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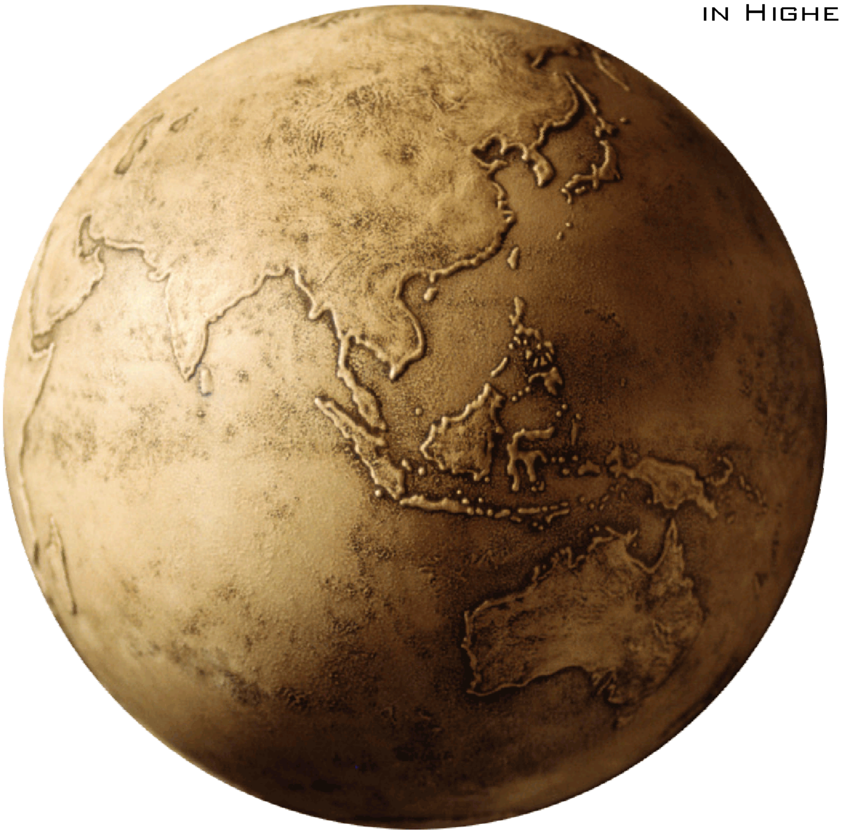

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The International Journal of Teaching and Learning in Higher Education (ISSN 1812-9129) provides a forum for the dissemination of knowledge focused on the improvement of higher education across all content areas and delivery domains. The audience of 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.

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## 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

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## Review Process

Following a brief editorial review, each manuscript will be blind reviewed by two members of the Review Board. The review process will take approximately 90 days. At the end of the 90-day review process authors will be notified as to the status of their manuscripts - accept, revise and resubmit, or reject - and will receive substantive feedback from the reviewers. Manuscript authors are responsible for obtaining copyright permissions for any copyrighted materials included within manuscripts.

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# Faculty Learning Communities: A Model for Supporting Curriculum Changes in Higher Education

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This article reports on a faculty learning community (FLC) as a professional development model for faculty in an English–medium university in the United Arab Emirates. The authors describe how the introduction of a new learning and teaching technology, in the form of iPads, resulted in many of the faculty feeling unsure about their pedagogy. A face-to-face FLC was set up with an on-line component. The FLC served as a forum to discuss issues, resolve these problems and develop sound pedagogy in accordance with the culture of the university. The authors present data from blogs, discussion notes and questionnaires, and they discuss the strengths and limitations of a FLC as a model of professional development (PD) in this particular context.

There has been considerable literature on the need for and expectations of professional development at higher education institutions (Elton, 2009; Mundy, Kupczynski, Ellis & Salgado, 2012). As is noted in the literature, professional development can take many forms such as peer observations (Bell & Mladenovic, 2008; Cosh, 1999; Lomas & Kinchin, 2006) and observations from supervisors (Gosling, 2002), as well as formal faculty appraisal (Murdoch, 2000). One of the criticisms of many of these forms of professional development is that they are top-down (Shortland, 2006) and may result in academic staff "going through the motions." Similarly, Elton (2009) points out that continuing professional development (CPD) in a higher education institution should recognize the need for adult learners to be involved in activities which are meaningful and immediately relevant. This often involves considering problems and how they might be solved.

A faculty learning community (FLC) is based on the concept of a community of practice. A community of practice recognizes that learning is a social and co-constructed activity which is situated in a particular context (Lave, 1991). According to Wenger and Snyder (2000) communities of practice are "groups of people informally bound together by shared expertise and passion for joint enterprise" (p. 139). The authors felt that a FLC as a model for professional development in this particular educational context may mitigate many of the criticisms mentioned above, and may act as a forum for reflection on practice and professional development. The FLC would be interdisciplinary but within the same institution, and it would include like-minded professionals. All faculty were faced with the challenges of the new curriculum changes, thus an expectation was that the interaction might develop naturally around common issues, questions and solutions.

## Professional Development in Higher Education

Many institutions require that the faculty carry out some professional development activity to ensure reflection on practice with the aim of developing and learning new skills. The ultimate goal is that student learning improves (Brancato, 2003). Professional development is a process: a systematic observation, analysis and reflection of teaching practice including a wider variety of activities such as "discussion, investigation, experimentation with new practices, learning, expansion of knowledge, acquisition of new skills, and the development of approaches, stances, knowledge and work tools" (Shagrir, 2012, p. 23). It has been well documented that academics at all stages of their career are expected to be accountable for their professional development, and it has been noted that the type of professional development needs to be appropriate to the experience of the faculty member (Weller, 2009).

Professional development (PD) of teaching staff in K-12 education is a widely accepted part of the professional activity of teachers. However, it is not always seen as a crucial strand of academic faculty development in higher education. Teaching, research, and service comprise three components of an academic's professional duties, yet PD is not often considered part of these activities. Blanton and Stylianou (2009) suggest several reasons for this. One is that academics perceive themselves to be experts of their own discipline rather than teachers of it. A second reason is that teaching has always been traditionally a closed-door activity with considerable professional independence. Thirdly, due to the pressure from institutions to research and publish, there may be time constraints and other professional tensions. Finally, the very specific and specialized nature of an academic's area of teaching means that there is little empirical data on which to make decisions about appropriate professional development in a particular institution (Blanton & Stylianou, 2009).

Despite these constraints, there are two main reasons why PD is an inevitable and necessary part of an academic's life. The first is that the naturally changing educational environment requires academics to keep abreast of new developments and be life-long learners (Roscoe, 2002). Additionally, with technical innovation and change permeating every aspect of society, educators have been forced to keep up to date in order to facilitate knowledge and skill acquisition in the next generation. This is particularly significant in the context of this research where academics were tasked with using a new technological device in their teaching, as well as adapting the curriculum to incorporate more project-based learning. Fundamentally, as educators, faculty are role models for their students. Even though time constraints, management issues and multiple roles may detract from other professional activities, effective teaching is a significant aspect of an academic's role, and professional development is necessary to update, re-skill and encourage life-long learning (Blanton & Stylianou, 2009; Roscoe, 2002; Weller, 2009).

The question arises as to what types of PD models are beneficial in a higher education context. Common activities are mentoring, peer observation of teaching, and collaborative projects on specific educational issues (Weller, 2009). It is clear from much of the literature that a collaborative, collegial activity, contextualized in the practices of academics, is a more viable and beneficial form of professional development. In order to create meaningful activities and reflection which are immediately relevant to the faculty member, a problem-based approach is suggested (Elton, 2009). In reality, a problem-based approach would encourage teachers to reflect on their pedagogic practice and attempt to solve their problems. A situated perspective on learning and teaching around specific, real and timely problems would allow not only learning about specific pedagogic skills, but would also allow academics to reflect on their wider role in the institution and society. Askew and Lodge (2000) suggest, "Learning, in this model, involves reflective processes, critical investigation, analysis, interpretation, and reorganization of knowledge" (p. 11). Naturally, reflection requires both dialogue and analysis, with justification and explanation beyond mere description (Marcos, Sanchez & Tilleman, 2008). Thus, an FLC as a model for professional development was thought to be an appropriate forum for problem solving, support, reflection and learning.

## Faculty Learning Communities

Faculty learning communities are based on the concept of a community of practice and the constructs underpinning these communities. These constructs derive from a social theory of learning (Eckert, 2006) which promotes a common practice, a common interest, regular joint activity and a commitment to shared understanding (Wenger, 1998). Cox (2004) defines an FLC as a "cross-disciplinary faculty and staff group of six to fifteen members…who engage in an active, collaborative, yearlong program with a curriculum about enhancing teaching and learning" (p. 8). The common goal of an FLC may be to learn something together, work on a project, develop a professional activity or solve a problem. In some cases, the common goal may be to empower teachers who are managing a curricular change or the introduction of a new technological device (Nugent et al., 2008).

According to Wenger (1998), learning involves community, identity, meaning, and practice. Thus, in a professional setting, an effective way for adults to learn is through collaboration, cooperation, and interaction on topics and issues directly related to their professional activities. Through this interaction, meanings are discussed, shared, negotiated, and developed. It is the discussion of the ideas and the co-construction of knowledge that makes the learning and development more meaningful. The basic premise of this approach is that knowledge is not "owned," but "made" through social interaction (Vygotsky, 1986). Teaching is a highly social, situated activity, so teacher development should reflect this. Wenger (1998) points out, "Even when people work for large organizations, they learn through their participation in more specific communities made up of people with whom they interact on a regular basis" (p. 1). Thus, not only are faculty constructing knowledge together through an FLC: they are also formalizing and systemizing informal chats in corridors and teacher rooms.

In an educational context, an FLC can be a vital form of professional development as educational practices, including technological innovations, constantly change. Di Petta (1998) argues that in the light of these changes, "…faculty need new ways of working together to prepare for and shape their professional future" (p. 54). A further important aspect of an FLC is that participants are engaged in meaning-making which involves shared experience over time and a commitment to shared understanding (Eckert, 2006). The FLC may be topic-based or cohort-based (Nuget et al., 2008). This article describes the former, where a group of teachers self-selected to meet regularly to enhance their knowledge of new technology in the classroom. Cox (2004) raises the question of whether experienced faculty need to be part of an FLC. Based on the literature, he concluded that an FLC can pay a crucial role in bringing together faculty who can support each other and stimulate ideas in an environment where faculty may feel burnout or bored. Eddy and Mitchell (2012) also suggest that FLCs can refresh and re-energize faculty and teaching, and the process of discussion, sharing and reflection can disprove the notion that teaching is an isolated activity. For mid-career and senior faculty, FLCs are opportunities to engage in more scholarly work through a systematic investigation of classroom practices, leading to scholarly teaching (Glowacki-Dudka & Brown, 2007). In the context described here, most of the faculty had more than 10 years of teaching experience, so they were considered mid-career faculty. However, despite their experience, in the light of major curriculum changes there was a perceived need that faculty required the opportunity to share, discuss, solve problems, and construct meanings and understanding about the new technology.

### On-line Faculty Learning Communities

Faculty are notoriously busy, and there is often very little time given to professional development. A possible solution to this problem may be found in on-line FLCs. Johnson (2001) defined on-line FLCs as “designed communities using current networked technology” (p. 45) to collaborate remotely with each other on tasks and activities. One advantage of a virtual community is the greater opportunity for introverts to participate. However, one disadvantage is that on-line communities are more likely to suffer from attrition (Johnson, 2001). Similarly, Sherer, Shea, and Kristensen (2003) reported on how technology supported an FLC of professors through a professional development portal in a higher education institution. The aim of the FLC was to keep up with technological changes in the education field, while at the same time leveraging the benefits of this technology. The participants used chat rooms, listserves, webcasts and faculty development portals in order to expand the number of participants and continue to work collaboratively in the face of the challenge to have face-to-face meetings. As can be seen, on-line FLCs can transcend time and place, can be an effective way for faculty to learn and grow, and can give all participants, regardless of confidence, an opportunity to provide ideas and suggestions. However, the problem of attrition is a real one. The FLC in this study merged on-line with face-to-face meetings for the reasons outlined above. The strengths and limitations of this approach will be discussed further in the paper.

## Methodology

### Context

A federal university in the United Arab Emirates was tasked with introducing iPads as a learning and teaching tool in all foundation language classrooms in Fall 2012 with a view to providing iPads out across the university in degree granting colleges by Fall 2014. This required a considerable change in planning, materials, and curriculum, and it therefore required training for teachers. The training took place September 2012 to February 2013. The training took the form of weekly input sessions and workshops. A more expert colleague often conducted these. After February 2013, there was to be no more institutional training, and faculty could instead consult with an iPad “expert” in the department.

The authors felt that this sudden withdrawal of support could leave some faculty feeling vulnerable (Nugent et al., 2008). Similarly, it was also felt that the top-down training, however useful, was not necessarily focused on identified challenges, and it would be beneficial and meaningful to continue professional development activities which were based around specific concerns of teachers. Thus, an FLC was formed based on the notion that communities emerge and grow based on issues which are timely and meaningful to all members (Wenger, 1998, p. 2). The first meeting introduced the concept of the substitution, augmentation, modification, and redefinition (SAMR) model (Puentedura, 2006). The SAMR model offers a framework for task design, where technology is the primary medium for content delivery and student participation. The model describes four levels of task design and what the addition of technology achieves in relation to the original task. At the substitution level of the model, technology serves as a substitute for paper or a textbook in terms of content delivery. In regards to student task completion, substitution occurs when students are asked to type something rather than write it on paper. In this level of the model, students without technology could just as easily complete the task. At the augmentation level of the model, the technology augments the task. The technology provides functional improvement in the area of content delivery, and student interaction with the task. In the upper two levels of the model, task design becomes significantly different (Jonassen, Howland, Marra & Crismond, 2008). At the modification level, the task is redesigned, and the technology is used to enhance the learning experience in a way that could not be achieved without the aid of the technology. Finally, in the last level of the SAMR model, redefinition occurs when the technology has allowed the task to be completely redesigned (often by the students themselves). This model focused meetings on how to enhance student learning through modification and redefinition of tasks through the use of iPads. FLC meetings were held bi-weekly in a meeting room, with participants taking it in turns to bring coffee and snacks. The meetings were held at the end of a busy teaching day. The snacks, therefore, created an atmosphere of relaxation and collegiality. All participants were motivated to join due to the sudden change in the direction of the curriculum, and because the earlier input sessions had not focused on personal challenges and concerns.

## Participants

There were eight initial members of the FLC and one additional member joining a month into its inception. The authors were initiators, participants and facilitators in the FLC. Wenger (1998) pointed out that even though communities are self-directing, communities do benefit from internal leadership; therefore, one of the authors was an iPad expert, as it was felt that there was a need for such expertise in the FLC to support problem solving. Three of the four departments in the General Education Program were represented. Teaching experience ranged from a few years to more than twenty. iPad user ability ranged from beginner (virtually no prior experience using the device) to expert user (the faculty trainer). Apart from one, none of the members had taught with the iPad before. As can be seen from Table 1 below, most of the faculty were experienced teachers.

## Data Collection

Data were collected from three sources. The first was the blog on which the participants posted. Participants were encouraged to share their experiences, concerns and questions in a bi-weekly blog posting. The blog posts were considered part of the FLC as the contributions were highly personal, significant and therefore meaningful. Some members were less vocal in the meetings, but would write regularly on the blog. Therefore, we found the blog contributions to be an integral part of the community. The blog posts tended to talk about concerns and issues, and they were often written just after a lesson. These were not always explicitly referred to in the meetings, but the participants would often talk about the same topic. There were a total of 27 posts over 16 weeks from eight participants (Table 2).

The second source of data were the notes which the facilitators took during the FLC meetings. The notes were taken on an iPad and immediately emailed to the participants after each meeting. The third source of data was a questionnaire which was sent to each participant four months after the end of the meetings. The questionnaire was sent via a Google form, and the software compiled the answers to protect anonymity. The survey asked participants to comment on their experience of being in an FLC, the strengths, and suggestions for its future form. Six participants completed the questionnaire. A list of questions can be seen in Appendix A. The questionnaire was anonymous and prior informed consent had been obtained.

## Data Analysis

This was a qualitative study incorporating qualitative data from blog posts, meeting notes and questionnaires. The blog posts and meeting notes were studied for themes. Although the authors were looking for evidence of learning and development, there were no a priori codes or categories (Richards, 2003). Once the main themes had been agreed on, the authors examined the data, categorizing comments according to the themes. The questionnaire results were examined for positive and negative comments. The aim of the questionnaire was to get both feedback and reflections on the FLC for further planning. Due to the very detailed and varied responses, it was felt that as an evaluation tool, positive and negative grouping of comments would be appropriate.

# Results

In this section we will present the results from the blog posts, meeting notes, and questionnaires. The first part will present data from the blog posts. The themes, which emerged over time from the blog posts, were all related to issues and concerns about incorporating new technology. These themes were “a crisis of confidence,” “technical issues,” and “changes and developments in pedagogy.” The second part will present data from the meeting notes. The meeting notes reflected changes and shifts in discussion focus over the period of the semester from technical issues to confronting changes in pedagogy. Applications and Wi-Fi, which had been the focus of discussion and frustration, evolved into theory-based discussion involving the sharing of ideas on teaching and learning with the device in ways that enhance the student experience. The final part will present data from the questionnaire. As mentioned earlier, the questionnaire aimed to elicit feedback in order to evaluate the FLC as a model for developing pedagogy, as well as to inform future activities. Themes emerging from the questionnaire were the practical nature of FLC, cooperation and collegiality, pedagogical development and limitations and weaknesses.

## Blog Posts

**Crisis of confidence.** Crisis of confidence emerged through comments related to how faculty were perceived by students. Teachers, who were unfamiliar with the device, were often worried about looking unprofessional in front of their students. This was a common theme, along with a feeling of loss of control over student engagement in the classroom. It is worth pointing out that most of the participants were experienced teachers, but many felt insecure with the new technology. One participant mentioned, “Then we went over a reading text they had already done for key

Table 1

*Member Profiles of Faculty Learning Community*

| Gender | Qualification | Years teaching | iPad user | Discipline |
|---|---|---|---|---|
| F | MA | Less than 5 | Experienced | Advising |
| F | MA | More than 5 | Experienced | Advising |
| F | MA | More than 20 | Beginner | Advising |
| M | PhD | More than 20 | Beginner | ESL |
| M | PhD | More than 15 | Beginner | ESL |
| F | PhD | More than 20 | Beginner | ESL |
| F | MA | More than 20 | Developing | Global Awareness |
| F | EdD | More than 20 | Developing | ESL |
| F | MA | More than 10 | Expert | ESL/Global Awareness |

Table 2

*Number of Posts*

| Poster | Total number of posts |
|---|---|
| F MA Less than 5 | 3 |
| F MA More than 5 | 4 |
| F MA More than 20 | 2 |
| M PhD More than 20 | 0 |
| M PhD More than 15 | 3 |
| F PhD More than 20 | 2 |
| F MA More than 20 | 2 |
| F EdD More than 20 | 4 |
| F MA More than 10 | 7 |

concepts. We agreed on these, and I was projecting, so I was tapping the concepts to highlight them, but my fingers were too fat and I was highlighting whole chunks, and then on screen, trying to unhighlight! Not very professional." Here the teacher illustrates a common issue where faculty were not comfortable using the device, and therefore smooth delivery of content was often stalled as teachers managed with iPad functions or features that were unique to the device. It is clear that this faculty member was particularly concerned with how he/she looked in front of the students. In relation to this, teachers' perceived self-efficacy has been found to be more important than knowledge and skills in successful use of technology in the classroom (Ertmer & Ottenbreit-Leftwich, 2010). Weston (2005) refers to this lack of confidence as a "second-order obstacle" or "intrinsic barrier" to technology integration.

Teachers also experienced crisis of confidence when they felt they lacked the necessary knowledge. This was frustrating for faculty who were experienced educators. Ertmer and Ottenbreit-Leftwich (2010) pointed out that even experienced teachers are constant novices in terms of knowledge of technology, as it is changing daily, hence the frustration. One participant wrote, "Learning a huge amount, but still aware my technical knowledge is limiting/frustrating me."

As well as feeling a lack of knowledge and experience, some teachers wrote about how difficult it was to be creative. This also affected their confidence. Although teachers were familiar with the SAMR model (Puentedura, 2006) and aware that in order to enhance student learning they needed to be working in the upper part of the model (modification and redefinition), one teacher commented on the lack of creativity: "Looking forward...I am hoping to come up with some brilliant ideas for upcoming lessons. We will begin our problem-based learning project following the break, so I have been trying to brainstorm some creative ways to include the iPad but haven't gotten too far yet." We can see a faculty member wanting to be creative, but at the same time being restricted by lack of knowledge of a new device and its impact on the curriculum. The participant is dealing with curriculum issues, as well as lack of confidence in herself/himself.

**Technical issues.** Issues with infrastructure and other technical problems in the iPad classes were recurring issues in discussions. Most applications, or activities on mobile devices are web based, and submitting work for feedback requires wireless and storage space. The biggest issue was the Internet bandwidth and the fact that students would proceed at different speeds though an activity in which everyone was supposed to be working at the same pace. One teacher wrote in his/her blog: "The problem was that wireless got really slow and many could not get the question while others were answering two questions ahead of others." This was clearly very frustrating as one of the applications, which had been presented in the input sessions in earlier training, was Nearpod, an application that meant students had to work at the pace set by the teacher's iPad. The participant had taken a risk by trying out the application, but had then been constrained by technical challenges. Lesson planning and everyday activities also became logistically challenging as participants tried to find the most efficient way for students to submit their work. One participant wrote, "Looking back, the biggest technical challenge has been finding a efficient way for students to submit their work....still don't know what we're going to do about that...unless webdav comes through!" Technical issues were a common theme in the blogs, demonstrating that these challenges dominated thinking and reflection on using iPads. It was expected that the on-line FLC would focus on reflections of teaching and learning, and although there were some, the reality of the technical side of using new technology took over.

**Changes and developments in pedagogy.** As mentioned previously, members were familiar with the SAMR model (Puentedura, 2006). Participants wrote in their blogs about both successful lessons and less successful lessons when incorporating the iPad. The SAMR model had been introduced in the first meeting as a possible framework to use when evaluating teaching and learning using iPads. The SAMR model encourages teachers to reflect on their lesson design and learner experience. Teachers can measure the success of their lesson design in terms of whether the mobile device being used modifies or redefines the learning experience. Lessons within the substitution and augmentation levels of the SAMR model are fine initially, but as teachers become more experienced designing lessons for mobile technology, they should be leveraging the device to enhance learning. One participant wrote about a successful experience: "High points today were when students collaborated to fill in a chart—this was due to the disadvantages of iPads and needing two pages open at the same time. One had the text open, the other the chart, and they worked really well together and were on task." The participant reflects on how he/she was able to enhance the lesson through iPad use, at the same time overcoming a pragmatic challenge.

Among the goals of mobile learning is to bring the world into the classroom without leaving it or to engage with people outside the classroom while physically inside it. This relates to the different levels of modification in the SAMR model. The participant below wrote about his/her experience in enhancing learning as well as commenting on the success of the lesson. He/she is able to evaluate the experience with reference to the levels of engagement: "This lesson had full engagement, and the great thing was students were logging into their Instagram accounts and posting their experience with their Instagram followers. They spontaneously shared comments they had received on posts with us as the lesson went on, thereby bringing the world into our classroom in real time."

The blog posts covered the main themes outlined above. Many of these themes were not brought up in the meetings, but the participants were able to share their experiences, both positive and negative, through the blogs. Although the on-line FLC component was set up as an added strand to the FLC, in fact it seems that it was a significant space to reflect on teaching, share frustrations, and make experience meaningful. Some participants may not have shared these experiences in a face-to-face meeting, but the blog gave them the confidence and opportunity to write. Not only did the writing of the blog help to construct meaning and knowledge about using iPads, but also reading other participant posts' also developed understanding. Just as in the meetings, on the blog there was a gradual shift in focus from technical issues to pedagogical concerns. In fact, many participants commented on the lack of enthusiasm they felt towards the end of the semester. One participant posted that he/she was a "paper addict." In effect he/she had not found a way to leverage the device to be working in the upper region of the SAMR model (modifying or redefining the lesson) and felt that there was no point in using the device if he/she could not transform the learning experience.

## Meeting notes

**Shifts in perceptions of issues and concerns.** The notes from the FLC meetings demonstrated a marked shift of emphasis with regard to concerns, experience, and confidence. The main theme noted was the transition from *enthusiasm* to *confidence* to *boredom*. The topics of discussion in the first and second months were exclusively about the specific applications for iPads and how to use them. There was a lot of discussion about different applications and their aims. A month later the discussion notes were markedly different. Participants discussed topics such as the long-term nature of the curriculum with regard to incorporating iPads and the need to now readdress the curriculum aims and assessment. This suggests that for the first few months, faculty were engaged with the new technology and were incorporating it into their teaching, as well as looking long term and considering how the curriculum and assessment might be impacted. A month later the content of the meeting was almost all demonstrations. Several participants demonstrated how they had used an application in class, while others chose specific applications to talk about. This major shift in four months suggests that participants felt more confident with using the new technology to the extent they wanted to share activities and demonstrate to colleagues. This was a far cry from the first meeting in which all faculty were nervous about how to use the applications. In the fifth month the topics of conversation demonstrated boredom with the iPad and a general frustration that faculty felt learning was not necessarily enhanced. There was also a preference to spend more time preparing materials that they know will work rather than spending time preparing iPad specific materials. This movement in thought and experience can be understood through the lens of research on motivation by Herzberg (1968), which has been replicated in business and is not just applicable to education. According to Herzberg's foundational research, six motivational factors are: (a) achievement, (b) recognition for achievement, (c) the work itself, (d) responsibility, (e) growth, or (f) advancement. When iPad adoption became difficult or stressful, teachers experienced a drop in motivation and, without a resurgence of one of the seven factors above, lost interest in putting the time and energy into the implementation process. As noted by Bates (2000), it is essential when integrating technology to identify inhibiting factors and to address these so that teachers can move forward. The teachers had initially been very enthusiastic about using the iPad in the classroom. However, this was not sustained due to a perceived lack of value. Some faculty felt that learning would be more enhanced by not using the iPad as faculty noted no qualitative difference in the learning of students. Thus, by the fifth month, many faculty were leaving the iPad aside for most of their lessons and using materials previously prepared.

### Questionnaire: Reflections on the FLC

**Practical nature.** The most common theme from the questionnaire results was the practical nature of the FLC. Since it was practical, it was therefore meaningful. The FLC was described as being hands-on and interactive. Another positive feature of the FLC was its cross-disciplinary nature. Most PD activities in the university are department-specific, so participants enjoyed the opportunity to discuss a common issue with faculty from other departments. The fact that the FLC had a common focus on which to base the discussions was also a positive factor of the FLC. The emphasis on practical techniques made the topics meaningful and timely, as they could all go into class the following day with new ideas. The practical aspect of the community stemmed also from the problem-based focus of the group. One participant commented on the opportunity to work out problems together and troubleshoot. The comments reveal the importance of having a common goal, which relates to a specific challenge shared by all participants. The common goal structures the discussion and the outcome.

**Cooperation and collegiality.** Cooperation and collegiality were also seen as a positive aspect of the FLC. Many participants commented on the fact that the community gave them a chance to work cooperatively and listen to colleagues describe their practice. Ideas came from the participants themselves, demonstrating that one did not need to be an expert iPad user to try out new pedagogy. The FLC was a way of seeing into others' classes. One participant wrote, "So much of teaching is being on your own in the class, you wonder what others are doing." In other words, discussion of teaching is not just sharing, but opening up the doors of our classrooms so that we do not feel so isolated (Eddy & Mitchell, 2012). In fact, one participant suggested a follow-up to the FLC could be observing each other's lessons. The participants also noted collegiality as a significant feature of the community in terms of flexibility and "comradeship." This was felt to be in stark contrast to the top-down training that had been provided in the first semester. One participant commented: "It was also devoid of anyone in a managerial position which made it more enticing and gave us the courage to voice our frustrations without fear of reprisals."

**Pedagogical development.** Comments suggested that participants did develop their pedagogical knowledge or confidence through participating in an FLC. Participants mentioned that they had more confidence in managing the device and the applications. They also commented on the fact that they know more about the effectiveness of the applications. One of the aims of the FLC had been to introduce the SAMR model (Puentedura, 2006) in order to structure development of pedagogy from substation to modification and redefinition. Some participants mentioned how the FLC had helped them learn about applications and the SAMR model. This suggests that even if the participants had not yet reached the level of redefinition in their teaching with iPad, the SAMR model had become part of their teaching conceptual framework.

Confidence was a theme as part of pedagogical development. The participants described how the community supported their teaching with the iPad. Although support does not necessarily mean that teaching is enhanced, it is important to note the very short time frame. Faculty had had to incorporate the iPad into teaching in one semester. As a result, both having support at the level of sharing ideas and gaining confidence were important parts of incorporating the iPad into pedagogy. The participants appreciated the opportunity to share ideas and discuss problems in a safe environment. An interesting comment was made by one of the participants with regard to the community giving confidence—not immediately, but some time after the end of the community—as the questionnaire was given in the semester following the FLC. The participant mentioned that now, in the second year of iPad initiative, he/she feels more confident: "Having put the iPad to one side at the beginning of the semester and then told to prioritize it now, I can say that I feel quietly confident about much of what I am doing." It seems that retrospectively the participant feels the benefit of the community.

**Limitations and weaknesses.** Although the feedback was positive, there were some areas in which the participants felt dissatisfied and suggested changes for the next time. The most common points were related to the practical aspects of the FLC in terms of the number of participants and the timing of the meetings. In relation to the composition of the group, participants mentioned the need to have more members from different departments and more commitment from members to attend regularly. This comment suggests also that the attrition that was felt towards the end of the semester impacted the atmosphere of the meetings. Two participants mentioned the timings of the meetings, which were held from 4:00 to 5:00 at the end of a busy teaching day. The earlier comment related to commitment reflected the fact that some members were either too tired to attend or came straight from class, so they were late due to students holding them back.

## Discussion

From the literature on PD in higher education, several features emerge from across the research. There seems to be four main characteristics for PD to be appropriate in a faculty or academic environment. The PD should be:

- *Collective*: There should be groups of like-minded professionals who have chosen to join the community to pursue a common goal (Eckert, 2006).
- *Collaborative*: There needs to be a sense of collegiality, flexibility and opportunity for sharing and advising (Weller, 2009; Wenger, 1998).
- *Meaningful* and *contextualized*: The community needs to focus on real, actual and timely activities which support the teaching and are contextualized in the faculty's work (Eckert, 2006; Wenger, 1998).
- *Problem-based*: The community needs to have a concern, question or problem as the focus of the discussions. This may be a particular problem that each participant has over time, a particular problem at each meeting, or a problem that the community may be set up to address. The aim is that the community focuses to solve the problem so that there is a real outcome (Elton, 2009; Klenowski, Askew, & Carnell, 2006).

This study aimed to explore the usefulness and effectiveness of a community of practice as a model for professional development in an English-medium university in the Arabian Gulf. The results indicated that, to a certain extent, the FLC fulfilled the criteria of an effective PD outlined above. However, there were also limitations and weaknesses.

A major strength was the collegiality and cooperation among members. In a profession where teachers often work behind closed doors, it is clearly a motivating factor to be part of a community and be mindful of the fact that teaching is not a solo activity (Eddy & Mitchell, 2012). Since the community focused specifically on iPads and their immediate use in the classroom, the participants were focused on a shared goal, which was timely and thus immediately meaningful to them. The topics discussed were contextualized in the real practices of the participants, as well as being part of the university's mission and goals (Brancato, 2003). The blog meant that participants could share thoughts and experiences outside the fixed meeting time of the community, which also promoted the timeliness of the activity. The blogs often described problems, and the meetings often focused on problems, giving the community a need to find solutions. The need for an outcome stemming from common problems also guided the discussion, a feature that is necessary in a restricted time frame.

In terms of limitations, the participants, including the authors, noted the following: many participants mentioned that the community would be more effective with more members. The optimum number is not clear, but Bell et al. (2006) reported on a learning community which limited itself to thirteen members. Cox (2004) recommended groups of eight to twelve. The community described in this study would have benefited from more members and a more cross-disciplinary membership. As Bell et al. (2006) suggested, a community can benefit from a "multidisciplinary approach to SoTL (Scholarship of Teaching and Learning) by establishing contact with other academics who may not otherwise have the chance to meet" (p. 3). Although the authors sent out emails to the department of Maths and Sciences, there were no participants from these groups. The problems of retention and attrition described by Johnson (2001) were also experienced. Although there was the on-line blog, as well as the face-to-face meetings, there was a certain amount of attrition towards the end of the semester in both. Some participants contributed less to the blogs, and some participants were not able to attend the last few meetings. One reason, outlined earlier, was the timing of the meeting. One possible reason for the attrition in the on-line community could be the weak / tenuous link between that and the face-to-face meetings. Wenger (1998) explained that a community has five stages, the final two being "dispersed" and "memorable," where the community no longer meets, but perhaps their ideas are still used by faculty. These final stages are inevitable.

A further limitation, or tension, felt by one of the authors was the compromise between the fact that the nature of a community involves collaborative activities and shared experiences, but at the same time it requires some intervention and guidance. This tension became palpable towards the middle of the community when members would discuss problems but not solutions. Blanton and Stylianou (2009) described a similar situation:

> Yet, because our peer relationship did not induce a status of 'more knowing other' (and as researchers, we wanted to emphasize collegiality), we often felt constrained in asking our colleagues, who already had busy professional lives, to experiment with other forms of practice. Indeed, our experiences brought to light the tension between participating as peers versus as authorities and, then the challenge of identifying a cadre of faculty who would be recognized as 'professional development leaders' among their peers (p. 88).

In fact, Wenger (1998) pointed out that for a community to maintain itself, there *is* in fact a need for internal leadership. In this study, the form of leadership was day-to-day leadership (Wenger, 1998), which meant intervention in terms of focus questions for the meetings and individual action plans.

## Conclusion

We believe that despite some of the weaknesses, the FLC was an effective model for PD in this particular educational context. The FLC followed a semester of compulsory, weekly iPad training, and as a result, it provided an opportunity for meaningful activities directly relevant to each member's teaching and learning situation. The learning was contextualized in that it was situated in the participants' everyday teaching challenges and concerns. This proved to be one of the most significant factors in the effectiveness of the faculty learning community described in this study. The context of the university and new curriculum changes were central to the discussions and sharing of expertise. In order to leverage the enthusiasm for professional development that directly addresses the current needs and interests of faculty, the authors plan to continue with a faculty learning community in the new semester. Based on the feedback, the authors plan for a more interdisciplinary group of faculty, more variety of focused topics and a more appropriate meeting time. Feedback from the faculty learning community described in this paper will inform decisions and the nature of further FLCs.

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## Appendix
## Faculty Learning Community Participant Survey

1. Please comment on your experiences of being part of a FLC. What did you find useful? Did it support your work with iPads?
2. Please comment on the FLC as a tool/model for professional development in the context.
3. What were the strengths of the community?
4. What suggestions would you make for the community to continue?
5. Any other comments.

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# Interprofessional Workplace Learning in Primary Care: Students from Different Health Professions Work in Teams in Real-Life Settings

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Interprofessional education may be defined as an occasion when two or more professions learn with, from, and about each other in order to improve collaboration and quality of care. We studied the self-reported experiences from Norwegian health care students participating in interprofessional workplace learning in primary care. We discuss the results particularly in light of self-determination theory. During 2012, 24 students from eight different health educations at the University of Bergen and Bergen University College participated in interprofessional learning in primary care organized by the Center for Inter-professional Workplace Learning in Primary Care, Bergen. The students had their training in nursing homes and public health clinics, and they wrote reflective notes describing their learning experiences. The material was analyzed by systematic text condensation. The qualitative data analyses revealed five major areas of learning experiences from workplace practice: learning in an interprofessional setting, teamwork, relationships among the teamwork members, consequences for the patient, and consequences for the future. The results indicate that there is a high degree of learning potential in interprofessional workplace activity in primary care. This kind of learning strategy is an important supplement to traditional training within all health professions.

As a large degree of the health services is team-based, health care students should be trained in interprofessional teamwork. Interprofessional education may be defined as occasions when two or more professions learn with, from, and about each other to improve collaboration and the quality of care (Barr, 2002). As part of a World Health Organization initiative, six major learning outcomes for interprofessional education have been defined: (a) teamwork, (b) roles and responsibilities, (c) communication, (d) learning and reflection, (e) patient related factors, and (f) ethics and attitudes (Thistlethwaite & Moran, 2010).

Experiences from the UK over a number of years show how interprofessional education motivates and prepares future health professionals for team working (Anderson & Lennox, 2009). Studies indicate that an interprofessional learning environment will strengthen the students own professional roles, in addition to developing positive attitudes between the professions for the benefit of the patients (Jacobsen, Fink, Marcussen, Larsen, & Hansen, 2009; Jacobsen & Lindqvist, 2009). Pollard, Miers, and Rickaby (2012) found that interprofessional learning prepared students to work effectively as qualified professionals with colleagues from other disciplines, which had a positive impact on service delivery. There is, however, a broad range of structural barriers to establishment of interprofessional learning at the universities and university colleges (Gilbert, 2005). As a result, interprofessional learning is still underdeveloped in many health education schools (Aase, Aase, & Dieckmann, 2013; Greer, Clay, Blue, Evans, & Garr, 2014).

One may view the competency within interprofessionalism as the ability of health workers to work together within the health service system. The students will, in the context of the workplace, learn interprofessional teambuilding skills and co-working by involvement (Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011). Collaborative practice may lead to development of responsibility, accountability, and autonomy.

When students become active legitimate participants in practice, their motivation and orientation towards self-determination for learning becomes essential. In self-determination theory (SDT), Ryan and Deci (2000) distinguish between intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to "doing something because it is inherently interesting or enjoyable," whereas extrinsic motivation refers to "doing something because it leads to a separable outcome" (Ryan & Deci, 2000, p. 55). Such a distinction is quite common in the literature and has previously been made by a number of scholars. As pointed out by Ryan and Deci, external motivation has been characterized as a rather pale and impoverished form of motivation. They go on to propose that there are varied types of external motivation.

This is elaborated further in a sub theory to SDT referred to as organismic integration theory (OIT). According to OIT, external motivation may vary from external regulation, which is the least autonomous form of external motivation, via introjection and identification to integration. Integration is a form of external motivation in which the individual has assimilated the reasons for action and integrated it into his/her own self. It is, nevertheless, a case of external motivation as a particular behavior is done for its "presumed instrumental value with respect to some outcome that is separate from the behaviour, even though it is volitional and valued by the self" (Ryan & Deci, 2000, p. 62).

SDT posits that autonomy (the feeling of being in control of one's own behavior), competence (feeling effective and that one is able to perform particular tasks), and relatedness (feeling understood by and cared for by others) are important in order for students to stay internally motivated. As shown by Miquelon, Vallerand, Grouzet and Cardinal (2005), controlling feedback, which involves the perception that one has to meet someone else's expectations, leads to reduced levels of intrinsic motivation. Ng et al. (2012) show that an autonomous supportive environment enhances intrinsic motivation. According to Kyndt, Dochy, Struyven, and Cascallar (2011), autonomous motivation is positively related to a deep approach to learning.

Liu, Wang, Tan, Koh, and Ee (2009) show that students described as high self-determined and low controlled were more adaptive, with better perceived skills, within a project-based learning scheme. Ciani, Sheldon, Hilpert, and Easter (2010) found, in accordance with SDT, that teacher autonomy support provides a buffer against a decline in students' mastery approach, whereas Thompson and Gaudreau (2008) found, in a sample of 299 undergraduate students, that task-oriented coping was associated with an increase in self-determined motivation. Trigwell, Ellis, and Han (2012) show that there is a relationship between the way students emotionally experience their course and their learning approach: students who experience positive emotions (e.g. hope and pride) adopt a deep approach to learning, whereas students who experience negative emotions (e.g. anger, boredom) adopt a surface approach. Skøien, Vågstøl, and Raaheim (2009) describe how students emphasize the importance of fellow students when describing learning situations in practice: "The presence of fellow students allows the students to express their feelings about clinical experiences, help each other, share responsibility, and have someone to call upon when uncertain" (p. 276).

Patrick and Williams (2009) discuss the applicability of SDT to medical training, and they claim that medical learners who have had their psychological needs supported may be more likely to facilitate their patients' psychological needs satisfactorily. The same authors go on to describe how autonomy supportive and competence supportive behaviors from medical practitioners' may have positive effects on patients' health behaviors (Patrick & Williams, 2012). As shown by Williams and Deci (1996), medical practitioners' autonomous and competence supportive behavior and interest in interviewing comes from training and is best fostered by instructors who demonstrate high need support. Lambert et al. (2013) discuss the importance of belongingness (relatedness), and they show that priming belongingness in a group of subjects increases meaningfulness.

Over the last years, there has been a change of teaching practice from the traditional "transfer of knowledge" to a perspective where teaching is understood and performed as "participation action," corresponding to the "participation metaphor" in research (Sfard, 1998). Learning situations improve when students experience autonomy, competence, and relatedness (Ryan & Deci, 2000), as well as when assessment aligns with teaching – so-called constructive alignment (Biggs, 1999). There has been an increasing awareness that students learn better when they receive appropriate feedback (Hattie & Timperly, 2007) and when training takes place within communities of practice (Kaufman & Mann, 2012; Wenger, 1998).

Since 2012, the University of Bergen and Bergen University College in Norway have collaborated in interprofessional training for health care students during their workplace learning in primary care. This is coordinated by the Center for Interprofessional Workplace Learning in Primary Care. The students represent a variety of health professions, including nutrition, music therapy, pharmacy, midwifery, dental hygiene, odontology, psychology, occupational therapy, medicine, public health nursing and physiotherapy.

The learning areas for this interprofessional training have mainly been nursing homes but also antenatal care clinics, youth health clinics, and physiotherapy treatment centers. Initially, the group of students meet for an introduction and to plan a specific patient contact. At the nursing homes, the student groups interview the patients and examine them, and afterwards, they cooperate in writing an individual treatment plan. As the student teams are interprofessional, these plans include a broad spectrum of approaches, thus ensuring the quality of care for the patients. Finally, the patient plans are discussed with the teachers and staff at the institution, thus creating a learning environment for everybody involved.

The aim of this study is to describe and discuss the self-reported experience from Norwegian health care students participating in interprofessional workplace learning in primary care. In accordance with SDT, we assume that students from different professional backgrounds working together in autonomy and in competent supportive teams with patients in real life settings will report higher autonomous self-regulation as well as a sense of belonging.

## Methods

Twenty-four students from health educations at the University of Bergen and Bergen University College participated in interprofessional learning in primary care organized by the Center for Interprofessional Workplace Learning in Primary Care during 2012. The students from medicine (7), pharmacy (6), midwifery (3), odontology (2), dental hygiene (2), physiotherapy (2), public health nursing (1), and nutrition (1) were offered the possibility to participate in the project and volunteered. Groups of four to five students from different educations had their training experiences in nursing homes or public health clinics (health services for teenagers or maternity services). The students were aged 22 to 41 years; six were male and 18 were female. All students were instructed to write individual reflective notes (400-500 words) on three questions:

- What did I learn about learning (in general) from participating in this project and working in this way?
- What did I learn about my own learning, which can be useful for me in the future?
- What did I learn about learning in a team from participating in this project and working in this way?

Individual reflective notes from the students were written once, and completed within one week after the training sessions. Thereafter, the notes were sent by e-mail to the authors, who did the analysis by systematic text condensation (Malterud, 2012) in the following four steps:

1. Getting an overall impression by reading through the reflective notes, identifying themes
2. Identifying meaning units, grouping and coding them
3. Condensation from code to meaning, abstracting the individual meaning units to meaningful wholes
4. Synthesizing – from condensation to descriptions of the participants' views

Three of the authors analyzed parts of the material independently and discussed for consensus during the analysis. The resulting data were finally merged, forming the results presented. The reflective notes were written in Norwegian, and the translation into English took place between steps three and four.

## Results

The qualitative analysis revealed several experiences among the health care students participating in interprofessional workplace learning in primary care. Five themes emerged during the analysis: (a) learning in an interprofessional setting, (b) teamwork, (c) relation between team members, (d) consequences for the patient, (e) and consequences for the future. The students emphasised the usefulness of learning in an interprofessional setting and appreciated the advantages of working in a team. Several students described the relation between team members representing different professional backgrounds. They also acknowledged the positive consequences of this kind of learning, both for the patients and for their own professional future. These findings with corresponding quotations are elaborated below.

### Learning in an Interprofessional Setting

Many students expressed that it was very useful to see the patient from different perspectives and to see the patient as a whole. Working alone they had found it easy to get narrow-minded in their view of the patient, but in the interprofessional group, they experienced how other students thought and worked, what they looked for when examining the patient, and how they concluded. This gave them a broader perspective. A dental hygiene student stated:

> I learnt to see the whole patient and not just the mouth. It is easy to focus on the mouth only and on what I can do about it as a dental hygienist. During this collaborative work, I understood that patients in a nursing home have a long history and many other challenges and that they sometimes need to explain things to me before I can decide what is best to do.

Simultaneously, the students had a feeling of security—if they missed something, another person in the group might see it and follow up on it for the best interest of the patient. Some students found it useful to read the notes in advance to understand the background, but also considered it essential to form their own opinion about the patient during the examination. One of them expressed it in this way: "All of us have something to offer, and we need to make as good use of everyone's knowledge as possible."

Some students found that both their own and other professions' roles in the health care system became more clear. They became more conscious about their own contribution, and more open to other interpretations of the cases that were presented. One advantage was that the students found out whom to refer patients to in the future and who to ask for advice. They realized that there was some overlap between the different professions. For instance, both medical and pharmacist students were concerned about medicines but with different foci. One of them wrote: “To participate in other students’ examination of the patient and reflections afterwards gave definite learning in each case, but it also gave insight in other methods and foci than your own.”

Some students also stated that they had a unique knowledge and found out how to use it. Prior to the interprofessional workplace practice, some students had been concerned about whether they would be taken seriously. However, they all noticed that they had an important role in the group and that everyone respected the competences of each other. The students became more secure in their roles and wanted to show the competences of their profession in the best way, while learning as much as possible from the others. A common thought was that being challenged gave a better learning outcome than the ordinary teaching and practice. “Being challenged in a new situation working with other health professionals resulted in an increased learning experience,” said one individual.

Some students felt more alert because the other students observed their examination of the patient and listened to their explanation of what they did and why they did it. Many found that a practical approach was better for learning and that it was harder to forget things they did than things they were told. In addition, some experienced that they found out more about how they collaborated with other health care professionals and with patients. One student mentioned that working this way meant you had to value curiosity – both your own and others. Some of the students reported very specific learning experiences related to medicine use, side effects, interactions, and contraindications—in addition to the clinical value of various diagnostic methods and measurements. One of them commented, “I have learned a lot by observing and discussing with pharmacy students how different drugs may affect patients…this knowledge and experience will be useful in my future work.”

