Action Research and Reflection on Student Approaches to Learning in Large First Year University Classes

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Abstract

This paper presents an action research approach to exploring methods of improving the learning styles and outcomes of first year university students within large class environments. The genesis of this project stemmed from an observation that entire tutorial groups were often lethargic in their approach to learning. Following a survey of learning styles, students were exposed to more student-centric teaching styles within tutorial groups, with a view to encouraging deeper student learning and self-regulated learning behaviours. Although the project was successful in motivating students' participation in class activities, no noticeable change to a sustained deeper learning style became evident. The findings suggest that simply motivating students to participate in class does not necessarily alter overall learning styles, at least in the short term. This suggests that the process of "unlearning" previous learning styles may pose a significant problem for instructors and it appears likely that the process of changing from surface to deep learning may require more than a single course intervention. However, there is some evidence that student-centred and self-regulated learning results in a more positive learning experience for both students and teachers. The article concludes with a model of proposed relationships uncovered by the research which deserve further exploration in the quest to provide greater levels of student satisfaction with their higher education experiences.

Introduction

University courses with large enrolments hold challenges for course convenors, particularly in managing and maintaining course consistency, and in accommodating different student learning approaches that are conducive to the realisation of high

quality learning outcomes (Cope & Staehr, 2005; Toth, 2002; Wachtel, 1998). Large cohorts of students often make it difficult for convenors to create an environment in which students feel that their own personal needs are being met (Stork, 2003). In addition, contextual difficulties such as divergent instructor personalities and teaching styles often inhibit effective teaching results in classes characterised by students with preferences for different learning approaches (Schlee, 2005). Therefore, within this context, we ask how educators can provide an environment that accommodates individual student needs and promotes deeper approaches to learning?

Although the term "learning style" is somewhat problematic (Richardson, 2000), previous research has shown that students' learning style (or tendency toward a particular learning strategy) affects their learning related performance (Heikkila & Lonka, 2006). Themes emphasising the constructivist, active, contextual and collaborative nature of learning have received considerable attention in the learning and metacognition literature (Ramsden 1998). However, situational and collaborative aspects of learning have received less attention in higher education settings (Lonka, Olkinuora, & Makinen, 2004). This is surprising given that teaching strategies, the associated type of teacher regulation and levels of associated student collaboration appears to mediate students' approaches to learning in all educational settings (Entwistle & Entwistle, 2003; Lonka, Lindbom-Ylanne, Nieminen, & Hakkarainen, 2001; Trigwell, Prosser, & Waterhouse, 1999). In particular, there is some evidence that loosely regulated approaches emphasising student-focused activities foster deeper approaches to student learning in universities (Heikkila & Lonka, 2006; Trigwell et al., 1999). However, there is no conclusive data to show how teaching style influences learning approaches and student motivation in large university classes, or what methods prove most advantageous in reorienting students from an existing surface learning predisposition to a deeper learning approach.

This paper describes and analyses the effectiveness of an intervention within a large, first year undergraduate university class. The course was an introductory management course of 827 students. Instruction was provided by one lecturer (first author) and 10 tutorial staff. The second author provided methodological support for the project. The course consisted of a two-hour lecture and one-hour tutorial which were held during the day. These classes were held at times consistent with other first-year university course and most tutorials were held at concurrent times. Attendance in tutorials was non-compulsory and no assessable value was placed upon the preparation of tutorial activities. Support materials and tutorial preparation exercises were provided to students through a computer assisted learning environment.

Problem Identification

Early verbal feedback provided by all tutors (in the third week of semester) confirmed that most students were lively, enthusiastic and prepared for in-class discussions. However two tutors observed that they each had one "problem" class comprising unenthusiastic and unprepared students. Both tutors commented that they found that students in these two tutorial groups (hereafter called the "interest group") were particularly difficult to motivate and were less engaged in activities from the very first tutorial. They self-reported that there was little value in engaging in and completing tutorial activities. Although the members of the interest group attended their tutorials regularly, they only appeared to be interested in "getting the answers" from their tutors. The majority of students in the interest group (more than 90 percent in each tutorial group), had just started their tertiary studies suggesting a possibility that their previous educational experiences may have influenced their orientation towards studying (Ramsden, 1992). However, the researchers could not discount the possibility that other pedagogical reasons associated with course content and delivery may also have accounted for the students' preferred approaches toward learning.

Thus the aim of this project was to investigate possible course content and delivery related issues that may be influencing levels of motivation and learning approaches within the interest group. Importantly, cognitive and situational factors have only recently been forwarded as potential explanations for student learning and motivation (Volet, 2001a).

An action research project was developed, implemented and evaluated, in an attempt to understand what methods and tactics would be most effective in encouraging both in-class participation and deeper approaches to learning. Previous research suggests that an individual's predisposition to a surface learning approach is not always capable of being changed (for example, Biggs & Rihn, 1984; Kember & Gow, 1989). Hence, the researchers were cognisant of the need to embark on an intervention in which learning activities were re-designed to require the demonstration of comprehension and critical analysis and thus foster deeper approaches to learning within the interest group student cohort (Biggs, 1985).

