it, will typically learn in a more profound

way. This thinking has been subsequently supported in the more recent literature of teacher education.

The focus of this paper is teacher education, and specifically music and English teacher preparation, but connections can be made across different disciplines and will be made explicit in the discussion section of the current paper. Teaching is “a process of ongoing learning, reflection and decision making” that develops over the course of multiple stages of pre-professional teachers’ education (Barr et al., 2000, p. 464). Beginning with undergraduate studies, pre-professional teachers develop their knowledge through academic coursework. Subject-specific content knowledge develops through the pre-professional teachers’ content-specific coursework, but pedagogical content knowing (PCKg) does not typically begin to develop until pre-professional teachers are provided with opportunities to apply subject-specific content knowledge to actual teaching or professional situations (Cochran, DeRuiter, & King, 1993; Wilson, Shulman, & Richert, 1987).

PCKg is defined by Cochran et al. (1993) as “a teacher’s integrated understanding of four components, pedagogy, subject matter content, student characteristics, and the environmental context of learning” (p. 266). For the purposes of this paper, pedagogical content knowing includes teachers’ purposes for teaching content, knowledge of students’ content understandings (and potential misunderstandings), knowledge of curriculum and materials, and knowledge of instructional strategies for teaching particular topics within the context of their internship settings. As Grossman (1991) explains, “Teachers must draw upon both their knowledge of subject matter to select appropriate topics and their knowledge of students’ prior knowledge and conceptions to formulate appropriate and provocative representations of the content to be learned” (p. 9).

The literature in the teacher education field has emphasized the importance of reflective practice in leading pre-professional teachers to restructure prior understandings and refine pedagogical thinking (Schön, 1987; Calandra, Gurvitch, & Lund, 2008). This is especially critical during the semester in which students complete their student teaching placement while compiling a culminating E-Portfolio (and accompanying defense/hearing/oral presentation). Fenstermacher (1994) is useful here in terms of understanding what it means to reflect on one’s practice in a deliberate manner:

Yet another way to justify that we know something is to offer good reasons for doing or believing it... the reasoning of the teacher takes place in folk or commonsense language... Reasoning of the sort I am referring to here is what Aristotle called

phronesis: deliberative reflection of the relationship between means and ends. (pp. 44-45)

Building on this understanding, Posner (2005) argues, “If preservice teachers do field experience without thinking deeply about it, if [they] merely allow [their] experiences to wash over [them] without savoring and examining them for their significance, then [their] growth will be greatly limited” (p. 3). Pre-professional teachers’ accounts of well remembered events and critical incidents can serve as important ways to provide good reasons for their actions and understandings within the context of their program and thus serve as a way for them to begin to articulate their PCKg. While recent scholarship continues to advocate for providing pre-professional teachers with opportunities to exercise reflective practice, the authors did not know how the use of assessments or rubrics might elicit, support and capture students’ growth as deliberative reflective practitioners.

Where methods courses typically have included written reflections to exercise and engage pre-professional teachers’ reflective thinking (Smagorinsky & Whiting, 1995), these approaches are subject to selective memory and lack of supportive evidence (Yerrick, Ross, & Molebash, 2005). The authors chose to conduct a comparative research study (authors, in review) where firstly they wanted to establish how our students’ reflective practice differed with different modalities of expression. The authors, as faculty and researchers, asked the students firstly to write a blog post (print text log) every second week, and on the weeks in between, the authors asked students to create and post a Vlog entry (video log) about their experiences. A Vlog is a recorded video of the student speaking while thinking back across their practice, understandings, and sometimes mis-understandings of, and in, their actions in the field. Results of this study are being reported elsewhere (authors, in review) as to the differences in how students used the blog and vlog media; however, the practices employed to elicit that reflective practice, as well as the design of appropriate assessment tools for that work, will be illustrated in this paper.