## Teamwork

Data revealed that several students experienced that making a work plan was important, as was the need to clearly define each member’s work role so that everyone came well prepared. This led the team to be more efficient and prevented the patient from getting bored. A participant said, “When working in a team, it is very important to have a good structure in the consultation, otherwise the patient will be bored.” As explained by one of the students, everyone had their natural place in the meeting with the patient, and she wanted to make an effort and contribute to the team. She had learned that working in a team meant that everything could not be exactly the way she wanted. She needed to be solution-oriented and willing to cooperate, and she admitted, “Learning in teams is practicing organization and resource benefits, as well as finding each individual’s strengths.”

Several students underlined two purposes related to the teamwork: mutual reports and cooperation with a patient. Teamwork also involved discussions aimed at reaching a mutual solution. One participant described his experience like this: “We are getting better at benefiting from others and cooperating with others to be able to reach a common solution.” Several students reported that working towards a common goal was both meaningful and fun.

## Relationships Among Team Members

Several students experienced that the other team members were interested in their contributions and that they were included in the group. One noted, “The other students were very open and easy to talk to. You felt very included and seen in the group.” As team members, they carried expectations both to themselves and to others in terms of being open to seeing problems from new perspectives and not to compete but to cooperate to get things done. One student expressed these mixed expectations like this, “It was both exiting and challenging working in a team.” Quite a few students pointed out that it was interesting to be presented to different academic foci and that this affected how they worked themselves. Several students mentioned that they met on equal terms during the work in teams, which is different from more formal settings where roles are more explicit. “We also broke some barriers by meeting on equal terms in a student situation, rather than a more formal setting with defined professional roles,” said a student.

Many students felt that their contribution was appreciated by other team members as well as by employees at the institution. They also expressed that they learned a lot from each other and that they needed to hold back to let others in the group contribute. They experienced the importance of listening to others, viewing them as constructive contributors, and being attentive and patient—knowing when to talk and when to listen. One student commented, “In addition, I felt that I was able to show the knowledge I inhabit and that the others in the team appreciated my contribution.” Some said it was important for everyone in the team to share a common language. This meant that they had to adapt the language to the people involved. It was useful to be able to explain what they thought and the terminology they used. A student explained, “It’s important to learn how to adjust the language to the colleagues around you, and this is something you become aware of when working in interprofessional groups.”

## Consequences for the Patient

A number of students described how professional background could influence the communication, both with the patient and among the students in the interdisciplinary learning setting. Some students described the large variations regarding themes they wanted to ask the patient about. They also expressed how responses from the patient were interpreted differently in the student group. As one student explained, "When discussing the patients after the consultations, it was interesting to note how differently we had understood the information from the patients." The students regarded these variations as a benefit for the patient, as an interprofessional approach would cover different perspectives and increase the possibility for the patient to understand and to be understood. One student noted this kind of team-cooperation serves to improve patient safety. Another student stated, "Your patient might get even better help from a colleague with another perspective than yourself." Some of the students expressed that an interdisciplinary setting facilitated a more holistic approach in the patient consultations. "Everyone in the group wanted to contribute with their own knowledge, and learn from the others, in order to obtain a holistic approach for the patient when writing the individual treatment plan," stated another participant. The students became more conscious, not only about focusing on health issues and diseases but also on other important factors related to patients wellbeing. Asking other health care providers for advice and cooperating in an interprofessional team was, by several students, pointed out as important factors for improved quality of patient care. One of the students explained her experience like this: "I learned a lot about how different health professions may contribute with helping the patients."

## Consequences for the Future

Several students expressed that undergraduate interprofessional training was inspiring and important to building good relations, as one of them stated, "I will remember all the good ideas from the other group members." They thought that this kind of training might reduce barriers for future cooperation between different health care providers. "In my future work as public health nurse, I will really try to cooperate with other health professions," said a student. Others stated that a focus on interdisciplinary teamwork early on at the student level was very relevant and enabled a better understanding of different perspectives related to health care. The students felt they had become motivated to cooperate with other health professionals in a future work setting. One student expressed the motivation like this, "Cooperation and joint problem solving in this project was a source of inspiration for my future work."

Some of the students emphasized how interdisciplinary training gave useful knowledge about the competences of other health care providers. They had become more conscious regarding the professional expertise of others and the importance of team cooperation to ensure the best use of resources. "In addition, we learned about the strengths of the different professional fields, making it easier to cooperate in the future," noted a participant. One student noted how other professionals could help her to do a better job within her own field. Another student described how this kind of training could improve his skills in communicating with other health professionals in the future.

## Discussion

The qualitative data analyses of the reflective notes from the 24 participating health care students revealed five areas of learning experiences from workplace practice: (a) learning in an interprofessional setting, (b) teamwork, (c) relationships among the team members, (d) consequences for the patient, and (e) consequences for the future. According to SDT, an individual needs to perceive that she or he is efficacious in carrying out particular behaviours in order to achieve particular outcomes—that she or he has the necessary competence. Support for competence and autonomy facilitate internalization and are pre-requisites for self-determination. Autonomy, relatedness, and perceived competence are, in other words, important for a regulation to stay integrated rather than just introjected (focused on approval from others). The same feelings of autonomy, relatedness, and competence are important for actions, which initially were internally motivated to carry on having the same value.

We did not include any scales measuring students' motivation or coping style. However, our analyses of the reflective notes show that working in interprofessional teams does indeed have a positive effect on self-regulation and perceived competence. The students reported that they became more conscious of their own role and more open to other interpretations of a particular case. They felt respected by their team members, and this had a positive effect on their feeling of competence. Not only did they feel more confident as individuals in performing their part of the job, they also felt that they were respected as members of their profession, as medical doctors, as nurses, dentists, physiotherapist, and so on. Such an observation is interesting in so far as it normally takes some time from graduation until one's image of oneself as a professional is shaped. This may be taken to indicate that the individual team members experienced relatedness within the team and also relatedness to their own specific profession.

Working in teams, the students had to listen to and take into consideration suggestions made by other team members, much the same way they need to do after graduation. The way the students naturally co-operated in treating the patients, avoiding the kind of competition often found in classrooms, was proof that they did in fact respect one another as professionals. The students reported interest in other team members' contributions, which shows a willingness to learn from each other. The fact that one had to work with representatives from other health professions added to one's own understanding and created a positive learning environment. They did not experience one another as competitors but as colleagues who participated on equal terms to the benefit of the patients. Working in a competence supportive team had a positive effect on the students' perceived competence and self-worth, creating good conditions for what Seifert (2004) describes as mastery pattern.

The collaboration between the University of Bergen and Bergen University College has introduced new aspects of workplace learning in primary care, emphasizing the importance of interprofessional training for health care students. This is in accordance with the background for The Coordination Reform of 2012, which was implemented by the Norwegian Ministry of Health and Care Services in order to encourage a stronger degree of cooperation across health care providers, and thereby to give proper treatment at the right place and right time (Norwegian Ministry of Health and Care Services, 2008).

As a substantial part of the workload in today's health services is team-based, the strategy of an interprofessional approach in treatment of patients should be introduced already at the student level. The Center for Interprofessional Workplace Learning in Primary Care in Bergen aims to implement interprofessional training as a permanent part of the curriculums of several health care educations. This might be an important step to meet the requirements of The Coordination Reform.

The clinical workplaces may be regarded as training laboratories. The learning process is in accordance with Morris and Blaney's (2010) concepts regarding workplace learning. It takes place as social practices of competent individuals where students are legitimate partners within the context of the workplace as they cooperate with patients and staff. The learning is dependent on the use of language. In this way, the interprofessional workplace may be regarded as a student-centered approach to teaching (Sadler, 2012).

A student-centered concept of teaching encourages students to adopt a deep approach to learning (Trigwell, Prosser, & Waterhouse, 1999). This workplace learning model combines active teaching, peer assessment, and formative assessment within teams of interprofessional students. It may have positive impact on a variety of learning skills, such as teamwork competence, communicative competence, and the ability to assess and develop one's own professionalism. Also, the students gain hands-on experience from clinical teamwork in real life situations and may share knowledge with professionals to the benefit of the patients.

There are, however, logistical challenges with this kind of training. Students from the participating health care areas need to have their practice workplace training at the same time and in the same geographical area. Further, clinical instructors from the different disciplines in primary care need to be motivated regarding the importance of interprofessional collaboration in the learning setting. Over the last years, there seems to be an increased interest in the teaching institutions for including this kind of training for health care students. As the initial experiences have been promising, there might be a willingness to provide the needed resources for a further strengthening of interprofessional training in primary health care.

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# Predicting Academic Entitlement in Undergraduates

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Academic entitlement (AE) is a common source of frustration for college personnel. This investigation examined predictors (self-concept, academic dishonesty, locus of control, and family functioning) of AE in male and female college students. Academic dishonesty and the interaction between locus of control and family functioning significantly predicted AE. Males reported significantly higher levels of AE, and the interaction between locus of control and family functioning was significant only for females. Future research should address possible developmental pathways to AE in adulthood to further understanding of this problematic belief system.

There has been recent concern among college faculty in the United States and other developed nations over seemingly increasing levels of academic entitlement (AE) among students. That is, students have reportedly become more demanding and even belligerent regarding their perceived right to receive excellent grades in their classes regardless of actual effort and learning (Cain, Romanelli, & Smith, 2012; Chowning & Campbell, 2009; Ciani, Summers, & Easter, 2008; Greenberger, Lessard, Chen, & Farruggia, 2008; Schaefer, Barta, Whitley, & Stogsdill, 2013; Singleton-Jackson, Jackson, & Reinhardt, 2010). AE, described as early as the eighties (Dubovsky, 1986), appears as a distinct construct rather than an offshoot of an overall attitude of privilege (Greenberger et al., 2008).

AE is sometimes referred to or likened to student consumerism, or the view that students are paying customers for their education and deserve the same customer satisfaction and service as any other type of consumer (Correa, 2006; Delucchi & Korgen, 2002; Fullerton, 2013; Schings, 2009). Students who espouse this quid pro quo mentality expect that an A will be the outcome for tuition payment; a degree with a high GPA is purchased rather than earned (Schaefer et al., 2013). Dubovsky's (1986) early description of this phenomenon included five components: (a) knowledge is a right that students should access with little effort and discomfort, (b) teaching staff should provide all needed information and direction required for course success, (c) the instructor is responsible for an individual student's performance in a class, (d) all students should be recognized equivalently despite differences in individual effort, and (e) hostile confrontations with school faculty are acceptable whenever a student is unsatisfied. All five of these aspects are often bemoaned at professional conferences and less formal gatherings of university faculty and staff (e.g., Benton, 2006; Gill, 2009); however, empirical investigations regarding the antecedents and consequences of AE are only beginning (Anderson, Halberstadt, & Aitken, 2013).

The current investigation examined predictors of AE for both male and female college students, with focus on the previously supported predictors of self-concept (Chowning & Campbell, 2009; Greenberger et al., 2008), academic dishonesty (Greenberger et al., 2008; Menon & Sharland, 2011) and locus of control (Chowning & Campbell, 2009), plus the additional predictor of overall family functioning as a potential moderator. The next sections of this document will provide more in-depth rationale for including these study constructs.

## Literature Review

### Self-Concept

Various elements of students' self-concept have been blamed for the seeming generational rise in AE. Self-concept refers to one's global view of the self, though it is often described as synonymous with related or precursory elements such as self-esteem and self-efficacy (Bong & Clark, 1999; Bong & Skaalvik, 2003). Some have suggested that the recent cultural push to boost students' self-esteem has created a generation of entitled students who expect adulation for modest to no effort (see Lippman, Bulanda, & Wagenaar, 2009). Blame has focused on the "self-esteem movement" that characterized primary and secondary education during the 1980s; the movement emphasized a shift in focus from correction of student mistakes to feeling good about oneself despite academic shortcomings (Stout, 2000; Twenge, 2006). Critics of the movement assert that its focus minimized academic failure and maximized self-esteem, thus encouraging poor personal responsibility for academics but great expectations for above-average grades (e.g., Colvin, 2000). However, studies linking self-esteem (belief in one's overall worth; Rosenberg, 1965) or self-efficacy (belief that one is capable of achieving a particular goal; Bandura, 1977) to AE have tended to find inverse rather than positive relationships (Boswell, 2012; Greenberger et al., 2008; see Baer & Cheromukhin, 2011, for an exception). That is, students harboring doubt about their abilities may be most likely to exhibit AE. In such cases, AE may serve a protective function or foster a self-serving or hedonic bias (as described in Weiner, 1985) by diverting blame for failures or mediocre performance from the self to college faculty (Achacoso, 2002; Chowning & Campbell, 2009). Based on these findings and rationale, self-concept was included in the prediction of AE, with association in the negative direction anticipated.

### Academic Dishonesty

It makes sense that students focused on the outcomes instead of the process of college education would be willing to bypass some of the expected effort and participate in cheating, plagiarism and the like (Karlins, Hargis, & Balfour, 2012). For example, individuals who are highly entitled may believe that academically dishonest behaviors are more acceptable, given that they may increase the likelihood of academic success. This is consistent with previous research indicating that entitlement attitudes are predictive of deliberate attempts to cheat (Brown, Budzek, & Tamborski, 2009). Indeed, past research has found that college students exhibiting more AE engage in more academic dishonesty (Greenberger et al., 2008) or more tolerance of such behavior (Shapiro, 2012). Academic dishonesty, thus, was included as a predictor of AE, with a positive relationship expected.

### Locus of Control

As described in the section on self-concept, AE may grow out of frequent deflection of blame for poor performance to others, such as college faculty. Self-serving biases such as blame deflection are consistent with an external locus of control. That is, individuals with an external as opposed to an internal locus of control view their life circumstances as being determined by others instead of themselves (Rotter, 1966). Indeed, meta-analytic findings suggest that individuals greater in externality are significantly more likely to utilize this self-serving attribution style (Campbell & Sedikides, 1999). Not surprisingly, AE has been associated with a more external locus of control; academically entitled individuals externalize responsibility for academic success (Achacoso, 2002; Chowning & Campbell, 2009; Kopp & Finney, 2013). Developing AE may be more likely in those possessing a more external locus of control because such a worldview has been linked to lower academic performance (Kirkpatrick, Stant, Downes, & Gaither, 2008) and lower confidence about the ability to personally achieve academic success (Boswell, 2012), thus calling for deflection of blame or a self-serving bias. A more external locus of control was therefore anticipated to predict AE.

### Family Functioning

In seeking a possible culprit for the development of AE, it appears tempting, based on informal venting sessions among college personnel, to blame parents. College-level educators easily point fingers at those who reared their students before they enrolled in a particular university (Zaslow, 2007); however, little research has addressed pre-college environmental factors as predictors of AE. As mentioned previously, some blame parents for encouraging overly inflated self-esteem and a subsequent sense of entitlement, but investigation so far has supported a different potential path to developing AE. The limited evidence addressing family factors as linked to AE has targeted specific aspects of parenting (i.e., perceived achievement pressure; see Greenberger et al., 2008). Thus far, AE appears more likely to stem from elevated emphasis on extrinsic rewards and tangible signs of achievement (i.e., awards, good grades; e.g., Schaefer et al., 2013) than from overly indulgent coddling by parents. In other words, those entering college after years of only gaining praise, approval or notice when obtaining concrete markers of achievement may have come to view those markers as the whole point of education. Developmental research supports the notion that parenting focused on extrinsic rewards contributes to an extrinsic motivational orientation and lower academic performance, while parental encouragement and autonomy support predict a more intrinsic motivational style (i.e., engaging in activities for the joy of learning itself; Ginsberg & Bronstein, 1993).

Other aspects of parenting have been targeted as early contributing factors to exhibiting entitlement (not necessarily AE) in adulthood. In particular, overly involved parenting (also referred to as “helicopter parenting”) has been linked to adult entitlement (Segrin, Woszildo, Givertz, Bauer, & Murphy, 2012) and greater external locus of control (Padilla-Walker & Nelson, 2012). Parents stepping in frequently to resolve all problems for their children and adolescents may undermine self-efficacy by robbing offspring of opportunities to engage in and master skills needed for success in adulthood, including college situations. These findings bolster the argument for an association between family-of-origin characteristics and AE.

The current study, rather than focusing on specific parenting practices, included family functioning (or dysfunction) in a more general sense. Parenting practices like achievement pressure and over-involvement may reflect a more global pattern of overall family dysfunction. Any family environment lacking emotional closeness or support may encourage the development of entitlement beliefs, either directly as part of a self-serving or hedonic bias (see Weiner, 1985) or indirectly via externalizing blame and taking a victim mentality (see Twenge, Zhang, & Im, 2004) by leaving those reared in such a family lacking value for their own potential and abilities. Feeling frustrated and powerless, students entering college from less functional family environments may be eager to seek outside culprits to blame when faced with any academic disappointment.

Family functioning additionally was suspected to interact with causality orientation (i.e., locus of control) in predicting AE. Family functioning was included as a potential moderator to allow for the possibility that a more external locus of control would be even more strongly associated with a greater sense of AE among students reared in a more dysfunctional, distant or non-supportive family environment. Likewise, students coming from more supportive or positive family environments may be less likely to develop a sense of AE even when inclined to a more external locus of control. More negative family functioning, then, was hypothesized to amplify the relationship between a more external locus of control and AE.

## Sex Differences

While past studies indicate male college students exhibit more AE than female students (Boswell, 2012; Chowning & Campbell, 2009; Ciani et al., 2008; Greenberger et al., 2008), research has yet to address whether pathways to developing AE differ for males and females. Mean differences have repeatedly been supported, but investigation has largely stopped at testing these group differences. Differences in patterns of prediction or explanatory models have been neglected thus far. This study allowed that AE may be predicted by different factors in male versus female college students. The hypotheses and exploratory analyses carried out are summarized below.

## Hypotheses

1. Self-concept, academic dishonesty, locus of control, and family functioning would predict AE.
2. Family functioning would moderate the link between locus of control and AE.
3. Male college students would report higher levels of AE than female college students.

In addition to these hypotheses, this study explored potential differences in study constructs by generational status (i.e., whether at least one parent has earned a four-year college degree or not), race, and year in college. The present investigation additionally explored possible sex differences in the pattern of results for hypotheses 1 and 2.

## Method

## Participants

The convenience sample consisted of 401 college undergraduate students enrolled in introductory psychology classes at a public university in the southern United States. Class sections ranged from 40 to 100 students and included a mixture of online and traditional classes. Out of the full sample, 398 participants' data were complete on all proposed predictor variables and were included in statistical analyses. For exploratory analyses, 392 participants completed all relevant sections completely. Data were missing because of skipped items and sections. Sample demographics are summarized in Table 1. For primary analyses, participants included 188 males (47.40%) and 209 females (52.60%). The average age was 20.01 years (SD = 3.86). The sample was predominantly White (56.60%) with 18.70% African American, 5% Asian, 5% Hispanic or Latino, and 4% Native American, Aleut, or Aboriginal peoples. One hundred ninety-two (47.09%) participants reported having a parent with a four-year college degree. The Institutional Review Board reviewed and approved this study.

## Measures

**Demographic information.** Participants completed questions regarding their sex, race, age in years, and whether at least one parent had earned a four-year college degree.

**Self-concept.** Multiple survey measures were employed to assess aspects of self-concept relevant to the college experience. The Rosenberg self-esteem scale (1965) is one of the most widely used measures of self-esteem in behavioral research. This self-report measure includes 10 items rated on a Likert scale ranging from 0 (strongly disagree) to 3 (strongly agree) with a maximum score of 30 possible and with higher scores indicating higher self-esteem. Half of the items require reverse scoring before calculating the final score. Sample items include, "All in all, I am inclined to feel that I am a failure," and, "I am able to do things as well as most other people." The Rosenberg self-esteem scale has exhibited good internal consistency and adequate test-retest reliability (Robins, Hendin, & Trzesniewski, 2001; Schmitt & Allik, 2005). In the current study, the Rosenberg self-esteem scale exhibited strong inter-item reliability (Cronbach's $\alpha$ = .88).

The general self-efficacy scale (Schwarzer & Jerusalem, 1995) was created to assess a general sense of perceived self-efficacy with a goal of predicting coping with daily hassles and adapting to a variety of

Table 1
*Descriptive Statistics for Study Constructs*

| Measures | Mean | SD |
|---|---|---|
| 1. Academic entitlement (AE) | 41.93 | 12.46 |
| 2. Self-concept | 105.22 | 18.23 |
| 3. Academic dishonesty | 1.19 | 1.64 |
| 4. Locus of control | 64.08 | 8.47 |
| 5. Family functioning | 137.42 | 29.11 |

stressful events. This self-report scale is composed of 10 items rated on a 4-point Likert scale with no reverse scoring (1 = not at all true, 2 = somewhat true, 3 = moderately true, 4 = exactly true), yielding a maximum possible total score of 40. Higher scores are indicative of higher general self-efficacy. This scale was designed to assess perceived self-efficacy, or the optimistic self-belief that one can perform unfamiliar or difficult tasks or cope with hardship. Sample items include, "It is easy for me to stick to my aims and accomplish my goals," and, "I can solve most problems if I invest the necessary effort." Previous studies utilizing the General Self-Efficacy Scale have reported internal consistency, as measured with Cronbach's alpha from .76 to .90 (e.g., Luszczynska, Scholz, & Schwarzer, 2005). In this sample, Cronbach's alpha was .86.

The course self-efficacy subscale of the college self-efficacy inventory (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) also was included in creating the composite construct of self-concept. The course self-efficacy subscale assesses perceived confidence in one's ability to successfully perform tasks necessary for college course success (i.e., researching a term paper or keeping up to date with schoolwork) using a 7-item, 10-point (1 = not at all confident to 10 = extremely confident) Likert-type scale. That is, higher scores indicate more confidence that the respondent can handle and master the tasks required in college-level courses. The course self-efficacy subscale has previously demonstrated adequate internal consistency (Boswell, 2012; Soldberg & Villarreal, 1997). Cronbach's alpha was .86 for the current sample.

Because of considerable theoretical similarity and statistically significant bivariate correlations among Rosenberg self-esteem scale, general self-efficacy scale, and course self-efficacy scores ($p < .01$), the final composite score for self-concept was computed by summing the total scores for the Rosenberg self-esteem scale, general self-efficacy scale, and course self-efficacy subscale (M = 105.22, SD = 18.23).

**Academic dishonesty.** The degree to which participants had engaged in cheating, plagiarism, and similar behaviors was assessed with nine items from the academic dishonesty assessment (Watson & Sottile, 2010). The yes/no items describe specific acts of academic dishonesty (e.g., submitting others' work as one's own, using instant messaging through a cell phone, or handheld device during a quiz or exam) and two more general items address whether the respondent has cheated or has been caught cheating. Items were scored such that an answer of "no" was coded as 0 and "yes" was coded as 1. Inter-item reliability for this scale was adequate in the current sample (Cronbach's $\alpha$ = .74). The final academic dishonesty score was computed by summing all items (M = 1.19; SD = 1.63).

**Locus of control.** The degree to which participants reported an internal locus of control was assessed using 20 items available from the international personality item pool (Goldberg et al., 2006). Items were scored on a 4-point (1 = strongly disagree to 4 = strongly agree) Likert-type scale with a mixture of positively- and negatively-scored items. Sample items include, "I believe that my success depends on ability rather than luck," and, "I believe that the world is controlled by a few powerful people." The items were scored and totaled such that a higher score reflected a more internal locus of control (M = 64.08; SD = 8.47). Inter-item reliability for this scale in the present study was strong (Cronbach's $\alpha$ = .89).

**Family functioning.** General quality of family functioning during childhood and adolescence was assessed retrospectively with the family-of-origin scale (Hovestadt, Anderson, Piercy, Cochran, & Fine, 1985). The 40-item self-report instrument measures global perception of family health using a 5-point (1 = strongly agree to 5 = strongly disagree) Likert-type scale. It contains a mixture of positively- and negatively-scaled items. Sample items include, "Differences of opinion in my family were discouraged," and, "I found it easy to understand what other family members said and how they felt." Items were scored and tallied such that higher total scores indicated a more positive or healthy view of family functioning while being raised (M = 137.42; SD = 29.11). The family-of-origin scale has repeatedly demonstrated adequate to good reliability (see Manley, Wood, Searight, Skitka, & Russo, 1994). In this study, Cronbach's alpha was .97, indicating strong inter-item reliability.

**Academic entitlement.** AE was assessed using the academic entitlement scale (Chowning & Campbell, 2009), a 15-item instrument answered on a 7-point (1 = strongly disagree to 7 = strongly agree) Likert-type scale. Sample items include, "I should never receive a zero on an assignment that I turned in," and, "My professors are obligated to help me prepare for exams." Two items require reverse scoring, and higher scores indicate a greater degree of feeling owed good grades and achievements regardless of work or performance (M = 41.93; SD = 12.46). As with previous studies (e.g., Boswell, 2012) inter-item reliability for the AE Scale was high for this sample (Cronbach's α = .81).

### Procedure

Data collection occurred online. Students received course credit for participation. Participants accessed the questionnaire via a weblink posted by the primary investigator on the psychology department's participant recruitment site. They were required to complete the survey in one session. Instructions stated that participants were allowed to skip any items with which they felt uncomfortable.

## Results

Analyses proceeded in several steps. First, sex differences in construct means were examined with one-way analysis of variance (ANOVA). Results are summarized in Table 2. Males reported statistically significantly higher levels of AE [F(1,396) = 26.09; p < .01]; this result supported the study's third hypothesis. Males also reported significantly less internal locus of control or a more external locus of control [F(1,394) = 8.37; p < .01]. Next, students who had at least one parent earning a four-year college degree or higher were compared on study constructs to those who did not have a parent earning a four-year college degree or higher (see Table 2). The only difference detected involved locus of control, such that participants with at least one parent having earned a college degree (n = 191) reported a significantly less internal locus of control or a more external locus of control. ANOVA also was used for comparisons by race and year in college, but no significant differences emerged in these analyses.

Next, relationships among study constructs were examined with bivariate correlational analysis (see Table 3 for summary of results). Self-concept (r = -.28), academic dishonesty (r = .23), and family functioning's (r = -.20) relationships with AE had small-to-moderate effect sizes; the relationship between AE and locus of control (r = -.38) had a moderate effect size (Cohen, 1988). As anticipated, AE was statistically significantly (p < .01) correlated with all proposed predictors and in expected directions, provided preliminary support for the first hypothesis.

Finally, multiple linear regression analysis was conducted to predict AE from self-concept, academic dishonesty, locus of control, family functioning, and the interaction between locus of control and family functioning. The assumptions of normally distributed residuals, linearity, lack of multicollinearity, and homoscedasticity were all examined, and analyses revealed no evidence for violation of these assumptions. All predictors, with the exception of the interaction term, were centered in that the mean for each predictor was subtracted from the individual scores. Centering yielded means of zero, and individual centered scores reflected distance from the mean. Multiple regression analysis proceeded in two steps. The first step included all individual or simple predictors. The second step added the interaction term. Results are summarized in Table 4. In the first step, all predictors but self-concept were significant. In the full model including the interaction term, hypotheses were partially supported, with academic dishonesty (β = .21; p < .01) but not self-concept (β = -.04) appearing as a statistically significant predictor. This was only partially consistent with the first hypothesis. However, the interaction term (locus of control X family functioning) emerged as a significant predictor (β = .11; p < .05); this finding supported the study's second hypothesis (see Figure 1 for a graph of the interaction). The $R^2$ for the first model was .19, and only increased to .21 when the interaction term was added, indicating the full model still accounted for a fairly small amount of variance in AE.

After examining the model with the entire sample, males and females were analyzed separately to test whether patterns would be similar in both sexes. As seen in Table 4, patterns of significance were similar for self-concept and academic dishonesty, but the family functioning score was not a significant simple predictor for either sex. Moreover, the interaction between locus of control and family functioning was only statistically significant for females. Model fit for the full model including the interaction term, as indicated by $R^2$, was better for males ($R^2$ = .23) than for females ($R^2$ = .16), but still quite small.

Since self-concept did not emerge as a significant predictor of AE in any of the multiple regression models despite ample previous evidence indicating it likely would be, the investigators again conducted all analyses including the individual scales used to create the self-concept composite score. Neither the Rosenberg self-esteem scale, general self-efficacy scale, nor college self-efficacy subscale score by itself was a statistically significant predictor of AE when examined with academic dishonesty, locus of control, family functioning and the interaction term.

Table 2

*Summary of ANOVA Results*

| Measure | Mean (*SD*) | Mean (*SD*) | *df* | *F* |
|---|---|---|---|---|
| | Males | Females | | |
| Academic entitlement | 45.20 (13.16) | 39.00 (11.03) | 1,396 | 26.09 ** |
| Self-concept | 103.46 (18.96) | 106.79 (17.45) | 1,395 | 3.32 |
| Academic dishonesty | 1.31 (1.87) | 1.08 (1.38) | 1,394 | 2.02 |
| Locus of control | 62.79 (8.37) | 65.23 (8.41) | 1,394 | 8.37 ** |
| Family functioning | 136.05 (25.12) | 138.65 (32.29) | 1,395 | .79 |
| | Parent degree | No parent degree | | |
| Academic entitlement | 42.61 (12.01) | 41.32 (12.54) | 1,392 | 1.09 |
| Self-concept | 105.03 (16.74) | 105.37 (19.65) | 1,392 | .04 |
| Academic dishonesty | 1.26 (1.66) | 1.09 (1.58) | 1,391 | 1.11 |
| Locus of control | 63.06 (8.41) | 65.07 (8.48) | 1,392 | 5.60 * |
| Family functioning | 139.21 (29.29) | 135.45 (29.00) | 1,391 | 1.64 |

*Note*. * $p < .05$. ** $p < .01$.

Table 3

*Correlations Among Study Constructs*

| Measure | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. Academic entitlement | -- | -- | -- | -- | -- |
| 2. Self-concept | -.28 ** | -- | -- | -- | -- |
| 3. Academic dishonesty | .23 ** | -.07 | -- | -- | -- |
| 4. Locus of control | -.38 ** | .70 ** | -.09 | -- | -- |
| 5. Family functioning | -.20 ** | .26 ** | .05 | .34 ** | -- |

*Note*. ** $p < .01$.

Figure1

*Interaction Between Locus of Control and Family Functioning in Predicting Academic Entitlement*

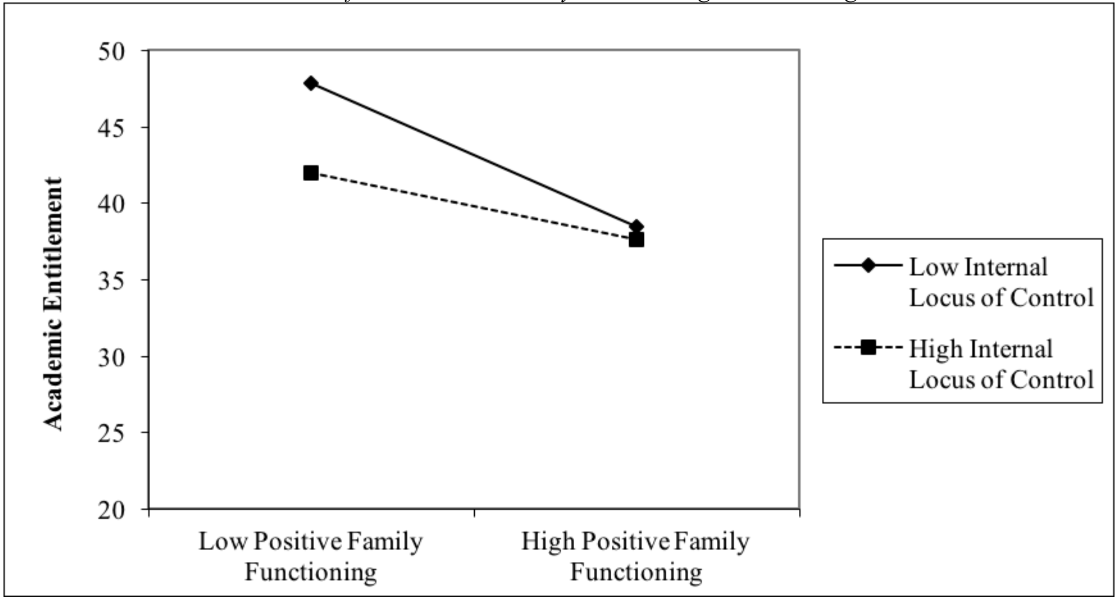

Table 4

*Multiple Regressions Predicting Academic Entitlement*

| Sample | Predictor | *B* | *SE B* | β | $R^2$ |
|---|---|---|---|---|---|
| Entire sample (*N* = 398) | | | | | |
| | Step 1 | | | | .19 |
| | (Constant) | 41.93 | .57 | | |
| | Self-concept | -.03 | .04 | -.04 | |
| | Academic dishonesty | 1.57 | .35 | .21 ** | |
| | Locus of control | -.44 | .09 | -.30 ** | |
| | Family functioning | -.04 | .02 | -.10 * | |
| | Step 2 | | | | .20 |
| | (Constant) | 41.51 | .59 | | |
| | Self-concept | -.03 | .04 | -.04 | |
| | Academic dishonesty | 1.57 | .35 | .21 ** | |
| | Locus of control | -.41 | .09 | -.28 ** | |
| | Family functioning | -.06 | .02 | -.13 ** | |
| | Locus of control X family functioning | .01 | .00 | .11 * | |
| Males (*n* = 188) | | | | | |
| | Step 1 | | | | .23 |
| | (Constant) | 44.24 | .87 | | |
| | Self-concept | .02 | .06 | .03 | |
| | Academic dishonesty | 1.73 | .46 | .25 ** | |
| | Locus of control | -.56 | .14 | -.35 ** | |
| | Family functioning | -.05 | .04 | -.09 | |
| | Step 2 | | | | .23 |
| | (Constant) | 43.77 | .93 | | |
| | Self-concept | .02 | .06 | .03 | |
| | Academic dishonesty | 1.72 | .46 | .24 ** | |
| | Locus of control | -.54 | .14 | -.34 ** | |
| | Family functioning | -.06 | .04 | -.12 | |
| | Locus of control X family functioning | .01 | .00 | .09 | |
| Females (*n* = 210) | | | | | |
| | Step 1 | | | | .14 |
| | (Constant) | 39.57 | .73 | | |
| | Self-concept | -.08 | .06 | -.13 | |
| | Academic dishonesty | 1.09 | .53 | .14 * | |
| | Locus of control | -.23 | .13 | -.18 | |
| | Family functioning | -.04 | .02 | -.11 | |
| | Step 2 | | | | .16 |
| | (Constant) | 39.15 | .75 | | |
| | Self-concept | -.09 | .06 | -.14 | |
| | Academic dishonesty | 1.10 | .52 | .14 * | |
| | Locus of control | -.19 | .13 | -.15 | |
| | Family functioning | -.05 | .02 | -.15 * | |
| | Locus of control X family functioning | .01 | .00 | .15 * | |

*Note*. All predictors were centered except for interaction terms. * $p < .05$; ** $p < .01$.

## Discussion

AE, while becoming of increasing interest to the scholarly community, remains poorly understood as a developmental outcome. In fact, potential developmental pathways explaining how an individual comes to enter college or some other educational environment with a sense of entitlement have largely been neglected in research. Building upon the progress already made in linking AE to various individual factors and demographic characteristics, this study was designed to introduce family functioning while growing up as a potential moderator of causality orientation (i.e., locus of control) links with AE. Results of the current investigation indicate that AE tended to be highest in students who were male, high in academic dishonesty, and had a more external locus of control. Furthermore, family functioning appeared to moderate the relationship between locus of control and AE such that those with a more external locus of control and more negative perceptions of family functioning were mostlikely to report high levels of AE. Female college students, in particular, exhibited this interaction.

This is not the first study to support sex differences in AE or in its development. Results are consistent with others finding significantly higher AE in males than females (Boswell, 2012; Chowning & Campbell, 2009; Ciani et al., 2008). Previous explanations for this sex difference have focused on differences in socialization, with males socialized to place greater value on success and task competence (see Boswell, 2012). This emphasis on success and status may encourage downplay of the countless struggles and commitment typically required to achieve the end result. Of course, the current findings introduced far more questions than they answered.

Consistent with the study hypotheses, AE had both significant bivariate and predictive relationships with academic dishonesty; individuals reporting greater AE tended to report greater academic dishonesty. Individuals high in AE may devalue the process of education while overvaluing its tangible outcomes, such as the transcript with a high GPA. Indeed, previous research supports this conceptualization. For example, Greenberger et al. (2008) found that individuals high in AE are characterized by an extrinsic orientation toward academics and place less emphasis on the intrinsic values of education such as learning and self-development. Those high in AE may view themselves as more deserving of academic rewards, therefore rationalizing an “ends justify the means” mentality to achieve academic success. The significant relationship between AE and academic dishonesty demonstrated in the current study is consistent with other research yielding relationships between entitlement attitudes and dishonest behaviors. For example, Davis, Wester, and King (2008) found that highly entitled psychology doctoral students were more likely to engage in ethically questionable research practices. Moreover, dishonest self-promoting behaviors have been related to similar forms of entitlement. For example, those high in victim entitlement (Zitek, Jordan, Monin, & Leach, 2010) and narcissistic entitlement (Tamborski, Brown, & Chowning, 2012) were more likely to engage in unfair behaviors designed to benefit themselves, even at the expense of others.

AE also had a significant inverse bivariate and predictive relationship with locus of control; individuals high in AE tended to report greater externality in locus of control. The externalization of responsibility for academic success often seen in individuals high in AE (Chowning & Campbell, 2009; Kopp & Finney, 2013) may be facilitated by an external locus of control. Indeed, the belief that one’s situation and prosperity are determined by others (e.g., external locus of control; Rotter, 1966) is certainly consistent with the belief that others are responsible for one's academic success. Externality facilitates a self-serving bias or hedonic bias in which individuals deflect blame for perceived failure and is also associated with a victim mentality (Twenge et al., 2004; Weiner, 1985). Following an undesirable academic outcome, students may perceive themselves as the victim of an unfair grading policy and believe they are of entitled to more favorable academic rewards. This is supported by previous findings that induction of a victim mentality increases entitlement attitudes (Zitek et al., 2010).

In partial support of the first study hypothesis, AE was inversely related to self-concept at the bivariate level; however, once the effects of academic dishonesty, locus of control and family functioning were controlled for, self-concept no longer explained a significant proportion of AE. The significant inverse bivariate relationship between AE and self-concept suggests that the self may be protected by entitlement attitudes following perceived failure. However, the loss of its significant relationship once controlling for the effect of other study variables suggests that self-concept’s relationship with AE is not a direct one and may be explained by other individual differences such as locus of control.

The most novel element of this study was the inclusion of family functioning as a potential moderator of the link between causality orientation (i.e., locus of control) and AE. Our results are consistent with prior studies demonstrating greater external locus of control in children and adolescents reared in more dysfunctional family environments (involving divorce and father absence) and more internal locus of control when experiencing family environments characterized by warmth, protectiveness, consistency and attentiveness (see Twenge et al., 2004 for a review of these studies). Basically, children reared in less predictable or supportive homes appear to feel less in control of their own destinies, perhaps including their academic trajectories. The current findings suggest that more negative family functioning strengthened the link between external locus of control and development of AE, meriting further investigation going beyond simple or direct relationships.

Furthermore, conducting separate regression analyses for males and females produced slightly different patterns of results, with family functioning serving as a statistically significant moderator for females only. Specifically, those female undergraduates recalling a more negative family environment and expressing a more external locus of control were most likely to display AE. Lack of support, or at least lack of perceived support, from family members combined with lack of ownership of one's own accomplishments may facilitate deflection of blame and avoidance of self-awareness (consistent with a self-serving or hedonic bias; see Baer & Cheryomukhin, 2011 and Weiner, 1985) such that a victim mentality ensues (see Twenge, et al., 2004) and educators become obvious targets for hostility when academic performance fall short of goals.

Finding different patterns of prediction for males and females sparks questions about the role of family interactions in development of causality orientation and whether there are sex differences in the importance of family functioning in how offspring come to view their place in their own environments. Since replication and further research is certainly warranted, we can merely speculate how AE in males may grow out of personal factors and attitudes toward education with little connection to how they perceive their own family functioning. Females' potential for developing AE may depend more on a combination of individual factors and environmental qualities such as support and openness experienced within their home environment as attitudes toward education take shape. Without continuing research incorporating complex models of prediction, only conjecture is possible.

## Limitations and Future Directions

While these preliminary results support the notion of separate pathways to the development of AE for males and females, more research with different samples, measures, analysis, and design is clearly needed. Model fit was rather low for the regression analyses, suggesting that predictors explaining more of the variance in AE were left out of the current study. Future investigators of the predictors of AE should strive to identify these other predictors. Likely candidates would be intrinsic versus extrinsic motivation, other individual factors, identity development status and different measures of parenting and family environment.

An additional limitation of the current study was the use of convenience sampling. Our sample was recruited exclusively from one public university in the southern United States. Moreover, the participants in the sample predominantly identified as White, potentially limiting generalizability to more ethnically diverse college groups. Future research should aim for a sample with greater diversity of racial and ethnic identity, as well as university location and university type (e.g., public, private, four-year, post-graduate).

Importantly, family functioning was assessed retrospectively rather than concurrently. To date, little to no research has tracked the development of AE longitudinally. The present study's findings would be strengthened considerably if corroborated by such prospective studies beginning in childhood or adolescence and continuing across the transition to higher education. Such investigations would better address the following questions:

1. When do AE beliefs first appear?
2. When do AE beliefs relate to problems in academic, social and other domains?
3. Do parents tend to socialize sons differently than daughters in a manner conducive to development of entitlement beliefs?
4. Do specific parenting behaviors predict the development of AE, and do such behaviors predict development of AE similarly for boys and girls?

These suggested questions are merely a sampling of the problems that could be tackled with longitudinal research on AE. Prospective studies are more complicated and difficult to carry out, but progressing forward in understanding or even preventing this characteristic that so exasperates college faculty in diverse geographic areas will stall without these more intensive research designs.

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# Enhancing the Scholarship of Teaching and Learning Through Micro-Level Collaboration Across Two Disciplines

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Two professors from two disciplines—education and sociology—analyzed the commonalities, differences, successes, and challenges of conducting cross-disciplinary Scholarship of Teaching and Learning (SoTL) research at the course level (micro-level). This case study of their collaboration resulted in a series of lessons learned which add to the literature base on the process of SoTL collaboration. The results of their professional collaboration at this level provide a validation for increased communication and alignment during the development and implementation of the projects developed to enhance teaching and learning in their respective courses. This erudition illuminates the potential of increased SoTL collaborations across disciplines at the micro-level.

This project is an outcome of our participation in a Faculty Learning Community (FLC). We are from two disciplines—education and sociology—and while convening monthly in a FLC to discuss the concept and field of the Scholarship of Teaching and Learning (SoTL), we developed a desire for research collaboration. The challenge was that we came from very different disciplines. As we explored collaborative research options, a common thread of interest emerged: service learning. As the FLC extended into another semester to afford the participants opportunity to further examine ways to collaborate, we determined that we would utilize service learning to improve teaching and learning in our respective courses. In addition, we were interested in the potential of cross-disciplinary SoTL research at the micro-level. This led to our research question focusing on this collaboration: what are the commonalities, differences, challenges and successes of collaborating at the micro-level to conduct SoTL research across disciplines?

The problem addressed here is about the challenges of cross-disciplinary collaboration. This article examines our successes and challenges as we collaborated to enhance teaching and learning through SoTL collaboration at the classroom level, or micro-level, in our respective courses—an introductory curriculum course in an early childhood education program and a gerontology course in a sociology program.

## The Scholarship of Teaching and Learning

The concept of SoTL has been around in higher education even before the emergence of the term *scholarship of teaching* in the early 1990s when Boyer's (1990) work was published on the topic. Some disciplines, such as sociology, English, chemistry, and communication have embraced this concept for much longer than some of the other disciplines. Some of the earlier proponents of this concept include: (a) Shulman (1987), who focused on *pedagogical content knowledge*; (b) Pellino, Blackburn, and Boberg (1984), who discussed the *scholarship of pedagogy*; (c) Braxton and Toombs (1982), who designated teaching activities and course content as scholarship; (d) Baker (1980), who began citing relationships between what teachers know, what they do, and what they write about their teaching; and (e) Cross (1986), who emphasized that college teachers should be considered *classroom researchers*. More contemporary proponents of SoTL include: (a) Huber and Hutchings (2006), who encourage teachers to consider their classroom as a site for research in order to enhance the teaching profession; (b) Kreber (2005), who deems the scholarship of teaching and learning critical as college and university teachers strive to attain their goals; and (c) Weimer (1997), who began writing about teaching and research, emphasizing that "research improves teaching" (p. 54), and continues to write about this idea using the term *pedagogical scholarship* (Weimer, 2006).

According to Hutchings and Shulman (1999), "Scholarship of teaching is *not* synonymous with excellent teaching" (p. 14) but extends to framing and investigating the questions related to their students' learning. Numerous definitions are offered for SoTL, varying by discipline and/or institution, many of which incorporate ideas from Boyer (1991). His ideas promote that teaching may be considered as routine, but when defined as scholarship, it can educate and attract future scholars; stimulate active learning by students; engage faculty, not only as teachers, but also as learners; and help maintain a vibrancy of scholarship in professors' work.

The design of this project resonates with the description of SoTL offered by Huber and Hutchings (2006): "… viewing the work of the classroom as a site for inquiry, asking and answering questions about students' learning in ways that can improve one's own classroom and also advance the larger profession of teaching" (p. 1). Additionally, this study follows the outline of the mission of the Carnegie Foundation for the Advancement of Teaching (2013), which includes (a) learning from each other, (b) improving on what we know works, (c) continuously creating new knowledge, and (d) taking what we learn and making it usable by others.

## Collaboration and the Scholarship of Teaching and Learning

Inasmuch as the works in the classroom are encouraged to be shared with others, collaboration with colleagues is paramount in SoTL in the procedures, outcomes and applications (Carnegie, 2013; Huber & Hutchings, 2006; McKinney, 2007; Shulman, 1993). Demonstrating this relationship, a study by Cox, Huber and Hutchings (2004) found that 88 percent of the participants in the Carnegie Academy for the Scholarship of Teaching and Learning collaborated with colleagues in their institutions as they investigated SoTL questions.

Collaboration in SoTL most often occurs within the discipline, but considering collaboration across the disciplines allows expansion of the questions and research ideas in attempts to improve student learning with SoTL (McKinney, 2007). According to Yakura & Bennett (2003), scholarship within disciplines is important, yet it should not limit work across the disciplines. Huber and Morreale (2002) summarized the advance of collaboration by explaining that more cross-disciplinary collaborations are contributing to a broadening of literature that once may have been shielded from others due to its specific language, procedures and subject matter.