The remainder of this article presents the findings of each stage of the research (cycles 1-3). Initially the learning styles of the members of the interest group were explored and then possible solutions that could be used to assist in the development of deeper (student-centred) learning activities were designed and tested. Next, a description of the action research method and its value in higher education settings is presented. Then, the plan for the action research project is explained. Details of two cycles of research are then provided. Reflections on outcomes are detailed within the context of existing teaching and learning theory. Finally, we conclude with a summary of the current state

of knowledge in pedagogical approaches and learning style and the contribution this research makes to this knowledge and present suggestions for further research iterations.

Action Research

Action research provides a useful framework for critical educational research enquiry (Biggs, 2003; Hooley, 2005; Zuber-Skerritt, 1992). Action research is "… a form of self-reflexive enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices and the situations in which these practices are carried out" (Carr & Kemmis, 1986, p. 162). Within the context of higher education action, research has been used to improve teaching practice, student learning and curriculum design (Dehler, 2006; Zuber-Skerritt, 1992).

Taking an action research approach provides the opportunity for researchers to change a situation aided by reflective iterations that are supported by the collection and analysis of different kinds of data (Hermes, 1999). Part of this process includes the opportunity for self-reflection and change by participants in the research, which is unlike most other research methods (Reason & Bradbury, 2001). As changes are made, the research takes the form of cycles of action and research (Zuber-Skerritt, 1992; Carr & Kemmis, 1986). Thus, action research, in this study, provided the opportunity to explore the situation and trial and reflect upon identified solutions in order to make conclusions about the causes of learning-related issues and the value of interventions.

There is agreement that action research takes the form of a number of iterations of research activity, which may involve combinations of qualitative and/or quantitative data collection and analysis (Zuber-Skerritt, 1992). The typical depiction of the action research process is shown in Figure 1(a), including the four phases of the iteration process of each cycle which are to plan, act, observe and reflect (Kemmis & McTaggart, 1988; Zuber-Skerritt, 1992). Figure 1(b) then depicts the iterations of the research adopted in this research.

As identified in Figure 1(b), two research cycles related to both understanding first-year undergraduate students' predisposition to rote learning approaches and designing strategies to shift these students towards deep approaches to learning. Within the first cycle, the researchers sought to understand the extent of surface learning approaches in the entire student cohort and identify particular characteristic differences of members within the interest group. During the second cycle student-centred learning activities were developed to promote quality learning in the interest group, that is, tasks and instruction involving students in the conscious and reflective