Multimodal, digital tools such as blogs and vlogs were intentionally selected to support and reflect a valuing of the increasingly multimodal nature of forms of representation. Current reform efforts in K-12 schools have emphasized value in a pedagogy of multiliteracies in which learning how to read and write multimodal texts is integrated alongside learning how to construct and communicate through alphabetic texts (Kress, 2003; New London Group, 1996). Multimodal representation is complex and largely unfamiliar to the pre-professional students entering some graduate programs, but in authentically utilizing the affordances

of several complementary modes of communication, students are quick to value the ease on the semantic load placed on written language when composing is limited to print text (Shoffner, 2009; Kajder, 2007). The selection of these modalities and forms of writing also derived from the authors' valuing of language and writing as a dynamic process of transformation, as opposed to a process of reproduction (Cope and Kalantzis, 2009). By modeling such a pedagogy within our methods course instruction, the current authors were both opening up what counted as valued communication within the graduate courses and modeling a pedagogy that aimed at a more productive, innovative, and creative use of meaning making, reflective practice, and subsequent development of teachers' identity and agency.

Reflective Practice and E-Portfolio

As evidenced above, reflective practice is seen to be one of the single most helpful strategies a student can employ to further their understandings. As much as we, the authors, focused on multimodal spaces for capturing and eliciting students' reflective thinking, students in both programs were concurrently developing E-Portfolios designed to capture their pedagogical growth over time. There has been ongoing debate as to the benefits or problems with the use of EPortfolio (Georgi & Crowe, 1998), but it is accepted as appropriate for teacher education (Barton, 1993). It has potential for other disciplines, particularly for the following areas: (1) integration: the ability to make connections between theory and practice, (2) explicitness: the student's focus on the specificity of purpose for the E-Portfolio, (3) authenticity: the E-Portfolio provides direct links between artifacts included and classroom practice, and (4) critical thinking: provided by the opportunity to reflect on change and growth over a period of time. It seems reasonable to expect that the areas of integration, explicitness, and critical thinking hold saliency for all higher education teaching and learning settings.

It is important to have students reflect in effective ways rather than merely run through a mental checklist of their knowledge or perceptions. Fernsten & Fernsten (2005) give three important notions for where to start. They suggest providing safe and supportive environments whereby students can be honest when adding reflective pieces to E-Portfolios (p. 304). They also point out that students need to be given "adequate and strategic prompts" (p. 305), and finally they advocate for "developing understandings of a shared discourse" (p. 306) whereby students have access to definitions, models, and feedback about their reflections. Reflectivity is the primary focus of this paper, and its subsequent use in E-Portfolios is often

most seen in the literature of teacher education; however, it can be found in other disciplines such as career services, communication studies, engineering, and business (Brown, Peterson, Wilson, & Ptaszynski, 2008). For a broader summary of reflection in E-Portfolios at large, please see the work of Barrett (2010), and for understanding the assessment of E-Portfolios as both reflective process and product, the recent work of Chen & Light (2010) is particularly useful.

The work of Gibson & Barrett (2003) illustrates how to best use reflective practice in E-Portfolios in asking students to be more self-directed. The method of asking students to "collect, select, reflect, and connect" is used by many and does not appear to be attributable to just one source; however, it is a useful phrase in understanding how artifacts such as lesson plans, videos of teaching, curriculum planning, and other students work are embedded and represented in E-Portfolios. Additionally, students have opportunity to illustrate how their reflective practice demonstrates the nature of their learning and growth over time. Students constantly reflect throughout a semester, and by going back for selecting, reflecting, and connecting multiple reflections, their opportunities for growth increase exponentially. Students who have had the most experience with E-Portfolios and thus have a familiarity with them tend to prefer the E-Portfolio, and the expected reflective practice, as a preferred assessment of their growth as a teacher. Struyven, Dochy, & Janssens (2008) report that when students have more hands-on experience with a particular assessment method, they develop more positive perceptions. When working intensively with E-Portfolios, participants in this study showed a preference for this type of global assessment of their knowledge and understandings. Students assessing their own reflective practices often try to decipher when reflection is simply about content (Grossman, 1991) and when reflection is about practice (Schön, 1987). Students often struggle with this delineation, and reflective practice loses its benefits and integrity unless the students are given feedback to improve their efforts.

Specific to the interests of the authors for the current paper, the work of Bauer & Dunn (2003) examined the use of reflection in E-Portfolios in music students. One of their findings indicated that there were varying levels of quality in the students' reflections (p.16). They reported low-level reflective writing from music students, noting that it was largely descriptive and about content, rather than in and on practice. The current authors were interested in improving a similar lack of reflective maturity in their own music pre-professional student teachers. Bauer & Dunn (2003) recommended that "students need assistance in better understanding what reflection is and how the process of

reflection works” (p.16). The processes the current authors undertook for improving reflective practice will be reported in detail further in this paper.