Other researchers have noted that this approach, also called transdisciplinary research, demands high quality when adopting ideas from one discipline into another and is based on common underlying relationships in which theories can be applied (Lattuca, 2003; O'Brien, Marzano, & White, 2013). Additionally, O'Brien et al. (2013) conclude that this type of collaboration sparks enthusiasm, not only about learning from other researchers, but also about gaining new ideas, perspectives and practices. Dewulf, Francois, Pah-Wostle, and Taillieu (2007) note that the different elements within disciplines work together to create professional communities through which researchers' professional and personal identities can be strengthened.

McKinney (2007) further notes that SoTL collaboration may occur in a variety of ways. Some of these descriptions include: (a) working independently, yet brainstorming with a colleague; (b) discussing efforts with another professor at various phases during a project; (c) gathering ideas with someone; (d) measuring concepts and/or analyzing the result; (e) engaging with a partner throughout the whole project. Finally, she offers an additional description, which is the mode of collaboration utilized in this project: SoTL work, which involves two or more professors sharing a research question for which they gather data in different courses, departments, or institutions. The researchers then pool their data and work together to analyze, interpret, publish, and apply the results (McKinney, 2007).

Huber and Hutchings (2006) resonate with Hatch, Bass, Iiyoshi, and Pointer-Mace (2004) as they note that, through technological advances, there are now more opportunities for collaboration across disciplines/institutions during SoTL projects. Additionally, the SoTL results can be more collectively disseminated at the end with networking. An advantage of collaboration in SoTL across disciplines is learning from each other about the respective disciplines. Additionally, Yakura and Bennett (2003) assert that finding commonalities across the disciplines strengthens the effectiveness of the methods employed in the study. They concur that connecting ideas and concepts creates new relationships and provides fresh perspective. Their study further validates Huber's (1999) findings that cross-disciplinary collaboration allows us to draw from the objective view of colleagues to note knowledge gaps, whether wide or narrow, and allows us to fill them within our disciplines. Yakura and Bennett (2003) reiterate that filling in these knowledge gaps may very well prevent scholars from getting frustrated and unnecessarily repeating work that has already been done. Additionally, in the teaching profession the collaboration strengthens the findings of studies, empowers replication, and advances the literature by providing diverse contributions (Huber & Hutchings, 2006; McKinney, 2007; Weimer, 2006).

As is evident from the literature, many of these collaborations occur at the institution/discipline level or *macro-level*. In this study, we use the classroom aspect to show that SoTL can be accomplished across disciplines at the *micro-level* and to answer the question, "What are the commonalities, differences, challenges and successes of collaborating at the micro-level to conduct SoTL research across disciplines?" According to Bernstein (2010): "... the best instructors in all fields are those who read what others are doing, evaluate their own successes, and refine their teaching through careful consideration of the evidence before them" (p. 1). Resonating with his words that summarize the SoTL mission, our goal in this study is to demonstrate effective collaboration across disciplines to improve teaching and learning in our respective courses.

## Service Learning in the Setting of this Study

Although this case study is not about service learning in our courses but about our cross-discipline micro-level collaboration, we feel it is necessary to aid the understanding of our selection of service learning as the strategy adopted for enhancing the teaching and learning in our classes. Therefore, we are providing an operational definition of service learning, which we adopted to guide us in the design of the service-learning option in our respective courses; a brief statement of the status of this methodology being utilized in university settings; and some of the reported benefits of students participating in a service-learning experience. The definition adopted for this study resonates with the explanation of service learning offered by Bringle and Hatcher (1995): Students receive credit in a course as they (a) participate in an organized service activity based on identified needs in the community in which they are working; and (b) reflect on their service activity to gain understanding of the course content, to develop a deeper appreciation of their discipline, and to enhance their personal values and commitment to civic responsibility.

Service learning has become a powerful force in universities, particularly in undergraduate education. In 2004, it was reported by Campus Compact, a national coalition of higher education committed to civic and community-based learning, that the number of full-time faculty teaching service-learning courses had increased threefold in the four-year period from 2000 to 2004 (Ehrlich, 2005). Recent reports indicate that membership in Campus Compact has grown by an average of 70 campuses per year over the past five years. This trend reflects an increased commitment to the civic purposes of higher education (Campus Compact, 2013).

Studies have confirmed students' higher academic achievement as a benefit of their participation in service learning (Astin, Voglesang, Ikeda, & Yee, 2000; Eyler, Giles, & Braxton, 1997; Jameson, Clayton & Ash, 2013; Shastri, 1999; Strage, 2000). In addition, the use of service learning provides rich experiences for students which promote self-esteem, develop higher-order thinking skills, and provide hands-on opportunities to help develop awareness of and value for diversities (Kahne & Westheimer, 1996; Wade, Boyle-Baise, & O-Grady, 2001; Weatherford & Owens, 2000). Finally, findings suggest that students may gain a greater depth of understanding of their course objectives and/or content as a result of participating in service learning (Anderson, Swick, & Yff, 2001; Eyler, Giles, & Braxton, 1997). The authors may be contacted for further information on service learning in this study.

## Method

The focus of this article is on the collaborative case study of two professors in two different disciplines adopting service learning in their courses. For clarity, we have divided the methods section into a description of the participants, data collection and analysis for research in the *courses* and then a description of the participants, data collection and analysis of this *case study*.

### Courses

Our collaboration consisted of implementing and evaluating the effect of service learning in two different courses in two different disciplines. This section of the methods describes the classes and the process of data collection for our collaboration.

**Participants in the courses.** To elaborate further and aid in the understanding of the results of our collaboration, information on the students in each of the classes is provided here. One course from the department of teaching and learning (hereafter referred to as Course Ed), was a junior-level, three-credit early childhood education introductory curriculum course that is required by the major. All 25 students enrolled in the class participated in the study; they were all juniors and education majors. All students, except for one, were traditional-age students (20-22 years old), and all but one were female. The other course was an upper-level gerontology course offered as an elective in the sociology department and hereafter is referred to as Course Soc. Anyone of any major could take this course. There were 28 students in the course participating in the study (five students opted not to participate). Students were in a range of years, but the majority were juniors (n=13) or seniors (n=13). Nineteen were traditional age (20-22 years old), and nine were non-traditional (23-54 years old). There were 20 females and eight males. Of the 28, only 10 were sociology majors.

In Course Ed, of the 25 students in the class that participated in the study (out of a total enrollment of 25), eight of the 25 students opted for service learning, which consisted of determining a need within their field placement classroom or school. They set goals and planned activities to address the targeted needs. Seventeen students opted for the traditional assignment, which consisted of observing and completing various tasks assigned by the elementary classroom teacher. In Course Soc, of the 28 students in the class that participated in the service-learning study (out of a total enrollment of 33), ten opted to do service learning which consisted of teaching computer lessons to older adults at the local library, and 18 opted for the alternative assignment, which included an interview with an elder and a paper based on the content of a range of feature films depicting older adults. We compared students who opted to do service learning with those students who opted to do an alternative assignment relative to their attainment of course objectives. Table 1 summarizes the participants in the course.

Table 1
*Course Participants*

| Characteristic | Course Ed | Course Soc |
|---|---|---|
| Number of Participants | 25 | 28 |
| Description/Level | Homogenous; all juniors | Diverse; 1 freshman, 1 sophomore, 13 juniors, and 13 seniors |
| Gender | 24 females; 1 male | 20 females; 8 males |
| Age | 24 traditional: 20-22 years old<br>1 non-traditional: 35 years old | 19 traditional: 20-22 years old<br>9 non-traditional: 23-54 years old |
| Major | All were Early Childhood Education (ECED) majors | Only 10 were Sociology majors |
| Course | Junior Level; Required for major; Early Childhood Curriculum Course; skills based objectives | Upper level; Elective for any major; Sociology Course; knowledge-based objectives |
| Service-Learning (S-L) Option | 8 students designed S-L in P-5 classrooms based on identified needs | 10 worked with older adults and computers in library |
| Traditional Assignment Option | 17 observed and completed various tasks assigned by P-5 classroom teachers | 18 interviewed an elder and wrote a paper based on feature films with older adults |

**Data collection and analysis in the courses.** To further support understanding of our collaboration, a brief description of our data collection and analysis within our courses is included. First, we collected basic demographic information from all students. Next, we gave all students in both classes a quantitative test at both the beginning and end of the course to measure their level of understanding of the course objectives. Since each class had a different set of course objectives, these tests were different for each class. These quantitative instruments consisted of a series of multiple-choice questions, and each question directly related to at least one course objective. In addition, all students in both classes provided three reflective journals (beginning, midpoint, and end of semester) where they could reflect on their learning through either the service learning or alternative assignments. Finally, all students were given a self-rated scale they could use to measure the attainment of course objectives and the utility of the learning strategy they had engaged in.

While similar data were collected for both classes, there were some differences. For instance, because of the homogeneity of the students in Course Ed, basic demographics included only gender and age, while in Course Soc, data was also collected on year in school and major. While students in both classes were required to provide journal entries at three points in the semester, those reflective journals differed. For Course Ed, journals focused on the process of service, students' attitudes about the experience, and examples of student work or on the traditional field experience activities in which they were involved. For Course Soc, journals focused on contributions of service learning or the alternative assignment to understanding course content and what was helpful and challenging about the experience.

Because the classes had different course objectives, those reflections looked different. In addition, we created different pre/posttests that were designed to measure baseline and terminal understanding of their individual course objectives. We also created a self-rated scale that allowed students to rate their level of understanding of each course's objectives using a five-point scale. This was included as part of the journal entries, and for Course Ed, it was administered at the beginning, midpoint, and end of the semester. For Course Soc, it was only administered at the midpoint and end of the semester, and a qualitative reflection of baseline understanding of course objectives was done at the start of the semester. In addition, students in both classes also rated how their learning experience (service learning or alternative) contributed to their understanding of each of the learning objectives on a five-point scale. This was completed in Course Ed at beginning (they projected how they perceived it *would* contribute), middle and end points; and in Course Soc, this was completed at the midpoint and end of the semester.

## Case Study

This section of the methods describes the case study documenting a collaborative effort between two professors. This is the primary focus of this work, and the results section is a reflection of the case study process.

**Participants in the case study.** As participants in this study, we were the professors for the two courses.

The professor of Course Ed will be hereafter referred to as Prof Ed, and the professor of Course Soc will be hereafter referred to as Prof Soc. Our background in this setting is included below.

Prof Ed: This study was conducted during the fourth semester that I had taught Course Ed. During the same semester, I also taught a Creative Arts methods course to second-semester juniors, and I supervised first semester seniors in a practicum field experience. I was serving as Service-Learning Faculty Fellow for the College of Education, and had served as a Service-Learning Faculty Mentor the previous semester to a Service-Learning Student Facilitator—a student leader trained to assist professors in their service-learning projects. I was participating in my second Faculty Learning Community (FLC), this one being my introduction to SoTL.

Prof Soc: This study was conducted during the ninth semester I had taught the course. It was the second time I taught the course at my current university and the first time I adopted a service learning option for the course. During that same semester, I taught one additional course, death and dying. I served as a Service-Learning Faculty Mentor to a Service-Learning Student Facilitator for the aging course that is the focus of this study. I was also participating in the same FLC focusing on SoTL as Prof Ed. This was also my first SoTL project.

**Data collection and analysis in the case study.** We utilized a case study approach to examine the process of collaboration across two disciplines. According to Patton (2002), a case study is a method for examining the complexity of a single case. The case consisted of our collaborative efforts in teaching very different courses to very different sets of students in different departments and evaluating the effectiveness of service learning on the attainment of the course objectives. The focus is on the commonalities, differences, challenges and successes of doing collaborative micro-level SoTL research across disciplines.

The process of collaboration began when we were a part of a FLC on SoTL. After concluding that our strategy for enhancing teaching and learning would be the implementation of the service-learning option for our students we began a collaborative planning process. We determined the appropriate types of data collection to use for the service-learning study. There were three major processes we both utilized for data collection: field notes, on-going dialogue between the researchers, and a reflective spreadsheet (matrix of comparisons) focusing on the process of collaboration. In our initial planning sessions, we developed the matrix of comparisons as an on-going shared document on which we entered the qualitative data: field notes, observations, feelings, and other pertinent information. We divided it into four main categories: commonalities, differences, challenges, and successes. Then, we each added our data/notes (designated with our initials) under the headings of process, desired outcomes, and outcomes for each of the categories.

The collaborative process continued during the implementation of the study. During the semester we held regular discussions (weekly at first, then monthly as the semester progressed) to talk about the research process from the beginning stages to the end stages. During our discussion sessions, we examined our matrix of comparisons as it developed throughout the semester. Discussions primarily took place during the ongoing FLC that focused on SoTL. In this setting, we were able to discuss our collaboration and receive feedback and support from other faculty familiar with the SoTL process. We also collaborated during the analysis process. As themes emerged regarding the collaborative process, we were able to discuss these themes with other colleagues, thereby providing a level of triangulation. The shared matrix of comparisons document proved invaluable as we began to compare and contrast our experience throughout the semester. Not only had it provided an "agenda" for our discussion sessions, the field notes and pertinent data contributed most to the construction of the thematic results of this case study. This research focused on the process of collaboration more than the classroom outcomes regarding the utilization of service learning. Specifically, this case study is the process of collaboration between the two of us. The results will be used to contribute to the limited base of process-focused literature in SoTL.

## Results

Results provided here are our reflections and analyses regarding the process of working together. In order to establish answers to our research question, "What are the commonalities, differences, challenges, and successes of collaborating at the micro-level to conduct SoTL research across disciplines?," we utilized reflections from our individual field notes as well as from ongoing discussions. We used our running spreadsheet, matrix of comparisons, that focused on our four themes: commonalities, differences, challenges, and successes of the collaborative process. For each of these themes, we were attentive to the process, outcomes, and plans for the future.

### Commonalities

**Process.** There were several commonalities in the process for both classes. First, we both were implementing a new teaching methodology for enhancing teaching and learning. In this case we selected to add a service-learning component in our classes. We had both revised our course syllabi to provide a service-learning option for students. As part of this process, we submitted our course syllabi to the university's Service-Learning Faculty Fellows for approval, and we both attained the course designation of service-learning course. The partial implementation of service learning allowed for comparisons between students opting into service learning and those opting for an alternative assignment in both classes. Also, while we both hoped that service learning would help students to attain course objectives, neither course had any specific course objectives directly related to service learning. There was a single IRB application, and students in both classes had to sign the same informed consent form to have their data included in the study.

**Outcomes.** One commonality with regard to the outcomes was that there were too few students in both courses to allow for a statistically significant quantitative assessment. This is discussed in more detail in the section on challenges. This led to ongoing discussions between researchers about if and how changes in the integration of service learning should take place. Through these discussions, we were both able to make decisions about future revisions to our classes.

**Plans for the future.** Similar types of quantitative and qualitative data were collected in both classes. Looking at outcomes, we both decided to adopt service learning as a course requirement the next time we taught our classes. A course objective was added to the syllabus for future sections of the course for Course Soc that directly related to service learning. Although Course Ed objectives could not be modified, as per program design, course activities were modified to include service-learning to achieve the prescribed objectives.

### Differences

**Process.** One of the key differences between the two classes was that Course Ed was a required course for majors in their junior year, whereas Course Soc was an elective for students of any major. This led to two very different sets of students. Course Ed was much more homogenous when compared to Course Soc across a range of factors, especially age and major.

Each course had its own objectives. A comparison of those course objectives showed that Course Ed's course objectives are much more skill-based, whereas Course Soc's course objectives are more knowledge-based. This may be attributed to the fact that education is a more applied discipline while sociology is a more theoretical discipline.

We both faced limitations with regard to service-learning options, but the limitations differed. Course Ed service-learning students had little opportunity to work outside the field placement classroom, which meant that students' service-learning options were limited to in-class based service. This limitation was due to a highly-prescribed course of study in the practicum experience of Course Ed. Course Soc service-learning students were only given the option to do computer lessons one-on-one with older adults in the community. This limitation in options was due to a limited amount of time available for coordination with a community partner.

**Outcomes.** Miscommunication due to failure to establish a common deadline for collecting the first reflections resulted in a difference in the first set of data collected in our classes' journals. The difference occurred when Course Ed students began their projects later than those enrolled in Course Soc, and Prof Ed revised the design of the first reflection after Prof Soc had already collected her first reflections. As a result, Course Ed students were asked to rate their baseline understanding of course objectives using a quantitative five-point scale in addition to their qualitative reflections in their journals, but Course Soc students were only asked to reflect on their understanding qualitatively in their journals.

**Plans for the future.** We both evaluated the effectiveness of service-learning in our classes, but our foci for future implementations are varied. Prof Ed plans to evaluate the effect of service-learning on students' self-efficacy, and Prof Soc plans to evaluate the effects of different types of service learning on students' attitudes toward older adults.

### Challenges

**Process.** Inasmuch as the two colleges within a single university represented in this study are separated physically across the university campus, our regular connection with each other was challenging. Additionally, there were scheduling conflicts.

We both struggled with service learning being new to our respective programs. For Course Soc, this was the first service-learning course for the department, so there were no clear processes or requirements for the adoption of service learning. For Course Ed, it was the first Early Childhood Education (ECED) course with field placement, and at this introductory level there are many limitations to the students' understanding of the classroom and identifying needs within that classroom. A previous student's experience as a Service-Learning Student Facilitator was employed to help introduce the concept to Course Ed students and encourage them to participate in this premier experience.

Additional challenges in Course Ed occurred relating to other classes in the Teaching and Learning Department. While multiple sections of the course were offered by other professors, these courses did not have a service-learning component, and that potentially affected students' expectations with regard to course content.

**Outcomes.** Perhaps the biggest challenge we faced was the limited number of students involved in the study. We each only taught one section of the course we were evaluating. As a class-based study, the data collected could only come from a limited number of students (n=25 for Course Ed and n=28 for Course Soc). In addition, the comparisons between service-learning and non-service-learning students were limited by the number of students who opted for service-learning (32 percent of students in Course Ed and 38 percent of students in Course Soc). This resulted in insufficient power to detect all but the largest of effects.

**Plans for the future.** The deficiency of statistical findings, along with the lack of service-learning options offered by the various instructors of the same courses within the program for Course Ed, made determining whether to continue, extend or eliminate service learning difficult. The lack of statistically significant findings also limited decision making for Course Soc.

### Successes

**Process.** Despite the challenges, we were both able to gather both quantitative and qualitative data that could be used to determine the success of implementing a service-learning component into our classes, and we were both able to analyze the data.

**Outcomes.** Each of us was able to utilize the qualitative data to develop themes that led to a better understanding of how service learning contributes to the attainment of course objectives. Data analysis for Course Ed showed that students participating in service-learning component achieved the course objectives as well or better than those who did not participate in service learning.

**Plans for the future.** We both report success in plans for the future. First, both of us have decided to require service learning for the class in the future based on non-statistical results, the thematic coding of qualitative results and collaborative discussions. We are both continuing with research regarding the effectiveness of service learning in our classrooms, and we each have developed specific plans for our own courses and disciplines. Prof Ed is sharing the idea of implementing service learning with other faculty members who have traditionally not offered this type of project due to the prescribed practicum programs: they now have a model on which they can base their implementation. And Prof Soc is using lessons learned from this research to implement a service-learning component in another upper-level sociology course. Both have been able to share the results of this work with faculty interested in SoTL through a presentation at an SoTL conference.

## Discussion

One of the best ways to think about teaching/learning problems, issues, or questions, according to McKinney (2007), is to consider SoTL questions posed by others. During this project, we investigated various SoTL projects as we determined our own design and research question(s). We discovered the same phenomena as McKinney (2007): "SoTL teaching-learning problems or research questions can vary tremendously even within a discipline" (p. 29). The more important discussion comes from the value and challenges of such collaboration. Although the approach for enhancing teaching and learning in our case study was implementing the methodology of service learning, the results from this collaboration can be applied to the execution of other strategies in cross-disciplinary SoTL research. What follows are some lessons we learned from the process.

### Lessons Learned

Lesson One: The two times that the collaboration was the most valuable were at the beginning and the end of the research process. At the beginning, we were able to collaborate on the research design. We both agreed on the research questions, the types of data to collect, and the method to collect them. In addition, we were able to submit a single IRB application. Our initial miscommunication regarding the initial data collection served as a caveat to remind us of the importance of getting off to a good start with clear communication. In the middle, each of us separately collected and analyzed our data. While we were able to check in and be supportive of each other during that process, the work itself was done separately. At the end, we were able to share results of our analysis and discuss why and how we would make revisions to future iterations of the classes.

Lesson Two: From the beginning, it is essential to have a clear understanding of the ways that each class and discipline differ and the ways they are similar. This is especially important when planning our methods. In our case, there was a range of differences, from course objectives to student demographics to place of the course in the major. All of these differences, described in the participants' sections, had an influence on data collection and data analysis. Understanding this, and thus allowing for the flexibility of process for each of the professors, is crucial. For instance, while we both had a quantitative measure of students' knowledge of course objectives, those measures were very different. In addition, analysis of the data collected needed to be done through separate processes. Initially, we had hoped to have one codebook for the qualitative analysis of journal entries, but we found this to be impossible since the students' reflections were so different, and the nature of the information we needed from them was also different.

Lesson Three: It is crucial to set up regular times to communicate about process, because learning about the bumps in the road faced by the other person can be helpful only if one knows what those bumps are. While we both felt that the experience of collaborating with someone from a different disciple was helpful, there were some challenges. Working collaboratively with someone from another department housed in a different building on campus meant we did not "run into" each other, and regular connection was challenging. We discovered that, while data collection and analysis is performed separately, ongoing communication is still essential.

Lesson Four: It is essential from the beginning to accept that outcomes and options will be different when working collaboratively with someone from another discipline. From the beginning, we planned to create separate articles on our findings that would be submitted to our own discipline-specific journals. In addition, we accepted that while we were both moving to make a decision about the future implementation of service learning, those decisions would most likely look different. Indeed, while each of us now require service learning in our classes, the implementation of that service-learning component—location, hours, connections to course content—are very different. Although the implementation of service learning was our common thread, this lesson can be applied in other content areas utilizing SoTL collaboration at the micro-level.

Lesson Five: A major advantage to working together is the ability to exchange ideas along the way, and in that sense, this process was invaluable. In addition, having another person who did not completely understand our individual disciplines forced us to provide a level of clarity that is not required by someone within our discipline. That worked to our advantage in a range of areas including IRB application, explanations of the research to students and community partners, and ultimately in producing publishable work.

## Limitations

As a process study, there were some limitations. While working across disciplines has advantages, there are disadvantages regarding the requirements of the disciplines. One limitation was the dramatic differences with regard to course outcomes. In addition, the study is limited by the fact that only two disciplines and two classes were involved. Future research would benefit from additional disciplines and additional classes. The additional complexity would provide an additional layer of understanding. Finally, the study was limited by the number of students involved. It would have been a stronger study of cross-disciplinary collaboration if the study had expanded to include future semesters of the same classes. These additional numbers would have enhanced our results as the process of continued collaboration could be explored.

## Conclusions and Recommendations

During this collaborative process of employing SoTL, we found that it is important to realize that results will be different and that each us has different limitations with regard to changes that can be made based on those results. In addition to the implications from the lessons learned, we recommend more long-term studies with the same classes, which would increase the number of subjects from which data could be collected. Ultimately, micro-level collaboration across disciplines enriches the research experience and contributes to the participants' increased Scholarship of Teaching and Learning.

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# Conceptions of Effective Teaching and Perceived Use of Computer Technologies in Active Learning Classrooms

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This paper examined professors' conceptions of effective teaching in the context of a course they were teaching in active learning classrooms and how the conceptions related to the perceived role and use of computers in their teaching. We interviewed 13 professors who were teaching in active learning classrooms in winter 2011 in a large research university in Canada. The interviews captured what professors consider effective teaching, expected learning outcomes for students, instructional strategies and the role participants saw for computers in their teaching. Analysis of interview transcripts using a holistic inductive and constant comparison approach resulted in three conceptions of effective teaching: transmitting knowledge, engaging students, and developing learning independence. Professors' perception about the role and use of computers was found to be in line with their conceptions of effective teaching. Professors whose conception of effective teaching focused on developing learning independence used computers as tools for students' learning; those with a transmitting knowledge conception considered computers as a means of accessing or presenting information. Data collected from students about their use and their professors' use of computers in the course supports this conclusion. Results have implications for design of active learning environments and faculty development initiatives.

Serious conversations that delve into the value added dimension of the use of computer related technologies in education largely attribute the value to the design of learning activities and environments rather than to the presence of these tools or their special features per se. Learning activities need to be designed in ways that elicit active engagement of learners and allow for judicious use of tools in the process (Jonassen & Reeves, 1996; Kim & Reeves, 2007). Effective design of learning activities are typically theoretically grounded, context-oriented, and aligned with learning-centered approaches to teaching (Hannafin, Hannafin, Land, & Oliver, 1997). However, the design of such environments is influenced by various factors, one of which is professors' conceptions about effective teaching.

We know from the literature on university teaching that the conceptions professors hold about effective teaching influence their choice of instructional strategies and teaching practices (Entwistle & Walker, 2000; Trigwell, Prosser, & Taylor, 1994). This literature, however, does not provide insight into how professors' conceptualization of effective teaching relates to the perceived role and use of computers in their teaching. This gap in our understanding can be attributed to the independent evolution of two bodies of literature: conceptions of effective teaching and the use of computers in teaching and learning. Research on effective teaching has typically focused on understanding professors' conceptions of teaching and determining traits and activities attributed to effectiveness. Likewise, empirical and meta-analytic research on the use of computers in university teaching have largely focused on determining the "effects" of computers on student achievement (Fried, 2008; Schmid et al., 2009). In most cases, the educational rationale behind the use of computer related tools and the importance of the socio-technical context have been, at best, implicit and often assumed. As part of a research project that investigated the use of computers in active learning, technology-rich classrooms from the perspectives of professors and students, the study reported in this paper addressed three questions: (1) What is effective teaching for professors who teach in active learning classrooms? (2) What role do professors see for computer related tools in enacting their view of effective teaching? (3) In what ways are professors' conceptions of effective teaching related to the perceived role and use of computers?

A persistent criticism voiced in the last three decades concerning computers in university teaching and learning has been that computers reinforce traditional methods of teaching instead of promoting more learning-oriented teaching approaches (Carpenter & Tait, 2001; Collis & van der Wende, 2002; Cuban, 2001; Kling, 1986; Selwyn, 2007). More than a decade ago, Cuban (2001) described the situation of computer use in U.S. universities as "new technologies in old universities" (p. 99), implying that new tools are used to teach in the same old ways. Carpenter and Tait (2001) expressed a similar concern about Australian universities, asserting that technology is allowing "traditional lecturers to become more effectively traditional" (p. 201). An international comparative survey of the use of technology in higher education (Collis & van der Wende, 2002) concluded that information and communication technology (ICT) use in the form of email, word-processing, Power Point, and the web has become common but has not radically affected the teaching and learning process.

More recently, Selwyn (2007) suggested the need to understand non use of computer technologies in higher education teaching and learning and to shift the discourse from a macro-level study of "barriers" to a micro level understanding of individual, psychological and educational rationales. The effect of computer use in teaching and learning is context-dependent in that the conditions under which the tools are used and the corresponding teaching strategies determine whether or not the tools are supporting student learning. For example, when used as cognitive tools—tools that assist students during thinking, problem solving, and learning — rather than as presentation aids, computers can improve student learning (Jonassen, 2000, 2003; Jonassen & Reeves, 1996). Schmid et al. (2009) have also arrived at a similar conclusion in their meta-analytic study of the effect of technology on students' achievement in higher education. They conclude that when computers are used as cognitive tools, students' performance, as measured by achievement scores, is significantly higher compared to when computers are used as presentation tools.

## Context and Active Learning Classrooms

Context provides a frame or "field of action" within which effective teaching is embedded (Duranti & Goodwin, 1992). It represents the weaving together of social, psychological and technological aspects in a way that situates the learning experience and provides coherence for the teaching and learning process (Gilbert, 2006; Van Oers, 1998; Windschitl, 2002). At a broader level, context could refer to the societal culture under which teaching and learning takes place (Devlin & Samarawickrema, 2010; Pratt, Kelly, & Wong, 1999). For example, Pratt et al. (1999) employed a qualitative survey and collected data from 397 students and 82 Chinese and expatriate faculty at Hong Kong Chinese University to examine the ways effective teaching is conceptualized and enacted. The researchers reported that expatriate faculty members' conceptions of effective teaching were different from Chinese faculty and students. The notable difference was in participants' expression of the role and value of foundational knowledge in undergraduate education, the roles and relationships of faculty and students, the teaching processes and the attribution of responsibility for effective teaching. Pratt et al. (1999) concluded that conceptions of effective teaching reflected "the cultural, historical and social structures within which they are enacted" (p. 251).

Context at a course or classroom level, as elaborated by Van Oers (1998), is a "meaningful situation," a situation that makes sense in relation to the "focal event" being undertaken: in this case, the teaching and learning process. Accordingly, context at classroom level has four aspects (Duranti & Goodwin, 1992; Gilbert, 2006). The first is the setting that includes the social and spatial framework within which the teaching and learning is enacted. The second is the activity structures and the extent of student engagement in learning-related activities that facilitate their cognitive and behavioral development. Tools are the third dimension of context as they mediate learners' active engagement. However, effective use of tools depends on what goals are to be accomplished. Tools such as computers lend to students the expertise of designers and previous users and help them in processing information, externalizing thoughts and creating representations. The fourth aspect is the extra-situational context that extends beyond, but relates to, the classroom context and processes. For example, previous knowledge or background of students as well as their career plans and expectations could shape or interact with the current teaching and learning situation.

Active learning classrooms (ALC) are instances of technology-based classroom contexts that afford rich environments for active learning, collaboration and engagement (Grabinger, 1996). They are often established with the purpose of integrating technology, facilitating active student learning, and improving teaching practices (Pundak & Rozner, 2008). ALCs are also considered as means of implementing constructivist teaching and learning principles with the goal of helping students construct and integrate knowledge and, in so doing, achieve higher level thinking and problem solving capabilities (Grabinger, 1996; Kovalchick & Dawson, 2004).

Various universities in the US and Canada have introduced active learning classrooms to enhance the learning experiences of students. The Technology Enabled Active Learning (TEAL) at Massachusetts Institute of Technology, the Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP) at North Carolina State University, and the Active Learning Classroom (ALC) projects at the University of Minnesota and McGill University are examples of such classrooms (Dori & Belcher, 2005). In most cases, traditional classrooms are completely redesigned to provide the social setting and collaborative context that can enhance students' active participation. In addition, the technologies available in the classroom enable the students to put to use the considerable experience and knowledge they have of computers and related technologies to foster deep learning. In summary, active learning classrooms afford professors a unique environmental context to design their instruction in a way that uses computers as learning tools. However, the design of learning activities could also be influenced by other factors such as their conceptions of effective teaching (Trigwell & Prosser, 1996) and the perceived usefulness (Davis,

1989) of available technological resources in enacting their version of effective teaching.

## Context and Effective Teaching

Several researchers have represented effective university teaching in relation to aspects of student learning (e.g., Abrami, d'Apollonia, & Rosenfield, 2007; Biggs, 2012; Carnell, 2007). However, "effectiveness" is a problem-driven rather than theory-driven construct (Cameron, 1986), and, as such, no single theory or criterion can adequately explain or represent it because definitions and measures vary from one context and/or constituent to another.

Researchers have questioned the universality as well as practical applicability of effective university teaching representations primarily because rarely is there a consideration of context related factors (Berk, 2005; Carpenter & Tait, 2001; Devlin & Samarawickrema, 2010; Eley, 2006; Kane, Sandretto, & Heath, 2002). For example, Berk (2005) has asserted that from a humanistic perspective, effective teaching could mean creating democratic classroom environments and positive relationships, while from a scientific perspective it could mean measuring processes and products of teaching. It can thus be asserted that the central element of effective university teaching is meeting the requirements of the context in which the teaching and learning takes place.

The logical extension of the above assertion and one that several researchers have supported is that teaching conceptions are also relative and context specific (Cole, 1990; Entwistle, Skinner, Entwistle, & Orr, 2000). However, professors' conceptions of effective teaching have rarely been examined in relation to a specific course or in active learning classrooms where technological resources are used in teaching. Understanding how professors conceptualize effective teaching in a specific classroom or course context and how their conceptions relate to their perceived use of computer related tools is important for two reasons. First, as suggested in the broader technology implementation literature, the consistency and quality of use of innovative facilities such as active learning classrooms is a function of their alignment with the values and perceptions of the users (Klein & Sorra, 1996). "Perceived usefulness"— the extent to which users believe a given technology can help them perform the job they do and achieve their intended goals—is considered to be a fundamentally determining variable for successful technology appropriation (Davis, 1989; Venkatesh, Morris, Davis, & Davis, 2003). This translates into how professors perceive what teaching in such contexts entails and the role computer-related tools can play in achieving effective teaching and student learning.

Second, there have been persistent concerns about the general nature of descriptions of effective teaching in the literature on university teaching and the extent to which these descriptions and reported conceptions of effective teaching reflect or relate to professors' practices and decision making with respect to the instructional strategies they use (Carpenter & Tait, 2001; Eley, 2006; Kane et al., 2002). This is because descriptions are generated from answers to general questions such as, "What is teaching for you?" Such questions are often not tied to a specific course or teaching context or a specific group of students involved in the process. Responses, not surprisingly, reflect general views and omit the nuances that are best understood when both the questions and answers are situated within a specific context. Because of the nature of questions asked, reported conceptions could be broad opinions or "*post hoc* reflections" on past experiences and may have little to do with actual classroom practices or specific plans and decisions related to teaching in a specific context (Eley, 2006; Kane et al., 2002). It is therefore imperative that we consider these contextual factors in conceptualizing as well as assessing effective university teaching.

In this study, we used the context of active learning classrooms to investigate professors' conceptions of effective teaching in relation to a specific course they were teaching in this classroom. Furthermore, we explored how their conceptions of effective teaching related to their and their students' perceived use of computers in the course.

## Methods

This study employed a multiple case study approach (Yin, 2003) with the purpose of understanding perceived technology use in relation to conceptions of effective teaching. Stake (1995) refers to this genre as instrumental case studies and recommends the genre's use for the purpose of understanding a wider phenomenon: in this case, the use of computers for teaching and active learning. The case in this study was a course taught in an active learning classroom.

### Context and Participants

The research site was a large research university in Eastern Canada. In 2009, the University established its first two active learning classrooms to encourage interaction between students and faculty, promote active and collaborative learning, enrich educational experiences, and provide a pedagogically supportive environment. One of the rooms (Room 1) can accommodate 72 students seated at eight large round tables, each with nine seats, two computers with screen sharing facilities, a microphone, and connection slots for laptops. The professor's podium is located in the center of the room with facilities for accessing each computer screen in the room and displaying it for class discussion when necessary. The second room (Room 2) has a capacity of 38 students seated at six long tables with a one-to-one student-computer ratio. The professor's podium is at the corner of the room, and, like Room 1, the room has a computer with screen access/sharing facilities. Both rooms were converted from their traditional design to accommodate the technological infrastructure and to support collaboration and interaction.

Participants for the study were 13 professors and their students (*N* = 232). Two faculty were lecturers (non-tenure track), and the rest held a rank of at least assistant professor. Table 1 presents the list and level of courses, attendance, and teaching experience of the professors. Participating professors constituted 68% of the professors who were scheduled to teach in the two active learning classrooms in winter 2011. All professors started teaching in the active learning classrooms by choice, and only two were using the classrooms for the first time.

Data from professors was collected using semi-structured interviews that took place between the third and tenth week of the 13-week term in their respective offices except in two cases where the interviews were conducted in the office of the first author for greater convenience. Interviews were based on seven questions, which lasted 50 minutes on average, and were audio-recorded. Interview questions focused on professors' views of effective teaching in the specific context of the course taught in the active learning classroom in that particular term, expected outcomes for students, their instructional strategies, the role they saw for computers in their teaching and in realizing their instructional goals, and the type of applications they used.

Following the interviews with professors, their students were asked to respond to three questions: (a) whether their learning would have been better, the same, or less if the course had been taught in a traditional classroom, (b) their professor's use of computers in teaching, and (c) their own use of computers for learning in that specific course. These questions were appended to the Student Engagement in Technology Rich Classrooms (SETRC) survey (Gebre, Saroyan, & Bracewell, 2014). Sixty-five percent of students who were attending the classes of the 11 professors consented to participate with almost equal gender composition and 65% undergraduate and 35% graduate enrollment.

## Data Analysis

All interviews were transcribed verbatim. Professors' descriptions were analyzed using a holistic inductive approach (Patton, 1982) and a constant comparison method (Strauss & Corbin, 1998). First, professors' descriptions were segmented into units of meaning or idea units (Aulls, 2004; Krull, Oras, & Pikksaar, 2010; Pratt, 1992). Units of meaning are segments that contain part of a sentence, a sentence, or more than one sentence representing an idea or a single meaning. Butterworth (1975) has suggested that there is no structural implication or restriction on the size of the idea unit. The following are examples of such segments or units of meaning from the descriptions provided by participating professors.

> I think at the upper level it is not just about the professor going up there and talking about things. It is about getting students to think and the chance to engage. I think it is a key, student engagement, really (effective teaching).
>
> In this case, it is electromagnetic waves and so they have to understand all the concepts related to electromagnetic waves or all the list of topics. So, they should understand all the topics (expected outcome).
>
> . . .we do them, we do the activities, and we see where the problems are, where the difficulties are, and then we try to use principles or examples to illuminate what we could do (instructional strategies).

It is worth noting that the professors' descriptions of effective teaching, their expected learning outcomes, and their instructional strategies were not clearly differentiated at times. When segments from one description appeared to be similar in meaning to segments in other descriptions, they were coded together. The distinction between the three sets of a professor's description was less important than the alignment between them and the holistic picture they represented about each professor's conceptions of effective teaching.

After reading the first segment (unit of meaning) of effective teaching, we created a provisional category. Subsequent segments were compared to existing categories. When the new segment was the same in meaning as the existing category, it was grouped together; when it was different, a new category was created (Samuelowicz & Bain, 1992). This required considerable iterative review of units of meaning, generated categories and original transcripts to represent professors' views as accurately as possible. Coding was done by the first author. For reliability, a professor emeritus who is an established qualitative researcher was

Table 1

*List of Courses and Professors' Experience*

| Course | Field of Study | Level | Class size | Prof. Exp. (years) |
|---|---|---|---|---|
| Analysis of sustainability | Geography | 300 | 18 | 6 |
| Aristotle | Philosophy | 300 | 42 | 22 |
| Behaviour in organizations | Management | 500 | 48 | 19 |
| Earth systems modeling | Geography | 300 | 14 | 6 |
| Electromagnetic waves | Physics | 300 | 28 | 10 |
| International human rights law | Law | 500 | 55 | 5 |
| Advanced methods in TESL | Language | 400 | 41 | 36 |
| Modeling environmental systems | Geography | 500 | 38 | 27 |
| Remote sensing and interpretation | Geography | 500 | 16 | 3 |
| Raster geographic information systems | Geography | 300 | 30 | 5 |
| Writing for graduate students | Language | 600 | 28 | 16 |
| Signals and systems | Ele. & Comp. Engineering | 300 | NA* | 6 |
| Human dimensions of climate change | Geography | 400 | NA* | 3 |

*Note*. Professors opted out of the active learning classroom and student data was not collected.

briefed about the coding procedure and asked to code segments of nine professors' responses on effective teaching using the established categories. After discussion, there was 89% agreement between the two coders. The analysis helped us examine the consistency of responses within a case and to compare responses between cases.

## Results

### Conceptions of Effective Teaching

Professors' descriptions of effective teaching were grouped into three categories based on expressed intentions and whether or not the emphasis in the description was on activities related to the teacher or student. Intentions, in the literature, is described as "representations of future courses of action" (Bandura, 2001, p. 6) and intentionality is the "essence of teaching" (Garrison & Macmillan, 1994, p. 386) as it prompts professors to adopt a given teaching strategy (Trigwell & Prosser, 1996). The emerging three categories of effective teaching were: a) a teacher-centered activity, b) an engagement-centered activity, and c) a learning and development-centered activity. Table 2 presents these categories. To triangulate and as a means of obtaining additional information about their views of effective teaching, professors were also asked what they expected their students to learn from the course: the expected learning outcome. Expressed learning outcomes were categorized into subject matter (content) understanding, skills development and learning independence. Table 3 presents these categories of learning outcomes. Descriptions of effective teaching and learning outcomes are discussed together below.

There were noted variations in categories of effective teaching descriptions and expected outcomes. In the teacher-centered category, professors' descriptions of effective teaching emphasized students' learning of content or understanding of the subject matter. Views captured in this category suggested that there is a pre-planned content and structure of the subject matter that learners should understand. Thus, the meaning of effective teaching appeared to be related to organizing and explaining pre-determined content in a way that would foster students' understanding. The emphasis in this category was on teacher-related activities and the amount or quantity rather than the quality of student learning. Within this context, the expected learning outcome for students at the end of the course was developing subject matter knowledge. The following excerpts are selected examples from this first category.

> I really aim that [the subject] should be clear to them. What they are reading should become clear to them through my teaching and what I actually say should be clear to the students. So that seems to me the single most important thing (P001).
>
> It is how much the students understand and get out of it and that is the sort of outcome… Students should learn as much as possible (P004).
>
> [Effective teaching] would be giving instructions to the students on a particular concept; and giving examples of application. And, having students doing examples of that on their own would be good (P009).

Table 2
*Descriptions of Effective Teaching*

| Prof. | Category 1 (Teacher-centered) | Category 2 (Engagement-centered) | Category 3 (Learning and development-centered) |
|---|---|---|---|
| P001 | Making the subject clear to students | | |
| P002 | | Engaging students; getting them to think, discuss, and make presentations | |
| P003 | Providing theoretical material and real life examples | Facilitating student participation, stimulating discussion; considering their backgrounds | |
| P004 | How much students learn. They should learn as much as possible | | |
| P005 | | Engaging students with the material, providing opportunities for hands on experience, engaging in discussion, making presentations | |
| P006 | | | Students learning through practice; working as independently as possible; solving their own problems |
| P007 | | Generating debates, encouraging participation, empowering students | |
| P008 | | | Students using tools to address sustainability issues; interpreting results |
| P009 | Giving instruction and examples of application | | |
| P010 | | Creating dynamic class environments; understanding challenges students run into; following their progress | Students working on modelling; providing instant feedback to them when they are faced with problems |
| P011 | | | Developing learning independence, strategies, and metacognitive awareness |
| P012 | | Creating dynamic environment; engaging students, team teaching | |
| P013 | | | Helping students develop as good teachers; developing their self-reliance, cultivating critical insight |

Table 3

*Expected Learning Outcomes*

| Prof. | Category 1 (Subject matter understanding and application) | Category 2 (Skills development) | Category 3 (Strategies and learning independence) |
|---|---|---|---|
| P001 | Knowledge about [the subject] | | |
| P002 | | Understanding key debate issues and policies on climate change; assessing the impact of climate change; developing skills to get involved in discussions | |
| P003 | Understanding of theories and their impact | Working effectively in teams, managing self, participating | |
| P004 | Understanding defined content and aspects of the subject; solving exercises | | |
| P005 | | Calibrating and analyzing data; being proficient in software tools (ENVI & Math lab) | |
| P006 | | Being proficient in the software | Dealing with technical solutions to geography problems; being an independent learner; approaching and solving problems |
| P007* | | | |
| P008 | | | Understanding logic and performing conceptual analysis; understanding what goes on behind the software; selecting and using tools |
| P009 | Developing knowledge of mathematical tools, the main concepts | | |
| P010 | | | Building models; ways of approaching problems, systems thinking; applying models |
| P011 | | | Developing strategies; having a better sense of their own abilities; having learning independence |
| P012 | | Writing equations, solving exercises using models | |
| P013 | | | Knowing how to develop a syllabus, aligning teaching materials and techniques; having competencies required by Ministry of Education |

**This outcome statement was not clear enough to be coded*

Descriptions in Category 2 primarily focused on engaging students in the learning process and with the course materials. Students were expected to acquire subject matter knowledge but through participation and interaction rather than through the professor's presentation. Engaging students was manifested in different forms such as students making presentations and participating in class discussions, professors considering students' needs and backgrounds and adjusting their teaching to meet the level of students, creating a dynamic classroom environment, and actively encouraging student participation.

These descriptions and outcomes differ from those in Category 1 in that the purpose of effective teaching extends beyond making the content clear for students. Considering the phrases used by participating professors, such as "engaging students" (see P002 below), "encouraging participation" and "empowering students" (P007), it could be said that these descriptions are more process and interaction oriented where students have relatively more control and responsibility. Expected outcomes involved subject matter knowledge as well as the development of social and cognitive skills. The following excerpts are selected examples of this category.

> It is about getting students to think and the chance to engage. . .I break them into groups and. . .half the group will have one set of readings and half the group will have the second set of readings and then for like 20 minutes the group will break out and teach each other. . .I think it is a key, student engagement, really (P002).

> [Effective teaching] is team teaching …to create the dynamics in the class [for] more participation, more interaction between the teacher and the students, because it is more about getting the students engaged (P012).

> So, the students need to be engaged with the material, I would like them to have hands on experience with some of the methods they are learning (P005).

The third category consisted of descriptions of effective teaching that extended to students' holistic development (see excerpt from P013 below), the ability to work independently (P006, P011, P013), and the use of relevant tools (P008). Professors in this category viewed effective teaching as creating opportunities for students to work on defining problems, modelling solutions, determining the utility of tools and interpreting results. Essentially, the primary goal was developing students' independence and self-reliance in learning. This was also mirrored in the descriptions of expected learning outcomes. Professors expected their students to deal with technical solutions (P006), understand the logic behind what software do (P008), develop ways of approaching problems, and produce artifacts in the form of models and teaching materials (P010, P011, P013). Professors (P010 and P013) also maintained that as it is not possible to prepare students for every possible scenario in the work place or in real life, students need to learn ways of approaching and addressing new problems. The following excerpts include examples from Category 3.

> My effective teaching is helping the students develop as good teachers. . .Some of the end results that we want are things like self reliance, they should be able to depend on themselves. . .we cannot prepare people for every single eventuality (P013).

> I approach the course in a quite loose was. . . I don't explain it all. I leave them with the problem to some degree and I then am around all the time with two TAs and we support rather than show them everything and just ask them to repeat. So they have to remain in my eyes a little bit in the dark, do it themselves, get a bit frustrated, solve it, solve it with their neighbours, and I think they learn much more by doing that (P006).