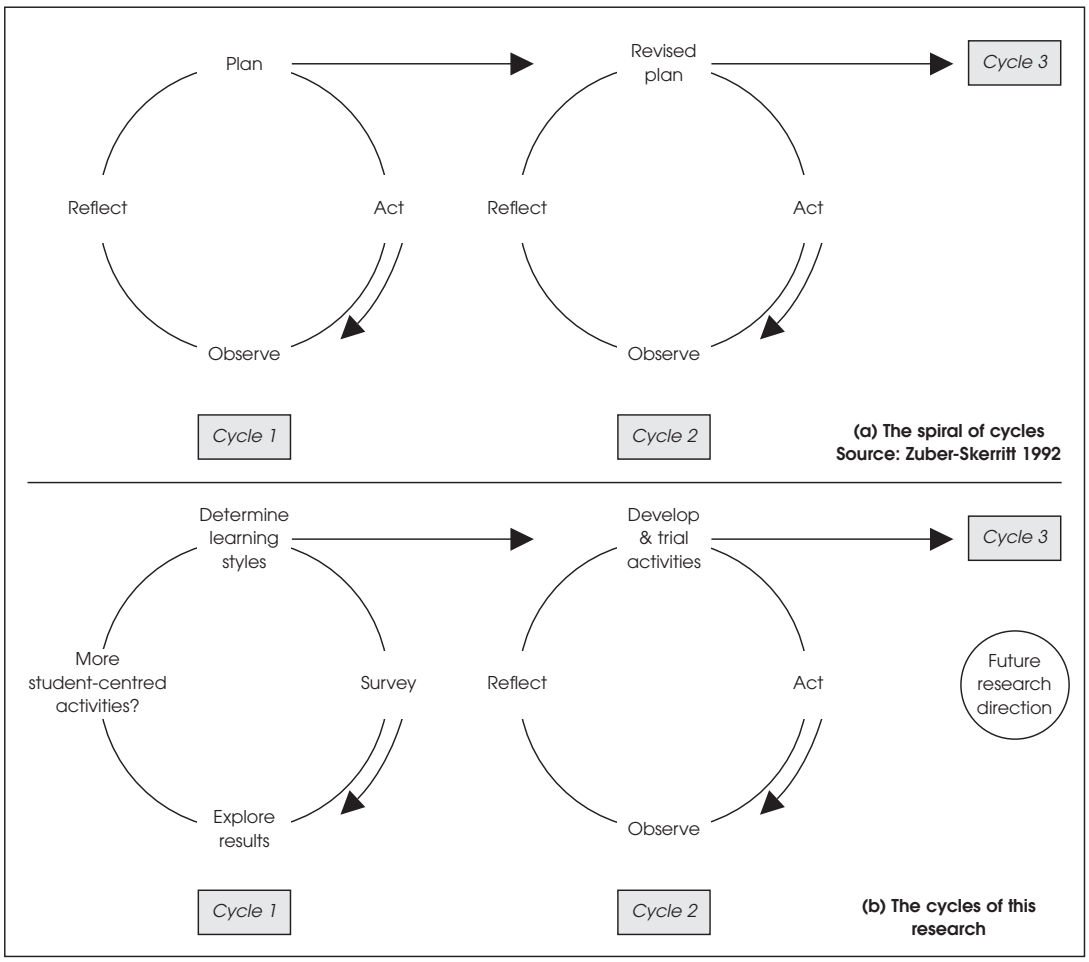

Figure 1: The action research process

search for personal understanding (English, Luckett, & Mladenovic, 2004). These stages are outlined in detail below.

Research Cycles

This action research consisted of three research cycles. Initially the learning styles of the students in the interest group were both observed and assessed using Fox, McManus and Winder's Study Process Questionnaire (Cycle 1). Following reflection on these results, Cycle 2 consisted of developing and measuring outcomes associated with student-centred learning activities designed to assist in deeper approaches to learning. Cycle 3 consisted of reflecting upon the results of the study within the context of the emergent research questions and subsequently identifying future research directions.

Research cycle 1

In the first instance we investigated the adopted learning styles of all students enrolled in the course so as to ascertain any differences between those who constituted the interest group and the remainder of the enrolled student cohort. Thus, the first iteration of the research commenced with a review of the literature pertaining to student approaches to learning.

Student approaches to learning (hereafter SAL) are well researched and documented within educational research (for example, Marton & Saljo 1976; Biggs, 1987; Entwistle, 2001; Ramsden 2003). Approaches to learning are related to the degree of satisfaction students experience in their learning. Students generally adopt surface, deep or achieving learning approaches (Marton & Saljo,1976; Biggs, 1987; Entwistle, 2001). Surface learning approaches incorporate the use of routine memorisation to recall course content (Entwistle, 2001). Alternatively, students adopting a deep learning approach actively engage with course content and attend to the meaning and significance of the materials to be studied (Fox, McManus, & Winder, 2001; Marton & Saljo, 1976). "Achieving" describes a student's need to achieve high grades and be visibly seen to achieve (Entwistle & Ramsden, 1983). Generally surface learning is often dissatisfying and generally leads to poorer learning outcomes (Ramsden, 2003). As student learning approaches impact on a student's motivation to engage in tutorial tasks, it appeared plausible that unprepared and unenthusiastic students were adopting surface learning approaches in tutorial sessions. This possibility required exploration, along with a need to understand the reasons for this occurrence.

Proponents of the self-regulated learning perspective advocate the need to extend SAL theories from examining students' self-reported study processes, to include analysis of actual cognitive processing (Pintrich, 2000). Generally, self-regulated learning (hereafter SRL) is where students assume responsibility for their own learning, set achievable goals and tasks and maintain their task-related motivation (Vermunt & Vermetten, 2004). This approach allows students to monitor and control their strategies to accomplish specific tasks. Although there are distinctions between the SAL and SRL frameworks, they are still closely related and both approaches impact upon actual study behaviour (Lonka et al., 2004). For example, surface learning approaches are often associated with rehearsal behaviour (Entwistle & Ramsden, 1983) and deeper approaches to learning are related to personal reflection and the search for meaning (Lonka et al., 2004). Importantly, should a student not self-regulate his or her learning, there may be a need to delegate responsibility for learning to a teacher. Subsequent problems may arise should there be a divergence between the learning approach of the student and practices of the learning environment (Heikkila & Lonka, 2006).

Apart from regulation and approaches to learning, a related stream of research has investigated the differences in the way that students manage their studies in response to challenges in academic environments (Kivinen & Nurmi, 2003). These cognitive strategies refer to "cognitive, affective and behavioural processes people apply to achieve their goals and to evaluate the outcomes of their actions" (Heikkila & Lonka, 2006, p. 102). Three main types of strategic processes have been introduced including illusory optimism (students striving for success), defensive pessimism (students with low expectations of future performance) and self handicapping (students who focus on task irrelevant behaviours to justify likely task failure) (Eronen, Nurmi, & Salmela, 1998).

Although illusory optimism and defensive pessimism have been shown to be successful strategies in higher education (Eronen et al., 1998), we did not know initially what cognitive strategies our students were adopting. Consistent with recent research (Heikkila & Lonka, 2006), we concluded that an integrated framework investigating the interplay of SAL, SRL and cognitive strategies was needed to ascertain differences between students' motivation, situational and contextual thinking prior to, and following changes in their learning environment.