While it is possible to see students’ weblogs as a form of an electronic E-Portfolio, the authors’ students’ work was developed in dialogue with or alongside the E-Portfolio work. In the context of English Education, students did read across their blog/vlog entries collected across the semester to develop a reflective page in the E-Portfolio discussing their growth over time, as evidenced within both the posts made and the comments received and, where appropriate, responded to. Where teacher reflective practice has historically been tied to written reflections through print (Ray & Hocutt, 2006), in both blog/vlog posts and E-Portfolio composing, students are writing across modalities and media. Within a discipline that studies and cultivates written expression, it follows that graduate students with 4-year undergraduate degrees in the areas of composition and literary studies are skilled at written expression, though research indicates they are still novices when it comes to using writing as a tool for self-growth and learning (Cole, Ryan, Kick, & Mathies, 2006; Khourey-Bower, 2005). Additionally, emerging research has begun to suggest that where blogs are writing spaces that may promote reflective practice, the depth of reflection within individual posts or blogs varies markedly (Shoffner, 2009; Ray & Coulter, 2008). The use of intentional scaffolding and assessment rubrics throughout this case study was a deliberate move to address these issues.

Assessing Reflective Practice

Improving the quality of reflective practice in students requires finding a way to make explicit the differences between levels of reflective practice. Several researchers have been successful; therefore, a brief examination of their work is useful at this point. Fernsten & Fernsten (2005) suggest “clearly differentiating between process and product reflections.” That is, to give students specific questions so that they can reflect about outcomes and processes. This can also be seen in Schön’s (1983; 1987) reflection *in* and *on* practice. Discussing the goals and expectations of each assigned reflection helps students understand what is expected but is not so detailed that the students simply write what they think the professor wants to hear. Fernsten & Fernsten (2005) also recommend the construction of rubrics to assist students and faculty to see the development of skills in reflective practice. Rickards et al. (2008) presented a series of frameworks to be used when characterizing student reflections, and they created a matrix of descriptors that overviews developmental perspectives (p. 41). In their study, they sorted a sample of reflective essays into

their framework, which consisted of three levels (beginning, intermediate, and advanced), through the lenses of three perspectives (self assessment, how people learn, and learning that lasts). The three perspectives are indicative of the content of the reflections, while the levels indicate the degree to which students are reflective in their writing. Rickards et al. recommended deepening understanding of reflective practice in students by refining the matrix descriptors and training assessors to use the matrix, with a view to being better able to identify the development of students’ reflection longitudinally over time.

The works of Larrivee (2008) and Sparks-Langer et al. (1990) are the most robust in the literature in developing frameworks for pre-professional teachers, and the current authors started with, and ultimately adapted, these works when developing their own measures. Sparks-Langer et al. (1990) set out to establish the characteristics of good reflective pedagogical thinking. They developed a framework and a coding scheme for analyzing reflective thinking, and they subsequently report the findings of testing these with pre-professional teachers. Their framework consists of seven levels, ranging from (1) “no descriptive language” through (4) “explanation with traditional or personal preference given as the rationale” to (7) “explanation with consideration of ethical, moral, political issues” (p. 27). The results of their study suggest they would reframe their framework, as the linear model was not consistent for all students. Specifically, some students might reflect about the moral implications of a situation or experience but use little to no appropriate or descriptive language. The work of Sparks-Langer initiated a path for the current paper, namely to establish a framework that might work with our particular set of students. Larrivee (2008) also contributed to this end, and her work puts forth a framework of four levels (p. 342-343): (1) *Pre-reflection*, where reflection is reactive, lacking ownership, and non-questioning; (2) *Surface reflection*, where the focus is on ‘what works’ in action and is basically just descriptive; (3) *Pedagogical reflection*, in which reflective writing applies teaching knowledge as well as theory and research, and connections are made between principles and practice; and (4) *Critical reflection*, where moral and ethical implications and consequences of their teaching practices are examined in light of the impact on students and the social conditions that fostered it (p. 343).