> . . .for me it is very important that students develop strategies and that they develop their meta-cognitive awareness about writing so they become independent with their learning. They are not always going to have. . . and they shouldn't have a language teacher at their side all the time. So, I am hoping that they will learn ways to become more independent with their writing (P011).

Considering professors' descriptions of effective teaching and expected learning outcomes as presented in Tables 1 and 2, we named the three conceptions of effective teaching as *transmitting knowledge* (Category 1), *engaging students* (Category 2), and *developing students' learning independence/self reliance* (Category 3). These categories are not mutually exclusive in the sense that a higher category (e.g. Category 3) may include descriptions of a previous category or categories (1 or 2), suggesting a hierarchical relationship between the categories. In the subsequent sections, we compare these three conceptions in terms of the professors' instructional strategies and the perceived role and/or use of computer related technology in their teaching.

## Instructional Strategies

Instructional strategies consist of a series of decisions and plans and a variety of related teaching activities that are aimed at achieving intended outcomes (Dick, Carey, & Carey, 2001; Jonassen, Grabinger, &

Harris, 1991). We examined the instructional strategies used by participating professors for two purposes: to check how instructional strategies differ in relation to conceptions of effective teaching and to see how instructional strategies related to the way professors' perceived the role and use of computers in their teaching.

The comparison of instructional strategies revealed a difference in the extent of control the described strategies give to learners. Learner control in this case is the extent to which the student can take steps independently or can make decisions about learning of the topic or the course and, in so doing, develop self regulated learning skills (Merrill, 1987). Results are presented in Table 4. Professors in the transmitting knowledge category described their strategies in terms of lectures, question and answer sessions, in-class exercises, and assignments. They also reported preparing clear plans for lectures and related activities, providing clear instructions for assignments, making notes available to students, and presenting lectures with coherence and clarity. Descriptions largely focussed on what the professor does during preparation and presentation rather than what the students do during the learning process. The following excerpts are provided as elaboration.

> I always have a plan for the lecture. . .I stop regularly and ask if they have any questions to make sure that what I have said is clear. . .I have assignments that are very short again with very specific instructions (P001).

> . . .lectures. . .[Students] can ask questions, we do exercises together. I ask a lot of questions. . .I have all the notes on the web. . .I use the web to have my notes on and it is accessible with password. Every class, I have four clicker questions (P004).

> You need to have a coherent story. . .this concept that you give, you need to introduce it in a coherent fashion. It is like telling a story, and you need to …go one step at a time until you complete. . .you give it entirely step by step. . .it needs to make a nice story at the end (P009).

In the engaging students category, instructional strategies identified by professors were participatory and focused on students' engagement with course materials as well as their interaction with each other and with the professor. This included reading assigned materials and making presentations, often followed by question and answer sessions, group work involving working on problems and cases in groups and in and out of class, and making presentations.

> [Students] spend two hours in a seminar format every week where they discuss papers and two students present and then they discuss the papers (P005).

> … students break up into groups of five. Each group has a country and we simulate a climate change negotiation like what happen through the United Nations… So, they have to make a presentation on that stand point on climate change policy (P002).

> ...with [the] round tables and chairs [students] are very used to discussion. They are also very open to ask questions… And then we move on to our activity (P003).

Professors in the developing learning independence category reported relying less on straight lecturing and more on employing strategies that involved practical exercises, problem definition, independent work and model-building. Students worked on summarizing articles, choosing their own projects and defining parameters independently.

> . . .for each module, they work on lab assignments…We essentially help them quite actively. . .for each of the journal articles, they write summaries and what they learned from the papers. . .For the group project, they will have to design it for themselves...design the whole course…to set boundaries for their problem (P008).

> We look at strategies, ways of learning and really helping [students] in their metacognitive awareness. [We use] lots of strategies and a better sense of their own abilities to have themselves learn—empowerment, that they can do a lot for themselves with their learning (P011).

> There are two ways that I do. . .one [goes] from the problem to the activity and the other from the activity to the problem. . .they have to put themselves in a kind of metacognitive state. . . So, they need to be able to feel what the problems are (P013).

## Roles of Computers in Effective Teaching

Professors in the transmitting knowledge category used computers primarily for making presentations and accessing information. For example, Professor 001 stated, "Because there is a document camera I can have the plan of the lecture up and then I can put up passages from the text and ask them to think. . .carefully about the particularities of the passage." Professor 004, who

Table 4
*Instructional Strategies*

| Prof. | Transmitting knowledge | Engaging students | Developing learning independence/ self-reliance |
|---|---|---|---|
| P001 | Having clear plans; asking questions; requiring discussion questions; planning specific assignments | | |
| P002 | | Group projects; student presentation with question & answer, role playing, debates | |
| P003 | | Using cases; providing support, group projects & presentations | |
| P004 | Putting all notes on WebCT; using clicker questions | In-class group problem solving | |
| P005 | Changing assessment to open-ended questions | Reading and presentation with Q & A; lab assignments, hands on exercise | |
| P006 | Lecturing | Group exercises, class interaction | Loose approach to teaching, independent work; making TA support available; allowing students to work on their own projects |
| P007 | | Class exercises, group discussion | |
| P009 | Having coherent story; presenting one concept at a time, getting their attention | | |
| P010 | | Creating dynamic environment at table and class level; students working on model building; | |
| P008 | (Guest) lectures | discussions; student presentation, in-class group exercises | Independent lab exercises; supporting lab efforts; summarization of articles, group projects |
| P011 | | | Working on strategies and ways of learning; using databases |
| P012 | Lecturing | Being approachable; encouraging questions; team teaching; creating dynamic environment | |
| P013 | | Doing the activities in class together; providing feedback | Students developing materials; asking students to evaluate their work, to redo, and to reflect |

used animations (physics applets) from the Internet, stated, “I use [the computer] just as a way to present stuff like lecture notes and articles. . .again for the clickers I need the computer.” Professor 009 expressed the role of computers in his teaching as “maybe [for] animations. It will be a good thing if you put animations in your power point slides. I do that sometimes.”

Responses of professors in the student engagement category varied based on two views of student engagement. One view, held by three professors, related effective teaching to social aspects of student engagement in terms of discussions, interactions and communication. These professors viewed computers as having a limited role in either their teaching or students' learning. Professor 003 stated her preference for round tables in the room over the computers: "If I had a choice between the computers in there and the round tables, I would throw out the computers and keep the round tables… because of the interaction that they encourage." Another professor in the same group stated, "I always found [computers] kind of get in the way. I don't want my students in front of computers, I want them thinking about the things; I want getting together in little groups to talk about questions and share with the class" (P002). Similarly, Professor 007 described the role of computers in his teaching as "quite significant, but only as a sort of mode of communication and as the way of aggregating results. I think they [students] should just be talking to each other."

The second subgroup in student engagement category consisted of two professors whose views of effective teaching related to students' engagement in data analysis and hands-on experience on issues and methodologies related to the subject. These professors perceived a stronger role for computers in their teaching and student learning. Professor 005 described the role computers can play in students' learning in the following words: "When students are presenting their papers, they have to prepare their own PowerPoint presentation, so they have to be able to get up in front of the class and present. So they learn presentation skills and how to put together a good presentation." Professor 012 considered computers to be "really crucial because it is modeling and modeling is by definition on a computer."

Professors in the learning independence/self-reliance category perceived computers as tools for learning and student development. Some of the tools students were expected to use included databases, sheltered web quest programs, open-ended analytical tools and systems modelling programs. Professor 013 and her students used SPEAQ Quest—a web quest designed for English as a second language (ESL) users. SPEAQ Quest archives information, guides, links, and tools that can be used by ESL professors and students. The professor explained, "…[O]ne of the things that the Ministry of Education wants really people to do is to learn how to use the Internet as a resource; at the same time, you can't have students to surf the Internet all over the place and going anywhere they want for obvious reasons" (P013). Thus, SPEAQ Quest provided students with sheltered search and learning facilities that involved working on activities, looking for resources, evaluating information, using tools, and developing teaching materials.

Professor 011 described computers as tools that "promote independence" when they are used by students: "Computers have their place, I don't use them for everything, and I don't tell people to use them for everything" (P011). She and her students used Concordancer, a software that is used to access and analyze language from a database (corpus) to help students develop the skill of academic writing. Her justification for using this software was that language teaching has moved "away from teaching vocabulary in isolation"; Concordancer provides "authentic language samples" taken from newspapers, speeches, or other contexts; and students "can search for the purpose of examining patterns in language" (P011). She stated, "I am not somebody who jumps on bandwagons with the latest thing. This [Concordancer], I think, is really judicious use of a computer tool. . .it really helps people to become independent" (P011).

Professor 008 expressed that computers are "central to this particular course because it is a methods course. It is actually teaching them analytical methods in dealing with sustainability issues. They are actually working with actual data and doing problem solving. So they cannot do that without computers." The two reasons he forwarded for his predominant use of Microsoft Excel was to help students develop conceptual understanding of what goes on behind the analyses/the interface and to accommodate differences in students' technical knowledge due to differing disciplinary backgrounds. Similar to P013, this professor related the use of computer tools to ultimate learning outcomes as he expressed a hypothetical scenario where graduates might be faced with requests to solve real environmental problems such as pollution. He argued that he was training his students so that they would be able to frame the problem, maneuver through the available data, and provide solutions using available tools.

Professor 010, whose course mainly involved systems modelling, considered computers to be "absolute necessity" for his course because it exposed his students to "the knowledge they can gain by working with those tools in a world that they would never have had the opportunity to do that before." According to this professor, computers facilitated the teaching of his course for students who did not have a strong background in calculus and differential equations. For this purpose, he used a systems modelling software called Stella. Students worked on modeling exercises in the class and mostly ran into different problems, which he referred to as "learning opportunities." The network and screen access facility in the room allowed students to share and discuss encountered problems in the modelling exercise.

Student responses to three questions related to what their learning would have been if the course had been taught in a traditional classroom, their professor's use of computers in teaching, and their use of computers in learning are presented in Table 5. As indicated in the table, a large number of students (43%) in the classes of professors with the knowledge transmission view of effective teaching considered that their learning would have been the same or better if the classroom had not been an active learning classroom. In other words, these students could not see the importance of the affordances of the classroom. Only 27% and 8% of students in classes of professors who consider effective teaching to be engaging students and developing learning independence, respectively, believed that their learning would have been the same or better if the classroom had been different.

Perceived use of computers by students and professors was also considerably different between the three groups as shown in Table 5, and this difference corroborates the qualitative data described above. That is, compared to the other groups, a larger proportion of students in classes of professors with conceptions of effective teaching as developing learning independence reported that they and their professors use computers highly in teaching and learning of the course. Table 6 presents an overall picture of the three conceptions of effective teaching generated from professors' description, the expected learning outcomes, the instructional strategies professors employed, and the role professors perceived for computers in enacting their views of effective teaching.

## Discussion

The categories of conceptions of effective teaching identified in this study are somewhat similar to reported categories in the literature (Kember, 1997; Kember & Kwan, 2000; Ramsden, 2003; Trigwell & Prosser, 1996). For example, Kember (1997) in his review of 13 primary studies on conceptions of university teaching identified two main orientations: teacher-centered/content-oriented and student-centered/learning-oriented, connected with a third, transitory category, student-teacher interaction. According to Kember's (1997) conceptual framework, the student-centered/learning-oriented orientation is characterized by facilitating student learning and changing their conceptions. Our data do not support Kember's (1997) latter assertion. None of our five professors in the developing learning independence category mentioned anything about students' changing conceptions. Rather, they focused on students' development as professionals and their ability to meet task related demands such as ways of thinking and approaching problems, producing artifacts (e.g., teaching materials, models), and developing learning strategies and metacognitive awareness. One reason for this discrepancy can be that Kember (1997) drew his conceptual change category largely from studies by Prosser, Trigwell, and Taylor (1994) and Trigwell et al. (1994) where only first year physical science teachers comprised the sample and the issue of changing misconceptions and preconceived ideas were emphasized in their views of teaching, which was not the case in our study.

Even though the 11 professors who used the active learning classroom think their teaching has changed because of the classroom, the data shows that not all professors embraced the strategic demands of learner and learning-centered teaching and responded sufficiently to the challenges of teaching in such technology infused classrooms. Some professors still use content-centered approaches. The explanation for this could be a combination of the way they conceptualized effective teaching and the lack of enough pedagogical repertoire to integrate the technologies in a way that supports student learning. Almost three decades ago, Fenstermacher (1986) suggested that research on teaching needs to have "more conceptual integrity" and should be done based on the "notion of teaching that has as its point the performance of certain kinds of tasks and activities by the student" (p. 41). Others have also echoed the notion that research and practice on teaching should consider its effect on students' learning (Barr & Tagg, 1995; Biggs, 2012; Shuell, 1993). Learning theories have undergone significant changes over the last three decades in terms of both expected learning outcomes and the centrality of learning activities to bring about intended results (Bransford, Brown, & Cocking, 2000; Cognition and Technology Group at Vanderbilt, 1996; Grabinger, 1996; Greeno, Collins, & Resnick, 1996). One of the changes is the shift in focus from developing basic skills to becoming lifelong learners and problem solvers. Another is the emphasis on what students do rather than what the teacher does and the alignment of the learning activities to learning outcomes (Saroyan et al., 2004). Our findings show that there is alignment between verbalized conceptions and reported instructional activities in all three categories. However, not all conceptions and practices of effective teaching are likely to result in a qualitative change in student learning, and students don't think this either. The almost even distribution of professors among the three conceptions of effective teaching identified in this study is a reminder that more support is needed to help faculty reflect on their notion of effective teaching and pedagogical practices and to embrace the idea of developing students' learning independence and self regulation.

Table 5

*Use of Computers by Students and Professor as Perceived by Students*

| | | Learning if class was traditional | | Professors' use of computers | | Students' use of computers | |
|---|---|---|---|---|---|---|---|
| Effective teaching | N | Less | Better or the same | High | Medium or low | High | Medium or low |
| Transmitting knowledge | 44 | 25<br>(57) | 19<br>(43) | 24<br>(55) | 20<br>(45) | 11<br>(25) | 33<br>(75) |
| Engaging students | 84 | 60<br>(73) | 22<br>(27) | 69<br>(82) | 15<br>(18) | 63<br>(75) | 21<br>(25) |
| Developing independence | 100 | 89<br>(92) | 8<br>(8) | 86<br>(86) | 14<br>(14) | 82<br>(82) | 18<br>(18) |
| Total | 228 | 49* | 174* | 179 | 49 | 156 | 72 |

**This question has five missing cases*

Table 6

*Professors' Conceptions of Effective Teaching and the Role of Computer Related Tolls*

| Conception of effective teaching | Views of effective teaching | Expected outcome for students | Instructional strategies (and techniques) | Perceived roles of computers (tools used) |
|---|---|---|---|---|
| Transmitting knowledge (*n* = 3) | Making topics clear to students, giving instruction, how much students learn | Subject matter knowledge, knowledge of mathematical tools and concepts | Clear lecture plans, Q & A, discussion question from readings, putting notes on WebCT, using a coherent story | Tools for presenting and accessing information. (document camera, Internet, Power Point, WebCT, clickers). |
| Engaging students (*n* = 5) | Facilitating student interaction, creating dynamic environment, encouraging participation | Presentation skills, understanding debates about issues, effective team work, application of theories and principles, calibrating data | Student presentations, question and answer sessions, discussions, group projects, in-class problem solving | Two views: 1) round tables preferred over computers, 2) essential tools for data analysis and modelling ( Power Point, ENVI, Stella) |
| Developing learning independence/ self-reliance (*n* = 5) | Encouraging students to work independently, developing students' metacognitive awareness, considering learners' holistic development | Ways of approaching problems, ability to deal with technical solutions, proficiency in tool use, better sense of their own abilities, understanding work requirements | Students' independent work, group projects, summarization of articles, students developing materials and models, working on strategies and ways of learning | Essential learning tools for developing independence. (Stella, web quest, *Concordancer*, spreadsheet, GIS) |

Our study also showed that professors with different conceptions of effective teaching differ in terms of their perception about the role and use of computers in their teaching. Maddux and Johnson (2005) identified two types of computer use in schools that they called Type I and Type II applications. Type I applications are use of computer related tools in a way that makes it "faster, easier, or otherwise more convenient to continue teaching or learning in traditional ways" (Maddux & Johnson, 2005, p. 3).

Type II applications use the tools to teach and learn in new and better ways that facilitate student learning and development. These two types of use were evident in our sample and findings. Professors with the view of effective teaching as transmitting knowledge considered computers to be presentation tools and it was primarily for this purpose that they used them. They reported using the document camera, PowerPoint, clickers, and the Internet in their teaching mainly to access and present information and ultimately to make teaching easier. On the other hand, professors who viewed effective teaching as developing students' learning independence/self reliance perceived computers as essential tools for student learning. These professors used and made their students use databases, modeling software (e.g., Stella), spreadsheets and web quest, among others. These types of applications are open-ended tools that students can learn and think with and express their knowledge through their use rather than tools that confine their thinking process (Jonassen & Reeves, 1996). The extent of student engagement in learning with computers was also found to be significantly different in relation to these three conceptions of effective teaching (Gebre et al., 2014). Students in classrooms of professors with the *developing learning independence* view of effective teaching reported higher cognitive engagement, followed by those in the *engaging students* category, and the *transmitting knowledge* category respectively.

The importance of professors' conceptions in guiding their teaching practices has been empirically supported in the past (e.g., Trigwell & Prosser, 1996).The contribution of the present study to this literature is the addition of the technology dimension to the equation. Our findings point to a relationship between one's view of effective teaching and the use of technology in teaching. This particular aspect has important implications for faculty development programs related to technology appropriation. Universities are making considerable investments in learning technologies. If their intent is to enhance the quality of student learning, then it behooves institutions not to assume that the availability of technological tools is a sufficient condition, to take into account the mindset of their faculty, and to provide development programs that foster conceptions of teaching that lead to learning independence (see for example Ho, Watkins, & Kelly, 2001). Whether technology helps professors in changing their conceptions of effective teaching or a change in conceptions is a prerequisite for using computer related tools in a way that makes meaningful contribution to student learning are questions that require further investigation.

One of the limitations of this study is that it employed self-reported data, and there is no evidence to show professors practice what they reported. While the addition of students' perspectives and the alignment of student responses to that of the professors' adds to the credibility of the findings, future studies could include data pertaining to classroom processes. The lack of correspondence between professors' conceptions and their classroom practices has been well documented (e.g., Kane et al., 2002). A more comprehensive study that collects data about classroom processes, related course syllabus, student survey, and interviews of professors could provide deeper insight about the educational rationale in using computer related tools. Studies in the broader area of technology adoption showed that perceived usefulness is one of the essential factors that significantly determine users' technology appropriation (Venkatesh et al., 2003). The difference in perceived use of computer related technologies by professors in their teaching and its relationship to their conceptions of effective teaching is an indication for the importance of a broader mixed method study that can inform faculty development initiatives. A design-based research that supports professors in planning and enacting their teaching in technology rich environments could also serve as a means of informing both the design of learning environments and the understanding of educational rationale and technology use in the process.

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# Proctored and Unproctored Test Performance

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This study examined test performance as a function of test format (proctored versus unproctored) and course type (traditional versus distance). The participants were 246 undergraduate students who completed introductory sociology courses during four semesters at a southeastern university. During each semester, the same instructor taught a traditional lecture section and a distance section of the course. Students in both course types took unproctored online tests in two semesters while students in both course types took proctored classroom paper-and-pencil tests in the other two semesters. Students scored significantly higher on the unproctored online tests than on the proctored classroom tests. There was no significant difference in test performance between students enrolled in distance courses and those enrolled in lecture courses. Additionally, no significant interaction was found between test format and course type. Implications of these results for the design and structure of online and hybrid courses are discussed.

Assessment is an integral component of teaching and learning (Rovai, 2000; Rowe, 2004; Serwatka, 2003). Tests are a common form of assessment used in distance and on-campus courses to assess student learning. Proctored, closed-book, pencil-and-paper tests are the predominant method of testing in academia, despite the absence of empirical evidence regarding the advantages of this testing format (Williams, 2004; Williams & Wong, 2009). Amid skepticism and concern, an increasing number of instructors are using online testing in both on-campus and distance courses (Khare & Lam, 2008; Rowe, 2004).

Online testing offers a number of advantages to instructors and students. Online testing is useful in distance courses in which the students are geographically dispersed, and it is not feasible for students to come to campus to take tests (Kinney, 2001). When used to assess student learning in lecture classes, online testing reduces instructional time dedicated to testing (Tao & Li, 2012). For both traditional and distance classes, the flexibility of online testing allows instructors to schedule frequent course tests and quizzes (Bonham, 2006; DeSouza & Fleming, 2003; Graham, Mogel, Brallier, & Palm, 2008). Frequent testing encourages students to keep current on their course reading and studying and increases content mastery (Hadsell, 2009; Smith, 2007). Using computerized scoring, online testing can provide objective, immediate feedback to instructors and students (Bonham, 2006; Hamilton & Shoen, 2005, Tao & Li, 2012). Immediate feedback is useful for student learning because students can remember how and why the mistakes were made while the material is still recent in their minds (Khare & Lam, 2008). This combination of ease of frequent test/quiz administration and immediate feedback allows students the opportunity to monitor their comprehension of course materials (Harmon & Lambrinos, 2008). There is also an advantage for instructors who want to examine aggregate test data or conduct test item analyses since test data are directly entered into electronic databases which allows for easy analysis (Bonham, 2006; Hamilton & Shoen, 2005). Additionally, several studies have reported that students find online testing less stressful and prefer online tests to written ones (Bonham, 2006; Khare & Lam, 2008).

Tao and Li (2012) note that instructors have two options for online testing: (a) students can take an online test on a computer in a proctored setting, or (b) students can take an unsupervised online take-home test in a setting and on a computer of their own choosing. Since the unsupervised online test environment is generally not regulated by course instructors, most instructors allow these tests to be open-book and open-notes (Shultz, Shultz, & Gallogly, 2007; Tao & Li, 2012), and one must assume that students will be using all of the resources at their disposal (DeSouza & Fleming, 2003; Kinney, 2001; Osika, 2006). A primary worry expressed over unsupervised online tests is that test results will be inflated if students are allowed to consult course materials (Rovai, 2000). Several researchers report similar test performance for students taking proctored online tests and students taking proctored tests in the classroom (Anakwe, 2008; Bonham, 2006; MacCann, 2006). There have been mixed findings regarding student performance on unproctored online tests and proctored in-class tests. Frein (2011) examined test scores on multiple-choice tests of military cadets enrolled in an introductory psychology course. A comparison of performance on proctored paper-and-pencil in-class tests, proctored online tests, and unproctored online tests revealed no significant difference as a function of test format. Frein speculated that this result may have been influenced by the strict honor code enforced at his institution. Schultz, Schultz, and Gallogly (2007) compared performance of students on proctored paper-and pencil exams and unproctored online exams in marketing, management and accounting classes and reported significantly higher performance on the unproctored exams. However, the size of the effect of test format was relatively small. Carstairs and Myors (2009) assessed performance of two cohorts of students in an upper-level psychology course as a function of test format during two semesters. The first cohort completed three proctored paper-and-pencil in-class multiple-choice tests during the first semester while the second cohort completed a take-home paper-and-pencil multiple-choice test, an unproctored online multiple-choice test and a proctored paper-and-pencil in-class multiple-choice test. Students in the two cohorts performed similarly under proctored testing conditions; however, students in the second cohort scored significantly higher on the unproctored take-home and online tests. Evaluation of effect size revealed that test format had a large effect on test performance.

We believe that further assessment of performance on unproctored online tests and proctored in-class tests is important because this difference in the method of testing reflects one of the most fundamental differences between online and traditional face-to-face lecture courses. The purpose of this study was to examine test performance as a function of course type (traditional lecture course versus distance course) and test format (unproctored online exams and proctored in-class exams). In each of four semesters, students enrolled in either a distance or a traditional lecture section of introductory sociology. In two of the semesters, all students in both course types took proctored closed-book exams in a classroom. In the other two semesters, students in both course types took unproctored online course tests. Based on meta-analytic studies reporting no significant difference in academic performance in lecture-based and distance courses (Bernard et al., 2004; Zhao, Lei, Lai, & Tan, 2005), we predicted that test scores would not differ as a function of course type. Recognizing that students would be able to access course materials while completing the unproctored online tests, we predicted that performance on these tests would be higher than performance on the proctored in-class tests. Subsequent to finding an effect of test format on test performance, an additional purpose of the study was to assess the magnitude of the effect and to examine whether course grades varied as a function of test format.

## Method

### Participants

The participants in this study were 246 undergraduate students who completed Introductory Sociology (SOC 101) during four consecutive fall semesters. The sample included 98 men and 148 women. The mean age of the students was 21.14 years (*SD* = 6.66). The sample contained 108 freshmen, 69 sophomores, 35 juniors, and 34 seniors. The racial distribution was 196 Caucasian students and 50 African-American/Hispanic/Other students. Eighty-seven students completed a distance course, and 159 completed a lecture course. One hundred thirty students completed online exams, and 116 students completed classroom exams.

### Materials

Students in the distance and lecture courses were assigned the same introductory sociology textbook (Henslin, 2005). Students accessed online materials through WebCT/Blackboard. Students in the lecture courses were given instructor-prepared notes and handouts in print form, and students in the distance courses obtained these materials via WebCT/Blackboard.

The director of the university's Office of Institutional Research, Assessment and Analysis supplied the researchers with an Excel file containing the following demographic and academic information for students registered in the introductory sociology courses: age, class rank, gender, race, high school GPA, verbal SAT score, quantitative SAT score, and cumulative college GPA. The provision of the data was done in accordance with the university's privacy policies.

### Procedure

Data for this study were collected in introductory sociology courses taught at a midsized state-supported southeastern university during four semesters. Introductory sociology is a required course for sociology majors; for students in other majors, this course may be used to fulfill a core curriculum requirement or serve as an elective course. In each of the four fall semesters, the same instructor offered two sections of the course, one as an online distance course and one as a traditional classroom lecture course. Assignment of students to the distance or lecture courses was not random; students selected one of the formats when they registered for the course.

The distance and lecture courses were designed to be as consistent as possible. Both sections of the course were taught by the same instructor, and the same textbook was assigned. Students in both types of course were provided with the same materials, completed the same written assignments and discussion activities, and took the same tests. The grading system was standardized across the two course types with test scores contributing 32%, written assignments contributing 43%, and discussion activities contributing 25% to the final course grade.

At the beginning of the semester, students in both course types were asked to complete a 50-question online pretest assessing their baseline knowledge of sociological concepts. In all four semesters, the instructor met with the lecture-based class for fifty minutes three times a week. The only time the instructor met with the distance class was for an introductory on-campus meeting during the first week of the semester to introduce herself and provide a WebCT/Blackboard tutorial. During each semester, three non-cumulative 50-item multiple-choice unit tests and one cumulative 60-item multiple choice final test were administered. Students could earn a total of 210 points on these four tests. In two semesters, the instructor administered all tests via WebCT/Blackboard in both the distance and the lecture courses. Students took the unproctored, open book/open notes online tests from the remote location of their choice (e.g., home, computer lab at the university). Students were allotted 50 minutes to take the online tests. Students had access to the tests for a 24-hour period. All students were given the same questions, but the questions were presented in a random order. In the other two semesters, students in both the distance and lecture courses took proctored, closed book/closed notes paper-and-pencil tests in a classroom. In both the distance and lecture course types, the online and classroom tests contained the same content, the tests were given at the same time during the semester, and students had the same time limit of 50 minutes for completing each test. The number of students completing each test format and each course type is shown in Table 1.

## Results

A test score was calculated for each student by computing the percent of total points earned on the four course tests. A 2 x 2 between-subjects analysis of variance was used to examine test scores as a function of test format (unproctored online tests versus proctored in-class tests) and course type (distance course versus lecture course). Test format had a significant effect on test scores, $F(1, 242) = 17.41$, $p < .001$, $\eta^2_p = .07$. Students who took unproctored online tests scored significantly higher ($M = 74.66$, $SD = 10.87$) than students who took proctored in-class tests ($M = 68.65$, $SD = 12.12$). No significant main effect was found for course type, $F(1, 242) = 3.45$, $p = .07$, $\eta^2_p = .01$. The mean test score for students who completed distance courses was 70.08 ($SD = 12.75$), and the mean for students who completed lecture courses was 72.78 ($SD = 11.24$). Additionally, no significant interaction was found between test format and course type, $F(1, 242) = 3.27$, $p = .07$, $\eta^2_p = .01$. The mean test scores as a function of test format and course type are shown in Table 2.

Test format covaried with semester of enrollment; therefore, it was possible that the higher test scores of online test-takers compared to classroom test-takers could reflect differences in academic characteristics of students enrolled in semesters when online tests were administered and students enrolled in semesters when in-class tests were administered. To evaluate this possibility, independent *t* tests were used to compare the two groups of students on five academic measures: high school GPA, verbal SAT scores, quantitative SAT scores, cumulative college GPA, and percentage scores on the sociology pretest. As shown in Table 3, no significant difference was found between the mean scores of the two groups of students on any of these academic measures.

The average test scores of students who completed unproctored online tests were 6% higher than those of students who completed proctored in-class tests. This difference represented a medium effect size with test format accounting for 7% of the variance in test scores and raised a concern that course grades for students who took online tests might be inflated relative to the grades of students who took in-class tests. The course grade distribution as a function of test format is shown in Table 4. A chi square test for independence revealed no significant relationship between test format and course grades, $\chi^2 = 3.47$, $p = .48$.

## Discussion

Our predictions concerning course type and test format were supported. Test performance of students enrolled in distance versus lecture courses was comparable. This is consistent with numerous studies which have found that student learning outcomes in well-designed distance courses are similar to those in traditional lecture courses (Bernard et al., 2004; DiRienzo & Lilly, 2014; Rivera & Rice, 2002). The online unproctored test format did result in significantly higher test scores than the proctored classroom test format. However, congruent with the

Table 1

*Number of Students Completing Each Test Format and Course Type by Semester*

| Semester | Test Format | Distance Course *n* | Lecture Course *n* | Semester *N* |
|---|---|---|---|---|
| Semester 1 | Online | 24 | 38 | 62 |
| Semester 2 | In-class | 19 | 36 | 55 |
| Semester 3 | In-class | 21 | 40 | 61 |
| Semester 4 | Online | 23 | 45 | 68 |

Table 2

*Mean Test Scores as a Function of Test Format and Course Type*

| | Test Format | | | | | |
|---|---|---|---|---|---|---|
| | Online Tests | | | In-class Tests | | |
| Course Type | *M* | *SD* | *n* | *M* | *SD* | *n* |
| Distance Course | 74.50 | 10.20 | 47 | 64.88 | 13.58 | 40 |
| Lecture Course | 74.75 | 11.28 | 83 | 70.63 | 10.86 | 76 |

Table 3

*Comparison of Academic Characteristics of Students Taking Online and In-class Tests*

| | Test Format | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Online Tests | | | In-class Tests | | | | |
| Characteristic | *n* | *M* | *SD* | *n* | *M* | *SD* | *t* | *p* |
| High School GPA | 116 | 3.31 | 0.52 | 96 | 3.36 | 0.49 | -0.72 | .48 |
| SAT Verbal | 91 | 517.58 | 77.46 | 78 | 505.90 | 66.69 | 1.04 | .30 |
| SAT Quantitative | 91 | 519.45 | 64.00 | 78 | 520.00 | 65.70 | -0.06 | .96 |
| College GPA | 75 | 3.04 | 0.61 | 63 | 3.04 | 0.58 | 0.00 | 1.00 |
| Sociology Pretest | 124 | 52.72 | 12.28 | 112 | 49.91 | 12.70 | 1.73 | .09 |

Table 4

*Course Grade Distribution as a Function of Test Format*

| | Course Grade | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | | B | | C | | D | | F | |
| Test Format | n | % | n | % | n | % | n | % | n | % |
| Online Tests | 47 | 36.2 | 54 | 41.5 | 19 | 14.6 | 6 | 4.6 | 4 | 3.1 |
| In-class Tests | 43 | 37.1 | 42 | 36.2 | 14 | 12.1 | 10 | 8.6 | 7 | 6.0 |

findings of Schultz et al. (2007) this difference was surprisingly modest. Students taking the online tests scored, on average, 6% higher. Moreover, students who took the online tests did not earn higher course grades in introductory sociology. This suggests that online tests are a viable option in online and hybrid courses as students who had access to books and other resources did not have test scores dramatically higher compared to students who completed the tests in class without access to resources.

Many instructors view testing as a learning activity and are willing to allow students to access course materials while taking online tests. Agarwal et al. (2008) suggest that students find open-book tests less stressful, and open-book tests may encourage students to practice higher level thinking skills like problem-solving and reasoning. When allowing students to use course materials, online test scores should account for a relatively small percentage of the students' course grade (Harmon & Lambrinos, 2008; Osika, 2006). A more substantial percentage could come from more comprehensive assessment tools, such as essays, projects and portfolios (Rovai, 2000).

Several strategies can be used to limit students' reliance on course materials or sharing answers when taking online tests. First, tests should include questions that require students to process or apply information rather than exhibiting memorization of simple facts. Second, limiting the test completion time decreases students' abilities to use resources and requires that they have done advanced preparation (Harmon & Lambrinos, 2008; Kinney, 2001; Rovai, 2000). Additionally, the test should be administered to all students at the same time to prevent students who take the test first from sharing questions with others (Rowe, 2004). Finally, using a database of questions from which tests are randomly constructed limits students' ability to share answers (Harmon & Lambrinos, 2008; Rovai, 2000; Rowe, 2004; Tao & Li, 2012).

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# Colonialist Tendencies in Education Abroad

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This paper considers education abroad (EA) and its relationship to global citizenship and colonialism by describing and analyzing the agitated interactions of one EA course through a post-colonial lens. Rather than claim the EA experience as emancipatory or colonialist, the paper illustrates the ways that colonialist tendencies can manifest in particular moments and through specific dynamics of an EA course. This paper illustrates the ways that colonialist tendencies related to a reifying of consumerist ideologies, a westernizing of the EA experience, and an ongoing employment of an objectifying tourist gaze became manifest in an education abroad context. The paper concludes with a discussion of the findings that includes some ideas for how education abroad programs can address its colonialist tendencies.

Across North American universities, *educating for global citizenship* has gained prominence and been brought to the forefront of university mandates and academic plans (Jorgenson & Shultz, 2012). Although a contested term with multiple conceptualizations, global citizenship involves "being aware of responsibilities beyond one's immediate communities and making decisions to change habits and behavior patterns accordingly" (Schattle, 2009, p. 12). As a concept, global citizenship is thought to bring together the dimensions of social responsibility, global awareness and civic engagement (Perry et al., 2013). Thus, the overarching aim of global citizenship education (GCE) is to use a variety of pedagogical strategies to "enhance students' global perspectives and help them to contribute to a more peaceful, environmentally secure, and just world" (Jorgenson & Shultz, 2012, p. 2).

As GCE has moved into university missions and academic plans, one pedagogical strategy that has moved from the wings to the main stage is education abroad (EA). Education abroad is a broad term that is used to capture any form of transnational student movement for the purposes of learning – from the traditional study abroad and exchange programs to more recent formations that include short-term study abroad, international service learning and *course-embedded* programs in which students travel as a group and are accompanied by course instructors (Ogden, 2010). Although EA has a long history in universities, its prominence has risen as EA programs have increasingly being framed as an important tool for preparing students for global citizenship (Jorgenson & Shultz, 2012). Indeed, education abroad programs are growing and expanding. In a recent review of university GCE mandates, education abroad programs were found to be the most commonly cited and advertised form of global citizenship education in post-secondary institutions, more so than strategies such as internationalizing the faculty or student body or expanding the number of course offerings with a global focus (Jorgenson & Shultz, 2012). The number of EA programs has grown dramatically; in 2000, only 65 percent of U.S. colleges had an EA program, and by 2006, the number had risen to 91 percent (Stearns, 2009, p. 65).

The rapid growth and new prominence afforded to education abroad has been affirming to scholar-practitioners, who have long contended that EA is a transformative pedagogy. For advocates, the transformative potential of EA stems primarily from two pedagogical features. The first is that EA creates opportunities for students to be exposed to beliefs and value orientations that contrast with their current beliefs (Tarrant, 2009). As Prins and Webster (2010) articulate, "by stepping outside national borders, students become more aware of how they and people abroad view their home nation, an awareness that can reinforce or erode their identification with ideological features" of the home country (p. 7). The second is the immersive and experiential quality of the pedagogical approach, both of which differ from the traditional classroom (Hovey, 2004). Tarrant (2009) noted that EA offers a "delivery mechanism that engages students with the real world and enables them to think beyond their own immediate needs while recognizing the critical responsibility that humans have in mitigating environmental issues" (p. 442). Combined, these qualities create a transformational learning environment, and through their participation in EA, students are led towards developing a more globally aware and justice-oriented worldview.

However, the new attention directed toward education abroad has also troubled the EA field. The rapid rise of EA programs, and its newly articulated relationship with GCE, has been met with some suspicion. Questions have been raised regarding the lack of clarity of the meaning of *global citizenship*: that although the term is widely used, it is rarely defined and explained (Streitwieser & Light, 2010). The rapid growth of EA programs in universities has also raised questions regarding whether growth may in fact be driven by motivations other than global justice aims.

Critics have drawn attention to the entrepreneurial and consumer-oriented flavor of contemporary education abroad and have suggested that although EA programs claim to promote global citizenship, they seem to be more highly valued as a marketing strategy to attract top-level students (Breen, 2012; Ogden, 2007) and as a way for universities to generate additional revenue from students who pay a premium to participate in EA programs (Lewin, 2009).

The growth of EA programs has also raised concerns about the actual, on-the-ground activities that unfold within the context of education abroad and about whether EA programs live up to the claim of fostering global citizenship. For example, one critique of EA has been that students do not truly enter the culture, and that particularly in light of the current trend of shorter stays, instructor accompaniment and increased access to technology, the transformative potential of EA has significantly weakened (Kinginger, 2010; Ogden, 2007). However, perhaps even more damaging has been the critiques brought forward by post-colonial scholars, some of which call into question the entire endeavor of education abroad. Post-colonial scholarship draws attention to the ways that education abroad operates in ways that maintain oppressive power relations between host and visitor, through practices that maintain the visitor at the center and reify notions of the host as the needy *other*. For example, post-colonial scholarship has critiqued the ways that EA promotional materials uses imagery that marks the host culture as traditional, as well as ethnically and racially distinct from the visiting student (Caton & Santos, 2009). Similarly, students are often drawn to education abroad out of a desire to *help* or *make a difference*, which is a stance that also positions the host culture as *in need of help* (Cook, 2008; Palacios, 2010). In fact, Zemach-Bersin (2007) has argued that EA is as imperialistic an endeavour as the “missionaries, colonizers, anthropologists, and humanitarian aid workers who have served as ‘goodwill ambassadors’” who came before them (p. 24). In light of these debates, it can become difficult to make sense of the education abroad experience. Are EA experiences transformative? Or, are students the new colonialists?

In this paper, I aim to contribute to this discussion by offering a descriptive account of one education abroad program, which I analyze through a post-colonial lens. As I will illustrate in the paper, my aim is not to claim the EA experience as emancipatory or colonialist, but instead to show the ways that the course had *colonialist tendencies* which became manifest in particular moments and through specific dynamics of the course. Specifically, this paper illustrates the ways that colonialist tendencies related to a reifying of consumerist ideologies, a westernizing of the EA experience and an ongoing employment of an objectifying tourist gaze, became manifest in an education abroad context.

By providing a description and analysis of the moments of the course as they unfolded, this paper builds on a growing body of work in which scholar-practitioners engage in critical reflection on the pedagogy of their own practice in an effort to uncover moments of contradiction between rhetoric and reality (Heron, 2007). As Himley (2004) contends:

> …turning a careful, critical eye to the ethical desires, peculiar intimacies, agitated interactions, material realities, and power asymmetries…we can excavate and explicate both the immediate and broader relations of power that structure these encounters and identify opportunities for at least partially progressive practice or effects (p. 423).

Thus, after a brief overview of the course, I present a description and analysis of the agitated interactions that emerged in the context of the education abroad course. The paper concludes with a discussion of the findings that includes some ideas for how education abroad programs can address its colonialist tendencies.

## Study Context: Education Abroad in Cuba

The course from which this paper draws was a short-term and instructor-led EA course that involved taking 17 Canadian students to Cuba for an 18-day sojourn, of which I was the course developer and co-instructor. The course, titled “International Field Experiences in Recreation and Leisure,” was a senior-level full-credit spring semester elective offered to students majoring in Recreation and Leisure Studies (my home department). The course was introduced into the curriculum as a departmental response to the university’s growing interest in internationalization and community engagement. Since the course was developed in 2009, it has been offered twice: in 2010 and 2012 (the incidences described in this paper are drawn solely from the 2010 offering). The broad course title was intended to allow different teachers in the department to develop and offer international field courses specific to their interests. The primary course objective was for students to emerge with a more robust understanding of the ways that recreation and leisure practices are shaped by and intertwined with culture, politics and globalization. The intent of traveling to Cuba was to add an experiential perspective to the theoretical analysis as well as provide an opportunity for the students to develop leadership and instructional competencies in a cross-cultural setting. I was interested in teaching the international field course due to its unique pedagogy as well as my academic interest in the course material. I chose Cuba as the country of focus because it is relatively close to Canada, yet it offered a range of contrasts, particularly in terms of political ideology and delivery systems related to sport and recreation.

In the preceding fall semester, 25 students applied and were interviewed for the spring course, and 17 were accepted. Students began meeting in January on a twice-weekly basis to prepare for the trip. Academic preparation included student-led seminars on various aspects of Cuba (e.g., history, significant events, health, education, and political systems). Some time was spent on preparation for travel (health and safety, what to expect, etc.). The final component was the preparation of specific recreation and outdoor education lessons which students would deliver as part of our program with one of our host partners (faculty and students in a recreation and outdoor education program at a Cuban university) at a Canada-Cuba outdoor education camp. We left for our sojourn in May, after the winter term had ended.

## Colonialist Tendencies: Description and Analysis

For our first week in Cuba, we stayed at a basic hotel in a vibrant area of Havana within walking distance from the Malecon, the city's famous seaside walkway. Our week was organized similar to an education tour in that each day had a theme such as history, environment or politics. We began our day with breakfast in the hotel followed by a group meeting. Each morning was spent in a lecture at the university, followed by an afternoon field trip that was relevant to the day's theme. We spent the second half of our sojourn camping with our host partners at an outdoor education center located in Pinar del Rio province, about two hours' drive from Havana. The two weeks contrasted dramatically in terms of the activities, dynamics and positioning of the student group. The moments that are described below are drawn primarily from the first week of the course.

### Canadianizing Cuba: Importing Familiar Comforts and an Objectifying Tourist Gaze

*Day Five. Havana. Late afternoon. We had finished our scheduled activities and it had been an interesting and fulfilling day. In the morning we walked from our hotel to the University of Havana where the students listened to a lecture on Cuban history, delivered in Spanish and translated into English, by a professor from the university. After lunch on their own, mainly at nearby restaurants, students reconvened as a group to visit Revolution Square. The visit was quite powerful for some, as the words from the morning lecture took on more weight in the open space of the square. Surrounded by the figures of Jose Marti, Che Guevara, and Camilo Cienfuegos, we could feel the energy of the revolutionary spirit of this remarkable country. Between reading the exhibits and wandering the grounds taking pictures, we spent over two hours at the square. On the way back, we talked as a group about the revolution, what drove the Cuban people to overthrow its government, and what kinds of happenings in Canada might lead the students in the group to undertake acts of resistance or activism.*

*We made it back to the hotel and had a bit of free time before our scheduled dinner. The group was hot and tired. Some students headed to the cool of their air-conditioned hotel rooms to watch TV. Others grabbed their swimsuits and headed upstairs to have a dip and relax by the side of the rooftop pool.*

As discussed in the opening, one of the central rationales of education abroad is how, in moving outside the walls of the traditional university, it opens up new opportunities for teachers and learners to explore alternative or counter-normative pedagogies – pedagogies that Howard (1998) characterizes as those that "qualitatively change the norms and relationships of the teaching-learning process" (p. 23). Certainly, teaching in Cuba did this, and the vignette above – a vignette that described a typical day in our first week in Cuba – captures the ease at which we moved out of the traditional lecture hall model of university teaching and learning, with its structured format and didactic style, into a more fluid learning format in which the construction of knowledge was multidirectional. The shift toward a more dialogue-based and *engaged pedagogy* (Hooks, 1994) was engendered in no small part by the immense amount of time that we spent together in the international learning context, which allowed us to engage in lengthy conversations about our experiences and emerging perspectives.

While this vignette captures the ease at which we were able to leave behind some of the norms of university classroom pedagogy, it also captures what I failed to notice when planning the course: the extent to which I also moved many of the norms of my Canadian teaching-learning environment into this new setting. When I consider this now, what I notice is not how different it was from the way we teach and learn at home, but in fact how similar it was: the flow of the day; the parceling out of activities; the lecture in the morning and free time in the evening. Even though we were in a different country, we were following a school-day routine and a style of pedagogy that was familiar and comfortable.

Another source of familiarity and comfort was the hotel environment. We stayed at a two-star hotel, low quality by Canadian standards perhaps, but it afforded us rooms with showers, air conditioning, television and a restaurant buffet with food that we were familiar with: eggs and toast, chicken, potatoes, rice, beans and fruit.

Our hotel had a computer station in the lobby, which students could use to send emails back home. Even more than these amenities, the hotel offered students a space into which they could retreat and take a break from Cuba life until they were called upon to re-enter. In the space of the hotel they would relax, either at the pool or the restaurant, chatting with one another or with other tourists or students that were staying in the hotel.

While the hotel was comfortable, it also shaped, immensely, the way we encountered Cuba. In Cuba, the separation of tourists from locals in hotels is significant; up until 2004, Cuban nationals were not permitted to enter hotels beyond the front lobby. Even at the time of our visit, while spaces were legally open to Cubans, they were subjected to a high degree of surveillance and policing from Cuban governmental hotel workers. So, the rooftop pool, the hotel rooms, and even the restaurant that our students frequented with regularity were de facto non-Cuban spaces within Cuba.

I want to consider how our access to these non-Cuban spaces shape our way of thinking about ourselves in relation to Cuban nationals. Did our ability to physically separate ourselves from Cuban life make it easier for us to conceptually and discursively separate ourselves, as Westerners, from those we encountered in Cuba? Did it lead us to think about Cuba as our *object* of study – a fascinating phenomenon we were able to examine, discuss, and critique without having to also consider ourselves in relation to it?

In retrospect, we had adopted what scholars in tourism have referred to as the *tourist gaze*. For Urry (1990/2002), the tourist gaze is a socially organized way of seeing and experiencing a given locale. The tourist gaze is guided by the anticipation of pleasure and directed toward objects such as an ethnic group, landscape, or cultural performance. According to Urry (1990/2002), the tourist gaze organizes the encounters of visitors with the *other*, leading tourists to notice separation, otherness, and difference, while often neglecting to see how places are intimately bound to other economies, nations, and peoples. In other words, the tourist gaze reinforces an "othering" process between visitors and the host community.