Previous research suggests that students enter university with pre-determined learning approaches based upon prior experiential and personality correlates (Pee, Woodman, Fry, & Davenport, 2000; Van Woerkom, Nijhof, & Nieuwenhuis, 2002). While this would be considered likely in the case described here, there is also some evidence that lecturer teaching styles (and corresponding level of associated regulation) may influence learning approaches (Biggs, 1999). In support of this contention, Ramsden (1992) states that "When students appear to be "unable to study" we should examine their approaches to learning before blaming them for being idle and unmotivated, particularly in view of the effect of our teaching on their approaches" (Ramsden, p. 58). This would suggest that in some instances, a student's approach to learning is an extrinsic factor, rather than being inherently intrinsic to the student. Hence, a thorough investigation of learning styles and the impact of different teaching styles was also warranted in order to determine if the problem with learning was related to teaching style.

A key tenet of Ramsden's (2003) argument is that individual teaching approaches influence the quality of their students' learning. However, in relation to the course being studied, it would appear that some students lacked enthusiasm at the beginning of this, a first year, first semester, introductory course. We would argue that students had not been in the class long enough to react quickly to teaching style – or could they? How long does it take before a class "settles into" a particular learning/teaching pattern? Further, should the method of course instruction be a major influence upon student learning styles, one would normally expect to find similarities across all

tutorial groups. Given the apparent disparity between groups, the researchers investigated whether learning approaches in this case might be related to intrinsic factors stemming from previous experiences. Students may have a predisposition to surface learning, based on previous educational experiences in secondary education (Oblinger, 2003). On this basis it may be necessary to design learning contexts that facilitate first year students' adoption of sophisticated learning approaches so as to prepare them for the remainder of their university studies (Ramsden ,1992).

Ramsden (1992) advocates that "good teaching implies engaging students in ways that are appropriate to the deployment of deep approaches" (Ramsden, p. 61). Similarly, Biggs (1999) and Karns (2005) suggest that changes in teaching approaches are necessary to encourage students to engage in and be interested in the task itself, and to search for inherent meaning within the task. In support of this, some studies have found that students will adapt their approaches to learning to their perception of what different units demand (Eley, 1992; Lindblom-Ylanne & Lonka, 2000). Meyer (1991) defines this as "study orchestration". Hence, it would appear that alternative approaches to teaching may lead to the student's adoption of a deeper learning approach, resulting in improved levels of motivation to complete the required tasks (Ramsden, 1992).

Adapting learning styles has also been found to be related to the students' perception of what is required in a course. A number of studies has found that despite attempts to train students in deeper learning methods, most students were very adept at adapting activities to maintain non-reflective or surface learning approaches (Hall, Ramsay, & Raven, 2004; Marton & Saljo, 1984). Some academicians suggest that this may have resulted from the promotion of the message that surface learning approaches are rewarded in higher educational settings (Cope, 2003; Peltier, Hay, & Drago, 2005).

Given the established link between students' adopting a surface learning approach when they are de-motivated, it appears logical to assume that students within the interest group would favour surface learning approaches. Further, these students may have a pre-disposition to surface learning approaches due to their prior educational socialization in secondary education (Carr & Claxton, 2002; Ramsden, 1992). For example, the demographic characteristics of members of the interest group might be found to be significantly different from other groups. Alternatively, students in the interest group cohort may have adopted a learning approach and level of self-regulation that is reflective of the learning environment (instruction, curriculum, student culture and opportunities for collaboration) (Cope & Staehr, 2005; English, Luckett, & Mladenovic, 2004; Vermunt & Verloop, 1999). This could include a failure to provide activities which engage the students, motivating them towards self-regulated learning approaches and

concomitant periods of reflection. Hence, for this first cycle of the research three questions were investigated:

- RQ1 To what extent are students within the interest group demographically different to other students within the same course?
- RQ2 To what extent do the students in the interest group exhibit different learning approaches to other students within different tutorial classes?
- RQ3 To what extent do the students in the interest group display lower motivation and lower levels of satisfaction with the course learning environment than other students within the course?

To evaluate the current situation in relation to student characteristics and learning approaches, all students enrolled in the course were asked to fill-in a self-complete questionnaire which assessed learning style and gathered information about their age, gender, ethnic background, year of study and opinions about the course. Learning style was measured using Fox, McManus and Winder's (2001) shortened version of the Study Process Questionnaire (SPQ). In comparison to Biggs' (1987) original 42 item version of the SPQ, the shorter version has been found to exhibit similar characteristics, psychometric properties and structure (Fox, McManus, & Winder). In addition, the shortened version was preferred due to ease and speed of administration, and the likelihood of minimizing risks associated with potential respondent fatigue following re-administration of the survey at a later date.
Results of the analysis of the findings of the survey revealed that:

- Although previous research has suggested that learning processes are related to an individual's maturity and experience (Biggs, 1987), there were no significant differences in the ages of students in the interest group cohort and students within other tutorials. In addition, there were no significant differences observed between these groups and other groups under instruction by the same tutors.
- There was no significant difference in the gender balance in these two groups.
- There was no significant difference in the ethnic backgrounds of the students in the interest group compared to other groups, and no particular similarities were observed within these groups.
- All respondents within the interest group favoured a predominantly surface approach to learning. Some differences were found in comparison to other tutorial groups. In particular, in groups characterized by a greater proportion of mature age students, a deeper approach to learning and understanding course content was adopted. However, although other

student tutorial groups adopting similar surface learning approaches were identified, these groups did not exhibit similar behaviours to those observed in the interest groups.