Larrivee goes on to suggest that reflection develops in dimension, “from trivial to significant to potentially profound” (p. 344). In her study, she sought out authors from previous teacher reflective practice literature and asked them to establish specific descriptors that might

define levels of reflective practice. After they were written, revised, and piloted, they were asked again to rank the descriptors as high quality or otherwise. By calculating the majority of “high quality” rankings from each participant, either a researcher or author with expertise in reflective practices, Larrivee took the majority opinion to assign items to each of the four levels. The magnitude of this study is apparent, as descriptors were created in such a way that they could be used for self-rating and observer rating. A final tool was created, a series of indicators in each of the four levels, whereby they are given a score based on observation or perception. That is, a categorical ranking of “frequently observed, sometimes observed, and infrequently observed” (p. 353). The tool also includes a facilitator assessment, a self-assessment, and a plan for action toward improved reflective performance.

The current paper authors were motivated to adapt the concepts particularly from Rickards et al. (2008), Sparks-Langer (1990), and Larrivee (2008) to attempt to make clear the levels of reflective practice they were looking for in their own students, students who were different in demographic and educational characteristics from those in the Sparks-Langer and Larrivee studies. The next section of this paper outlines the decision points, processes, and successes of eliciting and assessing reflective practice in music and English pre-professional students with the proposal that many of the suggested techniques and tools will adapt to other disciplines in higher education.

Putting the Literature into Action

Background

The authors are members of a small teaching and learning centered department in a School of Education at a state university. There is an accreditation requirement for the use of E-Portfolios as part of all pre-professional programs within this particular School, and both authors had used E-Portfolios extensively at other institutions, integrating them into their course pedagogies prior to their current roles. That said, one author had extensive experience in cultivating students’ written reflective practice (English education) and the other author had considerably less (music education). As colleagues with a fundamental goal of aligning capstone products, the authors met regularly to discuss how the work of students was similar and different. Naturally, the issue of reflective practice was raised often. The authors noticed that their approach to the processes of asking students to write reflectively was different, so they planned to align teaching styles in order to be able to evaluate students’ products with more congruence.

In the fall of 2008, students for music education had been emailing their reflections each week to their professor, whereas the English students had been creating dynamic voice thread digital narratives. For the Spring of 2009, the authors cooperatively asked their students to write a Blog one week and then create a Vlog every other week, the idea of the English faculty, a nationally recognized expert in multi-media literacies and Web 2.0 learning. A Blog is a written piece of text added to a weblog, and a Vlog is a video narrative recorded in real time and uploaded also to a weblog for sharing with the professor or viewing community within a class. This was done using the [www.wordpress](http://www.wordpress.com) blog site but was secured and password protected. Permissions were shared between students and faculty only. The content of the Blogs and Vlogs were the students’ reflections about their week of teaching experiences. The results from the data of these were remarkable, and group differences were observed between the Vlog narratives and the Blog narratives as well as within group differences (authors in review). The results of this study confirmed that students did indeed reflect differently depending on the modality (Blog or Vlog) and that their perceptions about the processes were mixed. When asked about the experience, many reported needing more prompts and, in particular, needing more guidance as to what was good reflection. In response to this, the authors met to design congruent prompts and created a rubric for use the following fall semester in 2009.

Blogging on Sakai

SAKAI is a free, open source, educational software platform. Systems similar to this are called Course Management Systems or Learning Management systems. Features of these include class calendars, document distribution, a grade-book, discussion threads, live chat, assignment uploads, online testing, wikis, blogs, and podcasting (for an example, see <http://sakaiproject.org/>). In the fall of 2009, Blogs were required of students in both classes who were taking a two day field placement internship at public schools. Faculty already used the learning management system (LMS - Sakai) to teach their classes, so it was administratively sensible to have students work in the platform where their other class and coursework was held. Blogs were written by students each week and responded to by faculty. The prompts greatly assisted students to focus their writing initially around themselves and what they were doing. This was often superficial writing, but with the use of the rubric (See Figure 1), faculty gave students feedback that promoted deeper thinking, and therefore, deeper reflective writing.