Education abroad has not always been associated with tourism. In fact, it has for many years been positioned as an alternative and a counterpoint to tourism-based travel formations. Travel under the auspices of education has been framed as distinct from, and superior to, travel undertaken for leisure and entertainment, which is characterized by the *ugly tourist* (Prins & Webster, 2010). However, Ogden (2007) argues that the terrain of education abroad has been shifting. As education abroad has moved into the mainstream of university mandates, international courses have proliferated, and, further, they have come to take on a different form to expand their appeal to the mainstream student. In his paper titled "The View from the Veranda," Ogden (2007) contends that the planners of these courses face "unrelenting pressure" to meet the growing demand among students for familiar amenities and conveniences during their international stay (p. 36). Some of what Ogden identifies, such as access to internet, English TV, and swimming pools, as well as excursions to beaches, were amenities that I too had built into this course. He also points to other conveniences, such as offering classes taught in English, classes offered exclusively to international students, and inflationary grading. In other words, students traveling abroad, even while in a new country, "carry [with them] the home-grown "bubble" of their American lifestyle" (Ogden, 2007, p. 38), which allows the student "to remain in the comfortable environs of the veranda while observing their host community from a safe and unchallenging distance" (Ogden, 2007, p. 36). Indeed, the question I now I ask myself is, with these amenities I had built into the course, how much time did students really spend *in Cuba*?

The tourist gaze produces more than distance; it also produces power as it relates to *who has the power to gaze upon the other*. In an encounter, we can see this power play out when we ask such questions as: Who has greater control over when and how they are seen? Who has the freedom to escape the gaze, and who does not? Whose lives are penetrated by the gaze? In general, it is the tourist who sets the terms of the encounter and intrudes on the lives of those in the host community, while their own relationships and home lives remain intact and undisturbed. Further, the direction of the gaze is one-way, which means that the lives that are penetrated by the gaze are those within the host community (Maoz, 2006). Himley (2004) considers the unequal access to the private lives of one group by another as a form of exploitation.

Consider this encounter, experienced by a student in my group. While at the Malecon, Havana's famous seaside walkway and hangout, a student and a Cuban family who had sat down next to the Canadian students opened up a dialogue. Darren, the student, learned that the father was a police officer (the man even allowed the student to hold his gun). The family lived nearby, and the evening ended with a late-night offer by the family for Darren to return to the apartment of his new acquaintances. Darren accepted, as he noted, out of his curiosity to see "how a typical Cuban family lived." At the apartment Darren was invited to share drinks on the small porch with the father while the family, which included a number of extended relatives who also lived in the apartment, attempted to sleep on the living room floor. As Darren prepared to leave, he and the family exchanged email addresses. When he recounted the events the following morning, Darren talked about maintaining a relationship with the family when he returned home and sending down goods and items that the family said they needed.

Certainly we can see that the student gained new insight on Cuban life in this encounter, but what else was it? Was it friendship? Was it voyeurism? How were Darren and the Cuban family framed by this encounter? How do they see each other, and how is this way of seeing produced by, and producing of, broader social and political histories and the circumstances that brought them together? Certainly the notion of international education students being freer to leave is especially relevant to Cuba, a country with extremely oppressive policies regarding international mobility. But how does the fact that Darren met the family at the Malecon, an ambiguous contact zone (Pratt, 1992) for tourists and Cuban nationals, also organize the social relations within this encounter?

My read of this encounter is one of a Cuban family "performing poverty" for a Westerner in the hopes that the student would take a charitable view of the family. A few days later when he was asked again about this family, Darren's commitment was much more tentative, and he admitted that he was likely not going to maintain the relationship once he returned home. However, does this even matter if what Darren takes back is a view of Cubans as the needy, and a view of Westerners as the saviors?

## Manifestations of the Student-as-Consumer: "We Paid a Lot of Money for this Course."

*Day Three Morning Meeting. Breakfast was over, and the group convened on the hotel patio for our regular morning meeting. After a review of our plan for the day, the meeting is opened up for group discussion. One student, Tyler, raises a concern he has about the way that the other students in the group are impacting his experience. Tyler reminds us that we spend a lot of time together as a group, and that the evenings are everybody's opportunity to have a little freedom, and that "no one should hold another person back from doing what they want to do." Tyler's point was that each person should be able to have the experience that he or she wants to have and not feel that kind of pressure from someone else in the group. Tyler says with emphasis, "We all paid a lot of money for this class; we should be able to have the experience we are looking for." A few other students murmur their support of Tyler.*

What does Tyler tell us in this moment? Certainly, Tyler is saying that he is having difficulty with other students in the group. As we learn later, the comments reflect an incident from the previous night when a fellow student – an overly needy student in Tyler's eyes – coerced another group member to leave a night out early to walk her back to the hotel so that she would not have to walk alone. For Tyler, this request was a demand that exceeded the limits of what a group member should be permitted to ask.

However, this conversation also communicates to us a bit of Tyler's perspective about the purpose and value of education abroad. Tyler draws attention to the investment he has made in the course, and he is expressing his dissatisfaction that the course is not living up to the expectation he has for it. In this conversation, Tyler is looking to negotiate the terms of the educational arrangement, and this is an opportunity he is afforded due to his financial investment in his educational experience. In other words, Tyler is applying a consumerist lens in his assessment of his educational experience.

The fact that Tyler engaged with the course as a discerning consumer should perhaps not be surprising. Universities have been moving in the direction of treating students as consumers over the last 20 years. With government subsidies shrinking, universities now actively compete for students and student dollars. This competition, Newson (2004) argues, has moved universities toward a model in which they work to attract students by offering them what they want. According to Ogden (2007), what students want, are "amenities and services. As customers, they want top-notch recreational facilities, smaller classes, and what seems like on-demand contact with counselors, advisers, faculty, and administrators" (p. 36-37). Thus, students begin to be positioned as consumers even before they begin their university education.

The positioning of students as consumers continues through the career of the typical student. As Newson (2004) describes, "accountable primarily to themselves…students proceed through educational institutions on the basis of individual achievement and mastery over whatever body they 'choose' to learn" (p. 230). University teaching and administrative practices, including the emphasis within universities on marketable skills and marketing opportunities, and optimization and evaluation based on economic principles (Porfilio & Yu, 2006) and the opening up of space within the university for corporate interests to be met (Newson, 2004) reinforce this ideology.

Certainly, students are not the only ones disciplined by the student-as-consumer ideology. As someone who has been enmeshed in institutions of higher education for the past eighteen years, it would be naïve to suggest that the consumerist ideology has not shaped my practices as a university teacher; it certainly has. For example, Newson (2004) notes that one aspect of the student-as-consumer model is for students to position themselves as *receivers of a service*, which in turn disciplines me to fulfill the subject position of *provider* of the educational service or *product* that students come to consume. Numerous aspects of university teaching, from course design, scheduling, and the evaluation process, reinforce the teacher-student relationship in terms of a service exchange that emphasizes information-dissemination, predictable outcomes, teacher control, and student passivity (Clayton & Ash, 2004). The past five years of my career has been driven by my interest in unravelling the myriad ways that consumerist ideologies discipline my teaching practice and looking for alternative or *counter-normative* (Howard, 1998) pedagogy – a search that, in fact, led me toward the international field course as an alternative pedagogy. However, ideologies are not easily left behind. Although we stepped out of our traditional classroom environment, Tyler's comments draw attention to some of the ways that our ideology of student-as-consumer travelled with us and took shape in the new teaching and learning context. In fact, given the additional expense of education abroad, which is bore solely by the student, I suggest that the international context may in fact work to *amplify* the student-as-consumer ideology.

Consider how consumerist orientations might also be tied up with the motivations of students who decide to take an international course for credit. Certainly, students take an international course with the purpose of enhancing their global perspective. However, what else draws them to move their learning to an international context? As I reflect on the students who participated in my course, I am able to identify at least two other motives. One strong motive among students was the desire to undergo a journey of personal discovery and transformation. One student, Lauren, typified this intent. Lauren was in her final year at the university; the EA course was the last credit she needed on her transcript and the last course she would take at the university. Overall, Lauren's experience in the university had been rocky; she often struggled with the academic demands of her courses and at times became consumed with the social dynamics of her circle of friends. She wished to find herself and hoped that the two weeks in Cuba would provide her with the opportunity to reflect back on her life in Canada, on what was working and not working for her in her life, with the intent that she would return with a stronger sense of identity and direction.

A second motivation among students was the desire to gain international experience that would be useful for future advancement. Although at the time, students were generally not able to identify specifically how they saw the course as related to their future goals, it was clear that they believed that taking an international course had a currency in the kinds of worlds they aspired to achieve in. In other words, they viewed the course as a form of what Bourdieu (1986) termed an educational credential. The credentialing of their participation in the international course was evident among the students I taught. By taking the course, students met the requirements to obtain a special *international plus* notation on their university transcript – a notation that at least half of the students applied for and obtained (the university also had an *experience plus* notation that students earned through volunteer service). Participation in the course also became central to resumes and applications of former students to teacher training programs and other post-undergraduate work. Interestingly, both motivations – the *personal discovery* motivation and *career development* motivation – have been noted in more recent studies focusing on motivations for participation in learning abroad programs (Tiessen, 2012).

I would like to return to Tyler's comments for a moment because it is important to consider not only his comments, but how this moment unfolded. So now I ask: What did Tyler's comment do to our learning experience? What power did his words yield? Here we need to look at how his comments were received by the group. For the most part, we accepted Tyler's viewpoint with little comment or critical consideration. Does this mean that the frame through which Tyler made sense of the education abroad experience was shared by that the rest of the group? It may. As Newson (2004) has noted, the student-as-consumer ideology is currently the dominant ideology of university education. However, there is another explanation: group members may have thought differently yet chose not to vocalize their dissent. Chaput and O'Sullivan (2013) have recently noted how in international field courses in which students travel as a member of a group, the push to maintain group harmony restricts students' ability to deliberate about important issues, especially if they are thought to be contentious. They noted that when students heard group members share perspectives that differed from their own, they opted to 'bite their tongue' rather than initiate a critical discussion about the issue at hand.

## Discussion

The intent of this paper was to illustrate the ways that colonialist tendencies enter into the teaching and learning environment of education abroad. It points to the difficulty that students and teachers experience in their attempt to leave behind the ideologies and practices that dominate their teaching and learning experience at home, as well as the ease with which they are imported into new context and come to shape the dynamics, relationships and encounters of students in this new setting. It also points out the challenges in educating for global citizenship in the context of education abroad, and in particular, it raises questions about the notion of EA as a tool for promoting global citizenship. As Chaput and O'Sullivan (2013) noted, educating for global citizenship has much less to do with a student's exposure to different people, places and cultures than it does with placing students in an experience in which "new knowledges are engaged, placed in relationship to one's own experience, and entered into a deliberative framework that leads to a deeper appreciation of global interdependence and worldmindedness" (p. 356). While these experiences can certainly happen in an EA context, it is also possible that they may not.

Certainly, some of these issues can be addressed by changing course practices. Some scrutinizing of course practices through a post-colonial lens can be helpful as a way to identify when and where EA courses may be unnecessarily relying on practices or beliefs that re-inscribe a colonialist relationship between student visitor and host community. If identified, these practices can then be altered. In the case of my own course, I revisited the course assignments and activities with an eye to whether they maintained, or challenged, notions of the student at the center, reified an *othering* process, or called on students to implement an objectifying gaze. This led to some course changes. For example, I realized that I had been focusing too heavily on teaching students *about* Cuba, which worked to maintain the perspective of Cuba itself as the "studied other." I changed my teaching to focus on helping students analyze the various ways that they were connected to Cuba (e.g., shared history of colonization and resource extraction, complicated relations with the US, and extensive Canadian-Cuban tourism). I also revisited the different ways that the course had been westernized and removed some of them, such as the adherence to a typical Canadian university schedule. Further, in the next offering of the course students travelled around the city using the bus system used by Cuban locals versus tour buses or taxis meant for tourists. While this certainly translated into a lot of time spent waiting for the bus, it was also central to students' subjective experience of life in Cuba.

Perhaps a way forward is not to work to remove education abroad's colonialist tendencies, but instead to acknowledge them and further, to see this acknowledgement as what to build on when attempting to educate for global citizenship. To do so would require a clarification and perhaps a rearticulation of the notion of global citizen. The definition put forward by post-colonial scholar Nancy Cook (2008) offers a useful starting place. Cook (2008) suggests that we should begin to think about a global citizen as someone who "reflects on their complicity in global power relations, considers their responsibilities to those who are disadvantaged by current global arrangements, and who actively resists perpetuating them so that Othered groups can actively exist in a more just social reality" (p. 17). This kind of reflection can be built into a course, for example, through assignments and exercises that intentionally work to disrupt taken-for-granted notions about the transformative potential and good work of education abroad. Students can also reflect on their own complicity in maintaining asymmetrical power relations in the context of their education abroad experience and its micro-moments.

Achieving Cook's (2008) vision of the global citizen perhaps also requires that some distance be inserted between the education abroad experience and the global citizenship education discourse that has come to define the student experience of these courses. While certainly education abroad may foster global citizenship, this relationship is not a foregone conclusion. Universities are encouraged to engage in reflection regarding the consequences of continuing to promote this perspective and the implications it may have on students' ability to fully understand themselves in relation to promoting global justice.

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# An Investigation into the Impact of Facebook Group Usage on Students' Affect in Language Learning in a Thai Context

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This paper reports on the way in which Facebook Group used as a learning management system can enhance Thai students' effective language learning (positive attitude and motivation) in a private university in the vicinity of Bangkok. These two variables are seen to influence learners' achievement in language learning, and they also interdependently influence one another. The qualitative outcomes deriving from ten participants revealed positive impacts of the Facebook Group usage on their attitude towards, and motivation in, learning English as a specific purpose in a Thai context because they commonly found themselves relevant to the Facebook Group as regular users of Facebook. Partly, the Facebook Group could give them senses of convenience, simplicity and relaxation and reduce cultural power distance between the instructor and them. Out of the exploratory parameter, the Facebook Group could be an online tool to facilitate English learning through error corrections. Positive results offered some insightful suggestions and implications for teachers of English as a foreign language. A specific limitation of this study is also discussed.

Facebook, Instagram, and Twitter—or social media—have been prominently used throughout the world. Recent reports in Thailand show a rapidly increasing Facebook usage (Millward, 2013; Sakawee, 2013). In the second quarter of 2013, about 18 million Thais used Facebook, which outnumbered users of Instagram and Twitter (Millward, 2013). By the third quarter, the number grew by 33 percent to 24 million Facebook users (Sakawee, 2013). This large number represents the country's social media users. Clicking "like" (7.1 billion likes posted in the nation) is the most popular activity, followed by sending private messages (5.5 billion) and posting comments (1.3 billion). These behaviors characterize Thai users of Facebook.

Facebook becomes a trendy social networking site among Thai users because of its structure, namely news feed, like, groups and pages. For example, a study showed that many university students from a middle-class background found news presentations on Facebook more interesting than the traditional papers (Rojanaphruk, 2013). Evidently, some students used it to fight hazing by creating a Facebook page where people could report on and post pictures that demonstrated any inappropriate behaviors (Lynn, 2013). Recently, thousands of people protested against the government by changing their Facebook profile pictures into a black sign with the message of *against the amnesty bill* to show their opposition to the amnesty bill (Pornwasin, 2013).

Students studying social work at a medium-sized private university in the vicinity of Bangkok also share the aforementioned phenomenon of Facebook usage. This includes ten undergraduate students in my English Reading-Writing for Professional Purposes class, which I was assigned to instruct for the first time. The course is considered English for specific purposes (ESP) and is one of the four compulsory subjects for them. In the first session, all ten students studying and using English as a foreign language (EFL) admitted to me that they were not competent in English, commonly because they encountered difficulty to learn when they started it at a young age. They took this class before and did not pass it. They thought that they failed this course because they did not enjoy learning English and hardly attended the class. Psychologically, these aspects indicated their negative attitudes and lack of intrinsic motivation in learning ESP. Additionally, they just wanted to pass this subject so that they could further take Practical Training or graduate from the course. This aspect further showed that the students obtained some level of extrinsic motivation in learning ESP.

Past studies (e.g. Alhmali, 2007; Fakeye, 2010; Gardner, Tremblay, & Masgoret, 1997; Ghazali et al., 2009; Masgoret & Gardner, 2003; Padwick, 2010) confirmed that attitude towards, and motivation in, language learning are affective factors connectedly influencing learners' performance. Motivation predicts success in learning a language, while positive attitudes towards learning build up learners' motivation. On the one hand, if learners are motivated, they tend to consistently put much effort into study so that they can reach their goal of achievement. On the other hand, if they lack interest in learning, they will obtain negative attitudes and become less motivated or enthusiastic to language learning (De Bot, Lowie, & Verspoor, 2005). They are then less likely to perform well in English. Other studies also showed that these two variables can greatly influence language learners' achievement in a computer-assisted language learning environment (Doherty, 2002; Gilbert, 2001). Learners can also gain confidence if they possess positive attitudes towards their ability in speaking English regardless of how well or badly they can actually communicate (Tananuraksakul & Hall, 2011). To say the least, it is considered vital for learners to be motivated in learning and enjoy it at the same time.

After discovering that the students were very much active on Facebook for social reasons, especially to keep in touch with their friends who live far away from them and have no other better way to communicate with them regularly, I created a Facebook Group and used it as a learning management system (LMS) in the ESP class. By means of LMS, I virtually administered interactions among students and between myself and students through putting up announcements, sharing resources and conducting online discussions (Wang et al., 2011). It is used as a teaching tool to boost their positive attitudes towards and motivation in learning ESP as Dalton (2009) suggests that young students may feel connected with people and global knowledge through technology.

While some teachers of EFL in Thailand have explored how Facebook facilitated interactions among students and their peers and between teachers and students in a writing class (Kajornboon, 2013; *Suthiwartnarueput & Wasanasomsithi, 2012), there has been no attempt to investigate* into Facebook Group usage as an LMS, a pedagogical tool to build up students' positive attitudes towards and motivation in learning ESP (although its structure of groups can enhance their learning to a certain degree). With the previously mentioned characteristics of the ten students enrolled in the ESP course, this present study primarily aims to investigate how the Facebook Group can enhance their positive attitude towards, and motivation in, learning ESP. It, however, does not examine how these two affective variables impact on their learning achievement for two reasons. First, their level of English is rather low to be improved within a semester under their learning attitudinal and motivational circumstances. Second, they do not major in English or any other foreign languages. The study asks these two key research questions:

1. How did Facebook Group promote students' positive attitudes towards learning ESP?
2. How did Facebook Group motivate students to learn ESP?

## Defining Key Terms

Attitude towards and motivation in language learning are key terms that deal with feelings. Since both influence one another, many research studies into language learning are focused on these two affective variables (Al-Tamimi & Shuib, 2009). The former differs from the latter in that it refers to "[learners'] feelings about something, especially as shown by their behavior" (Macmillan English Dictionary, 2006, p. 76). Choy and Troudi (2006) posit that foreign language learners' feelings and emotions affect their attitudes towards the target language. Learners who like English or have positive attitudes towards learning English tend to be motivated to learn. In this study, a Facebook Group used as an LMS is the external tool to enhance students' positive attitudes towards learning ESP.

Motivation is "a feeling of enthusiasm that makes [learners] determined to do something" (Macmillan English Dictionary, 2006, p. 925). Psychologically, it plays a vital role in the process of learning a language in that learners can succeed in their learning if they possess intrinsic goals and desires which link to their passion (Karaoglu, 2008). Motivation also fluctuates from time to time depending on external motivational factors, such as teaching and learning strategies, classroom atmosphere and use of technology. Teachers need to find ways relating to their students' passion so as to promote their intrinsic motivation and maintain it. In this study, a Facebook Group used as an LMS is the external motivational tool to boost students' intrinsic motivation to learn ESP.

## Theoretical Framework

The present study is constructed on the ground that affect in learning a foreign language is interdependent with cognitive abilities or learning achievement. Past research studies (e.g., Dörnyei, 2003; Dörnyei & Clément, 2001; Krashen, 1988; Phimphirat, 2008; Supakitjumnong, 2002; Udomkit, 2003) indicate that learners can learn or perform in a foreign language better if they have both motivation and positive attitudes towards language learning, high self-confidence and low anxiety. Gardner and Lambert (1972) initiated a study of motivation in Canada and applied their efforts over a decade to studying the degree to which motivation could impact the achievement of second language acquisition. Their best-known conceptual framework of integrative (intrinsic) and instrumental (extrinsic) motivation has been widely adopted by many scholars (e.g. Atkinson & Raynor, 1974; Clement & Kruidenier, 1985; Crookes & Schmidt, 1991; Dörnyei, 1994, 1998, 2001a, 2003; Fineman, 1977). Learners with integrative motivation study a language because they want to know and understand the target language group better, while instrumentally motivated learners want to succeed in life due to social, professional and/or academic purposes.

Integrative and instrumental motivation in language learning is parallel with intrinsic and extrinsic motivation in social psychology that describes one's behavior as a consequence of a desire to earn something. Apparently, students in this study were not motivated intrinsically but instrumentally or extrinsically as they aimed to pass the required ESP class. However, the level of their instrumental motivation was low since they only wanted to just pass the course or receive a D. From the qualitative data, they had learned English as an EFL since primary school but had not yet acquired the language generally due to the social context itself that does not require them to use it daily and in turn limits their chance of practice to be linguistically competent.

In the current era of globalization, Facebook is obviously used as parts of tertiary students' lives. Studies into Facebook reveal its social and academic benefits as a social networking site. For example, Mitchell (2012) qualitatively explores motivation of seven students from non-native English speaking backgrounds in an intensive English program in America for joining and utilizing Facebook. It was found that they joined this social networking site for social reasons and had opportunities to acquire English and learn about American culture. Radel (2011) found that Facebook is used and valued as a blended learning tool in tertiary institutions. Blended learning is a hybrid model that encompasses face-to-face and virtual instructions viewed as good practice because it provides interactions and prompt feedback among users (Martyn, 2003). Simpson (2012) examined if Facebook could be an effective and easy teaching tool in English tertiary classes, and the qualitative outcomes showed that it was neither effective nor easy due to some certain factors that involved the instructor's familiarity with the tool usage and students' willingness to learn or "lazy factor" (p. 46).

Omar, Embi, and Yunus (2012) explored the use of Facebook Group as a platform for information-sharing discussion among tertiary students in Malaysia. The outcomes showed that Facebook Group could promote constructive interaction among students studying English as a second language (ESL) as an alternative platform when they were assigned to discuss some issues online. Incorporation in classroom activities could also boost their confidence. Facebook Group can also be used as an LMS to promote students' learning and student-teacher relationship (Li & Pitts, 2009; Schroder & Greenbowe, 2009; Terantino & Graf, 2011). It has certain pedagogical, social, and technological affordances which satisfy adult learners in Singapore (Wang et al., 2012) and first-year undergraduate students learning EFL in Thailand (Kajornboon, 2013; Suthiwartnarueput & Wasanasomsithi, 2012). The implications are that Thai learners of EFL will be satisfied with or like the Facebook Group usage as an LMS, a teaching tool in the ESP class. The feeling of satisfaction or liking will in turn positively impact on their attitudes towards, and intrinsic/instrumental motivation in, learning ESP.

## Methodology

This study employed these qualitative research instruments for data collection: observations and interview questions. I selected this approach rather than a quantitative research approach due to two main reasons. First, it is because the study is not primarily concerned with numerical measurement or making generalized hypothesis statements, but with meaning of undergraduate students' personal experiences of a phenomenon (Crouch & McKenzie, 2006; Johnson & Christensen, 2012). Focus was on how they encountered the use of the Facebook Group as an LMS, a pedagogical tool in the ESP class. Second, the sample size characterized by the aims of the study (Charmaz, 2006) is rather small, comprising the number of ten students enrolled in the ESP course.

### Participants

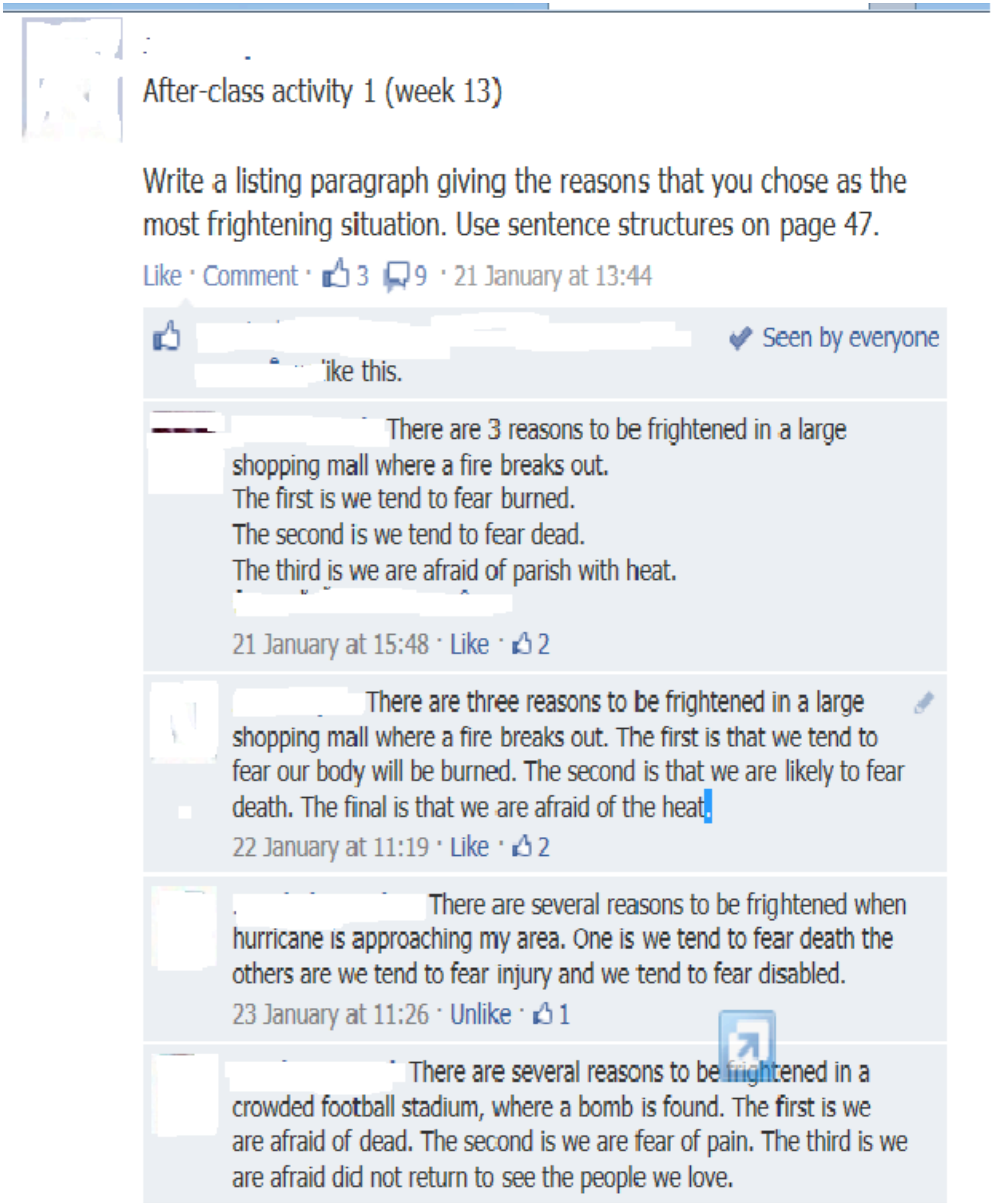
There were ten students who were enrolled in my ESP class and whose English competence was self-perceived as low with negative attitudes towards learning ESP and a lack of intrinsic motivation in learning ESP, and they were all recruited on a voluntary basis. Their self-perception of English ability accorded with the pre-test they took at the beginning of the semester (week one), grades of other English courses and GPA. Four were female, and six were male. Seven participants' ages ranged between 20 and 25, while two were over 25. One did not specify his age. While two were junior students, three were senior. Four were in their sixth year of study and one in her fifth year.

### Exploratory Procedures

In order to fulfill the investigation, I invited all students to join the Facebook Group created in week two. Then I started teaching in the classroom according to weekly lesson plans along with virtual interactions with the students via the Facebook Group by means of putting up announcements, sharing resources, and conducting simple online discussions relevant to the subject matter as shown in Figure 1 below. The medium of virtual interaction was mostly English so as to get the students accustomed to the language and feel comfortable with it. I used Thai occasionally when some students failed to express themselves in English and kept trying in Thai. In addition, I tried to correct their English online as much as I could. Throughout the semester (sixteen weeks), I observed students' learning behaviors during the class and online. The emphasis

Figure 1

*An Online Announcement and Discussion in the Facebook Group*



[redacted]

After-class activity 1 (week 13)

Write a listing paragraph giving the reasons that you chose as the most frightening situation. Use sentence structures on page 47.

Like · Comment · 👍 3 💬 9 · 21 January at 13:44

👍 [redacted] like this. ✓ Seen by everyone

[redacted] There are 3 reasons to be frightened in a large shopping mall where a fire breaks out.
The first is we tend to fear burned.
The second is we tend to fear dead.
The third is we are afraid of parish with heat.
[redacted]

21 January at 15:48 · Like · 👍 2

[redacted] There are three reasons to be frightened in a large shopping mall where a fire breaks out. The first is that we tend to fear our body will be burned. The second is that we are likely to fear death. The final is that we are afraid of the heat.

22 January at 11:19 · Like · 👍 2

[redacted] There are several reasons to be frightened when hurricane is approaching my area. One is we tend to fear death the others are we tend to fear injury and we tend to fear disabled.

23 January at 11:26 · Unlike · 👍 1

[redacted] There are several reasons to be frightened in a crowded football stadium, where a bomb is found. The first is we are afraid of dead. The second is we are fear of pain. The third is we are afraid did not return to see the people we love.

was on their participations both in the class and on Facebook Group.

In week fourteen, I started collecting data regarding the students' experiences in the Facebook Group usage. In order to reduce power distance between students and me that may cause any cultural and social barriers (Tananuraksakul, 2013) and concomitantly intimidate them and prevent them from sharing their real experiences with me, I asked them to voluntarily complete a survey (See Appendix) that consists of two parts: demographic profiles and views on the use of Facebook Group. The second part comprises two structured questions: "How does the use of Facebook Group help you learn English?," and, "What do you think about the use of Facebook Group in this class?" If they decided to take part in my research project, they could bring the answers back to me in the following week. I also ensured them that their final grades would not be affected whether they joined the research project or not.

After that, I transcribed the participants' views on the use of Facebook Group in the ESP class from the survey and checked if there were any questions emerging in the survey and related to the key research questions that the participants did not state in the survey. Then I listed those questions which were considered semi-structured (See Appendix). I spent two weeks interviewing the participants via Facebook Group message with the semi-structured questions so that they would not feel intimidated but feel comfortable enough to share their views with me. In fact, one of the participants mentioned in the survey that the Facebook Group usage in the ESP class helped reduce his anxiety in communicating virtually with me. The reason was that it was not a face-to-face interaction. The virtual interviews were conducted in Thai. Data garnered were then transcribed and translated into English. Thai words and phrases detecting the definitions of the two key terms were carefully translated with literal meanings, which included *stimulate*, *urge*, *kindle*, *pay attention*, *enthusiastic*, *eager*, *like*, *appreciate*, and *prefer*. These data were then analyzed and grouped into common themes (Bogdan & Biklen, 1998). The participants' views were kept confidential, so their real names were not disclosed.

## Findings

Findings through my virtual observations explained the students' nature of learning behaviors in general that they tended to be more passive even online among their classmates or people they knew. Their passive behaviors were manifested in eight students (Participants 1, 2, 3, 4, 6, 7, 8, and 10) who normally clicked *like* more than making comments. This particular outcome is parallel with recent reports on behaviors of Thai Facebook users (Millward, 2013; Sakawee, 2013). Two students (Participants 5 and 9) tended to be more active as they not only clicked *like*, but also made comments in both Thai and English. Two students (Participants 5 and 6) appeared to pay closer attention to my feedback and comments on their final writing work than the rest of the students. One student (Participant 8) appeared to be too relaxed with virtual participation and assignment submission. His learning behaviors are in line with his frequent use of Facebook Group—a few times per week—but more frequent use of Facebook, which is daily. Six students (Participants 1, 2, 3, 6, 8, and 9) spent more time on Facebook than on the Facebook Group in the ESP class, which is resonant with the research findings conducted by Grosseck, Bran, and Tiru (2011) that tertiary students were more active on Facebook for social purposes than for academic uses.

Findings through my observations inside the classroom revealed the students as digital natives (Prensky, 2001) since nine of them (Participants 1, 2, 3, 4, 5, 6, 7, 8, and 9) used a smart phone as a part of their learning strategy. They switched it on and accessed the wireless Internet to look up and check the meanings of words they did not know when I assigned them to do group reading and writing work. Three of them were even active on the Facebook Group sometimes, as they clicked *like* when I posted something in the class.

Six participants (Participants 1, 2, 3, 7, 9, and 10) tended to arrive in the class late by ten to thirty minutes. Four of them (Participants 1, 2, 3, and 10) were in the same group and they were late because they awaited each other to go to class together. Three other students (Participants 4, 5, and 6) who were friends in the same group arrived in the class punctually and were rarely absent from the class. The class attendance behaviors of these seven students mirrored the high rank of cultural collectivism in Thailand (Hofstede, 1997), which they unconsciously practiced at school. This evidence accords with Tananuraksakul's (2011) study of power relations in pedagogy at a university in Thailand in that some Thai tertiary students tend to follow their peers when it comes to class attendance.

Nevertheless, the seven students mentioned above appeared to take my advice on unpunctual attendance to the class as they stopped arriving late after I mentioned its negative effects on their learning and marks. This aspect, on the one hand, reflected the position of power teachers hold (French & Raven, 1959) in Thai culture since they had a position of authority over their students. On the other hand, it suggests that I successfully exercised my teacher power in the classroom to influence my students' learning behaviors positively. The implication can be that teachers should embrace and exercise their power relations in pedagogy to positively influence their students to learn (Gore, 1995, 2002; Tananuraksakul, 2011).

The observational analyses above do not strongly indicate the impact of the Facebook Group usage on students' positive attitudes towards, and motivation in, learning ESP since their learning behaviors were rather influenced by collectivism and power relations in teaching. This aspect is resonant with Dörnyei's (2001b) argument that motivation is not something directly observable but inferred from self-report. Despite such cultural factors, there is a positive indication that the Facebook Group usage in the ESP class is appropriate for this group of students.

In terms of interview findings, all students had similar reasons why they disliked English. Many of them said they started disliking it and feeling scared as well as discouraged to learn when they were at a young age primarily because they found it too difficult to learn. They could read texts but not understand the meanings. Only one person ignored studying English as hard as he should because he saw that English was unimportant.

Regardless of the fact that all students did not like English when they were much younger, they began to realize after spending three to six years at the university that English was an essential language for their future career. It is an international language to communicate with people from different backgrounds (Hatoss, 2006). The concept of becoming one community among the Association of Southeast Asian Nations (ASEAN) countries particularly enforces their realization.

The overall analyses of interview data with ten participants were commonly constructed into three themes. While the first two themes emerged in accordance with the purposes of the study, the last theme was out of the exploratory parameter, offering additional insights for EFL teaching and learning.

### Key Research Theme #1: Attitudinal Aspects of Facebook Group Usage

All ten students apparently obtained more positive attitudes towards learning ESP after the fifteen-week experience in the Facebook Group usage. Their attitudes appeared to be positive due to their "feelings about something, especially as shown by their behavior" (Macmillan English Dictionary, 2006, p. 76). In such cases, ten of them liked the use of Facebook Group because they use Facebook regularly. Two people (Participants 4 and 6) appreciated the structures of Facebook, namely making comments, editing and posting, integrated in the class, which gave them a sense of convenience. The former said, "I feel happy, not bored with the Facebook Group usage. I do hope that I will try to learn English more by means of translation." The latter expressed, "There is no need to type homework or write on a piece of paper and ask the instructor to check it, and then I have to bring it back for correction."

Three other students (Participants 2, 7, and 9) tended to work harder by translating the instructors' postings from English into Thai. Participant 2 saw that the use of Facebook Group "is a good alternative teaching approach, better than the traditional way." Participants 7 and 9 also preferred the teaching tool the same way as Participant 4 in that they could practice English online by means of translating all the postings. Another student (Participant 10) expressed his liking because "The Facebook Group usage reminds me of the instructor's assignments, unlike e-Learning [used by the university]." One person (Participant 8) was interested to learn more English technical terms.

One student (Participant 5) described that she had a positive attitude towards the Facebook group usage although she did not think she liked English more. Similarly to Participant 5, Participant 6 thought that he liked English a little more, but he enjoyed the Facebook Group "Because the teaching style gives me a sense of relaxation more than the traditional teaching in the classroom." In addition to this sense, the same student (Participant 6) made an explicit view of the Facebook Group usage that reflected on power distance (PD) deeply embedded in Thai culture (Hofstede, 1997). He said he preferred the Facebook Group usage to the traditional way of teaching because:

> the old teaching method involves face-to-face interaction between students and the teacher, and students usually feel intimidated by the teacher's presence and destructive comments...this teaching style helps reduce face-to-face interaction that may cause me to feel reluctant to interact with the instructor...promote more interactions between the instructor and students.

Six other students (Participants 1, 2, 3, 5, 7, and 9) agreed to the above views that the use of Facebook Group encouraged them to take part more in the classroom and online. For example, Participant 1 shared "It gave me courage to ask questions in the classroom. I always avoided face-to-face interaction in the classroom as I was afraid that the instructor would call my name."

Participant 2 said, "There were more classmates, so I did not have courage to ask the instructor, but the use of Facebook Group helped me feel less anxious." Participants 5 and 9 implicitly stated similar points. The former said, "It helps reduce my anxiety a lot because it further allows me to feel more comfortable to interact with the instructor outside the classroom. The latter thought that ". . .it reduces my anxiety about 70%. I feel less nervous to interact with the instructor. . .I feel free to use my language to talk to her."

The above analysis suggests that the Facebook Group usage could help reduce cultural PD between myself and students in a manner that lowered their anxiety when interacting in the classroom and online. Hofstede (1997) posited that PD culture in Thailand is viewed relatively high. Tananuraksakul's (2013) study in cultural PD reduction in an English listening and speaking class in a Thai context is an example. Learning to call college students by a nickname instead of their real name in the class was a teaching approach to reduce PD, decrease their anxiety, and concurrently increase their confidence in speaking. The reason is that calling each other by nicknames shows a close relationship among friends while students *(luk-sid)* are culturally seen as disciples, and they formally go by real or official names.

## Key Research Theme #2: Motivational Aspects of Facebook Group Usage

Findings demonstrated that all ten participants were motivated in learning ESP after a fifteen-week-long encounter with Facebook Group usage. They had motivation due to their "feeling of enthusiasm that makes [them] determined to do something" (Macmillan English Dictionary, 2006, p. 925). Their motivation appeared to be driven intrinsically to some extent because they began to like to learn English more or less as discussed in the first theme. Eight students were enthusiastic to learn English more. For example, Participant 5 said, "It urges me on access to the Facebook Group to see the instructor's new postings." Participant 10 mentioned, "I am eager to learn English more because it allows me to express my voice with a sense of convenience." Participant 3 found that "It kindles me to learn English more because it gives a sense of simplicity to understand the lessons and of convenience to access the Facebook Group. . .I regularly use Facebook." This aspect of using Facebook as part of daily life and feeling senses of convenience and simplicity suggests that students identified themselves with the Facebook Group usage in the ESP class.

Six people (Participants 1, 4, 6, 7, 8 and 9) were determined to complete and submit their assignments virtually in the Facebook Group. Participant 1 said, "I feel enthusiastic to search for information for the assignments," while Participant 7 felt eager "because I would like to submit my work and so I have to try to understand all assignments the instructor posted in English on the Facebook Group." Participant 9 said, "It stimulates me to study and do assignments since I have to post them online." Participant 8 "feels eager to be responsible for class assignments." Participant 6 especially stressed the differences between working on assignments virtually and on a piece of paper that "I feel more eager to learn and complete the tasks on Facebook Group because it is more convenient to post, get feedback and edit." These particular analyses suggest that I successfully exercised my power relations in pedagogy influencing students' positive behaviors in learning. It further implies that teachers should embrace and exercise their power relations in pedagogy to positively influence their students to learn (Gore, 2002; Tananuraksakul, 2011). This implication aligns with the one constructed in the observations. Past research (e.g. Atkinson & Raynor, 1974; Clement & Kruidenier, 1985; Crookes & Schmidt, 1991; Dörnyei, 1994, 1998, 2001a, 2003; Fineman, 1977), mostly conducted in western contexts, consistently confirmed the correlations between integrative motivation and language learning achievement in which English is used rather as a second language (ESL) than as an EFL. Oranpattanachai (2013) argued that there was no consensus of what type of motivation in non-western contexts affected achievement in learning EFL. In a Thai context, although study into this area is limited, instrumental motivation appeared to correlate with success in EFL learning (Choosri & Intharaksa, 2011; Kitjaroonchai & Kitjaroonchai, 2012), which was socially enforced by the language requirements for all levels of education and better employment opportunities, and integrative motivation appeared to strengthen learners' motivation to study English beyond such requirements (Oranpattanachai, 2013). The ones who were socially and/or personally inspired to study English tended to pursue their higher education in an English-speaking country (Tananuraksakul, 2010) or study domestically in an international program (Teowkul1 et al., 2009). Initially, Thai students in this study possessed a low level of instrumental motivation. The results, however, signalled a positive indication that they gained integrative motivation in learning ESP. With hope, they will be personally and/or socially aspired to study English more.

The analyses discussed in themes one and two firstly suggest that Facebook Group with its structures is a social networking tool that can facilitate teaching and learning (Srinivas, 2010) of ESP. Secondly, it places the learning experience relating to students in line with Dalton's (2009) arguments that new generations feel associated with learning technology and that school is a part of their life. Thirdly, it reduces cultural PD between teachers and students. Fourthly, it constructs feelings of happiness and relaxation and senses of convenience and simplicity. Fifthly, liking something or feeling happy with something can have positive impacts on learners' attitudes and motivation (Choy & Troudi, 2006). Finally, convenience, simplicity and relaxation are features that characterize Thai EFL learners' learning behaviours. These suggestions firstly imply that Facebook Group is a practical, trendy and useful teaching tool in an ESP class and secondly it is practical, trendy and useful for Thai EFL learners.

### Theme Three out of the Exploratory Parameter: Relevant Benefits of Facebook Group Usage

This theme emerged out of the exploratory parameter. It provides insights into the ways in which the participants positively perceived the Facebook Group usage in the ESP class. For example, three people (Participants 5, 7, and 9) appeared to appreciate my posts in English, as they perceived they could learn the language more through this channel. Acquiring new words through reading comprehension was in particular. One student (Participant 6) thought, "It helps save time and money for group discussion. I can ask the instructor virtually without face-to-face interaction." Two students (Participants 1 and 2) spent their leisure time reviewing weekly lessons online. Participant 4 mentioned that she learned English better via the instructor's virtual correction, "The instructor corrects our English online after we posted our assignments. The error correction helps me learn because I am aware of the writing mistakes I made."

Eight other students (Participants 1, 2, 3, 5, 6, 7, 8, and 9) agreed to the above views of Participant 4 that the instructor's error correction could help them learn English. In fact, they thought they learned the language in many positive ways. For example, Participants 1 and 8 saw that it helped them learn English better. The former added that this was "Because the instructor corrected some words I knew incorrectly; I also learn new words." Participant 2 noted, "Sometimes I could not translate sentences correctly, but the instructor helped correct it." Participant 3 believed that "It makes me eager to learn from mistakes I made." However, three students (Participants 5, 6, and 7) appeared to learn English better than the rest. Participant 5 explicitly shared, "It helps me be aware of the errors I made and how to correct them. In my other English classes, the instructor did not correct my grammatical errors but deducted my marks."

The reasons nine students possessed positive perceptions of my direct feedback on their writing errors may be because they were incompetent in English as beginners and unable to self-correct their work (Ferris, 2002, 2003). Those corrections made available virtually, not face-to-face, may give them a sense of security, confidence and/or comfort, since Komin (1991) asserts that the notions of losing, gaining and maintaining face are parts of Thai culture. The *face* is identical with *ego* and is very sensitive. Thai people place important emphasis on these two aspects, and preserving one another's ego is the basic rule of all Thai interactions on the superior-inferior continuum.

The analyses of the unexpected data indicated that the students had positive perceptions of their English level through the use of Facebook Group in the ESP class. Regardless of how much they self-perceived they could learn—better, a lot, or more—their experiences in learning English through the Facebook Group usage appeared to impinge on their sense of self-efficacy. This is a kind of mastery experience that can encourage learners in lifelong learning (Bandura, 1994). The data also imply that Facebook Group, on the one hand, is a practical, trendy and useful teaching tool in an ESP class. On the other hand, it is practical, trendy and useful for EFL learners.

## Conclusion

The study qualitatively investigated the ways in which the Facebook Group used as an LMS, a pedagogical tool in an English reading-writing for professional purposes class, could enhance EFL undergraduate students' attitudes towards, and motivation in, learning ESP. The results positively illuminated that the students enjoyed learning English better with the use of Facebook Group and concurrently felt more enthusiastic to learn the language. The primary reason was that they could relate themselves to the Facebook Group usage as regular Facebook users. These outcomes go in line with Prensky's (2001) argument that young students of the current era of globalization acquire knowledge effectively through technology as they are digital natives. They also comport with Dalton's (2009) arguments that young students feel connected with learning technology, especially a social networking site (Srinivas, 2010), and that teachers can take on the role of trainer, not of engineer.

The positive outcomes led to insightful suggestions as well. First, Facebook Group with its structures is a social networking tool that can facilitate teaching and learning of ESP. Second, it is a teaching tool to reduce PD between teachers and students as it could lower the latter's anxiety during their interaction with the former. As such, interaction between them tended to be promoted. Third, it constructs feelings of happiness and relaxation and senses of convenience and simplicity. Fourth, liking something or feeling happy with something can have positive impacts on learners' attitudes and motivation. Finally, convenience, simplicity and relaxation are features that characterize Thai EFL learners' learning behaviors.

Unexpectedly, with time and space compression on the Internet, the use of Facebook Group additionally provided benefits to students to learning ESP as well as saving time and money. My error correction was seen to contribute to most students' language improvement.