- Students within the interest group were generally negative about the course content and the nature of course activities. In particular, many self-reported that tutorial sessions were "boring", and were "not useful" as they were "not assessable" and "not related to real life". Although students in the interest group often attended both the lecture and the tutorials, they "rarely" or "never" read the prescribed textual materials and "rarely" or "never" participated in tutorial activities. Further questioning revealed that the general opinion from these groups was "why should we do it, when we don't get any marks for it?" And "it won't be tested in the exam". In addition, most of the students in this cohort had low expectations of their likely performance in the course, due (in the main) to their commitment to tasks external to the university. Although this appears to be broadly consistent with a self-handicapping cognitive strategy, many of these students may have been adopting a defensive-pessimistic strategy so as to protect their feelings of self-worth and reputation with their peers (Martin, Prosser, Trigwell, Lueckenhausen, & Ramsden, 2001).

Thus, a key finding of this initial student evaluation was that a large proportion of the student population in this course favoured surface learning approaches. Central issues at this stage of the research were whether the two tutorial groups were early indicators of a larger problem within the entire pedagogical approach taken in the course (and/or tutorials) and/or whether there was a possibility that these dysfunctional behaviours would encourage similar affective responses within students of different cohorts.

As identified in the earlier review of the literature, teaching style is influenced by an individual's cognitive style (Riding, 2000) and impacts upon the learning approaches of students (Evans, 2004; Kember & Gow, 1991; Prosser & Trigwell, 1998). Research conducted into holist-analytic cognitive styles has determined that "analytic" students appear to prefer self-directed enquiry, while "wholist" students prefer greater external regulation from their instructors (Evans, 2004; Sadler-Smith & Riding, 1999). However, as two tutors had independently identified two classes as being distinct from all others, teaching style (including style of delivery and course management) was not assumed to be a factor in students' lack of engagement within tutorials. In addition, both tutors had well-established teaching reputations as shown in past teaching evaluations.

Having reflected upon the results derived from the initial evaluation of the classes, the researchers felt that teaching style may only play a small role in re-engaging these students. The course was predominantly content focused, and although some students

appeared to react negatively to the nature of the course content, the researchers did not discount the option that this behaviour was more indicative of a surface learning approach. Both tutors agreed that a more student-centred (and less regulated) approach, focusing upon engaging these students in class rather than just focusing on desired activity outcomes, may prove a more effective means of re-engaging students within the interest groups (Horng, Hong, ChanLin, Chang, & Chu, 2005). This approach is consistent with prior studies in which limited changes were made to tutorial programs (Gordon & Debus, 2002; Hall, Ramsay, & Raven, 2004).

Research cycle 2

As a result of reflection on the results from the first cycle of research, a subsequent research question emerged: To what extent will re-focusing teaching style on a student-centred approach lead to the re-engagement of disengaged students and foster development of deeper learning styles, without changing the content of a course?

An action plan for the second research cycle was developed over the course of two meetings with the two tutors of the interest group. To ensure that the tutors had a thorough understanding of the differences between surface and deep learning, they reviewed elements of the nonreflection/reflection continuum (Peltier et al., 2005). In addition, the researchers consulted the work of Ramsden (1992, 2003), Biggs (1987), Lonka et al. (2004), and Marton and Saljo (1976) so as to provide a summary of learning approaches, self-regulated learning approaches and cognitive learning strategies. In particular, tutors were encouraged to consider motivational drivers of specific learning approaches. For instance, surface learning approaches could be viewed as a metacognitively guided achievement strategy, or a self-handicapping strategy arising from a student's avoidance behaviours driven by negative feelings in response to demands of the learning environment. By encouraging tutors to look for variations in approaches, it was hoped that they would be able to identify precise, situation-specific influences upon student behaviour (Volet, 2001b).

In addition, considerable attention was given to understanding the differences between student-centred and content-centred teaching styles. Particular emphasis was given to the search for congruence between a student's self-regulation strategy (setting realistic tasks, taking responsibility for personal learning and maintaining appropriate levels of personal motivation to realise task outcomes) and the tutor teaching strategy (teacher regulated, shared regulation and loose regulation) (Evans, 2004; Pintrich, 2000; Vermunt & Verloop, 1999). In addition, tutors were encouraged to consider the role and influence of the collective student culture in the tutorial class study environment (Clark & Trow, 1966).

A summary sheet was provided and discussions were held during the second meeting to ensure agreement on what we considered were important aspects of learning styles and teaching styles. To ensure comprehension, these discussions were largely based around the tutors developing their own examples to demonstrate different approaches to instruction. During the second meeting, the two tutors also discussed their own approaches to teaching and how they intended to ensure a greater student focus. Importantly, the tutors were not defensive about their teaching, nor were they reticent towards trying something different to improve their teaching effectiveness. Instead, both were enthusiastic about applying their new understanding about teaching and learning into practice. One tutor independently reviewed the teaching and learning literature so as to develop a greater understanding of both concepts, clearly exhibiting the deep learning approach which we were trying to foster in the tutorial groups. The approaches used in the two tutorial groups are detailed below.