Figure 1
Reflective Practice Rubric

Capstone or macro-reflection	Level 0 (Unsatisfactory)	Level 1 (Basic) 70-80	Level 2 (Competent) 80-90	Level 3 (Distinguished) 90-100	Score
Reflection on practice	No reflection on practice is given	Does not recognize change to practice but discusses it Does not perceive relationships between student learning and teaching practices but discusses them Does not engage in critical criticism of one's own teaching but discusses one's teaching	Is unclear how changes to practice occurred, but they are recognized Perceives relationships between student learning and teaching practices Engages in critical criticism of one's own teaching	Acknowledges and articulates changes in practice Analyzes relationships between student learning and teaching practices Engage in critical criticism of one's own teaching offering alternatives for future practice	
Critical reflection of growth	No reflection of growth is given	Does not perceive area of change in beliefs or assumptions Does not observe self in the process of thinking Does not question commonly-held beliefs Does not craft narrative using past experiences, reflections, or learning	Is unclear which changes to beliefs or assumptions have occurred Partially observes self in the process of thinking Questions commonly-held beliefs without offering alternatives Narratives refers minimally to past experiences, reflections, and learning	Acknowledges and articulates change in beliefs or assumptions Observes self often in the process of thinking Questions commonly-held beliefs offering solutions Narrative weaves richly between past experiences, reflections, and learning	
Total Score					/200

The benefits of asking students to Blog on Sakai were three-fold. Firstly, work held in the blog could be accessed anywhere, which means students were more likely to "Blog" while in the field. Secondly, comments added by faculty were recorded in the Blog and served to remind students how to improve their performance at the next entry. Thirdly, the material was held for the course of the semester, and adding to the Blog each week helped motivate students as they could see their progress and growth. The prompts that were used typically started with orientation in the field, i.e., "What do you see? How do you fit in? What are your fears? What will be your strength here?" The prompts then moved to professional expectations such as "Why do you feel prepared? Do you know your material? Do you know what to teach?" As the semester progressed, the faculty both agreed to also use prompts to elicit thought about important aspects of the experiences such as classroom management, teaching children with special needs, dealing with administrative tasks such as roll call and tardiness, being able to differentiate instruction for diverse students, and evaluating what their own students were learning. The faculty subtly promoted

reflection content but then guided the depth of the reflectivity with rubric-driven feedback. There is support for both prompts and feedback in the literature (Fernsten & Fernsten, 2005; Rickards et al., 2008), and the faculty saw a deliberative improvement in the students' work over time. The faculty both gave their students the same prompts at the conclusion of the semester in order to establish if students could see their own growth. The final prompts of "What have you learned the most? What do you still need to learn? In what ways do you feel, think, or act like a teacher now that you didn't in the beginning?" helped student unpack their own processes and track their growth, and this was assisted by the fact they could refer back to earlier entries as examples.

Vlogging on www.wordpress

In the spring semester 2010, the authors moved off the Sakai learning platform for the Blogging work. The primary reason was so that students could be more creative with how they posted their reflections. The faculty still required a Blog text one week and a Vlog

Figure 2
Video Collage Rubric

	Developing (3-5 points)	Acceptable (6-8 points)	Target (9-10 points)	Score
I Selected Video Segments	There is some question about why these segments were chosen, how they fit together, etc. Recording is of low quality. Students' faces and identities are not showing. (Must be shadowed or grayed out in video editing)	Video selected fits the reflection and goal setting offered. Some footage is of high quality (and offers a great vantage point for the viewer), and some is not. Students are not identifiable in the video.	Key moments of classroom practice are selected. Footage is consistently of high quality and captures the action of the class. Events are fully presented. No student identities are discernable (either visibly or through reflective comments).	
II Presentation	The video is sloppy – or it is little more than some cutting and pasting – bad PowerPoint. Or, presentation distracts the viewer from the substance of the content.	The video brings together good visuals and effects/transitions/visual content that helps to communicate to the viewer.	The video is well composed, with each element working to communicate intended meaning.	
III Balance	Too much style and not enough substance. Or, worst case – too little of both.	An adequate balance between substance and style. Footage is balanced to moments of reflection and meaning making.	Just the right balance between substance and style. Leveraged the media and medium to do something not done in another textual form.	
IV Voice/Identity	Voice is either inconsistent or is immature. Little to no evidence of learning from previous work. Limited vision. Limited scope.	Voice is consistent, reflects ownership and responsibility for the class, and captures beginning identity as a teacher. Components all come together to demonstrate that the teacher is mindfully engaged in this work.	Voice here is articulate, mature, and communicates some sophisticated moves for a beginning teacher. It is clear that the teacher is genuinely immersed in this work as the work is in dialogue with and builds on previous learning.	
V Reflection across time	Offers little constructive criticism of one's own teaching. Acknowledges basic student needs and learning.	Critically examines "core instructional practices." Examines learning of all students. Communicates an awareness of difference across class communities, etc. The video has a clear and meaningful purpose.	Sets informed goals for future practice that grow from insights gleaned through observation and performance. Challenges assumptions about and expectations for students. Unpacks the context of the school, the community, etc. The video sheds new light on practice, understanding, questions, etc.	
TOTAL				/50