## Implications

It is apparent that the analyses of findings from both observations and interviews suggest three positive implications. The first is that teachers of EFL should consciously practice their position power or power relations in pedagogy to positively influence their students to learn. The second implies that Facebook Group is practical, trendy and useful for Thai EFL learners, and the third is that it can be a teaching tool that is practical, trendy and useful for an ESP class.

## Limitations and Recommendations for Future Research

Although this qualitative exploration comprising a small number of ten participants may limit the outcomes, it offers positive directions and implications for EFL practitioners. Quantitative study into the same topic or other relevant English language learning in different contexts with similar characteristics of participants is recommended for future research. Since attitudes towards, and motivation in, language learning are affective variables that can positively influence EFL learners' cognition, investigation into the effects of the use of Facebook Group as an LMS on their learning achievement is another recommendation.

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## Appendix
## Survey and Semi-Structured Interview Questions

### Survey

This survey is part of a research study into use of Facebook Group as a learning management system for an ESP class. Please complete all sections. Your information will help me improve my teaching strategies, and it will be kept confidential.

### I. Demographic Profile

1. Gender: ☐ female ☐ male
2. Age: ☐ 20-25 ☐ over 25
3. Year of study: ☐ 3 ☐ 4 ☐ 5 ☐ 6
4. Your grades of other English classes:
   4.1 English for Communication 1 _______
   4.2 English for Communication 2 _______
   4.3 English Listening-Speaking for Professional Purposes _______
5. GPA: ____________
6. How often do you use Facebook?
   ☐ rarely ☐ a few times per week ☐ everyday
   ☐ other - please specify ________________________________
7. How often do you use Facebook Group?
   ☐ rarely ☐ a few times per week ☐ everyday
   ☐ other - please specify ________________________________

### II. Views on Facebook Group Usage

1. What do you think about the use of Facebook Group?
2. How does the use of Facebook Group help your learn English?

### Semi-structured interview questions:

1. Do you feel more enthusiastic to study English on your own? If yes, please explain how.
2. Has the instructor's error correction helped you learn English? If, yes, how has it helped you so?
3. Does virtual communication with the instructor help you feel more comfortable to interact? If yes, can you explain how it helps you feel more comfortable?
4. Do you start to like English better after the use of Facebook Group the ESP class? If yes, why do you like it so? If no, why do you not like it?
5. Why didn't you like English?
6. Was it because you could hardly read and understood it?
7. Do you feel enthusiastic to learn English with the use of Facebook Group? If yes, why do you feel so? If no, why do you not feel so?
8. Do you think English is important for you to study? If yes, why is it important? If no, why is it not important?

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# What Helps TESOL Methods Students Learn: Using Q Methodology to Investigate Students' Views of a Graduate TESOL Methods Class

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The direction of university courses is often guided by the results of traditional Likert scale student evaluations. Most of these focus on instructors' characteristics and frequently do not provide useful insights into students' learning preferences or feedback regarding specific activities and projects in the courses. This study, carried out in a Midwestern U.S. university, reports the use of Q methodology to capture students' views of 35 activities in a graduate TESOL (Teaching English to Speakers of Other Languages) Methods course as to which were most helpful and least helpful to learning course content. During the last class of the semester 19 students carried out Q sorts about different aspects of the methods course. Factor analysis showed how participants grouped onto 3 factors, expressing 3 unique views on how helpful the 35 different course activities were to their learning. The majority of the students were "group-centered learners" who learned best through various face-to-face interactions with classmates. Two were "self-centered learners" who learned best by working independently, then receiving feedback. One learned best through the course's online activities. Analysis of students' different views helped researchers determine whether to redesign various aspects of the course to meet different learning preferences.

Universities face many challenges in their desire to offer high quality courses that meet the needs of a wide array of learners. In an effort to collect student feedback, summative course evaluations have been essential elements of most college courses for many years. At some point in a university course, students typically complete evaluations which provide data regarding various features such as course design, quality of teaching, use of resources, and overall effectiveness (Jurczyk & Ramlo, 2004). According to Frick, Chadha, Watson, and Zlatkovska, (2010), "Course evaluations traditionally used in higher education have few items that are empirically related to student learning" (p. 116). These items yield few insights into student learning preferences or individual paths to achievement. An issue in the use of student rating for instructional improvement is that the feedback is often based on general items or is focused on the instructor, making it difficult to use data to improve the course (Pohlman, 1975). Indeed, higher education institutions have placed heightened attention on the need for alternate forms of student course evaluation (Amin, 1993).

Using Q methodology as part of course feedback can provide a vehicle for gathering students' opinions and uncovering insights into their views of the course and how it supports their learning, aspects often missed in traditional Likert scale course evaluations (Jurczyk & Ramlo, 2004). As noted by Brown (1986), the instrumental basis of Q methodology is the Q sort technique, which conventionally involves the rank ordering of a set of statements from *most unlike my view* to *most like my view*. Therefore, this methodology provides the way for uncovering and identifying the range of participant opinions regarding a specific course.

This mixed method study investigated the views of students enrolled in a TESOL (Teaching English to Speakers of Other Languages) methods and materials course regarding which aspects and activities of the course best helped them learn course content. The study utilized Q methodology, commonly referred to as Q, which provided the means for uncovering and identifying the range of participant opinions regarding a specific topic of investigation (Stephenson, 1953).

## Literature Review

The importance of preparing teachers to address the needs of English language learners (ELLs) has been well documented nationwide but became acutely aware to the instructors of the course under study as a result of a survey conducted within the Midwestern state where this study was carried out. Responses to a teacher survey related to professional development research in the state where this study took place showed that 96% of teachers responding had ELLs in their classrooms (Newman, Samimy & Romstedt, 2010). This underscored to the researchers in this study the urgent need for high quality offerings for teachers in the state to learn about identifying and meeting the needs of English language learners. For this reason, researchers determined that finding out via a learner centered course evaluation which learning aspects and which activities were most helpful to these graduate students' learning would be the best way to find out in what ways the course matched their learning preferences.

Different approaches to evaluating courses have been suggested over the years with the argument that they provide clearer insights into identifying how students evaluate their courses and instructors. For example, Patrick (2011) has written that the five basic instructor personality traits students rate strongly in their evaluations are neuroticism (emotional stability), extraversion, openness, agreeableness, and conscientiousness. Instructor openness and conscientiousness added significantly to students' ratings of their courses and professors' effectiveness.

Many universities, including the one where this study was conducted, use Likert scale course evaluations to gather students' overall impressions, but those generally provide few insights into aspects of the courses that support learning or specific dimensions that students find useful. Other sources of student feedback on courses may also include checklists. While instructors design courses based upon their ideas about how to make them effective, overall, little is known about the effects on learning that arise due to differences that exist between perceptions of learning held by university instructors and students (Lecouteur & Delfabbro, 2001), and researchers were looking for more information they could use to guide future presentations of the course under study. Recently, a novel approach for investigating students' opinions of different aspects of a given course has been used by several researchers (Jurczyk & Ramlo, 2004; Ramlo, 2008; Wheeler & Montgomery, 2009). This approach uses Q methodology which is considered "an appropriate choice whenever a researcher wishes to determine the various perspectives and consensus within a group regarding any topic" (Ramlo, 2008, p. 77). In a Q study, participants are presented with a number of statements about some topic (in this case, the helpfulness of different aspects and activities of a given course) and are asked to rank order them according to their personal opinion or feelings about these statements. The individual rankings of the different people's viewpoints are then analyzed using factor analysis (For explicit details of Q Methodology please see the "Description of Q Methodology" section). Q Methodology (often referred to as Q) was determined to be the best choice for this study in uncovering different points of view regarding the helpfulness of different course aspects and activities to the students. Q is an established research methodology used to study participants' subjectivity, or viewpoints, in a systematic way (Brown, 1991; McKeown & Thomas, 1988). Developed by Stephenson in 1935, Q has served as the foundation for the scientific study of subjectivity and showed that people's thoughts can be studied. Q is an appropriate choice when studying the perspectives of a small number of participants as they rank order a number of statements that pertain to the topic under study (Brown, 1986, 1991; Stephenson, 1953).

Jurczyk and Ramlo (2004) noted that using Q as a course evaluation leads to "a more complete understanding of students as individuals compared to the traditional Likert scale course evaluations" (p. 14). In a subsequent study, Ramlo (2008) used Q to uncover students' views of their learning in a college physics course relative to the instructor's perceptions of students' typical and ideal views. While the majority of the student viewpoints aligned with those of the instructor, another perspective coming from Ramlo's study emphasized the need to understand how to improve his learning while a third perspective indicated that learning the content would either be immediate or unlikely. Overall, students in that study indicated that they did not utilize the professor's chosen textbook much, if at all.

Lecouteur and Delfabbro (2001) used Q methodology to compare instructors' and students' views of learning and discovered that "there was not a great deal of similarity in the accounts of teaching and learning produced by. . .teachers and students in this study" (p. 226). Those authors recommended further study of available repertoires of teaching and learning and how they apply to local contexts.

When community college students used Q to describe their views on learning math, they expressed their distinct perspectives through the relative placements of Q sort items and open-ended follow-up questions based upon their sorts more consistently than was possible using available Likert scales (Wheeler & Montgomery, 2009). Nevertheless, despite their three distinct views, students concurred that the teacher was the most important factor in learning math, a conclusion subsequently supported by further research. In a study involving teachers in a professional development workshop, Ramlo (2012a) determined that "Q methodology can provide a means of determining holistic views about learning at any point during the workshop" (p. 7). These workshop participants were all in-service teachers, and the authors in the current study generalized this observation to determine that Q would be an appropriate venue to explore perspectives of adult learners (mostly practicing teachers) enrolled in the graduate-level course under study.

With the intent of identifying the versatility of Q in higher education, Ramlo (2012b) wrote about three studies which underscore the usefulness of Q methodology. One study grouped students according to their views as they evaluated a newly developed course. Another study investigated students' views of their learning in a physics course, a study that replicated previous investigations. Results showed similar results in the studies, which used the same Q sort items each time. The third study investigated faculty perspectives as they carried out professional readings and professional development in the formation of a new school of technology at the university. Consensus and distinctions among faculty perspectives were highlighted in an inclusive setting. These three studies underscored the advantages of Q over traditional surveys and Likert scales in collecting feedback and ascertaining individual participants' views and improving overall course quality.

## Description of Q

A Q study begins by gathering a concourse, which is a collection of statements related to the topic under study. Imagine a professor interested in students' subjective opinion of her class. She wants to know which aspects of the class and which activities that students were engaged in during the semester were most helpful to them. The professor writes a list of all activities and adds statements related to different aspects of the class. For example: *methods quiz*, *feedback from the professor*, s*tudent-student interaction*, or *my desire for a good grade*. From this concourse, the researcher selects a Q sort which is placed on a set of numbered cards, each card showing an individual statement selected from the concourse. Participants force rank these individual items, frequently from (-5) *most unlike my view* to (5) *most like my view*. Ranking decisions are recorded on a Q grid data sheet, similar to Figure 1.

Q methodology is unique, and it differs from survey research even though both methods uncover participants' perceptions or viewpoints. Unlike surveys and Likert scales, Q sorting ensures that participants make explicit choices by ranking of each of the sort items relative to the other items while discriminating among them in a way they would not do otherwise (Corr, 2001; McKeown & Thomas, 1988; Ramlo, 2008). Such distinctions occur since using a forced distribution in the sorting process limits the number of items that participants place at each ranking level. Another unique feature of Q is that it can be accomplished and be effective with small numbers of people (Brown, 1986, 1991; Stephenson, 1953). The intense nature of Q methodology calls for small numbers of participants, or even single case studies, in order to explore the existing viewpoints and make them open to study (McKeown & Thomas, 2013).

An appropriate and adequate number of participants in a Q study could be small but must include enough participants to establish that a varied number of points of view exist regarding the topic under study (Watts & Stenner, 2012). Participants should be selected thoughtfully to be sure to incorporate individuals who have specific and relevant opinions on the topic (McKeown & Thomas, 2013).

Through Q methodology, operant categories are identified that represent functional, not just logical distinctions (Brown, 1991) among participants' perspectives. Capturing different perspectives allows a researcher to "understand a human experience rather than identify cause-and-effect relationships" (Broady-Ortman, 2002, p. 110), while finding out different opinions of group members and how many people in the group share specific opinions (McKeown & Thomas, 2013; Ramlo, 2008; Stephenson, 1953).

Q methodology follows subjective perspectives patterns across participants rather than patterns across variables. Thus, Q reveals correlations and factors among persons and their views while survey research reveals correlations and factors among traits. In Q, the correlations are based on the assumption that "persons significantly associated with a given factor ... share a common perspective" (McKeown & Thomas, 1988, p. 17).

## Method

### Setting

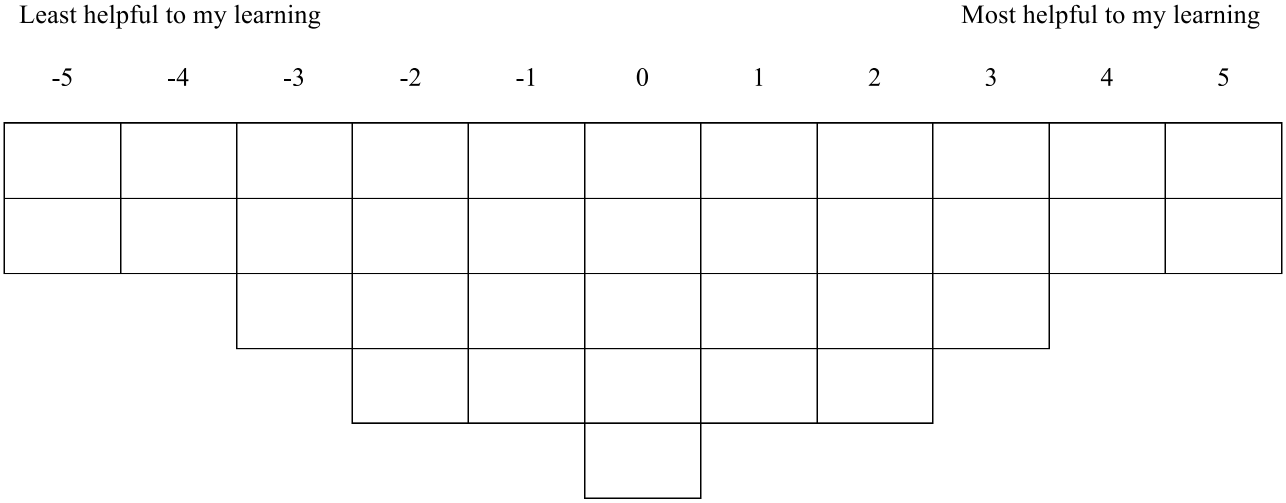
The setting for this study was fall semester in a graduate level course in TESOL methods at a large Midwestern urban university. Since it was the beginning of the school year, researchers recognized that course content would be available for teachers to apply to instruction in the current academic year, enabling study participants to apply and implement course content immediately and judge which course activities were most helpful.

This study was carried out by two researchers. One was the course developer/instructor, and the other was the instructor who taught the section of the course in this study. Their intent was to obtain the students' views of different aspects and activities in a graduate TESOL course to find out which were the most helpful and least helpful ones to learning the course content. Additionally, this was the first time this course was offered as a blended course (with some online content and discussion), and the researchers wanted to find out whether the students found the online components to be helpful as well. Currently, this is the only course in this university's TESOL endorsement program that does not have an online version. This is considered the cornerstone course in the program, so, based upon students' feedback, researchers intended to use the results of this study to aid in a possible redesign of the course to make it more meaningful for the students. The research question for this study was: What are students' views of the different aspects and activities in the TESOL methods course in terms of their helpfulness to their learning?

### Description of the TESOL Methods and Materials Course

This course was designed to offer students opportunities to develop both content and experiential knowledge in teaching English language learners

Figure 1
Sort Distribution Grid



(ELLs). Through lectures, readings, class discussions and class activities, the course provides a critical exploration and analysis of current approaches to language teaching with an emphasis on the development of communicative competence. During the first half of the course students prepared group presentations on one of eight methods for teaching ESL, and they took a quiz on the different methods studied.

The second purpose of the course was to offer students opportunities to gain experiential knowledge through teaching mini-lessons. Each student chose one of six skills (reading, writing, speaking, listening, grammar, or vocabulary) as the focus of a mini-lesson. The mini-lessons were taught to the instructor and other students who acted in the role of ESL students. All observers provided feedback on each mini-lesson. Students also wrote personal reflections on their own lesson presentations. The final project for this class was to write a personal teaching philosophy paper regarding teaching ELLs.

## Participants

Nineteen students (14 females and 5 males) who were enrolled in the TESOL methods course participated in this study and included one undergraduate and 18 graduate students. Eleven of those in the class had or were seeking licensure for elementary grades (up to grade eight) and seven for secondary or K-12, while one participant was preparing to work with adults. Fifteen students cited this course as a requirement, and four did not. While all were preparing to work with English language learners, their experience working with ELLs over the past two years varied. Seven had worked with nine ELLs or fewer, one had worked with 10-19, four had worked with 21 – 29 ELLs, two worked with 30-49 ELLs, and five had worked with more than 50 ELLs over the past 2 years. The amount of previous preparation for working with ELLs varied as well. Seven participants had had no prior course work in the area of teaching English to speakers of other languages. Four had completed one or two courses prior to this one, and six participants had completed three to five courses. Two participants had completed six or more courses and were nearly at the end of their TESOL endorsement program.

## Instrument

An essential aspect of any Q study is the selection of the Q sample, or Q sort, which refers to the items selected by the researcher to be ranked by participants during the sorting process. In this study, the concourse consisted of all course activities as well as statements reflecting the students' personal perspectives like student motivation regarding the course. The Q sort was generated by the researchers from the course syllabus and literature reporting on other studies which investigated college courses using Q. Researchers started with 42 course related activities and aspects and after reviewing them selected 35 sort items for the final Q sort, listing the statements on separate cards. The sort included all activities and tasks completed throughout the semester (see Appendix) and some personal perspectives of students.

## Data Collection

Data was collected through Q sorts (Figure 1) which were completed by each of the 19 participants during the last class of the fall semester. During the sorting activity, students force ranked 35 statements into a quasinormal, symmetrical distribution to prioritize among the sort items for the research question (Figure 1). Participants sorted the numbered cards from *least helpful to my learning* to *most helpful to my learning* and then copied the numbers from their completed sort to a grid sheet. Then they answered follow-up questions explaining their sorting decisions for the highest (5, 4) and lowest (-5, -4) ranked statements along with demographic questions.

After ranking the statements, the participants were asked for follow up explanations of specific rankings which were used as qualitative data that provided insights into the various ways that different viewpoints were represented among participants (Corr, 2001). One researcher (also the course instructor) conducted the Q sort activity, facilitating the sorting process by explaining the data collection process to the whole class. Participation was voluntary, as details of the data collection process were shared with students a week before the sorting activity was scheduled to take place, giving students the option of not participating during the upcoming class meeting if they did not want to do so. All participants freely signed letters of consent, indicating that they were participating voluntarily. On the designated day, students sorted at their desks independently and submitted their grid sheets with no names into an envelope. To eliminate bias, students were assured that no data would be reviewed or analyzed until after final grades had been submitted. Responses were kept confidential as results were analyzed and reported.

Students sorted the cards first in three piles: (a) the aspects and activities they thought most helped them learn course content, (b) those they thought least helped them learn, and (c) the ones about which they felt neutral. Then they distributed the statements according to the individual cells of the sorting grid (Figure 1) and answered demographic questions as well as questions about their sorting decisions by writing brief explanations for the items they ranked as -5, -4, 5, and 4. They also had the opportunity to provide comments about the overall sorting process and the Q sample.

### Data Analysis

The 19 Q sorts generated in this study were analyzed using the PQMethod 2.11 software program (Schmolck & Atkinson, 2002). The program accepts data entry and then correlates the Q sorts. Factor analysis was conducted to show how participants grouped according to their sorts. Centroid factor analysis was conducted as an initial analysis. Then manual rotation was used for more focused factor iteration. Participants with similar views shared the same factor. In this study, the emergent factors represented the different ways participants' Q sorts grouped together regarding their views of helpfulness of specific items to their learning of course content. Participants with similar views shared the same factor (Brown, 1980).

The PQMethod software calculated the reported factor scores as well as how closely the factors correlated to each other. The software also aided in identifying distinguishing statements and consensus statements, underscoring ways that the three factors were distinct and similar. The resulting *representative sorts* expressed the overall perspectives of each factor. Participants' comments served to clarify or explain some of their sorting choices. In addition to the statistical analysis, each of the two researchers read the students' comments and explanations of their rankings to find quotes that were relevant to the students' choices. The selected quotes were compared by the two researchers, and the ones that best explained the participants' ranking of the items were used as a source for data triangulation and establishing credibility (Lincoln & Guba, 1985).

## Results

Three factors emerged from the analysis of the 19 sorts as displayed in Table 1. Correlations marked with an X represent defining sorts. Sixteen students, twelve females, and four males loaded to one of three factors. Factor loadings "are generally considered to be statistically significant if they are approximately 2 to 2.5 times the standard error" regardless of sign (Brown, 1991, Section 5). For this study, statistical significance was calculated at 0.334 - 0.422, signifying $p < .05$ or $p < .01$. Two sorts did not load on any of the factors as they were not statistically significant. One confounded sort loaded nearly equally on two factors, thereby not identifying with any one particular factor. These three sorts were not seen as specifically relating to any of the three factors.

Factor 1 represented the perspectives of 13 students, Factor 2 included two students sharing a different point of view, and Factor 3 represented one student's perspective (Table 1). Despite having just one sort, the third factor was retained because that sort presented a viewpoint quite different from the others, presenting a distinct perspective on the helpfulness of the different course aspects. Unlike other factor analysis techniques, Q is based upon "self-significance," or "importance to me" (McKeown & Thomas, 2013, p. 49). According to Brown as quoted by Van Exel and de Graaf (2005), "Since the interest of Q methodology is in the nature of the segments and the extent to which they are similar or dissimilar, the issue of large numbers so fundamental in most social research is rendered

Table 1

*Factor Matrix with an X Indicating a Defining Sort Loading*

| Q Sort | Factor 1: Group Centered Learners | Factor 2: Self Centered Learners | Factor 3: Online Learner |
|---|---|---|---|
| 1 | 0.5889X | -0.4311 | -0.1604 |
| 6 | 0.5325X | -0.2716 | 0.1212 |
| 7 | 0.3564X | 0.1587 | 0.0894 |
| 8 | 0.7958X | 0.3926 | 0.1406 |
| 9 | 0.7210X | 0.0033 | 0.0265 |
| 10 | 0.6227X | -0.0842 | 0.1156 |
| 11 | 0.5210X | -0.2400 | 0.0840 |
| 14 | 0.7079X | -0.2667 | -0.1654 |
| 15 | 0.5626X | 0.2932 | 0.3759 |
| 16 | 0.3831X | -0.0555 | 0.2235 |
| 17 | 0.6255X | 0.2554 | 0.1616 |
| 18 | 0.4683X | -0.0548 | -0.1400 |
| 19 | 0.6439X | 0.3194 | -0.2626 |
| 4 | 0.0952 | 0.5926X | -0.1938 |
| 5 | 0.1514 | 0.7739X | 0.1801 |
| 2 | -0.1905 | -0.0760 | 0.4101X |
| 3 | -0.0052 | 0.1200 | -0.0586 |
| 12 | 0.0743 | 0.2886 | -0.0089 |
| 13 | 0.4821 | 0.4308 | -0.1364 |

relatively unimportant” (p. 5). As Q methodology “aims to establish the existence of particular viewpoints” (Watts & Stenner, 2012, p. 73), the participants in this study expressed three clear perspectives, and researchers maintained the three factors that emerged in order to highlight those distinct views, even though expressed by just one or two participants. These participants’ sorts met the threshold for statistically significant loadings and provided unique insights for the course developer and instructor.

The majority of the students were on Factor 1, named *group-centered learners*. These students learned best by working with other students and the instructor. They considered the experiential components of the class as the most helpful for their learning. They indicated that they learned best when they worked in groups and shared ideas with fellow students through class presentations, group activities and face-to-face discussions. In one student’s words, “Coming to class is hands-on, and I like the interaction.” Table 2 lists the six highest and lowest ranked statements for Factor 1.

The highest ranked (5 to 3) items for this group demonstrated that these group-centered students expressed a preference for in-class tasks such as modeling the different second language methods studied in class, which was a team project. Additionally, presenting the interactive mini-lessons they designed as well as observing their colleagues’ presentations of their mini-lessons was very helpful to them. They also benefitted from discussing different topics during class and being engaged in different class activities, most of which were done in groups. One student stated, “I feel that I learned a great deal from the class discussions and activities. I was able to grow as a teacher by hearing other people’s ideas and strategies.” Among the least helpful, or lowest ranked (-5 to -3) activities for Factor 1 were *working alone* and *reading assigned articles*. Also ranked low were researching and writing the final paper, all independent learning activities. One learner wrote, “I would rather sit in a classroom and learn from my peers.”

Further clarifying this perspective, a student responded to the follow-up question, “Interaction and shared stories are the best way to learn methods. Hearing other hits and misses helped considerably.” Another student wrote, “I really liked all the presentations. I’m more of a hands-on learner and being able to become a part of my peers’ presentation created a lasting impression. It added to the reading. It made the reading come alive.”

Factor 2, termed *self-centered learners*, were two students who presented a perspective that differed from the *group-centered learners*. Unlike their colleagues loading to Factor 1, the *self-centered learners* viewed working alone as helpful, and they focused heavily on their individual performance in class and events that benefitted themselves rather than being mutually beneficial to others also. Their work was driven by the desire for a good grade, and they also gave the item *feedback from instructor* the highest rank (5). Table 3

Table 2
*Factor 1, Group Centered Learners: Most and Least Helpful Aspects and Activities*

| Rank | Item # | Statement | Z score |
|---|---|---|---|
| 5 | 21 | Observing others' presentations | 2.173 |
| 5 | 6 | In-class activities | 1.736 |
| 4 | 24 | Classroom discussions | 1.613 |
| 4 | 29 | Presenting micro-teaching lesson | 1.242 |
| 3 | 22 | My desire for a good grade | 1.133 |
| 3 | 23 | Presenting and demonstrating method for class | 0.913 |
| -3 | 5 | Doing research for final paper | -1.009 |
| -3 | 13 | Writing personal philosophy–final paper | -1.211 |
| -4 | 2 | Online discussions | -1.215 |
| -4 | 33 | Methods quiz | -1.533 |
| -5 | 32 | Reading assigned articles | -1.544 |
| -5 | 30 | Working alone | -2.188 |

Table 3
*Factor 2, Self-Centered Learners: Most and Least Helpful Aspects and Activities*

| Rank | Item # | Statement | Z score |
|---|---|---|---|
| 5 | 22 | My desire for a good grade | 1.957 |
| 5 | 7 | Feedback from instructor on quiz and assignments | 1.688 |
| 4 | 35 | Preparing micro-teaching lesson | 1.524 |
| 4 | 6 | In-class activities | 1.404 |
| 3 | 29 | Presenting micro-teaching lesson | 1.389 |
| 3 | 18 | Receiving feedback from colleagues on micro-teaching | 1.270 |
| -3 | 14 | Preparing method presentation and handouts | -0.852 |
| -3 | 23 | Presenting and demonstrating method to class | -1.120 |
| -4 | 34 | Previous education courses | -1.136 |
| -4 | 33 | Methods quiz | -1.270 |
| -5 | 25 | Classmates' methods handouts | -1.688 |
| -5 | 26 | Working in small groups or with a partner | -2.091 |

lists the highest and lowest ranked sort items for Factor 2.

The majority of their highest ranked items (5 to 3) showed that they were focused more on the preparation and presentation of the assigned mini-lesson, primarily individually initiated tasks and the major course assignment. They felt that feedback from both their peers and the instructor was helpful to their learning, and providing feedback to others was not ranked highly. They benefitted from working independently to prepare and present their micro-lessons as well as hearing the feedback, which was for completing and enhancing their own assignments. The demographic data showed that these two students were quite different from each other in that one was male, the other female; one was undergraduate, the other graduate; and one had worked with ESL learners and had taken several other TESOL courses, while the other had almost no experience with ESL students and this was his first TESOL course. As one learner put it, “I think working in small groups or partners. . .becomes too much.”

The lowest ranked statements for these two students (-5 to -3) showed they felt that working with a partner or in groups was least helpful to their learning. One specific online assignment required group feedback be provided with participants observing a particular timetable. To ensure that each group member would have time to respond to all other group members, the recommended time frames were liberally assigned. A comment from one *self-centered learner* confirmed that the individual preferred learning on his own, even within the liberal parameters of the online tasks. That Factor 2 participant explained, “The online discussion was a hassle. Group work is a practice for team-building and should NOT be used on adults.” Another of their lowest ranked (-3) items referred to one of the assignments, team preparation and presentation of one of the methods for teaching ESL. These two students’ sorts indicated that they didn’t think preparing for the methods presentation, doing the presentation, or reading their fellow students’ handouts (-5) on the different methods were helpful to their learning. The explanation that one of them gave was: "The methods activity wasn't as useful because I cannot see ever applying a single method in the way we learned them," again, focused on individual preference or need.

Factor 3, the *online learner*, represented only one student's viewpoint, a female who taught elementary level students and had taught fewer than nine ESL students in her classroom in the past two years. Her opinion of the helpfulness of the different aspects and activities was quite distinct from the rest of the class. This student ranked the online discussions very high (5) and valued what she had learned from previous education courses (5). A number of other courses in the TESOL endorsement program were online. In addition, she ranked high (3) being able to access additional resources provided on Blackboard learning management system (Table 4).

Table 4 also lists the six aspects and activities that the *online learner* considered least helpful to her learning. These indicated that coming to class regularly, presenting the mini-lesson, observing others' presentations were not as helpful to her as the online aspects of the course. Most of these lowest ranked items required that the students be together on campus to complete them. Her comment was, "I prefer online classes. . ."

## Discussion and Implications

The results from the factor analysis showed three distinct views on the helpfulness of the different course aspects and activities to students' learning of TESOL methods. Three students did not load distinctly on any of the factors. The sorts of two of the students did not load on any of the factors as they were not statistically significant. The other student's sort was confounded because it loaded nearly equally on two factors, thereby not identifying with a factor. These three sorts were not seen as relating to any of the three factors as they did not share the perspectives of their colleagues. The researchers noted that all three of the nonloaders had limited prior experience in the TESOL field. This was one of the first TESOL courses they had taken, and they had worked with fewer than nine ESL students in the last two years. For two of them this course was not a requirement. Researchers also observed that they did not represent the typical population of students who enroll in this course, usually taken as a program requirement close to the end of the university's TESOL endorsement program. This led researchers to consider the possibility that this narrower TESOL background (compared to most classmates) may have influenced their perceptions of the course activities, setting them apart from their colleagues. A comment from one nonloader also illustrated a perspective different from colleagues: "Working alone and working in a small group are very different, but I would learn either way." Others in the class had more specific learning preferences regarding interaction with colleagues. Another nonloader commented, "The text book is well written and easy to understand" and ranked high "Reading Larson-Freeman methods book," an item ranked very neutrally by others in the class having more TESOL background experience and knowledge. These kinds of comments also separated these nonloaders from the rest of the class and may have been a reflection of their more limited background in TESOL and experience with English language learners.

Sorts and comments of the 13 *group-centered learners* expressed that they learned better through the interactive aspects of the course. This led researchers to consider that the experiential aspects of the course were generally helpful to the majority of students regardless of amount of prior TESOL coursework and experience working with ELLs. The results of Factor 1's view coincided with earlier findings by Gándara, Maxwell-Jolly, and Driscoll (2005) that individuals preparing to work with ELLs preferred to learn effective TESOL strategies by observing other teachers, thereby confirming that the interactive parts of the course were positive aspects in the syllabus for a high proportion of these students.

The *group-centered learners* also gave a high rank to in-class activities and class discussions, which centered upon modeling effective TESOL techniques. This finding, too, concurred with research indicating that teachers cite learning about second language instructional techniques as what they most want to learn (Gándara et al., 2005; Karabenick & Noda, 2004) in order to enhance their confidence in working with ELLs.

As experienced ESL teachers themselves, the researchers also considered this course from the perspective of learning in a second language. This course intentionally incorporated activities in which students carried out a variety of tasks designed to model and allow them to experience learning through TESOL instructional techniques based heavily upon interactive tasks and carried out in a rich context. Many of the students in this class learned English as a second language themselves, a fact that may have contributed to why some of these "group centered learners" might have felt they learned better from these face-to-face interactive activities more so than lower ranked, less contextualized learning tasks such as reading and writing about the content or discussing their ideas online. Interactive tasks also highly engage all participants and offer information and feedback to all those participating in them rather than being directed more toward one person. Researchers felt that collectively, it was possible that students recognized

Table 4

*Factor 3 Online Learner: Most and Least Helpful Aspects and Activities*

| Rank | Item # | Statements | Z scores |
|---|---|---|---|
| 5 | 2 | Online discussions | 1.815 |
| 5 | 34 | Previous education courses | 1.815 |
| 4 | 18 | Receiving feedback from colleagues on micro-teaching | 1.452 |
| 4 | 22 | My desire for a good grade | 1.452 |
| 3 | 8 | Resources, announcements posted to Blackboard Learn | 1.089 |
| 3 | 4 | Methods summary paper | 1.089 |
| -3 | 20 | Coming to class regularly | -1.089 |
| -3 | 11 | Instructor's availability to explain-in person, e-mail, phone | -1.089 |
| -4 | 5 | Doing research for final paper | -1.452 |
| -4 | 24 | Classroom discussions | -1.452 |
| -5 | 21 | Observing others' presentations | -1.815 |
| -5 | 29 | Presenting micro-teaching lesson | -1.815 |

these activities as appropriate for ELLs, which gave the tasks a feeling of being familiar and inside their comfort zone.

The views expressed by the two *self-centered learners* on Factor 2 differed from those of the *group-centered learners* in that the *self-centered learners* were driven by external motivation, that is, their desire for a good grade guided them in their choices of most helpful activities. In fact, their other highest ranked item was feedback from the instructor – the one who ultimately assigns the grades. Receiving feedback is less active in nature than interactive tasks, which seemed to fit with the overall perspective of these Factor 2 learners.

These students ranked high their experience with mini-lessons presentations, the most heavily weighted course assignment which included the most extensive feedback, and, ultimately, their grade, which they deemed an important feature of the course. This was seen as reflecting their self-centered learning nature. Unlike the *group-centered learners*, these *self-centered learners* preferred to study alone, and they focused mostly on their personal performance in class, which could explain why they ranked feedback from their instructor and their mini-lessons the highest (5). Researchers wondered if these students may have thought that taking into consideration the instructor's feedback, particularly on the heavily weighted mini-lesson, would ultimately help them achieve a better grade. The students from the second factor were more *individualistic* learners as opposed to the *collectivist* team player type of learners from the first group. They preferred to study alone and to present their own work rather than collaborate with the others, but they also wanted to have the instructor's and peers' feedback so that they could be successful.

The *self-centered learners* did not find the assignments related to learning about or applying the different methods helpful to their learning. One possible explanation of this low ranking in Factor 2 might be that these two students did not find the group activities to be helpful since the format of the methods assignment was to work and present with a partner. Nevertheless, researchers found this attitude toward the methods project to be a bit distressing since this course, "TESOL Methods and Materials," had such a strong basis in exploring different language instruction methods in order to identify one's own preferred methods. Yet, preparing, presenting and receiving feedback on the micro-lesson, which they planned and presented individually, helped them learn. This led researchers to consider that in the future, the course design might need to indicate more explicit connections between the assignments related to learning of different methods and classroom instruction by redesigning that aspect of the course.

These *self-centered learners* did not find the online discussions to be helpful either, which again might reflect their view of group work. To the researchers, these two students seemed to be very traditional, preferring transmissive instruction in their style of learning. They appeared to prefer a teacher-centered classroom in which they communicate mainly with the instructor whose feedback they value highly, receive feedback from colleagues, and learn content through independent work.

The only student on Factor 3, *the online learner*, expressed often cited reasons students mention for favoring online courses such as a busy schedule and preference for working alone rather than doing group projects. (Brown & Green, 2003; Carter, 2004; Harlen & Doubler, 2004). This student did not think observing others' mini-lesson presentations was helpful to her learning. This view could perhaps have been influenced by the fact that these were essentially in-class activities. She valued her previous education classes, a number of which were online, which may be based upon her preference for working independently rather than collaborating with colleagues.

Factor 2, the *self-centered learners*, and Factor 3, the *online learner*, ranked receiving feedback among their top three items, indicating it was very helpful to their learning. These views underscored what was for them a strength in the course design since, in addition to traditional instructor feedback on their mini-lessons, students received three points of feedback from every classmate. The usefulness of feedback in the learning process is documented as far back as Bruner (1973) when he outlined the benefits of scaffolding learning with constructive feedback to guide learners to carry out a task independently and effectively. The course designer's intent was to make available a variety of perspectives and depth of feedback offered to each student. The helpfulness noted through the sorting activity confirmed that this was a valuable aspect of the course.

Those loading to factors 2 and 3 also appeared to prefer to work independently, although in different contexts. Factor 2 students appeared to be more externally motivated and found in-class activities to be helpful, while the Factor 3 perspective was more focused on the independence and flexibility allowed by the online learning environment. Researchers saw these perspectives as underscoring the importance of maintaining balance between collaborative and independent learning opportunities in the course structure. Such differences in learning preferences may also indicate that more choices in format or method of completing required course work are needed in future iterations of the course.

It is worth noting that 17 of the 19 participants in this course (13 on Factor 1, one on Factor 2, one Factor 3 student, and two of those not loading to a factor) did not view writing about their personal TESOL teaching philosophy as helpful to their learning. Researchers observed that the majority of the students were experienced teachers, and these perspectives and student comments brought the researchers to consider that possibly students had already written about their teaching philosophy in previous courses. Since the teaching philosophy paper was a major course assignment and 17 students ranked it very low, researchers turned to the students' explanations of their sorting decisions for clarification. A Factor 1 student confirmed researchers' thoughts by stating,

> As a current educator, it seems a bit pointless for me to discuss my personal philosophy regarding teaching. I already did this in undergrad and continue to do so every day I teach. To record that data for someone else no longer seems to be a beneficial learning experience for me.

The Factor 3 *online learner* commented, "I do many research papers – I do not [get] much out of them." This overwhelming negative view of the philosophy paper led the course developer to consider restructuring this final task for future implementations of this course or reviewing the context in which it is presented.

In order to further ground this work more firmly in established and accepted theory, researchers (who collectively had designed and taught the course) compared the foundation of the course design and participants' responses and comments to Merrill's (2002) "First Principles of Instruction," which outline a complete learning cycle. These features are common to various instructional design theories, and if any are missing, "learning will be negatively impacted" (Frick et al., 2010, p. 116). These five principles, as stated by Merrill (2010) are:

> (a) Learning is promoted when learners are engaged in solving real-world problems. (b) Learning is promoted when existing knowledge is activated as a foundation for new knowledge. (c) Learning is promoted when new knowledge is demonstrated to the learner. (d) Learning is promoted when new knowledge is applied by the learner. (e) Learning is promoted when new knowledge is integrated into the learner's world (p. 44-45).

Researchers found direct parallels between these features of an effective course design and the course under study, but they wanted to compare students' views with these principles as well. After collecting and analyzing students' perspectives on the course, researchers investigated how students' rankings of course tasks and comments coincided with these essential features of an effective instructional design. A review of all factors showed students' perspectives of the course design coincided readily with principles of instruction presented by Merrill (2002) as essential to instruction.

The generally high rankings given mini-lessons and other class tasks showed that students found them helpful in solving real classroom problems and demonstrating new knowledge. One self-centered learner even stated, "It was obvious that the interactive mock lesson was very helpful in implementing a real-world application of the lessons used in a classroom." Factor 3 (*online learner*) ranked activating previous knowledge high (5). Students acknowledged that the new learning was applied directly in their mini-lessons. As noted by another group-centered learner: "Presenting the micro-teaching gave me a dry run of applying our methods … The feedback that I received from my colleagues allowed me to refine my approach." Finally, students indicated that they were ready to introduce the methods into their classrooms.

As a self-centered learner said: "I really appreciated getting legitimate feedback which I felt will personally help me reflect and improve my teaching." A group-centered learner noted, "I gathered a plethora of teaching materials and activities for my kids." All of this reinforced to the researchers that the majority of the in-class work was beneficial to the students' learning and overall, Merrill's (2002) First Principles of Instruction had been included in the course design.

After being taught more than 20 times and evaluated through the university's traditional Likert scale feedback, researchers uncovered students' distinct views of which aspects of the course were most helpful to each of them. It must be noted that this study has its limitations as it is a single case. However, Q methodology was designed for small numbers of participants and even single case studies (McKeown & Thomas, 2013). Also, the use of Q methodology helped the researchers find out what all students agreed upon by identifying the consensus statements for all three factors. The results showed that nearly all students thought that the two textbooks used for this course were not very helpful. This led the researchers to wonder if there was something about the textbooks that limited their helpfulness or if the way they were incorporated into the lessons made them less helpful than other aspects of the course. Future implementations of this course might be enriched if varied ways of using the texts were tried or students were questioned more in depth about their perspectives regarding the texts. It is also possible to change the textbooks for different ones. Additional studies using the same methodology should be done in the future after making the suggested changes based on the results from this study in order to find out if these changes would be considered beneficial by the students.

In conclusion, using Q methodology for this study helped the researchers/course designer/instructors to examine the different views students held about the helpfulness of different aspects of the course and activities completed in the class when following a blended face-to-face and online design. The majority of the students seemed to find the hands-on activities, mini-lesson presentations, in-class discussions and feedback from their instructor and colleagues to be most helpful to their learning. Many did not feel that the online component of the course was as helpful to their learning. One specific activity the students felt helped them the most in learning about different methods and approaches to teaching ESL were the lesson demonstrations.

More advanced uses of technology would be involved in redesigning the course to be totally online, as the other courses in the TESOL endorsement program are, and may need to be considered. As the course designer considers whether an online format would be feasible for this course, it seems that incorporating the mini-lesson presentations into an online course could be challenging. To achieve this, students could possibly videotape themselves teaching, perhaps in an isolated setting, in which case they would not be experiencing a classroom environment with their fellow students acting as ESL students. Thus, the teaching would be less authentic. It would be more difficult, perhaps impossible, to have a discussion immediately following the presentation and receive feedback, course aspects which students ranked as very helpful to their learning. One solution might be to restructure this class but continue as a hybrid class to accommodate more types of learners with readings, activities and discussions online and mini-lesson presentations with feedback in a face-to-face setting. Giving students more choices in activities or format might also support the varied learning preferences of different students.

In this "post method era," results also seemed to indicate that several assignments might benefit from revision. Some students appeared to think that it was not necessary to give methods presentations and take a quiz on the same material. Perhaps replacing the quiz with a different way of assessing knowledge and understanding of the different methods and approaches is in order. In addition, it seems that the final paper on the teaching philosophy could also be replaced by a reflection paper on one's preferred methods for teaching ESL students or another assignment to synthesize and enhance the application of different methods of second language instruction. The course might be enriched by adding case studies of ESL lessons and experiences in ESL classrooms which could offer additional hands-on experience, the experiential component of the course that so many of the students considered most helpful to their learning. Finally, the instructors might need to re-examine the use of the textbooks and technology for this course.

This study demonstrated how instructors can examine students' different views of the activities that helped them the most in learning the content of a course. As noted by Jurczyk and Ramlo (2004) and Ramlo (2012b), clearer insights into student viewpoints on learning can be captured through Q than through traditional Likert scale course evaluations.

Evaluations at the university in this study consist of Likert scale surveys, rating items from 1 (least effective) through 5 (most effective). This allows students to rate different aspects of the course and the professor, although no items directly address student learning preferences. The resulting score is an average of the ratings of all students, which can often provide a somewhat inaccurate picture of the course (Jurczyk & Ramlo, 2004). For example, if half of the students rate the instructor's communication skills as 5 and half rate these skills as 1, the final report rating would be the average of those scores, or 3. This score would indicate that the students found the instructor to be an average communicator. Yet that is far from what their individual scores indicated, and students' views were not fully expressed or heard.

Using Q methodology to study students' opinion of the helpfulness of different activities and projects in the course gave the instructor and researcher a chance to understand which activities students found most and least helpful. Such was the case with the final paper about students' personal teaching philosophies and the different tasks surrounding the ESL instruction methods which had never been brought to the researcher's/course developer's attention before. Specific feedback such as what was provided through this Q study is much more valuable to faculty in making decisions about the content and format of their classes than the traditional Likert scale evaluations that produce global observations and that are frequently used at the end of each course (Frick et al., 2010).

Differences among students' perspectives of courses which only use Likert scales for evaluation might go undetected if just final average scores are reported to the university administrators and the course instructor. Additionally, reasons for these differing scores might never be brought to the surface, denying the opportunity to understand better how the course might be more closely matched to the needs of all students, as using surveys often does not permit individual voices to be represented (Lecouteur & Delfabbro, 2001; Ramlo, 2008).

As a possibility for other course developers and instructors, the researchers suggest they design Q studies to evaluate their own courses. Their sorts and research design could be based on the questions they have about their courses and reflect different aspects of the course as well. Their Q sort items would be unique to their specific course, would provide insights about their students' perspectives of the classes they teach, and would allow them to make informed decisions for their future course implementations, as "this research enables improved student input regarding teaching and learning." (Jurczyk & Ramlo, 2004, p. 3).

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# Appendix

List of sort items used in study:

1. Reflection on micro-teaching
2. Online discussions
3. Rubrics
4. Methods summary paper
5. Doing research for the final paper
6. In-class activities
7. Feedback from instructor regarding quiz and assignments
8. Resources and Announcements posted to Blackboard Learn
9. Interacting with instructor outside of class time or during breaks
10. Giving feedback to colleagues regarding their micro-teaching
11. Instructor's availability to explain what I did not understand (in person, e-mail, online, in class, phone call, etc.)
12. Personally choosing skill for micro-teaching
13. Writing personal philosophy paper (final paper)
14. Preparing method presentation & handout
15. Instructor's lectures, PowerPoints
16. Reading the Larson-Freeman Methods book
17. Lesson plan template for micro-teaching
18. Receiving feedback from colleagues on micro-teaching
19. Discussing with peers how to present method
20. Coming to class regularly
21. Observing others' presentations
22. My desire for a good grade
23. Presenting & demonstrating Method for class
24. Classroom discussions
25. Classmates' Methods handouts
26. Working in small groups or with a partner
27. Reading H. Douglas Brown text book
28. My personal interest in the topic of the course
29. Presenting micro-teaching lesson
30. Working alone
31. Syllabus
32. Reading assigned articles
33. Methods quiz
34. Previous education courses
35. Preparing micro-teaching lesson

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# Shifting to Active Learning: Assessment of a First-Year Biology Course in South Africa

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Large first-year class sizes have resulted in many lecturers adopting coping strategies consisting of direct-transmission mode teaching, reduced practical time, and assessment. Recently several strategies have been implemented in an attempt to improve student participation and active learning; however, these changes have to be facilitated and fostered by faculty and administrators. Consequently, we present the implementation, results, and feedback of a new Biology first-year course run for the period 2005-2008. In this course, the number of lectures was reduced, and the number of more co-operative tutorial and practical-based sessions was increased. The aim of these changes was to promote active participation of students and to encourage them to take responsibility for their own learning. Despite some initial problems, most students and staff were positive about the learning experience, and the skills developed were considered of value to other science courses. Other courses are encouraged to follow this example and move to a reduced lecture and increased interactive tutorial/workshop and practical approach to promote student learning and development.