In order to assess the impact of a change in teaching style on the classes, it was important to standardise the content of the tutorials in all classes. Each week discussions were held between the researchers to confirm approaches that would be taken in each tutorial session. Following Biggs' (1999) conceptual change framework, we clearly and frequently communicated learning objectives to students and attempted to provide a teaching environment that would encourage a deeper approach to learning. Students were involved throughout this process. For example, tutorials frequently commenced with 4-5 multiple choice questions so as to encourage students to reflect upon the lecture material as well as providing an introductory point of review for subsequent in-class activities. Rather than presenting students with answers to the questions, students were encouraged to divide themselves into groups, choose a question to investigate from the text, and relate the meaning of specific concepts to the rest of the class. This approach was favoured as group exercises and unstructured problem solving have been shown to increase students' deep approach to learning in other disciplines (for example, Hall et al., 2004; Zeegers, 2001)

In developing activities, we focused upon the "mathemagenic" activities espoused by Laurillard (1993), that is, learner-focused activities designed to induce learning through learner action. Consistent with previous research we communicated the value of group tutorial activities to students at the beginning of each tutorial (Sweeney, Weaven, & Herington, 2007). In particular, students were asked to consider specific examples related to each topic so as to demonstrate the practical value of these exercises (Bacon, 2005). Tutors acted as a facilitator for each individual discussion group and provided a personalised approach to each group member, so as to develop stronger relationships with students as individuals.

Throughout the semester, weekly case application questions were reconfigured to personalise content and encourage active and conscious engagement with the research issues (Cole, Field, & Harris, 2004). In particular, students were asked to relate some of their own experiences to the case and discuss the importance of their discussion within the context of management theory, a method that has been employed successfully in previous research (Chalmers & Fuller, 1996). Once again, the value of this approach was explained to the students in terms of their learning and understanding. As one of the tutors observed, what was really being trialled was coaching students to view deep learning as an optimal approach to learning.

To evaluate progress student learning styles were re-assessed at the end of the course. In addition, class feedback from tutors and students was used to monitor student satisfaction and the degree to which these two groups were becoming more engaged in the tutorial learning activities. A series of open focus group discussions were conducted in which students were asked to detail their perceptions of the learning environment, reflect on the variations to learning activities in the tutorials and discuss their attitudes towards the changes. In promoting open discussion, students were encouraged to express any doubts about the process and to challenge the value of less external regulation and greater self-regulation (Thorpe, 2001). In addition, the course convenor visited the classes as an observer at the beginning and at the end of the process to ascertain if there were any discernable differences in student attitudes and approaches and the general culture exhibited within the class.

Results and Reflection

Each week the two tutors met with the researchers to reflect upon the week's activities and the progress of their students. This was in addition to the normal weekly tutor meetings that were held with all teaching staff. Initially, students did not appear to respond to the student-centric approach. However, by the fifth week of tutorials, both tutors reported that some discernible changes in tutorial activities were positively influencing student motivation, engagement and participation. In particular, both tutors had found it effective to nominate non-participating students to engage in special group activities. These students were asked to nominate a topic and facilitate a 10 minute class discussion. This strategy resulted in encouraging greater levels of (active) participation by many of the other students who reported that they appreciated that students (rather than instructors) were managing in-class activities.

These results appear broadly consistent with the findings of Wood (2003) in which students were found to adopt deeper learning approaches from engaging in group projects where they could increase their level of psychological ownership by providing their own ideas or material, choosing case studies, proposing their own

internships, or creating their own experience. However, at this stage both tutors reported that many students were still reticent to engage in all class activities. This suggested that intrinsic factors may have encouraged students to engage in activities at different times, indicating the possibility that personal factors and social styles affect adopted learning approaches.

Part of this research process involved getting agreement from students to spend a few minutes at the end of each tutorial to discuss what they enjoyed and did not like about each class (Cooper & Mueck, 1990). Firstly, they were asked to comment on the nature and delivery of their tutorial activities. Suggestions focused upon giving students accurate portrayals of real work situations, such as in detailing a real life strategic plan. This was attended to where possible, and resulted in such experiences being utilised in all tutorials. In reality, the separate treatment of these two tutorial groups became difficult, as the convenor had a responsibility to share this new information with all students, not only with the two interest groups. Hence, positive changes in activities were adopted by all tutors with their groups. However, the convenor was not inclined to influence the teaching styles of the tutors to the same degree as the instructors that were involved in the experiment.

As the semester progressed it became apparent that more and more students in the interest groups were showing a willingness to take responsibility for their own learning. For example, both tutors reported instances of students bringing in materials that they had sourced from the internet (by conducting independent self-directed study) prior to the tutorial sessions. In addition, students in one of the interest group classes assumed responsibility for developing, critically analysing and presenting concepts for the following week's tutorial. In recognition of the need to assist students in understanding what to prepare each week, activities related to each tutorial were displayed on the course website at the conclusion of the last lecture in the previous week.