posting every other week, but additionally, students could upload video clips of their teaching (with K-12 student identities removed or grayed out), links to interesting websites, and photos. Most importantly, they could choose the look or design of their wordpress Blog to best represent themselves with a fuller teacher identity. The wordpress blog site is fully password protectable, and students wrote with the knowledge that their professor would read and respond to reflective material on a weekly basis. The quality of the reflection was still guided by material from the rubric. Faculty used the Sakai learning platform for all other coursework submissions but opened the reflective practice to a more individualized platform. The faculty also chose not to use prompts in this second spring semester. The reasoning was to determine if students could begin to self-examine their practice in meaningful

and mature ways, as, once they graduate, this process will be crucial to their longevity in the profession as life-long learners themselves. Instead of using guiding prompts to scaffold students' reflective work in the vlog/blog, the authors' expectations were that, given the fall experience, students were ready for a gradual release model that moved the scaffolds to the context of other activities and "freed" students to make meaning from their developing points of view and unique, individual teaching placements.

Additionally for the spring, the un-scaffolded yet still multimodal writing was tasked within the context of three student-created video collages. Here, students were required to videotape themselves teaching in their school-experience placements and edit the footage down to a short, yet intensely-reflective, video collage of habits, trends, strengths, and weaknesses that they

perceived in their own teaching practices. This reflection both *in* and *on* practice led students to examine themselves in much more focused, critical, and realistic ways than they had previous semester. Asking students to create this video collage, or what was effectively a mini-movie, with titles, subtitles, soundtracks, voice-overs, and transitions, was made possible by the skills of the two faculty. They both have created multimodal compositions, used digital media as spaces to learn from their own pedagogy, and are confident in their skills and abilities to teach their students how to navigate these technologies. Secondly, students were open to and familiar with this kind of composing, reporting that it gave them more freedom to illustrate what they know about themselves. This, in turn, allowed them to ask for help in areas they were less confident with – largely the targeted content and reflective comments or questions evident in the video. Using a multi-media reflection technique in the video collage, and reflecting both *in* and *on* practice across time, seemed to help students make more progress each month. They were asked to make three video collages, one each month, in the middle three months of the spring semester. The video collages were also assessed by the faculty with a shared and jointly developed rubric (see Figure 2).

Sharing of videos for evaluation occurred in two different ways: one, in the case of the music class, the students volunteered to periodically share their video collages with the class while using the rubric for peer evaluation and review, and; two, in the case of English Education students, by commenting on one another's videos when posted to the blog/vlog website.

The rubric developed for this video collage project is an analytic one, so while other aspects of the Video Collage are evaluated, of most value to this current paper is row 5 (Figure 2), *Reflection Across Time*. To be clear, summative evaluations using the rubric for the video collages did not factor into the class grade for any student. Instead, it was used as a diagnostic and formative assessment only to encourage deeper reflection. Students at this level of pre-professional training are encouraged to self-direct their learning for personal growth rather than a grade.

Outcomes

The culminating product for the students in this pre-professional program is the E-Portfolio. This is housed in Sakai as well. Firstly, students select work they believe best represents their learning, such as course assignments and lesson plans, etc. Where prompts for specific pages differ across programs, all students are expected to select reflections from their Blog on Sakai, their work on www.wordpress, and their work in their Video collage, again with an emphasis on

demonstrating their growth over time. The E-Portfolio is presented and defended orally as a master's thesis equivalent, a culminating defense presentation of their work, and is evaluated by not only the advisor but also other members of the students' committees, cohort members, and faculty from previous coursework. The E-Portfolio is assessed on several distinct features to meet accreditation, but the authors also used the reflective practice rubric (Figure 1) to ascertain if the capstone reflections were of suitable maturity and depth. The use of the rubrics (seen in Figures 1 & 2) as tools to support this work is important for two reasons. First, they give formative feedback to the students for their reflective Blogs, Vlogs, and Video collages during their coursework and professional placement in student teaching. Grounded in theoretical frameworks and research discussed earlier, the authors were guided in assisting their students to reach deeper levels of reflective practice. Second, the consistent, descriptive indicators for what exemplifies rich reflection made explicit to the students how the final product, the E-Portfolio, would be assessed for one of its main components – the voice of reflection about growth over time.