There is pressure to increase student access to tertiary education, yet still maintain standards and retain students (Rust, 2002). Related to this is the need to raise standards and improve efficiency, as well as enhance student learning (American Association for the Advancement of Science, 2009; Hockings, 2005; Jones, 2007). Consequently, there is much discussion about the size of first year and introductory courses and the conditions necessary for effective teaching and learning (Goldfinch & Hughes, 2007; Hockings, 2005; Jones, 2007; Preszler, 2009). Currently with increased content to learn, improved access to facts via the Internet, the demand to apply conceptual knowledge, and the anticipated use of problem solving skills in career experience after graduating from the university, students need an education that promotes these abilities rather than one that promotes merely the memorizing of facts (Knight & Wood, 2005). The problems of teaching and learning science, as well as the solutions to these, have been around for 200 years, but they have had little impact on classroom practice (Wright & Klymkowsky, 2005).

Most large first-year science courses follow a traditional lecture mode and contain a laboratory component (Alghasham, 2012; Handelsman et al., 2004). Unfortunately, the laboratory component is often not innovative or inquiry- or research-based (Weaver, Russell, & Wink, 2008). Although the lecture approach can be used as an instrument of inspiration, it has severe limitations as a teaching tool if there is no student engagement and interaction (Fernandez-Santander, 2008; Jones, 2007). There needs to be implementation of alternative approaches that are more effective at fostering and developing conceptual and scientific understanding or reasoning, active student participation, and assimilation (Exeter et al., 2010; Fernandez-Santander, 2008; Handelsman et al., 2004; Preszler, 2009; Ueckert, Adams, & Lock, 2011). Implementing change requires active student participation in lectures, reduction in lecture time, and an increase in more cooperative tutorial and discovery-based laboratory tasks in order to encourage student participation in, and responsibility for, their learning (Allen & Tanner, 2005; Exeter et al., 2010; Fernandez-Santander, 2008; Handelsman et al., 2004; Weaver et al., 2008). Some reluctance to reform teaching results from the large class size and the perceived reduction in specific content covered (Allen & Tanner, 2005; Freeman, Haak, & Wenderoth, 2011; Handelsman et al., 2004; Knight & Wood, 2005).

This reluctance to change is despite the research (neither isolated nor discipline-specific) that has shown that student learning and knowledge acquisition are enhanced with an interactive approach to lecturing (Allen & Tanner, 2005; Andrews, Leonard, Colgrove, & Kalinowski, 2011; Handelsman et al., 2004; Hockings, 2005; Knight & Wood, 2005; Meltzer & Manivannan, 2002; Thornton & Sokoloff, 1998). However, some courses or modules have gone to the extreme of replacing lectures almost entirely (Handelsman et al., 2004).

In the large classes typical of first year courses, the process of reform in teaching—or more specifically, the process of translating these into practice—is daunting. Lecturers who do attempt to promote student participation and learning are often met with resistance from an unexpected source, the students themselves, as emphasis moves from memorization and recall to the development of critical thinking and the skill and ability to undertake self-directed learning (Allen & Tanner, 2005). However, changes need not be rapid, but rather incremental with partial shifts, and they should start small but should be introduced early (Knight & Wood, 2005; Wood, 2003).

Conceptual understanding in biology requires comprehension of scientific terms, the ability to transfer information, and a working awareness of scientific knowledge and practice (Klymkowsky, Garvin-Doxas, & Zeilik, 2003). There is general support that first-year biology courses should have educational objectives that prepare students to function as scientists and educators in a broad array of biological disciplines.

A number of strategies have been used to facilitate the implementation of *active learning* teaching (Alghasham, 2012; Allen & Tanner, 2005; Fernandez-Santander, 2008; Preszler, 2009; Weaver et al., 2008). These strategies can include structured question-and-response techniques and/or involve students in researching and writing reports on delegated topics (Allen & Tanner, 2005). Allen and Tanner (2005) suggest the use of a learning-cycle instructional model in order to overcome students' concerns and doubts about a more active learning approach. This is a scaffolded sequence of tasks that assist students in developing their conceptual understanding and their ability to transfer knowledge. Another approach that also addresses students' concerns is the use of senior students to guide and facilitate discussion and to give feedback (Allen & Tanner, 2005).

The active learning strategies that have been developed and implemented successfully in large first year biology courses require curriculum change and usually new approaches to teaching. As most of these courses are taught by more than one lecturer during a semester, it also requires that all those teaching the course adopt the change and move from the more familiar and perhaps comfortable *teaching as we were taught* approach (Allen & Tanner, 2005). This requires a mind-set change that understands teaching efficacy as how many students engage in deep and meaningful learning (Allen & Tanner, 2005). Lecturers need to be convinced that learning is based on discovery and guided by mentoring and transmission of insights (Wood, 2003).

In 2005, in the context of the *active learning* teaching, we developed a new biology first-year course at the University of KwaZulu-Natal (UKZN) in the School of Biological and Conservation Sciences (SBCS) to run parallel with the current first year course. The proposed instructional mode was different from most other first year courses in the Science and Agriculture Faculty, UKZN. The new mode mimicked one used successfully in foundation courses at UKZN and other biology courses attempting to enhance teaching and learning using an *active learning* or *student-centered* approach (Allen & Tanner, 2005; Kumar, 2005; Miller & Cheetham, 1990; Wood, 2003) to encourage students' participation and responsibility for their learning. One of the main purposes of the course was to scaffold the development of science process skills in a biological context. It was hoped that students would acquire the fundamental practical and cognitive skills necessary for study in the life sciences, as well as develop a foundation in biological concepts and awareness. It was also hoped that students would be exposed to scholarly scientific and technological advances that affect the changing needs of society. Another important aspect was to develop the students' approach to problems and the process of the scientific method. The following describes the implementation of a practical-based first-year biology course which was introduced on two different campuses and included reduced lecture and an increased tutorial.

## Methods

During the second semester of 2005 and 2006 at UKZN, the SBCS ran a course, "Hot Topics in Biology," on the Pietermaritzburg (PMB) and Howard College (HC) campuses. Originally this was a 16-credit, whole semester course but was reduced to an eight credit course in 2007. The course design, implementation, and assessment were documented for the period 2005-2008. Students and staff were asked for comments about the course. The students' comments were made as a response to an evaluation form which they completed at the end of the course. Budgetary and other constraints were also documented. Performances of students were analyzed and compared.

### Course Design, Implementation, Teaching, and Assessment

It was decided to move from the traditional four lectures and one practical per week course to one with fewer lectures and increased interactive tutorials and practicals (the proposed outcomes of the course are shown in Table 1). The explicit skills development for 2005 and 2006 during tutorials is shown in Appendix A and during practicals in Appendix B. The skill development was reduced when the course was reduced to eight credits in 2007.

Although three formal lecture periods were assigned each week, only two of these were used with the third allocated for library or assignment time. Each lecturer was allocated three to four weeks with the class during the semester. Generally, the two lecture periods were used to cover topics in an interactive mode and not a formal instructional mode (see Appendix A). These lectures were scaffolded with topics for discussion and explanation, as outlined in the manual that the students received.

Two more practical-based sessions were assigned per week: a double period tutorial that was held in the laboratories (see Appendix A) and a three-hour practical session (see Appendix B). During the tutorials

Table 1

*Outcomes and Their Assessment in the "Hot Topics in Biology" First-Year Biology Course*

| **Student Outcomes** | **Practical Reports** | **Assignments** | **Tests** | **Portfolio** | **Practical Examination (3h)** | **Theory Examination (3h)** |
|---|---|---|---|---|---|---|
| Have a **foundational** understanding of the scientific basis of important contemporary issues of a biological nature facing humanity and how these interrelate | √ | √ | √ | √ | √ | √ |
| Have learned basic skills in managing and organizing information | √ | √ |  | √ | √ |  |
| Have learned basic skills in sourcing information relevant to different topics which includes discerning use of the internet | √ | √ |  | √ |  |  |
| At a basic level can find, read and critically evaluate original scientific literature | √ | √ | √ |  | √ | √ |
| At a basic level can analyze, interpret, and present scientific information or data | √ | √ | √ |  | √ | √ |
| At a basic level have developed skills in asking questions, generating testable hypotheses, designing investigations/ approaches to test them, and interpreting the data from those tests to reach valid conclusions. | √ | √ | √ |  | √ | √ |
| At a basic level have developed oral and written communication skills | √ | √ | √ | √ | √ | √ |
| At a basic level are able to work independently | √ | √ | √ | √ | √ | √ |
| Have developed basic interpersonal and team-working skills | √ | √ |  |  |  |  |
| At a basic level have developed personal opinions and ideas while acknowledging and respecting the views and opinions of others | √ | √ | √ | √ | √ | √ |
| At a basic level are able to place their work in a broader scientific context. | √ | √ | √ | √ | √ | √ |
| At a basic level have an awareness of important moral and ethical questions in a biological context | √ | √ | √ | √ | √ | √ |
| At a basic level are able to express personal responsibility for their actions | √ | √ |  | √ |  |  |
| Have begun to show adherence to accepted standards of professional and ethical behavior | √ | √ | √ | √ | √ | √ |
| Have begun to relate what they have learned to their own life experiences. | √ | √ | √ | √ |  |  |

(see Appendix A) students were involved in, and completed, a range of designated tasks. Although a lecturer was present, postgraduates acted as demonstrators or tutors (hereafter called facilitators) that facilitated group work. On the PMB campus each facilitator was assigned a maximum of 15 students. However, initially on the HC campus, each facilitator was assigned groups of up to 60 students, which created problems. However, in the second half of the course, this approach was amended to that described for the PMB campus.

Cooperative learning was facilitated through formal group work with the emphasis on peer teaching and individual accountability. A tutorial topic was scaffolded by relevant questions; direct learning resulted from group discussions that were then supplemented by readings and notes. Tutorial sessions differed in their foci with some concentrating on development of aptitudes including essay writing skills, interpretation of diagrams, interpretation of scientific text including textbooks and papers, comprehension, and understanding of tasks. Other tutorials included analysis of video footage, analysis of quantitative and qualitative data, and discussion or debate on the various topics. Another important aspect of these tutorial periods was the time dedicated to addressing problems that students had with the previous practical so that they could benefit from, and act on, the comments of the facilitators. Every student was expected to prepare for these tutorials. Tutorials included group discussion and individual consolidation through written exercises (see Appendix A).

The teaching methods used in the practical component of the module may be described as hands-on. Students engaged in skills-based, guided discovery learning (students worked in small groups with a facilitator) during the laboratory sessions. Library work and field trip experiments were central to investigative learning (see Appendix B). The “hands-on” approach was also used on the field trips where students enjoyed real biological experiences in groups small enough to develop interest and promote communication and interaction with mentors and postgraduates.

As a consequence of the teaching philosophy adopted for this course, the facilitators played a pivotal role during practicals—especially in the assessment of the students’ work after each practical—in providing feedback, encouraging discussion with students, and with assisting on field trips. Many of these facilitators acted as mentor figures to the students as well. Similarly, as Wass, Harland, and Mercer (2011) observed, there were many benefits to using facilitators. The pre-practical preparation and management of facilitators was important. Facilitators attended a general training course at the beginning of the course, and thereafter, they attended weekly pre-practicals where they were provided with detailed mark sheets to scaffold their marking and to ensure standardization of marking. Feedback from facilitators was useful in determining the dynamics of the course.

Independent study was encouraged through research and essay exercises, as well as through the use of the course manual. The course was scaffolded with a manual in the form of a file that had a lecture/tutorial section and a practical section. The content of the tutorial section was covered in the allocated lecture periods and tutorial double-periods. Pre-reading and preparation for tutorials and practicals was expected of the students. There were four units which represented the biological topics to be covered. Each unit had basic notes and diagrams that summarized key information, and it also had questions that needed to be answered by students as well as questions designed to drive discussion. Readings and articles of interest pertaining to the topic were made available to the students.

Expectations of student performance were explicit from the start, and the process and criteria for assessment were made transparent. Conceptual understanding and reasoning skills were assessed in class tests and theory examinations. The course class mark contributed 33.3 % to the final grade and included practicals, theory assignments and tests, and a portfolio. The final examinations made up the remaining 66.6 % of the final grade and were comprised of a theory paper (50 %) and a practical (50 %). The practical component focused on the students’ acquisition of processing skills and was assessed using data response questions. The practical component also included a set of questions designed to assess students’ microscopy observation and drawing skills and was assessed in their production of detailed drawings.

## Results

### Course Implementation

The course was run on two different campuses. The HC campus had more students (2005: $n$ = 151; 2006: $n$ = 122; 2007: $n$ = 130) who were biased towards medical science whereas student numbers on the PMB campus were lower (2005: $n$ = 69; 2006: $n$ = 55; 2007: $n$ = 34) with a more agricultural/biological science bias. Those lecturing the course on the PMB campus were more involved in the development of the course and were therefore more accepting of the change.

### Course Evaluations

There was a range in students’ responses to the course, and these differed according to campus. In 2005, HC students felt they were ill prepared for examinations and were concerned they had not achieved as well as the parallel biology course that was less skills-based and more content-based. However, students were more positive in subsequent years. Course evaluation results of PMB students in 2005 are summarized in Appendix C. Responses for subsequent years were similar. Most PMB students found that the course had benefitted them, and they particularly enjoyed the alien invasive section as well as the lecturer responsible for that section.

### Student Performance

Overall, in the years 2005-2007, most students performed well enough to pass the course. The distributions of final marks for both campuses in 2005 (see Figure 1) were similar to subsequent years. Although the failure rate was low, few students excelled with only a few students achieving marks above 80 %. Despite this, it was clear that most students had developed some degree of skills. The small class size and enjoyment of the alien plant section likely contributed to the higher pass rate on the PMB campus.

## Discussion

### Buying into the Course

We implemented a course with fewer lectures but with additional group work tutorials and research-based practicals. Students were more actively involved in the learning process but also scaffolded to develop the basic skills needed to function as scientists and to develop discipline-specific information fluency. In particular, they were exposed to scientific papers, and their biological literacy was developed during tutorials and while writing essays and research reports. We found there was still a role for lectures, but that these could be reduced in number to allow for additional interactive tutorials/workshops. Facilitators who led the students in mini-groups played an important role in assisting with assessment, as well as in developing the students' confidence.

In many first year or introductory courses with large class sizes, lecturers give well-prepared lectures, handouts and model answers, but most students still show poor response in terms of problem solving, are focused only on getting the answers and marks, show little critical engagement, and accept little responsibility (Hockings, 2005). Transforming to a student-focused approach requires the redesign of a module, its implementation, and its assessment. Elsewhere course restructuring to ensure active learning in undergraduate first year biology has improved students' learning, attitude, and performance (Armbruster, Patel, Johnson, & Weiss, 2009; Freeman et al., 2011; Preszler, 2009).

As mentioned earlier, conditions for effective teaching and learning when a student-focused approach is adopted are often hindered by the institution's policies and practices, students' and lecturers' perceptions, and the reluctance for change (Hockings, 2005). These barriers include the following: (a) the students' experiences, beliefs, and expectations of learning, teaching and assessment; (b) class size and diversity; and (c) assessment demands, workload, and over-bureaucratic quality procedures (Hockings, 2005).

Initially, the management of the SBCS and the lecturing staff involved in developing the module from the outset were supportive. However, once the module had been developed, some lecturers showed reluctance, and many of these resorted to teacher-focused strategies as a coping mechanism. Some students, particularly HC students, also showed reluctance to a change to this non-conventional module. Many of their comments emphasized their surface learning attitudes and habits. It is perhaps overly optimistic to hope to change the student culture or habits across the whole cohort when transforming a module to a student-focused one (Hockings, 2005; Knight & Wood, 2005).

Interestingly, one of the main opponents to this new biology course at UKZN have been faculty in other disciplines who perceive that biology has an extra first-year course and should not have this advantage. However, many of the topics covered and skills developed are actually interdisciplinary and would benefit their courses as well. This interdisciplinary approach is not new, but rather is highlighted in the report for changes in undergraduate biology in the USA, *Bio2010: Transforming Undergraduate Education for Future Research Biologists,* that examined ways to integrate mathematical, physical, and information sciences into the education of undergraduate biology students (Brenner, 2003).

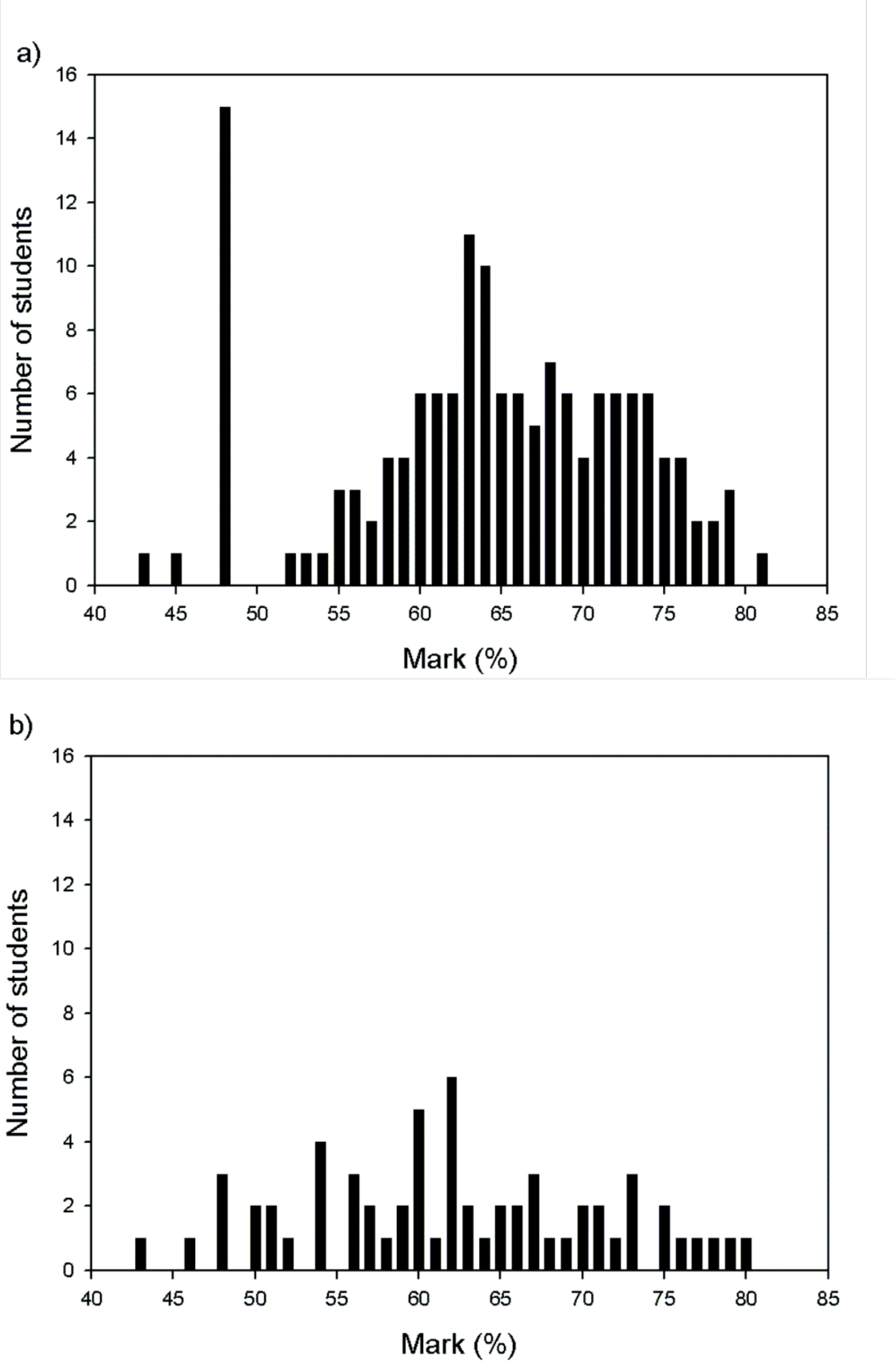
After two years, the course was reduced to an eight credit course to satisfy other disciplines and faculty. In 2008, the management of the SBCS decided to change the course to a reading and writing course to focus primarily on developing scientific literacy using tutorials only. This was despite objections from staff who felt inquiry- and research-based tutorials and laboratory sessions could develop scientific literacy as well as encourage student participation and interest. The changes to the course over the period 2005-2008 illustrate how an institution's policies and practices can affect course implementation.

### Infusing Active Learning

Despite some negativity and wariness, many students responded positively to the change in the course. From the comments and the quality of research reports through the semester, it was clear that student engagement and ownership had increased in most sections of the module. Students had begun to develop

Figure 1

*Final Course Marks of Students in the "Hot Topics in Biology" Courses at the UKZN in 2005 before Supplementary Examinations Where a) is the HC and b) is the PMB Campus*



the skills necessary to function as scientists, the same skills as listed in the course outcomes. In particular, they had developed scientific literacy, a proficiency that could then be developed further in subsequent years.

One of the perceived problems of the course was the number of assessment tasks in the module. We felt that this was necessary to force students to engage with the module, as we found attendance and completion of tasks was linked to assessment marks. This indicated that this approach has to be maintained until students' perceptions and involvement in the course change from being primarily assessment driven. Similarly, others have identified problems of absenteeism and the degree of work completion linked to graded assessment (Case & Gunstone, 2003; Hockings, 2005). One could reduce the amount of assessment and allow those students who do not take responsibility to perform poorly. However, these same students will be the loudest in condemning the course and its teaching practices. As assessment has a great influence on what, how, and how much students study, Chevins (2005) has shown that lectures replaced by prescribed reading with frequent assessment enhanced students' performance. This is what we were hoping to achieve by replacing lectures with tutorials that demanded reading and discussion by the students.

## Are They Learning?

A principal feature of enhancing the ways that university lecturers teach relates to the way knowledge is understood (Dall'Alba, 2005). The understanding of knowledge as absolute and foundational has been challenged with evidence of the pluralization of knowledge within a range of contexts (Dall'Alba, 2005). This then questions the traditional views of knowledge transfer and acquisition, as well as assessment practices (Dall'Alba, 2005). Conversely, with active teaching and learning there is often a focus on skills development rather than on content knowledge. However, reducing teaching to a set of skills or competencies, rather than a holistic learning experience, is as questionable.

There are numerous studies that show that even for large classes, teaching approaches that center on active, inquiry-based, collaborative learning are more effective in promoting student interest, understanding, attitude to learning, and performance than the traditional approaches (Haak, HilleRisLambers, Pitre, & Freeman, 2011; Howard & Miskowski, 2005; Wood & Gentile, 2003). Adoption of some these teaching methods may be interpreted as teaching in a research context (Holbrook & Devonshire, 2005; Weaver et al., 2008; Wood & Gentile, 2003), and generally students respond positively to this (Lindsay, Breen, & Jenkins, 2002). This approach can be described as giving students a sense of how science is performed, rather than what is currently known (Howard & Miskowski, 2005). Revision or transformation of courses to allow student involvement in experimental design, data collection and analysis, and discussion of results in a broader context requires increased laboratory experience to facilitate this inquiry-based learning (Howard & Miskowski, 2005; Weaver et al., 2008). Furthermore, there needs to be a progression from more instructor-guided to a more open-ended student-focused investigation (Howard & Miskowski, 2005). However, it is too much to expect students to do wholly independent research, especially at the first-year level (Wood, 2003). Given the diversity of students, there must also not be an expectation that one can develop all students into researchers. The aim should rather be to instill an inquiry-based attitude through the curriculum (Wood, 2003). Students responded positively to the research-based practicals in our course, especially those that included fieldwork.

There is a perceived but mistaken notion about what content must be covered by an undergraduate biology course (Wright & Klymkowsky, 2005). Furthermore, experience shows that increased in-class discussions, group problem-solving, or any activities that reduce time available for content dissemination provide a more valuable and meaningful learning experience for students (Wright & Klymkowsky, 2005). In particular, students develop content mastery through inquiry-based learning as they try to solve, evaluate, and organize information about relevant problems (Wright & Klymkowsky, 2005). The development of biology-literate students—those who can ask and answer their own biology-relevant questions—should be the goal of undergraduate biology classes. Unfortunately, most undergraduate biology classes fail to achieve this as they are content focused (Wright & Klymkowsky, 2005).

Another important factor to consider in an interactive teaching approach in which students share their opinions is that in addition to this sharing, they actually learn the greater context. This requires them often to modify their opinions, especially if they harbor misconceptions. This is when that real learning occurs.

## Improvements in the Teaching and Learning Context

There is a broad array of literature that supports and encourages changes in teaching practices and provides strategies for changes in teaching practice that improve student learning outcomes and their experiences of learning (Allen & Tanner, 2005; Armbruster et al., 2009; Dall'Alba, 2005; Fernandez-Santander, 2008; Preszler, 2009; Weaver et al., 2008). The implementation of the "Hot Topics in Biology" course has challenged staff involved to transform their ways of teaching first year students. When changes in teaching methods occur that are perceived as undermining the familiar, customary ways, there is often resistance or defensiveness by both staff and students (Allen & Tanner, 2005; Dall'Alba, 2005; Knight & Wood, 2005). The latter are often reluctant to become active in the learning process as it requires more effort initially (Dall'Alba, 2005). Dealing with resistance or defensiveness requires a shift to openness and support (Dall'Alba, 2005). Furthermore, the unpopularity among students of changes in teaching methods needs to be downplayed if the actual learning outcomes, opportunities, and motivations are achieved.

Within the context of teaching for active learning, delivery methods need to be evaluated for their effectiveness in achieving learning. There is suggestion that laboratory or studio methods involving team work, hands-on exercises, and minimal lecturing achieve more learning than an interactive lecture approach with questions (Roy, 2003). Our approach on the PMB campus of using the laboratories for tutorials/workshops, where the students were divided into smaller groups (12-15 students) with an assigned a postgraduate facilitator, worked better than the HC campus where initially students were in much larger groups (e.g., 60 students). The former approach allowed more rapid assessment of tasks by the facilitator as well as quicker and more pertinent feedback. We also found that students positively engaged in the field trips and hands-on practicals where they had to collect data and produce a scientific report. Many colleagues were astonished that first-year students had read— albeit slowly—and discussed research papers. Tutorials which were scaffolded with questions that dealt with various issues that contributed to the students' overall understanding of a problem were more successful than those where students had to address the overall problem on their own.

Students' conceptual understanding can be assessed with a variety of tools from portfolios to essays. We used a variety of strategies or a smorgasbord approach, with a range of measures as part of the formative assessment and the examinations as the summative assessment. We found that students' performance improved in most of these over the semester, thus emphasizing the need for a developmental and scaffolding approach to tasks, particularly in the early stages. A mixture of data response and problem-solving questions together with an essay in the final examinations assessed these as well as their mastery of content. There was a range in students' performances that reflected the diversity of abilities and their development. However, the external examiner felt students at the upper end were sometimes assessed too harshly. As Wright & Klymkowsky (2005) assert, the most difficult part in transforming a course to an interactive one is how to pose good questions and how to award grades. Often this requires moving away from select-response or selected/short answer questions that are often the major assessment tools used to assign grades in large enrollment undergraduate courses (Wright & Klymkowsky, 2005). Interestingly, it has been shown that students' content mastery is often better in an interactive course with a problem-solving approach than in traditional courses (Armbruster et al., 2009; Knight & Wood 2005; Wright & Klymkowsky, 2005). Furthermore, areas of student difficulty at the introductory level often persist to higher levels (Dancy & Beichner, 2002), and if the assessment tasks and types at this level do not identify where these difficulties lie, then these problems cannot be addressed.

## Students' Perceptions

Student feedback can be enlightening, but its worth is limited (Dancy & Beichner, 2002). In addition, as most students are familiar with a direct lecture mode format, the demands of an interactive course may take them out of their comfort zone and so cause them to respond negatively in an evaluation (Dall'Alba, 2005; Knight & Wood, 2005). If education is to be student-centered, then students need to be consulted. Generally students have positive views of student-centered learning, but they show concern about whether the resources to implement this approach are adequate (Lea, Stephenson, & Troy, 2003). The PMB students were generally positive, and it will be interesting to follow their perception of the course as they move through their subsequent years of study.

## Lessons Learned

We found that lecturers were more accepting of the change towards active learning when they were more involved in the course development. Although we established that there was still a place for lectures, we found that they could be reduced in number to allow for more interactive and hands-on tutorials and practicals which encouraged the development of science process skills in learners. Our results and observations indicate that smaller class sizes and enjoyment of the course material will generally result in better student interaction, greater participation, and, consequently, higher class marks and a better pass rate. We also found that the use of facilitators greatly benefitted the students in numerous ways, such as providing feedback, encouraging class discussions, acting as mentors, and developing students' confidence. Despite some initial resistance, many students responded positively to the change in the course, and our more hands-on and interactive approach generally improved students' learning, attitude, and performance.

## Conclusions

Despite problems in showing some students and staff that the approach used in this biology first year course produced more meaningful learning, most of those involved in the course felt it contributed to the overall outcomes required of students. Other first-year course instructors need to be encouraged to change to a more interactive mode of teaching and learning. The attempt to encourage a change in teaching and learning methods, as reported here, only represents change in one course within a discipline, rather than across all undergraduate courses, or across the biology curriculum at the UKZN. It needs to be adopted at these other levels. The benefits of reform could be far reaching with a domino effect on cognitive gains, real-world applications, and acquisition of skills, with science as the greatest beneficiary.

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## Appendix A
## Details of Lectures/Tutorials: Knowledge and Skill Development in the "Hot Topics in Biology" First-Year Biology Course (PMB campus, 2005-2006)

| | | Lectures | | Tutorial in Laboratory (2 periods) | | | Tests/Essay |
|---|---|---|---|---|---|---|---|
| Week | Theme | 1 | 2 | Task 1 | Task 2 | Skills | |
| 1 | Biological warfare-human immunity | Introduction to course | Pathogens and fighting back | Characteristics of blood-types and origins of leucocytes | Lines of defence-surface barriers | Interpreting diagrams-how the body fights back | |
| 2 | | Lines of defense-non-specific and specific responses | Lines of defense-specific responses | Lines of defense-specific responses | Defenses enhanced, misdirected or compromised-Immunization, allergies, stress | Essay skills and Discussion | |
| 3 | | Defenses enhanced, misdirected or compromised-autoimmune disorders, deficient immune responses | Medic to speak on AIDS and Antiretrovirals | AIDS-immune system compromised | | Interpreting diagrams-how the body fights back. Discussion | |
| 4 | Biological weapons-Muthi plants | Introduction - taxonomy, compounds | Important plants and their chemicals | Important plants and their chemicals | | Using dichotomous keys, classification, Discussion | Hand in essay |
| 5 | | Research-detection, propagation | Research-detection, propagation | Economics | Economics | Supply and demand-Muthi trade-discussion of paper, numeracy | Test |
| 6 | | Research-detection, propagation | Herbalist to speak | Ethics | Legalizing dagga debate | Discussion, research, debate | |
| 7 | Time Bomb-Defense of the earth | Climate change | Climate change | Climate change-Carbon cycle | Climate change-Carbon cycle | Interpreting diagrams- carbon Cycle. Discussion. Synthesis. | |
| 8 | | Climate change | Climate change | Climate change | Climate change | Interpreting diagrams and numeracy. Discussion. Interpretation | |
| 9 | | Climate change | Climate change | Climate change | Climate change | Interpreting diagrams and numeracy. Discussion. Interpretation | |
| 10 | Alien Invasion | What are plant and animal aliens, and why are they successful? | Continued | Arrival of aliens-history | Effects of aliens | What are aliens-comprehension tasks | |
| 11 | | Need for concern-conservation of biodiversity | Research-pollination and dispersal | Research-pollination and dispersal | Research-biological control | Why are aliens successful- numeracy and comprehension tasks discussion of paper | Test |
| 12 | | Research-biological control | Research-biological control | Research-biological control-case study | Research-biological control-case studies | Interpretation of diagrams-discussion of research papers | |
| 13 | | Biological control | Biological control | Biological control | Biological control- case studies | Discussion of research papers | |

# Appendix B
## Details of Practicals: Skill and Knowledge Development in the "Hot Topics in Biology" First Year Biology Course (PMB campus, 2005-2006)

| Theme | Biological Warfare-Human Immunity | | |
|---|---|---|---|
| Practical | 1 | 2 | 3 |
| Title | Pathogens and defense | HIV Transmission Rates | Condom Quality |
| Introduction | Pathogens, leucocytes | Transmission rates | Introduction |
| Task 1 | Size and description of viruses plus questions | Hypothesis | Hypothesis |
| Task 2 | Size and description of bacteria, plus questions | Collection of data on transmission rates using whole class with beakers and pipettes | Collection of data on transmission rates using whole class with beakers and pipettes |
| Task 3 | Importance of leucocytes: use of microscope, drawing, scale, annotation | Tabulate results | Tabulate results |
| Task 4 | Origin of leucocytes-examination of thymus and bone in dissected rat | Graph | Graph |
| Task 5 | Analogy of warfare | Discussion and conclusion | Discussion and conclusion |
| Skills developed | Observation, interpretation, scale, drawing, 3D, synthesis | Use of scientific method, hypothesis testing, numeracy, data collection, analyzing results, tabulation, graphs, synthesis | Use of scientific method, hypothesis testing, numeracy, data collection, analyzing results, tabulation, graphs, synthesis |
| Theme | Biological Weapons-Muthi Plants | | |
| Practical | 4 | 5 | 6 |
| Title | Muthi plants | Extraction techniques 1 | Field trip to Muthi market |
| Introduction | Introduction: importance | Introduction | |
| Task 1 | Identifying important muthi plants-Use of dichotomous key to identify | Hypothesis | |
| Task 2 | Drawing | Collection of data | |
| Task 3 | Tabulate similarities and differences | Tabulate results | |
| Task 4 | Interpretation of data on removal-questions<br>Interpretation of data on economics-questions | Graph | |
| Task 5 | Discussion and conclusion | Discussion and conclusion | |
| Skills developed | Observation, use of dichotomous keys, classification, interpretation, scale, drawing, 3D, numeracy, tabulation, synthesis | Use of scientific method, hypothesis testing, numeracy, data collection, analyzing results, descriptive statistics, tabulation, graphs, synthesis | |
| Theme | Biological Weapons- Muthi Plants | | |
| Practical | 7 | 8 | 9 |
| Title | Field trip to weather station: Cedara | Climate change | Climate change |
| Introduction | Introduction: Weather | Introduction | Introduction |
| Task 1 | Temperature | Data analysis and interpretation | Video |
| Task 2 | Rainfall | Data analysis and interpretation | Video |
| Task 3 | Wind | Data analysis and interpretation | |
| Task 4 | Evaporation | Data analysis and interpretation | |
| Task 5 | Data analysis and interpretation | | |
| Skills developed | | Numeracy, data collection, analyzing results, descriptive statistics, tabulation, synthesis | Observation and thinking |

| Practical | 10 | 11 | 12 |
|---|---|---|---|
| Title | Urban aliens-Field trip to collect data | Rural aliens-Field trip to collect data | What are aliens? |
| Introduction | Introduction: cont. | Introduction: Extent of alien invasives | Introduction: aliens |
| Task 1 | Hypothesis | Hypothesis | Identifying important alien plants-Use of dichotomous key to identify |
| Task 2 | Synthesis of data | Data collection: Microhabitat, alien identification and density estimation | Tabulate similarities and differences |
| Task 3 | Tabulate results | Tabulate results | Interpretation of data on removal-questions |
| Task 4 | Discussion and conclusion | | Interpretation of data on economics-questions |
| Task 5 | | | Discussion and conclusion |
| Skills developed | Use of scientific method, hypothesis testing, numeracy, data collection, analyzing results, descriptive statistics, tabulation, graphs, synthesis | Use of scientific method, hypothesis testing, numeracy, data collection, analyzing results, descriptive statistics, tabulation, synthesis | Observation, interpretation, use of dichotomous keys, classification, scale, drawing, 3D, numeracy, tabulation, synthesis |

## Appendix C
## Results of Hot Topics in Biology Students' Evaluation (PMB Campus, 2005)

| | | | | | |
|---|---|---|---|---|---|
| Biology 104 Evaluation 2005<br>This is an anonymous questionnaire. Please express yourself freely. Your honest feedback will help us improve the Biology 104 course. Thank you for your effort and time.<br>For questions 1- 12, your possible answers are:<br>A = strongly disagree B = disagree C = neither agree nor disagree D = agree E = strongly agree | | | | | |
| Respondents=49 | Responses shown as % | | | | |
| General Aspects of the course | A | B | C | D | E |
| 1. A detailed course syllabus and information on course requirements and assignments was provided at the beginning of the course. | 4.2 | 8.3 | 16.7 | 47.9 | 22.9 |
| 2. The different components of the course were all relevant. | 2.1 | 16.7 | 18.8 | 43.8 | 18.8 |
| 3. Lecturers were generally available. | 2.0 | 6.1 | 12.2 | 49.0 | 30.6 |
| 4. I thought this course was well organized. | 4.1 | 16.3 | 10.2 | 47.0 | 22.5 |
| 5. This course is appropriate to my major/program. | 8.2 | 6.1 | 30.6 | 32.7 | 22.5 |
| 6. I feel that I have developed intellectually beyond the point I was at when I started the course. | 2.1 | 6.3 | 12.5 | 41.7 | 37.5 |
| 7. In Biology 104 I have learned general skills like reading, thinking, analysis and interpretation of data. I have been able to use these skills in other courses. | 2.0 | 0.0 | 12.2 | 49.0 | 36.7 |
| 8. I find the language in the notes easy to understand. | 0.00 | 10.64 | 19.15 | 55.32 | 14.89 |
| 9. I am able to link up the different units studied throughout the year to get a good understanding of Biology 104. | 2.1 | 8.3 | 33.3 | 52.1 | 4.7 |
| 10. I learned something of value in the course. | 4.3 | 0.0 | 4.3 | 57.5 | 34.4 |
| 11. The Biology 104 course has helped me to put more emphasis on understanding than on learning something off by heart. | 2.0 | 6.1 | 16.3 | 55.1 | 20.4 |
| 12. The tutorials helped me to think further and learn more about the topic than was in the notes. | 2.1 | 8.3 | 22.9 | 41.7 | 25.0 |
| Relative to other courses you have taken: | Much Higher | Average | Much Less | | |
| 13. The intellectual challenge presented was: | 37.5 | 56.3 | 6.2 | | |
| 14. The amount of effort you put into this course was: | 37.5 | 56.3 | 6.2 | | |
| 15. The amount of effort to succeed in the course was: | 37.5 | 56.3 | 6.2 | | |
| | No | Unsure | Yes | | |
| 16. Was this course intellectually stimulating? Did it stretch your thinking? | 0 | 12.5 | 87.5 | | |
| 17. Will you recommend this course to other students? | 4.2 | 12.5 | 83.3 | | |
| 1. What ONE thing has contributed to your enjoyment of each section of the course? | | | | | |
| Immune system | talk by guest speaker (6), AIDS (7), how immune system works (11), practicals (8), lecturer (3) | | | | |
| Medicinal plants | field trips, esp. muthi market (14), usefulness of plants (8), cultural side (4) | | | | |
| Climate Change | field trips, esp. weather station (5), lecturer and lectures (5), esp. global warming and el Nino/la Nina and how it affects real life (12) | | | | |
| Alien Invasives | everything (13), lecturer and lectures (6), field trips and practicals (8), biological control (6) | | | | |
| 2. What ONE thing have you least enjoyed of each section of the course: | | | | | |
| Immune system | AIDS (6), rote learning (3) | | | | |
| Medicinal plants | lecturer/lectures (5), learning names (3) | | | | |
| Climate Change | lecturer/lectures (8), hard to understand (5), tutorials and practicals (8) | | | | |
| Alien Invasives | amount of reading (3) | | | | |
| 3. What ONE suggestion would you make to improve the course? | | | | | |
| | demonstrators: same marking and increase number, don't like tutorials since long as practical, | | | | |
| | need better notes | | | | |
| 4. Any General Comments: | | | | | |
| | good course, there are issues with demonstrators, make tutorials easier | | | | |

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# Dog Bite Reflections—Socratic Questioning Revisited

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In the online environment, the asynchronous discussion is an important tool for creating community, developing critical thinking skills, and checking for understanding. As students learn how to use Socratic questions for effective interactions, the discussion boards can become the most exciting part of the course. This sequel to the article "Does Your Dog Bite? Creating Good Questions for Online Discussions," applies sound communication principles and the prior question of trust to show online instructors how to phrase probing questions to increase comfort for learners' use. Based on the questions from the original "Does Your Dog Bite?" article, a variety of prompts are provided for asking probing questions in a non-threatening way.

Eight years have passed since the publication of "Does Your Dog Bite? Creating Good Questions for Online Discussions" (Toledo, 2006) in the *International Journal for Teaching and Learning in Higher Education* (IJTLHE). I wrote that article, which I affectionately refer to as "Dog Bite," in an attempt to provide my online students with an understanding of how Socratic questions can create a robust and synergistic learning environment. The article has been well accepted as evidenced by over 7,000 downloads and a consistent ranking on IJTLHE's list of "Top 20 Downloads of All Time" (International Journal for Teaching and Learning in Higher Education, n.d.). This popularity signals that practitioners are looking for instructional techniques to enhance their learners' interactions.

In the original "Dog Bite" article, it was presented that "a lack of questions results in a lack of understanding, and shallow questions produce shallow understanding" (Toledo, 2006, p. 151). By utilizing Socratic questioning, instructors can guide students through the critical thinking processes by providing them with well-written questions that lead to more questions. According to Muilenburg and Berge (2000), "… when facilitating online discussion, *asking the right questions* is almost always more important than giving the right answers (Conclusions, para. 1). Using the Socratic approach, as outlined in the original "Dog Bite" article, provides a model "in which questions are used to guide students through the desired learning route" (Toledo, 2006, p. 151).

After employing the Socratic questioning style for several years, I have observed some interesting uses of these questions in online discussions (see Table 1 for a list of the questions from "Dog Bite"). The most important observation was seen in how students gravitated toward the clarifying questions, and, most interestingly, were reluctant to ask the probing questions in order to avoid conflict. Many of the question prompts presented in "Dog Bite" are straightforward and might be considered confrontational by some students and instructors. In fact, several of my students shared that they felt they were being rude by asking these types of straightforward questions. This article will take a fresh look at the Socratic questioning approach for asynchronous online discussions. The questions from the "Dog Bite" article will be rephrased to help students feel more comfortable using them as they demonstrate their critical thinking and content knowledge in online discussions.

According to Berko, Aitken, and Wolvin (2010), "The power of language in human communication is profound. To understand a person's verbal [as opposed to non-verbal] communication is to understand how that person sees the world, how that person thinks" (p. 107). In online courses, the written word is used heavily to communicate ideas. As presented in "Dog Bite," one approach that can help extend online discussions is the use of Socratic questioning. In this method, students and instructors ask questions that take the conversation to a deeper level. Many times the interactions can challenge common assumptions, beliefs, and ideas (Pang, 2008). This process necessitates the creation of an environment where participants feel safe to ask and answer challenging questions within their learning community. When utilized well, Socratic questions can help students produce deeper and broader understandings of the target content and processes. Maxwell (2013) stated, "The idea is that by participating in the active sharing of dialogue, students can develop and refine their critical thinking and problem solving skills" (Socratic Methods section, para. 1).

At the same time that we are focusing on content and processes, we must ensure that students feel safe sharing their thoughts and feelings. "One of the most 'Socratic' aspects of Socrates' method. . .is all about a genuine attitude of humility and service towards the person being questioned" (Maxwell, 2013, The Deconstructive Phase section, para. 7). Many years ago, while working on a masters degree at Biola University, I took a course in the School of Intercultural Studies, which was taught by Dr. Marvin Mayers. In

Table 1
*Probing Questions*

| Questions that probe for: | Example Questions |
|---|---|
| Clarification | Let me see if I understand you; do you mean __ or __?<br>What do you think Mike means by his remark, Dee?<br>How does this relate to our problem/discussion/issue?<br>Jane, can you summarize in your own words what Richard said?<br>Richard, is this what you meant?<br>Would this be an example?<br>Would you say more about that?<br>How does __ relate to __? |
| Assumptions | What are you assuming?<br>What is Jenny assuming?<br>What could we assume instead?<br>You seem to be assuming __. Do I understand you correctly?<br>All of your reasoning depends on the idea that __. Could you have based your reasoning on __ instead of __?<br>Is that always the case? Why do you think the assumption holds here?<br>Why would someone make that assumption? |
| Reasons and evidence | What would be an example?<br>Do you have any evidence for that?<br>What other information do you need?<br>What led you to that belief?<br>How does that apply to this case?<br>What would change your mind?<br>Is there a reason to doubt that evidence?<br>Who is in a position to know that is true?<br>What would you say to someone who said that __?<br>What other evidence can support that view? |
| Viewpoints or perspectives | When you say __, are you implying __?<br>But, if that happened, what else would happen as a result? Why?<br>What effect would that have?<br>Would that necessarily happen or only possibly/probably happen?<br>What is an alternative?<br>If __ and __ are the case, then what might also be true? |
| Implications and consequences | How can we find out?<br>Can we break this question down at all?<br>Is this question clear? Do we understand it?<br>To answer this question, what other questions must we answer first?<br>Why is this issue important?<br>Is this the most important question, or is there an underlying question that is really the issue? |

*Note.* Adapted from Stepien (as cited in Toledo, 2006).

the first week of class, he talked about the prior question of trust (PQT) and the importance of developing trust bonds with others. The PQT asks, “Is what I am doing, thinking, or saying, building trust or undermining trust?” (Mayers, 1987, p. 7). Mayers calls the PQT a tool of empathy that can increase emotional and interpersonal empathy when it is used sincerely. We can use the PQT in our learning environments to raise the level of intellectual empathy.