Students in one tutorial class requested that activities for the whole semester be made available to allow them to designate the activities between members of the group. The course convenor communicated an appreciation for greater flexibility and self-regulation by allowing students to nominate topics relevant to their tutorial discussions. This inspired debate as to the optimum level of course organisation, where too many course procedural controls could facilitate the development of a learning environment and course culture that encouraged the adoption of surface learning approaches. This is worthy of further investigation. Biggs (2003) has suggested a link between institutional procedures and learning style and this conceptualisation could also be extended to include course management as part of the course climate. However the extent of this relationship remains unclear.

However, the above situation only occurred within one of the tutors' test classes. This tutor had a more outgoing personality than the other tutor and had greater success in reducing the degree of external regulation in class activities. While this may have been attributed to teaching style, it may also be a function of the individual's personality as some current research suggests (for example, Schlee, 2005). The situation may also have arisen as the result of the social styles or personalities of students within the group (Clark & Trow, 1966). Students in this group also made recommendations to the tutor as to how they might undertake the final tutorial review session prior to the final exam suggesting that there had been a change in the leadership ability of students within this group, or perhaps indicating a re-focusing of the strong personalities within the group. The nature of the impact of teacher personalities, leadership ability of students and their impact upon group dynamics has already been highlighted in the education literature and deserves further investigation (Schlee, 2005)

In the final evaluation of this action research project, assessing changes to learning style proved difficult. Due to the necessity for anonymity, the direct assessment of changes in individual learning styles was unable to be assessed. Only comparisons between whole tutorial classes were made. Importantly, at this final stage no significant changes were found with regard to the learning style in the two groups. The possibility that this may be a reflection on the assessment practices, amount of content covered in the course (Ramsden, 1992), or excessive student workloads (Heikkila & Lonka, 2006) was considered.

Although tutors had provided a more student focused approach which resulted in higher levels of engagement of students during tutorials, the level of student involvement in activities appeared to be hindered by the nature of the course content. Future research needs to investigate how student-centered activities should be structured so as to emphasise student technical skills development and content learning rather than the promotion of task accomplishment (Bacon, Stewart, & Stewart-Belle, 1998). In particular, although students were encouraged to read widely, search for relationships and integrate theoretical concepts into their own experiences, no noticeable increase in their intrinsic interest towards the course was observed which is consistent with previous research (Heikkila & Lonka, 2006). Perhaps the inclusion of student culture, individual cohort and "free riding" effects within in-class teams may provide a more encompassing view of the nature and process of encouraging deeper learning strategies within higher education environments (Barr, Dixon, & Gassenheimer, 2005). At least, in the case of this research situation, it appears that although student-centred learning activities improve the course experience for students, they do not positively influence learning style.

However, the findings did reveal that there was an attitudinal change in student views toward the course and to their work. Students in the two interest group tutorials were now more likely to prepare for tutorial activities and other tutors reported a noticeable rise in pre-class preparation. A majority of students stated that they were now enjoying the course and suggested that the learning experience itself was more enjoyable, which is indicative of higher learning processes (McKeachie, 1990). In addition, a majority of students saw value in adopting self-regulated and co-operative learning approaches as they fostered positive interdependent relationships with other students in the tutorial (Johnson & Johnson, 1992) and encouraged them to exceed their previous motivations centring upon meeting minimum course requirements. Hence, we propose that if the recall of the course is positive, the actual learning by students may not necessarily rely upon the adoption of deep learning approaches, at least in courses providing a broad learning experience for students, such as in an introductory management course.

Most communicated that they were appreciative of the tutors "trying to make the course interesting" and relevant to "real life" contexts. Students were also cognisant that the tutors had taken a specific interest in their approach to learning. They felt that this had also increased their interest in the tutorial activities. This finding appears consistent with Ramsden's (1991) research into students' perceived quality of teaching. In particular, favourable student perceptions towards the quality of teaching may act as an important influence in the learning process by serving as a motivating factor in students' adoption of preferred learning approaches.

In addition, in their own reflection on the nature of the teaching experiment, both tutors believed the experience to be both challenging and rewarding. They had enjoyed their tutoring roles and felt that this had resulted in a positive flow-on to all their tutorials for the course. They were also encouraged by being given an opportunity to "experiment" and to be more flexible (and less standardised) in their approach to tutoring. They expressed that there was much to be gained from changing the focus from content to the provision of an encouraging environment for students. They believed that excessive emphasis on equity and standardisation of course delivery may not necessarily equate with favourable student learning outcomes. This resulted in students losing out on the creativity of the tutor. Future research should investigate the role of the teaching instructors' knowledge, personality and communicative ability within the context of student social styles so as to arrive at a more holistic or systems model of teacher and student interaction (Schlee, 2005).