Discussion

The benefits of this year of practice have been numerous. The faculty authors have found that their students responded well to being part of an ongoing dialogue between professor and student each week. It was, in some ways, a type of individualized instruction. The students were asked at the end of the semester what they enjoyed or disliked about the various ways they could reflect, and it was interesting to note that although the students who had the least amount of experience with the technologies used offered up the most negative feedback, they consistently recognized that their learning was amplified by examining themselves so often.

Work by Gomez, Sherin, Griesdorn, & Finn (2008) suggests that when reflection is valued in a culture, video technology can support self-examination of any practice. Naturally, as technology advances, so will opportunities for new methods of self-examination of practice. Rich & Hannafin (2009) illustrate the ways in which several new video annotation tools can assist students to examine their own links between theory and practice in action. Future research could of course empirically examine if there is a correlation between the various forms (Blog, Vlog, Video collage) of reflective practice and whether the level of reflective practice significantly improves in students in pre-professional programs. Further comparative study could investigate whether levels of reflective practice differ between students in pre-professional programs (i.e.,

teaching, medicine, physical therapy) and other types of programs such as business, liberal arts, or engineering, as well as the question of how much the choice in reflective practice modalities may impact the subsequent quality of action in students. That is, does reflecting in a multitude of ways help the professional skills of the student? The purpose of this paper was to illustrate the nature of eliciting reflective practice and also assess reflective practice, and the best-practices noted here are suggested for other pre-professional programs. Veterinarians, physical therapists, and other disciplines that need to encourage a deep understanding of actions, performance, and practice would most certainly benefit from asking students to engage in clearly assessed reflective processes. Schön himself recommended that physicians, architects, and engineers may benefit from reflective practice in the ways it has also been used in athletics and the arts, not simply in classroom teaching (Robbins, Seaman, Yancey & Yow, 2006, p. 2).

Conclusion

Strategies suggested within this paper revolved around several key themes identified in the wider literature. These can be taken and applied directly to most teaching and learning settings where faculty wish to understand more meta-cognitive and higher order thinking of their students. Simply put, eliciting reflective practice needs four essential elements: (1) students need to understand what reflective practice is or what it looks like (Bauer & Dunn, 2003; Fernsten & Fernsten, 2005); (2) students need safe and supportive environments whereby students can be honest (Fernsten & Fernsten, 2005); (3) students need to be given “adequate and strategic prompts” (Fernsten & Fernsten, 2005); and (4) there needs to also be an accessible platform for the students to house their reflective practice in an ongoing and consistent fashion so improvement can also be acknowledged and, in turn, reflected upon. It is suggested in this paper that using Learning Management Systems such as the open source Sakai and Web 2.0 technologies is appropriate, but it is also cautioned that the use of technology needs to be supported and facilitated by faculty who are confident in these technologies themselves. Other Course Management Systems such as Blackboard, Toolkit, and WebCT may also offer commensurate features such as Blogs.

The above research and best practices suggest that there are two important factors involved for evaluating reflective practice. Firstly, making explicit the vocabularies of excellent reflective practice is critical. This will naturally depend on the discipline, but the work of Schön (1983, 1987) and Van Manen (1977) may help faculty who are interested in exploring

reflective practice discriminate between reflection *in* and *on* practice in their own disciplines. The positive outcomes of reflective practice are becoming increasingly prevalent in higher education literature across many disciplines. Secondly, creating a rubric or checklist with desirable criteria is equally important and is necessary to convey expectations clearly and regularly to students. Asking students to evaluate models of reflective practice will also assist them in understanding differences in reflective practice quality. In summary, much of this literature and many elements in these theoretical frameworks can support higher education students in other content areas, not simply teacher education. The tenets of teacher education are salient for all faculty in improving the eliciting of reflective practice from students, and the nature of reflective practice makes it suitable for faculty to use across multiple disciplines, and multiple modalities, in their own classrooms, particularly when housed in an E-Portfolio.

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