The following is an example of applying the PQT in a learning setting. When an instructor has an attitude that she knows everything, is the final authority on a topic or discipline, and has total control over that content knowledge, she is less likely to have intellectual empathy for others who do not have the same depth and breadth of knowledge. In fact, she may even put up walls and cut off discussions that are less articulate or accurate than those she would present. Ultimately, this attitude is judgmental and most likely will be received as a rejection of what others have to say about *our* (emphasis intended) intellectual area. The PQT can help us open up the conversation and empower students to experiment and play with the information. Modeling openness and sensitivity in this way can create an environment of trust where students feel free to express their questions and be more willing to answer questions posed to them. This approach also requires the instructor to be (or learn to be) open to being questioned—it can be difficult, but has the potential to be very rewarding. The bottom line is that education is all about relationships, and relationships are built on trust. Applying the PQT to our intellectual and interpersonal interactions will jettison our students' learning beyond content mastery by helping them learn how to think more deeply and be able to teach themselves after they are finished with our courses in a safe environment. We must always remember that the best learning is more about asking effective questions than about memorizing and regurgitating content.

Taking into account the PQT and the heart of Socratic questioning, I suggest rewording the "Dog Bite" questions to make them softer and more user-friendly. For instance, one of the questions asks, "What are you assuming?" I suggest asking, "I'm wondering what assumptions might be involved in. . .?" Notice that I've rewritten this phrase using two principles of good interpersonal communication: (a) I've taken out the word *you* and (b) I've added the phrases *I'm wondering* and *might be*. By avoiding *you messages,* we people are less likely to be defensive. Maxwell (2013) put it this way: "When people are placed in a situation where they are questioned in a way that is friendly, respectful and useful, [they] are empowered to experience the value of good questions" (Socratic Questioning and Critical Thinking section, para. 1). We have all participated in conversations where *you always*, *you think*, or even *you should* were directed toward us. These *you messages* can create tension and stop the conversation in an instant – even in the online environment. Instead of accusatory *you-messages*, *I-messages* can set the tone of the conversation by creating a non-judgmental dialogue where people feel safe to share their thoughts and feelings.

In the early 1960's, Thomas Gordon, a student of Carl Rogers, the father of non-directive psychotherapy, began using *non-blameful* language with children during play therapy. Gordon coined the phrase *I-message* and added the model to his first parent effectiveness training book in 1970 with the belief that those in authority could use these same principles to communicate in a non-coercive and non-threatening manner (Gordon, 2011, I-Messages section). For educators, "I-messages are presented as an effective and positive means for inviting communication and establishing good rapport with students" (Ming-tak & Wai-shing, 2008, p. 126).

Second, adding phrases such as *might be* or *I'm wondering* demonstrates the author's curiosity and reveals that he or she does not have all the answers. Remember, the purpose of Socratic questioning is to create an exploratory conversation; it is not to determine the correct answer as quickly as possible. Look again at the probing questions from "Dog Bite" (Table 1). Which of these questions would you feel comfortable asking? Which would you avoid asking? Try using these two techniques to rewrite some of these questions as I've done in Table 2.

Again, it is very important that students know they are in a safe environment where they can ask and answer these probing questions. Many students will still need our permission or a gentle nudge even after we've softened the questions, so we must model the Socratic process as we extend the discussion. Their security in the process will develop most effectively when we help them build authentic connections with their peers and with us. Berko et al. (2010) suggest three additional guidelines for good communication that apply directly to online settings: (a) respond to what the other person has said, (b) give the other person freedom of speech, and (c) do not put labels on either yourself or the other person. I would add the following to these three principles:

- Respond to the person by name, respond directly to what the person has said, ask a PQT probing question, and sign your post.
- Ask PQT probing questions in order to take the discussion to a deeper level and learn more about the other person's thoughts and feelings (if applicable).
- Avoid generalizations, name-calling, and flaming. When emotions rise, create a response offline (in Word or handwritten), and then walk away. Come back later and revisit the post and your response – adjust the post so that it is objective and enables further understanding and discussion. Double-check using the PQT.

As we all know, the instructor sets the stage for the tone of the class, and this is especially true for online courses. Without the visual and verbal input of face-to-face learning environments, online instructors must be skilled at effectively communicating who they are and

Table 2

*PQT Probing Questions*

| Questions that probe for: | Example Questions |
|---|---|
| Clarification | Let me see if I understand what you are saying ... [restate in your own words].<br>Dee, how would you interpret Mike's statement? Mike, how was that?<br>In what ways does this relate to our problem/discussion/issue?<br>Jane, how would you summarize in your own words what Richard said? Richard, is that accurate?<br>Tom, am I getting this right? When you said ___, did you mean ___ or something else?<br>Would this be an example?<br>What might be added to your statement?<br>I'm wondering how you see ___ relating to ___? |
| Assumptions | What might some assumptions be?<br>If you had a guess, what assumptions might Jenny be making? Jenny, what do you think about that guess?<br>What might we assume instead of ___?<br>I think I'm hearing these assumptions ___. Am I understanding correctly?<br>It seems that your reasoning depends on the idea that __. What do you think? How might it be possible to base your reasoning on __ instead of __?<br>Might that always be the case? Why do you think that assumption is applicable here?<br>Why might someone make that assumption? |
| Reasons and evidence | It would help to have an example. What might that look like?<br>What evidence is there for that thought/idea?<br>What other information might be needed?<br>It would help to hear your description of how you came to that belief?<br>How might that apply to this case?<br>What might change your mind?<br>What might be some reasons to doubt that evidence?<br>Who might be in a position to know that is true?<br>What might you say to someone who said that?<br>What other evidence might support that view? |
| Viewpoints or perspectives | I wondering if this might be what is being implied?<br>If that happened, what else might happen as a result? Share your insights.<br>What effect might that have?<br>Describe your view on whether or not that might happen.<br>What might be an alternative?<br>If __ and __ are the case, then what might also be true? |
| Implications and consequences | How can we find out?<br>Is there a way to break this question down?<br>Is this question clear? Do we understand it? Explain.<br>To answer this question, what other questions must we answer first?<br>Why is this issue important?<br>What might be some underlying question that identify the issue? |

*Note.* Adapted from Stepien (as cited in Toledo, 2006).

how the class will be conducted. If instructors are merely going through the motions, the students will do the same. Palmer (1998) stated it this way, ". . .good teaching cannot be reduced to technique; good teaching comes from the identity and integrity of the teacher" (p. 10). I find that as I let my students get to know me, rather than the academic persona I have been encouraged to project, they are more likely to share who they are. To do this I make my learning transparent and share the teaching and learning processes that I go through as an instructor. As I become more approachable, demonstrate my comfort with being asked probing questions, and show my students that I don't know all the answers, they learn that they don't have to either, and the learning environment becomes an expression of openness and exploration. It is then that my students have come to see Socratic questioning as safe and exciting. Try this approach and watch your students grow in their knowledge, insights and relationships.

When used in online discussions, the softened Socratic questions regularly produced robust student interactions – thus meeting my goal of a synergistic learning environment. Students experienced many *ah-ha* moments when they saw the connections in content and processes that once went over their heads. As they began asking questions, they opened up to a wider array of possible answers, extended their thinking, and grew in their abilities to interact effectively.

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# Creation of Exercises for Team-Based Learning in Business

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Team-based learning (TBL) is an approach that builds on both the case method and problem-based learning and has been widely adopted in the sciences and healthcare disciplines. In recent years business disciplines have also discovered the value of this approach. One of the key characteristics of the team-based learning approach consists of exercises that require teams to choose a specific answer and defend it against the answers of other teams. Discipline-specific exercises designed for this approach are not in abundance, and a gap in the literature exists regarding information on how to create effective exercises for the business disciplines. This paper reviews the concept of team-based learning as related to business, discusses the need for help in designing effective exercises, and suggests four avenues for filling the void.

There has been a growing interest noted in the literature in building into university courses more opportunities for students to combine discipline-specific knowledge with practical skills (Dearing, 1997; Gold et al., 1991; Holmes, 1995; Nwanaka, 2011), especially the soft skills of communication, critical thinking, creativity, and collaboration (White, 2013). In business, we find complexity and the need to make effective decisions, with the input of others, under the pressure of time. One successful technique for bringing these realities to the classroom is team-based learning (Argyris, 1993; Burkhill, 1997; Gibbs, Haigh, & Lucas, 1996; Kolb, 1984). Bringing such realities to the classroom strengthens the students' preparedness for the complex environments into which they move after school.

Team-based learning presents complex problems rooted in real-world situations to motivate students working in teams to make a decision. The teams make this decision after considering important concepts and the interconnection of these with other concepts, as well as the myriad environmental variables impinging on a situation. Team-based learning emerged to enhance active learning and critical thinking by engaging students with the kinds of problems they will encounter in the workplace. The major emphasis in team-based learning is on concept application, and the processes through which students learn both the content and the applications are specifically designed so that student groups develop into self-managing teams. This approach fits with that of teaching for meaning as suggested by McTighe, Seif, and Wiggins (2004). These authors urge the schema of working backward from the *big ideas* of the discipline to ask students to inquire, think at high levels and solve problems while applying knowledge and skills in meaningful tasks within authentic contexts. Others concur that this approach serves "… to promote the development of problem-solving skill and self-directedness" (Lohman & Finkelstein, 2002, p. 125).

One thing that sets the team-based learning approach apart from its predecessors, such as case-based learning (Egleston, 2013; Machuga & Smith, 2013), problem-based learning (Nargundkar, Samaddar, & Mukhopadhyay, 2014; Pennell & Miles, 2009), project-based learning (Brady & Davies, 2004; Kloppenborg & Baucus, 2003), inquiry-based learning (Blasco, 2012; Madden, 2010) and task-based learning (Mallin, Jones, & Cordell, 2010; Whittington & Campbell, 1998) is that, while it borrows liberally from its antecedents, the team-based learning approach places intense emphasis on the tight-knit bonding and functioning of the team. Team-based learning distinguishes a mere group from a team by characterizing a group as an assemblage of people, while a true team is defined by a high level of commitment, intimacy and trust as well as the integration of the members into mutually supportive roles based upon mutually beneficial interests (Michaelsen, Knight, & Fink, 2004).

In team-based learning, teams are typically formed by the professor at the beginning of the course, based upon characteristics of diversity, and remain intact throughout, much the way a cross-functional team in a firm might operate. Another feature of team-based learning teams, which is not always true of group work, is that virtually all of the team's collaboration is done inside the classroom in the presence of one another and the professor (Michaelsen et al., 2004). This fact allows for an intense experience with a*ll hands on deck* and the teacher available to supervise the teams as they work.

The melding of the team, out of an assortment of individuals, consists of a series or cycles of activities in which the team members engage in intensive individual study, demonstrate their comprehension of the basic theories and concepts of the discipline, participate in mutual instruction concerning the points on which members are not clear, are exposed to supportive teaching primarily over points that continue to be unclear, apply themselves to a set of exercises over the major concepts that call for a decision from the team, and contribute to a discussion with other teams about the points of understanding and disagreement (Michaelsen & Black, 1994). As shown in Table 1, this cycle is repeated for each major topic in each major unit of study in a course.

The team-based learning approach in business, as popularized by Michaelsen et al. (2004), is built on a foundation of collaboration within a small team context and satisfies three important criteria that promote optimal learning (Perelman, 1992): (a) the student is immersed in a practical, on-going activity; (b) learning is multi-directional, with feedback from other learners and the instructor; and (c) learning is functional -- based on a real problem. It is through this process of cooperative learning and reflection that students move from passive learners to active learners (Goby & Lewis, 2000) and become responsible for a significant amount of their own education (Speece, 2002).

Team-based learning has improved educational outcomes in science, education, business, and medical education courses (Haidet, O'Malley, & Richards, 2002; Michaelson et al., 2004; Seidel & Richards, 2001). As an instructional method, team-based learning has been found to enhance students' communication skills, group interaction skills, and comprehension of complex course concepts (White, 1998). This accomplishment becomes significant in view of the fact that employers identify communication skills and social skills as the most desirable skills for job applicants (Appleby, 2000), while teamwork and problem-solving skills have frequently been identified by business leaders as key competencies (Goltz, Hietapelto, Reinsch, & Tyrell, 2008). Team-based learning exercises are more prevalent in the health sciences where the process matches well with that of diagnosis, but team-based learning is also finding a home in business education as well.

## The Problem

The logic behind team-based learning is compelling and the approach a natural step for those already employing group activities and assignments in classes, such as in cooperative education. However, the backbone of team-based learning, and the single biggest challenge, is that of creating effective exercises (Michaelsen et al., 2004), a recognition which has been borne out in our teaching experience. Unlike cooperative learning, where group activities are used within a pre-existing course structure (Johnson, Johnson, & Smith, 1991; Millis & Cottell, 1998; Slavin, 1996), team-based learning requires the instructor to reconfigure the entire course around uniquely fitted exercises.

Michaelsen et al. (2004) indicate that good exercises promote a high level of individual accountability and motivate vigorous discussion. These same authors suggest that effective exercises should present the teams with a set of specific choices that requires use of course concepts to arrive at a decision. The exercise should also prompt individual thinking which contributes to intense intra-team discussion. The learning process that begins with individual study and preparation and continues through the individual and team assessments (by thinking about and debating the finer points of the posed questions) will persist with concentrated focus on the exercise effort.

Our search of the literature made it clear that most of the available materials dealing with team-based learning in educational settings are in the area of medical and health science education followed by the basic sciences. One reason for this predominance of information in the area of medical education is due to a grant from the U.S. Department of Education awarded to Baylor College of Medicine in 2001 with the specific purpose of exploring the use of team-based learning in medical education (Sibley & Parmelee, 2008). Baylor's award funded several years of nationwide workshops for faculty and provided direct support to medical schools for implementing the team-based learning strategy. Baylor's efforts also involved good timing as Sibley and Parmelee (2008) explained,

> Several medical schools were searching for ways to have more active learning instead of a steady stream of lectures. However, they chose not to develop a PBL [problem-based learning] curriculum because of its high student-to-faculty ratio requirements. Instead, several of these schools sent key faculty to workshops on team-based learning. Many returned to their home campuses and either converted entire courses to the team-based learning strategy (Nieder, Parmelee, Stolfi, & Hudes, 2005) or began to use it episodically in place of existing faculty-led small group discussions (p. 46).

Following the initial dissemination of information by Baylor College of Medicine, many medical schools adopted some version of team-based learning for the value commonly attributed to the process, but they were pleased to also experience unanticipated benefits. Research into team-based learning use at medical schools found additional benefits such as enhanced knowledge retention and critical thinking (McInerney & Fink, 2003) along with a variety of positive academic and noncognitive outcomes of team-based learning in medical education (Baldwin, Bedell, & Johnson, 1997; Dunaway, 2005; Kelly et al., 2005; Koles et al., 2005; Searle et al., 2003; Vasan & DeFouw, 2005). According

Table 1
*The Team-Based Learning Process*

| Step | Activity |
|---|---|
| Individual study and preparation | Home reading of text, case, and articles |
| Individual readiness assessment | Quiz to determine preparation to move to the exercise phase |
| Team readiness assessment | Same as above, but answered as a team |
| Supportive teaching | *Ad hoc* mini-lectures over points not already comprehended |
| Individual exercise | This step will be the focus of the remainder of this effort |
| Team exercise appeal | Applies when a team believes a material error is in evidence |
| Post-exercise class discussion | Opportunity to learn from other teams |
| Periodic examinations | Crafted on the exercise model |

to Sibley and Parmelee (2008), "Schools of nursing, veterinary medicine, dentistry, physicians' assistants, and other allied health professions programs have also developed team-based learning within existing curricular structures" (p. 46).

While team-based learning is popular in medical education, we found the majority of prepared exercises and questions to be restricted to persons with login credentials rather than available to the public at large. Of the few exercise and question examples the authors discovered, most were short vignettes centered on patients presenting with a particular set of symptoms. The question and answer choices challenged the students to apply their knowledge within the context of the particular patient situation to explain the meaning of test results, the causes of the symptoms and other such questions leading to the proper diagnosis of the patient's condition and/or the appropriate treatment.

Despite the popularity of team-based learning, according to Michaelsen et al. (2004), a common problem with team-based learning is poorly conceived assignments [exercises]. These same authors insist that these poorly conceived exercises account for discussion domination by some members of the team and social loafing on the part of others. Michaelsen et al. go on to say that a well-conceived exercise will (a) encourage individual accountability, (b) promote closer physical proximity during the team discussion, and (c) promote a high level of interaction and discussion within the team. The outcome of these three phenomena is enhanced learning.

Michaelsen et al. (2004) urge the use of four procedures to create effective assignments. These procedures, sometimes referred to as the 4S Framework, include: (1) use of a *significant*, relevant problem, (2) have all the teams working on the *same* problem, (3) require teams to make a *specific* choice, and (4) have teams *simultaneously* report their choices. These procedures ensure that answers are comparable and that teams commit to their answer without knowing how others have responded. After the report is made by all teams, discussion/debate can begin.

While these four procedures provide some limited guidance on how to use exercises, very little guidance is available in the literature to assist with the creation of exercises, and virtually no prepared and tested exercises are available. Sufficient information is available concerning procedures for conducting all other parts of the team-based learning process, from forming teams, developing procedures for team management, crafting assessment questions, and conducting peer evaluations. But the largest—and arguably the most significant—gap in information about how to administer a team-based learning approach is in the development of discipline-specific exercises that are properly crafted to accomplish the learning objectives. For teachers new to the team-based learning approach, this gap in exercise materials is a formidable challenge. For team-based learning to be successful, instructors need help to fill the gap.

This article grew out of our struggles to find suitable exercise material for our team-based learning classes in business. The following sections share our experiences and thoughts concerning the development of team-based learning exercises that may be generally applicable to a range of subjects, but they are offered primarily with business disciplines in mind.

## Developing Team-Based Learning Exercises

Because the exercise is the core activity in team-based learning, it is critical to get this element of the approach right in order to succeed. According to the approach espoused by Michaelsen et al. (2004), the subject matter of a class should be broken into a manageable number of units: no less than four and no more than seven segments. Each segment will consist of an individual and team assessment of comprehension of text reading and applicable instruction to validate the students' preparation for proceeding with the exercise. It is at this point that some decisions have to be made, such as: (a) How many exercises will be associated with each unit of material? (b) How long and how in-depth will each exercise be? (c) How many questions will be associated with each exercise?

The instructor's answers to the preceding questions will set the stage for selecting, or creating, appropriate exercises for discussion and decision making. Based on personal experience, we recommend four viable means of developing suitable exercises: cases, news stories, custom episodes and simulations.

## Cases

Many textbooks come with cases or case-lets embedded in, or supplemental to, the reading material. Cases are a natural starting point for developing exercises because they already exist and typically come with teaching notes that augment their value for the instructor. However, the cases that we usually find in case texts are often not suitable, in their original state, for the exercises complementary to team-based learning. They are often too long, too far-ranging, or too technique-oriented to be suitable to the team-based learning method. We are not aware of texts in business that have been specifically geared to the team-based learning approach, and the problems and cases that are available tend to be more technique-driven than those called for by the team-based learning approach.

Our experience suggests there is no single template for case selection; a good case will have certain characteristics that will enhance its effectiveness in the context of team-based learning. The case conducive to high-energy team-based education (a) is relevant and interesting, (b) challenges students to process information at higher levels of cognitive complexity, (c) requires students to come to a specific choice, and (d) requires student teams to defend their choice with evidence and logic. Short cases work well when trying to focus on a specific point, while longer cases lend themselves to emphasizing a variety of points within a thematic context.

We have used cases on occasion, in either their full or modified form, but attention must be devoted to preparing questions that conform to the *specific choice* requirement. Already-prepared cases may be a good place to start, especially if an instructor has not had time to develop tailored materials. An instructor may use a case for a single exercise, but an efficient approach can be to assign a case for an entire learning unit and then employ it over and over to explore specific facets of the topic for the unit. This latter approach justifies a heavy investment on the part of the student in becoming thoroughly familiar with the case and doing independent research beyond the case. We have even created cases, later published, with the idea of using them as class exercises (e.g., Morris, Timmerman, & Lovvorn, 2014; Timmerman, Lovvorn, Barth, & Morris, 2011).

This method may be supplemented with questions provided by the instructor to focus the individual student's preparation, foster contributions to the team effort, and set the stage for questions to come in the team-based exercises. More information concerning question development is covered in a later section; however, the idea is essentially that of a multiple-option listing, all of which are plausible, among which each team must choose and present a compelling defense.

## News Items

Other sources of existing exercise materials are news items that fit the teaching objective. It is especially helpful if the item is in print so that it can be easily captured for use. Articles from the *Wall Street Journal, Fortune, Forbes,* and other business publications make great, contemporary backdrops for probing questions relevant to the text concepts as well as making the point that these concepts are current as well as relevant.

We have occasionally used articles directly from the *Wall Street Journal* and other sources, without alteration, as a timely exercise that depicts the current state of affairs. Examples of these instances include an article about the struggles of Staples as a big box store facing the vicissitudes of the economy, Wal-Mart's and Target's various relationships to labor unions, and Campbell Soup's use of neuromarketing in designing product labels. Each of these were used as versatile approaches to allow students to reflect on the meaning of *product*, application of the marketing concept, construction of a value proposition, selection of the best marketing metric, discussion of the product life cycle and the purchase decision process. These articles do not come supplied with ready-made questions. However, the *Wall Street Journal Weekly Review* for professors in various business disciplines comes with a set of quiz questions that can sometimes be adapted for use in a team-based learning exercise.

We have also used modified news stories, such as that of the Winter Olympics in Sochi, Russia. Not only was this a contemporary episode, which engaged student interest more than a more generic scenario, but it helped to show how these non-profit events have business and economic implications and are treated with the same concepts as for-profit organizations. In this instance, the Sochi Winter Olympics scenario was used to allow students to consider how rivals can actually help an organization make inroads into a market, to allow discussion of customer loyalty and CRM efforts, and to consider the application of outside readings.

We believe the key when using news articles is to craft questions that will prove the team's ability to employ the concepts and tools to which its members have been exposed in the reading assignments. The goal is to gain proficiency in applying concepts rather than merely reciting or defining them.

### Custom Episodes

Exercises custom-fitted to the topic can also be a meaningful route for instructors to take. The impetus for the episode can be a news article or an event that has come to the attention of the professor that suits the unit of study. One of the authors bought a reel lawn mower at a garage sale, more out of fascination with the uniqueness of reel mowers than out of an actual need for another mower, not to mention that the price was right. A few days later, the *Wall Street Journal* ran a story on the resurgence of reel lawn mowers in the face of high gasoline prices, shrinking residential lots sizes, concern with air and noise pollution and a rediscovery of the benefits to the lawn of reel technology. Borrowing from personal experience, the *Wall Street Journal* article, and a little further research on the history of mechanical means of mowing and competitors in the market, an exercise was ready to go which focused on the definition of a product and market segmentation as part of a marketing course. The beauty of creating a custom exercise with the objectives already in mind is that the questions are not forced on the exercise, but the exercise is built around the specific questions with which the instructor wishes the student teams to contend.

While the previous example of a custom exercise was based partly on an article found in the *Wall Street Journal*, one of the authors created a totally fictitious exercise. The author was unable to find an existing case or news story that adequately presented the situation needed to support a specific teaching point in a management of information technology course. Thus, the process of creating an exercise from the ground up offered the opportunity to design an entire story with specific circumstances that lead to the appropriate questions and decision choices.

In the contrived account, the author presented a company of a particular sales volume, with a certain number of employees, in a particular industry and competitive environment, possessing a specified information technology infrastructure, with specific strategic needs, goals, budgets and other such particulars. After reading and comprehending the story, the students were asked to make their best choice among the available alternatives using their understanding of the various information system principles while operating within the specific situation and circumstances as described in the fictionalized story. The exercise was well received by the students and provided the opportunity for the desired discussion and debate among the students within each team and then among the teams.

In the absence of an existing case or news story, the development of the crafted story allowed for an exercise that fully met the learning objectives and teaching points associated with a particular section of the course. However, a fully fictionalized exercise may also be the first choice of a professor, rather than the last choice.

### Simulations

A fourth viable source of Team-based Learning exercises is business simulations. Anderson and Lawton (2004) raised the question of whether or not simulation exercises would fit the needs of this type of learning process. Though Anderson and Lawton were focused specifically on the problem-based learning approach, their conclusions have the same implications for team-based learning. Anderson and Lawton's work showed support for the use of a business simulation exercise as the *problem* to be addressed by the kind of exercises being discussed here.

In the team-based learning context, simulations can be used in either of two ways. The simulation can comprise the one-time specific exercise for a set of team-based learning questions, or a semester-long simulation can be the basis for exercise questions throughout the term. In the latter case, questions can be posed which direct students' attention to specific understanding or skills they will need to perform well on the simulation. In this sense, the exercises serve as preparation for various aspects of the simulation task. The simulation provides the answer to the question: What backdrop shall I use for exercise questions? The questions will need to be created using the pattern mentioned earlier: questions should be of significance to the simulation work, should be identical among teams, and should include specific choices for which to opt.

There certainly are no rules that require any particular order of precedence among the methods presented here for developing exercises. It simply depends on the individual professor, the specific set of needs and a bit of creativity.

## Crafting the Exercise

### Exercise Characteristics

Regardless of which method is used to provide exercises matched to the unit topics, the exercise should be fitted to the learning objectives established for that unit. Other elements we consider when creating suitable exercises are: (a) length of time to be made available for students to work on the exercise; (b) how many sets of questions/decisions each exercise will contain; (c) whether the students will have opportunity to make advanced preparation; and (d) the level of study.

Some professors favor the *big* exercise that requires intense consideration and abstract thought. These are the types of exercises that may be more controversial and require time for negotiating the answer before committing as a team. Other professors like to expose the students to many specific topics, an approach that lends itself to smaller exercises or at least more discrete questions within an exercise.

There is another factor found in the team-based learning teaching method that has implications for exercise length. The issue is whether to hand out the exercise in class at the time of consideration or whether to distribute the exercise early, perhaps in the prior class period or online in the Learning Management System to allow the students to digest the information before being exposed to the questions. Obviously the former approach favors shorter, more manageable cases/exercises that can be absorbed quickly. If one is to permit deep consideration of the case, then handing it out early is an advantage.

An idea that helps promote student preparation outside of class is to assign an individual exercise that must be completed before class and then brought to class to be turned in with the team exercise. Students can be told that they must have their completed individual exercise to be eligible for credit on the in-class team exercise. An example of an individual exercise may be something as simple as writing a brief summary of the case that will be the subject of the in-class team exercise or thought-provoking questions that serve to prep for the exercise. The latter approach, in the context of a marketing course, might consist of asking students to identify the major bases for market segmentation as preparation for the choice of a basis for segmentation in a specific industry in class. Again, such an out-of-class individual activity helps ensure that all students on the team read the case ahead of time, give it some thought, and come to class prepared to contribute to the in-class team exercise.

Team-based learning can be effectively employed both at the undergraduate and graduate levels. However, the type of assessment and exercise questions may vary. We have found that undergraduate students are more in need of mastering the basic concepts and applications of the discipline and in making relatively modest distinctions. Honors and graduate students, on the other hand, should be well beyond a simplistic understanding of the discipline and prepared to deal with complex concepts and a high order of uncertainty. As such, the types of exercise questions can be of a different magnitude of complexity with advanced learners.

## Composing the Questions

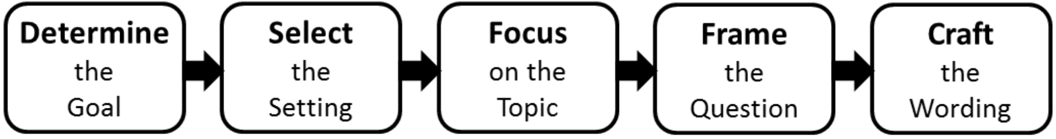
In our experience, the most challenging facet of building effective exercises for team-based learning is creating specific questions that accompany the exercise. Ill-conceived exercise questions not only fail to stimulate the type of thinking and team interaction desired, but also can be frustrating for the students and anti-productive.

The starting point for developing effective exercise questions for team-based learning is for the instructor to ask him/herself: What are the desired learning outcomes? These backward designed questions (Wiggins & McTighe, 2005) must be thought-provoking and relevant to student learning. The idea is that listing the desired learning outcomes will provide the basis for composing individual questions. Because the nature of team-based learning does not permit coverage of every concept in the text or readings, it is essential to focus on those concepts that constitute the crucial underpinnings of the discipline and, ideally, incorporate an understanding of contributing concepts. By working on the task from the conclusion back to the beginning, the instructor will have a much better handle on how the question should be phrased to evoke deep critical thinking (see Figure 1).

We believe it is best to create questions that feature answers that are all plausible and require a keen appreciation of the conceptions to arrive at an acceptable conclusion. The questions should enhance higher order thinking, as described in Bloom's revised taxonomy (Anderson & Krathwood, 2000), such as constructing, analyzing, evaluating, and synthesizing, while also serving as a means for the instructor to assess student learning and understanding of the issues. It is helpful if the instructor has modeled this type of questioning in class discussions prior to the exercise so that students can relate and find it familiar.

Thus, the heart of a team-based learning exercise is the list of questions that accompany it. If properly framed, team-based learning exercise questions can prompt critical thinking and promote comprehension (McInerney & Fink, 2003) while fostering articulation and defense of a managerial position, all vital characteristics of a business education. We have learned through experience that definitional and identification questions can only go so far in fomenting understanding of the discipline. When used, definitional questions can provoke hairsplitting and arguments over nuances of the terminology or position on a definitional continuum. If this type of question is to be used, the boundaries between the options must be clear and mutually exclusive. Alternatively, we have found using questions that call for a conclusion to be articulated and defended promote higher-order thinking and comprehension. As

Figure 1
*Team-Based Learning Back-to-Front Question Development Approach*



an example of a question that calls for a conclusion, we offer the following for an introductory marketing class.

> *Michael and Ashley Bonner are considering fulfilling their seven-year-old daughter's wish to attend a ballet performance. . .her first. Which problem-solving variation should the Boston Ballet expect parents like Michael and Ashley to use when they make their choice between The Nutcracker, Snow White, and Dance of the Sugar Plum Fairy: extended problem solving, limited problem solving or routine problem solving? Provide ample and telling evidence for your choice.*

The purpose of a question like this one, concerning the Boston Ballet Company, would be to help students clarify their understanding of the different problem-solving approaches. The question could be extended by asking the team to discuss implications for the organization as it develops strategy to serve this audience.

A fruitful line of questioning for graduate and advanced undergraduate courses is one which establishes a choice between strategic alternatives or raises the question of which avenue of action should be taken under a specified set of circumstances. Phrasing a question this way forces the student team to evaluate each alternative, assess its pros and cons, mentally try it in the scenario for fit, and then select a course of action around which it can build a plan for execution. An example for a fitness center scenario would be:

> *The industry in which FitLife is competing is most likely in the early growth stage of the PLC. [True. . . defend. False. . .indicate which stage is more likely and present a compelling argument. Offer the rationale for your pick. What are the marketing strategy implications of this stage for FitLife?]*

The choice is between two specific options but allows for the team to present seven arguments from evidence for either the stage offered in the questions or one of the others for which they have evidence. The real advantage of the question is that after the specific answer has been defended, the team is directed to go on to recognize and make application of the implications of its answer.

For example, if the objective is for the student to be able to demonstrate comprehension of the major psychological variables that affect consumer behavior, as opposed to only knowing their definitions, then the second in the following pair of questions is preferable.

> Question 1: *Ranchers who frequent Acme Farm Supply express deep pessimism about the future of ranching in the U.S. This pessimism is an example of which of the following psychological variables: perception, attitude, opinion, personality or motivation.*
>
> Question 2: *To help change the prevailing pessimism about the future of ranching in the U.S., the Department of Agriculture should develop public service messages that target positive changes in which of the following: perception, attitude, opinion, personality or motivation? Discuss how this targeting should occur and provide an example of how a message might be constructed to target the selected psychological variable.*

Question two has the advantage of not only eliciting information about the students' understanding of the various psychological variables, but of observing how the students are able to employ this information in a realistic marketing setting. Further examples of team-based learning questions in business are provided in Appendix A.

## Evaluation Rubric

Because team-based learning calls for intensive use of exercises that permit teams to receive frequent feedback, it can assist both the team and the instructor to employ a scoring rubric that captures the essential qualities for which the instructor is looking. Not only will the rubric facilitate efficient feedback, but it will concisely define for the team how to focus its attention. The learning process is assisted when the instructor determines in advance which factors to focus on and the weight each factor should carry.

For upper-division and graduate classes, a set of scoring factors has been outlined in Appendix B, which is offered as one example of an evaluation rubric for a team-based learning exercise. Instructors can use the rubric in Appendix B as a starting point for customizing their own scoring rubrics. The rubric in Appendix B was designed for a graduate strategic marketing course, and so the factors, weights, and scoring ranges (shown in parentheses at the bottom of each cell) reflect the high level and mature ability of the students. After considering the nature of the course being taught and the learning objectives for the particular exercise, the instructor could customize an appropriate rubric to fit the specific application.

Again, the beauty of the rubric is that it provides guidance to students for responding to the exercise questions and feedback once the exercise is completed. If the instructor employs the essential components of carefully determining the learning objective, selecting an appropriate exercise scenario, crafting robust questions, and using an informative rubric to supply feedback, then the instructor is placed in a great position to make the team-based learning process an effective educational tool.

## Conclusions

Team-based learning is an educational approach similar to case-based and problem-based learning that presents teams of students with complex problems rooted in real world situations. While the team-based learning approach has seen wide adoption among the sciences and health-related disciplines, its adoption within the business-related disciplines has been more recent. Even so, the approach of team-based learning is being accepted as a good fit for business courses.

For any teacher who desires to use team-based learning, it is critical to understand that the backbone of the entire team-based learning approach, as well as the biggest single challenge for any teacher, is the creation of effective team exercises, including the questions that accompany them. Yet, the largest gap in the available literature concerning the administration of the team-based learning approach is the lack of detailed information and guidance concerning how to develop discipline-specific exercises that accomplish the associated learning objective(s). The purpose of this article is to help fill that gap.

Based upon our research into the extant literature concerning team-based learning, and drawing upon our experiential learning from business disciplines, four broad categories or sources for creating effective exercises are identified: existing cases, news items, custom episodes and simulations. We offer guidance concerning how teachers can use each of these sources to build and create appropriate, effective exercises to support the team-based learning approach for their courses. We extend a call to other educators who use the team-based learning approach to also codify and share their experiential insights in an effort to further expand knowledge concerning the creation of exercises that are appropriate and effective within the team-based learning methodology.

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## Appendix A

| No. | Question Examples | Commentary |
|---|---|---|
| 1 | *The following is an effective value proposition for OfficeMax:"* To be the most trusted source for office solutions…" (2010 Annual Report) *[**Agree…** make a compelling defense, showing how it complies with the qualities of a good VP. **Disagree…** draft an effective value proposition for Staples. Indicate how an effective value proposition can promote success.]* | The purpose of this question is to help students refine their understanding of the wording and use of a value proposition. Like the other questions in this list, it calls for a specific answer which the teams will reveal simultaneously to prevent any risky shift. The teams are required to defend their response with rationale and then to discuss their reasoning and demonstrate an understanding of the characteristics of a competently worded value proposition. |
| 2 | *Suppose Kentucky Fried Chicken first crafted an advertising campaign to promote its new spicy wings and then developed a marketing plan to complement the campaign. Does this sequence of activities resonate well with the marketing concept? [**Yes…** clearly explain why. **No…** why not?]* | This question meets the criterion of having specific and mutually exclusive answers. It also tests comprehension of both the definition of the marketing concept as well as how it fits with other activities the firm will pursue. Not only will a team learn as it debates its answers, but teams will learn from each other during the inter-team discussion. |
| 3 | *From a multi-dimensional conceptualization of "product," (1) what is the essential (or quintessential) product that Bovine Boots is marketing? (2) How is this quintessence delivered/transmitted to the customer? (3) Is there even more to the "total product?"[You may answer the preceding questions by diagramming a multi-dimensional model of the product, with commentary.* | In this question about shoes for cows designed to prevent them getting hoof disease in wet conditions, not only does the exercise take the student out of their zone of familiarity, but gives them the opportunity to define an unfamiliar product in terms of its relevant strategic dimensions. While not explicitly contained in the question, the answers should be part of the students' knowledge base from classroom discussion. The question allows teams to demonstrate their appreciation for how the components of a product relate. |
| 4 | *The price elasticity of demand for ComfortAir Patient Warming System markets are relative price inelastic. [True/false? Why?]? How is the price elasticity likely to affect marketing strategy?* | This question provides a mechanism to consider the meaning and effects of price elasticity of demand. Teams will reveal their answer simultaneously and compellingly present their case to the other teams. |
| 5 | *Which approach should Coastline Marine use to determine the advertising budget for the coming year: competitive parity, percentage-of-sales or objective-task method? Demonstrate how the method selected would be applied by determining the amount of the recommended budget for the coming year and suggesting how it should be allocated across promotional types.* | This question addresses promotion budgeting methods studied in one class and permits students to demonstrate a comprehension of the nature and differences between the methods. The beauty of the approach is that by the time the three-step process of individual consideration, team consideration and inter-team discussion has occurred, the class should be on the same page AND will have engaged in peer instruction which is sometimes more effective than faculty-to-student instruction. |

## Appendix B

### Team Exercise Evaluation Rubric

**Exercise #** ________ **Team #** _________

| **Elements** | **Wt.** | **LEVEL 4** | **LEVEL 3** | **LEVEL 2** | **LEVEL 1** | **Points** |
|---|---|---|---|---|---|---|
| **Accurate** | .20 | Demonstrates clear and deep understanding and identifies all the main issues; employs terms and concepts properly and where appropriate; consistent/ noncontradictory with marketing vocabulary (19-20) | Demonstrates generally clear understanding and identifies some of the main issues; uses terms and concepts of the discipline most of the time and does so properly and with general consistency (16-18) | Demonstrates limited/surface understanding and identifies only the most obvious issues; insufficiently uses terms and concepts of the discipline; employs marketing vocabulary incorrectly or inconsistently (11-15) | Demonstrates superficial understanding or identifies only a few of the issues in the exercise; fails to appropriately use terms and concepts of the discipline or makes "fuzzy" use of marketing vocabulary (0-10) | |
| **Complete** | .30 | All parts of issue are addressed; "thick" analysis is evident; considers a germane range of factors; multi-dimensional (28-30) | A few parts of issue are addressed; "medium" analysis is evident; considers a limited range of factors; limited dimensionality (23-27) | Limited parts of issue are addressed; "thin" analysis is evident; considers an overly narrow range of factors; one dimensional (16-22) | Few or no parts of issue are addressed; analysis virtually nonexistent; considers an insignificant range of factors; almost non-dimensional (0-15) | |
| **Logical** | .40 | Rationale fully articulated; logic holds together well; makes appropriate, insightful and powerful connections between the issue/ problem and marketing concepts; argument is highly consistent/coherent; reveals keen insight (37-40) | Rationale is passably articulated; logic is adequate; makes appropriate connections between the issue/problem and marketing concepts; argument is reasonably consistent/coherent; reveals good insight (31-36) | Articulated rationale is skeletal; logic not well knit together; makes appropriate but somewhat vague connections between the issue/problem and marketing concepts; lacking in compelling sense; argument is inconsistent; reveals hazy insight (22-30) | Rationale is ineffectively articulated; logic quite lacking; unclear; makes little or no connection between the issue/problem and marketing concepts; argument is nonexistent or incoherent; reveals no real insight (0-21) | |
| **Well Expressed** | .10 | Very effectively presented; compellingly stated; clear and concise (9-10) | Adequately presented; could be more compellingly stated; generally clear (7-8) | Ineffectively presented; unpersuasively stated; lost focus at times (5-6) | Poorly presented; lack of focus and clarity in statement; hard to follow (0-4) | |

**Further Comments:** **Score:**_________

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# Educational Leadership and Michel Foucault

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Educational leadership and Michel Foucault by Donald Gillies (2013) examines the contemporary discourse of educational leadership from the ideas of Michel Foucault. Foucault was a French philosopher and literary critic. In this book, Gillies presents both theory and application of Foucauldian theory to study educational organizations, social hierarchy, and human nature in leadership roles. He highlights the hegemonic status of educational leadership associated with the strategic planning and school outcomes. He views educational leadership through the lenses of postmodernist ideas and concepts as plural discourses, instead of a single discourse. Gillies challenges leaders on the current education stage to advance the dominant educational leadership discourse by using Foucault's concepts of discourse, discipline, power, and governmentality whether they are from schools, academia, business, or government.

At first glance, it does not seem like a marriage made in heaven: the merger of dynamic, never static Foucauldian structuralism / anti-structuralism philosophy with the mundane principles of educational leadership. However, after reading a few pages of *Educational Leadership and Michel Foucault*, readers can explore the uncomfortable merging of Foucault's philosophical premise of *critique* and the educational leadership domain. In his book, Gillies proposes that the postmodernist ideas and concepts propounded by Michel Foucault, the 20th century French philosopher, be applied to the educational leadership environment. Using a Foucauldian theoretical lens, Gillies attempts to critically examine today's dominant discourse in educational leadership. In doing so, Gillies also confronts status quo educational leadership praxis with Foucault's theoretical and perpetually evolving social philosophy. Armed with this focus, Gillies characterizes the current educational leadership environment as an intensely global and geo-political stage upon which broadly defined educational stakeholders with diverse agendas interact with, and react to, continuous systemic change, ubiquitous reforms and levels of individual and collective accountability unheard of a generation ago. In Gillies' view, the ongoing discourse is a cacophony of voices, ranging from individuals to organizations to governments, all promoting transnational, evidence-based, and transferable *solutions*. Gillies identifies this noisy intersection of environment and discourse as the Transnational Leadership Package (TLP).

Gillies' intent is to challenge and spur actors on the current education stage to advance the dominant educational leadership discourse by using Foucault's concepts of *discourse, discipline, power and governmentality*. Gillies is confident that all educators, whether from schools, academia, business or government, while perhaps not embracing all Foucauldian philosophical axioms, can in practicality, significantly benefit from their unconventional insights and alternative understanding of educational leadership all together.

The book is organized around four prominent Foucauldian concepts and their applicability to educational leadership: (a) educational leadership as *discourse*, (b) educational leadership as *discipline*, (c) *power* and educational leadership, and (d) *governmentality* and educational leadership. Gillies, by targeting today's leaders (administrators, academics, and practitioners at every level of education), urges them to consider both the application and critical examination of Foucault's substantial, if unsystematic potential, contributions to the evolution of existing educational leadership tenets.

Early in Chapter 1, Gillies reinforces his philosophical argument and propositions, first by introducing Michel Foucault and his ideas to a new generation of educators, and second by delineating the potential benefits and influences of these ideas on existing educational leadership thought. He readily admits Foucault's lack of attention to things educational in his lifetime, but he is a compelling advocate for the application of Foucault's (1977) enlightened and progressive arguments for educational leadership in his seminal work, *Discipline and Punish*.

Gillies frames the discussion of educational leadership from a Foucauldian perspective "as a discourse, or set of discourses" (p. 25) in Chapter 2, thus bringing Foucault's analytical *discourse* and *archaeology* to bear on existing and perceived imperfections of current educational leadership thought. According to Gillies, these deeper perspectives will explore "various different 'styles' and 'types' of leadership" (p. 25).

Moving from *discourse* to *discipline* in Chapter 3, Gillies applies Foucault's intensely penal view of *discipline* to the education environment. *Discipline,* as Gillies suggests, produces a stratification of individuals, functions and authority. Interestingly, Gillies positions educational discipline as an analysis of individual development, self-disciplined behavior and interactions—harmonious or conflicting—between individuals and groups and the greater dominant educational leadership discourse.

Gillies presents how the Foucauldian term *power* can contribute immeasurably to the educational leadership discourse. It is in Chapter 4 that *power* is directly related to knowledge; but *power*, in Foucault's view, is *exercised rather than possessed*; it is, then, a circumstantial variable dependent upon micro and macro educational relationships. Gillies posits that *power* cannot simply be understood; it must be dissected into its myriad components – social, systemic, and situational.

Introducing and extending his discussion of the Foucault concept of *governmentality* in Chapters 5 and 6, Gillies clarifies that Foucault's idea of *governmentality* was the *conduct* or *influence* exercised by individuals upon other individuals. As presented by Gillies, Foucault's *governmentality* approximates today's consensus view of leaders as *influencers* rather than as authoritarians. In Chapter 7, Gillies acknowledges the real philosophical foibles and blemishes of Foucault as well as the skepticism and suspicion with which educators will view the appropriateness or practicality of his theoretical framework being applied to current educational leadership thought or praxis. Gillies notes, with uncommon honesty, both the "acclaim and distain in equal measure" that Foucault attracts (p. 106). Gillies predicts that what will be most disconcerting to current educators is Foucault's lack of workable alternative practices. Instead, Foucault offered continuous philosophical criticism while proposing no "suggestions of how to proceed otherwise" (p. 106).

However, Gillies maintains his position as an effective apologist by identifying several positive aspects of Foucauldian philosophy being applied to educational leadership: (a) that Foucault *critique* reveals the evolutionary, dynamic nature of educational leadership; (b) that Foucauldian analysis is, in fact, philosophical, comprehensive and non-directional; (c) that Foucault's view of power is insightful at both the organizational and individual levels of leadership; (d) that Foucault analysis is highly effective in *problematizing and questioning the discourse*, and by introspection, potential alternative approaches may be identified; and (e) that Foucault's relativism provides an optimistic assessment of educational leadership which is open-ended and contingent on future discourse.

Gillies' work is thought-provoking and expansive; it demands attention while conceding weaknesses and flaws in the philosophical theory. However, readers may find Gillies' recommendation to apply Foucauldian concepts and theory to the ongoing educational leadership discourse both confounding and impractical. Gillies, not unlike Foucault, clouds his proposals with esoteric and convoluted arguments. It is difficult to find a recommendation for expanding the educational leadership discourse that is directly and simply stated. As an example near the end of the book, Gillies (2013) writes:

> While this book has suggested its links to the school effectiveness agenda and the rise of managerialism and new public management, a thorough study of the relevant archive would be very helpful in plotting the discursive journey involved – a history of educational leadership problematics, as it were, how the discourse encountered problems and how it sought solutions (p. 114).

Readers may conclude that Gillies' proposals, much like Foucault's contradictory philosophies, are equally ambiguous and confusing. However, Gillies has also serendipitously held a reflecting mirror to the troubled face of higher education and its very real stress points of financial and budgetary pressures, the constant drone of doing more with less and its own battles with disparate voices concerning curricular standards, vision and accountability assessment. Time will reveal whether Gillies' challenging but overly generalized approach will be taken seriously as a reasonable educational leadership reformation within the community at large. *Educational Leadership and Michel Foucault* should be considered by educators as representing exotic, contemporary thinking about educational leadership theory and praxis. Readers may also consider the two other works that are included in this Routledge series: *Deconstructing Educational Leadership* by Richard Niesche and *Educational Leadership and Hannah Arendt*, by Helen M. Gunter.

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