Finally, what also became apparent to the researchers was the renewed enthusiasm and motivation that these two tutors exhibited towards the course. This became infectious with other tutors asking for ideas and trying out new approaches even though they were

not part of the research project. This did result in some difficulty in making a thorough investigation of the project under research conditions. However, this provided another learning experience for the researchers. An individual's success in teaching can encourage other teaching staff to adopt similar teaching approaches. This alludes to the ability to create a course "climate" as it details the ability of a specific course to create its own learning/teaching environment which can be separate from other teaching experiences. Hence, this would confirm that adopted learning style can also be affected by extrinsic factors, rather than being entirely intrinsic to the individual. However, given that deep learning is a higher level of learning one would expect that deep learners can regress to surface learning, but not vice versa. The exploration and importance of likely external factors impacting adopted learning style requires further exploration.

Conclusions and Future Directions (Cycle 3)

The research was planned to investigate whether a more student-centred (self-regulated) teaching style can lead to re-engagement of students. The results of the project indicate some support for this proposition. Further, the research supports the positive effect of student-centered teaching on student satisfaction with courses, regardless of the employed learning style. A second research question investigated whether a student-centred approach would encourage students to adopt deeper learning approaches even though the content of the course remained unchanged. The results suggest that whilst the adoption of student-centred approaches in tutorial sessions may encourage students to be more engaged in class activities, it does not necessarily promote deeper approaches to learning. However, there is some indication that a positive class experience may be as effective for some students' learning as the attempted promotion of deeper learning approaches.

Building upon previous research, the design of this study presupposed that some changes in learning approach may be found during the course of the research. However, the findings suggest that teaching style did not influence adopted learning approaches. It would seem that other factors, such as course structure, delivery and assessment activities may not communicate the need for (and reward) the use of deeper, self-regulated and cognitive organisation strategies (Patterson & Bell, 2001). This is in support of previous research suggesting that students will adopt surface learning approaches if that is seen to be what is (visibly) rewarded (Deeter-Schmelz, Kennedy, & Ramsay, 2002; Ramsden, 1992). However, as suggested above, does this matter for classes that are providing an overview of an entire area of study for students, as in the current situation? We speculate from the results of this study that the engagement of students in learning activities should receive more attention than singularly focusing upon encouraging students to adopt particular learning styles.

It is intended that the next iteration of this research will incorporate a review of assessment to explore the encouraged learning approaches and subsequent engagement by students in the activity and to reposition the focus of the course content to build constructive alignment (Biggs 2003). One such assessment approach may include the use of learning portfolios that focus upon the purpose and process of learning so as to promote effective learning outcomes and professional development (Klenowski, Askew, & Carnell, 2006).

However, the research also highlighted other factors that may impact upon the adopted learning approach of these students including inherent learning approaches which might prove difficult to change. The required length of time to change an inherent learning style warrants further investigation, as do the factors which might indicate a pre-determined learning style (such as personality and social style) (Murray, Rushton, & Paunonen, 1990). While there is some suggestion in the literature that learning approaches change towards meaning-directed and application directed styles over time (Busato, Prins, Elshout, & Hamaker, 1998) other research suggests that preferred learning dispositions may be trait based and difficult to change (Riding & Burton, 1998). Our findings would support the latter position. However, within the constructivist perspective, learning orientations are not viewed as fixed, but "are oriented by schematic views or perceptions" (Bloomer & Hodkinson, 2000, p. 583). Therefore, a greater understanding of the temporal dimension to adapting and changing learning approaches and the learning environment in university settings may provide a more holistic view of how students develop their "learning careers". However, if it were found that deeper approaches to learning occurs as a result of greater engagement in activities, then perhaps difficulties associated within inherent learning styles may be overridden.

Further, exploration of the research results revealed other external factors which may impact on a student's approach to learning, such as insufficient time due to other commitments that may include too high a workload, a greater emphasis on non-academic activities, or a deliberate intention to treat university as necessary precursor to a career, rather than an opportunity to learn (Biggs, 1999; Hernandez, 2002). In addition, the results of this research may be indicative of students' ability to adapt activities to surface learning approaches as observed in previous research (for example, Heikkila & Lonka, 2006; Marton & Saljo, 1984; Ramsden, 1992) which could be the result of students trying to accommodate both university and work commitments. Although these aspects were not discussed with students, nor examined, the impact of such factors does warrant further exploration within the higher education domain. Given the increasing expense of university education and resultant increased need for students to seek employment to help support their education, it is feasible to assume that some of these factors may explain why some students resisted the adoption of deeper approaches to learning.

Of course, the final evaluation of the success of this action research project lies in the final grades of these students. Students within the interest group generally did better in their second assessment item, than in their first assignment. However, given that the approach to assessment could not be adjusted during the course, it is likely that surface learning approaches prevailed during preparation for the final examination. Overall results for the course did not show any significant difference in the results of the students in the two targeted tutorial groups over other tutorial groups. Final course evaluations did however demonstrate a change in attitude towards the course by the two identified tutorial groups and discussions with these two groups about the change in teaching approach to the tutorials were very positive. This indicates that although approaches to learning may prove difficult to change, the use of a student-centred approach may encourage favourable in-class experiences from the students' perspective.

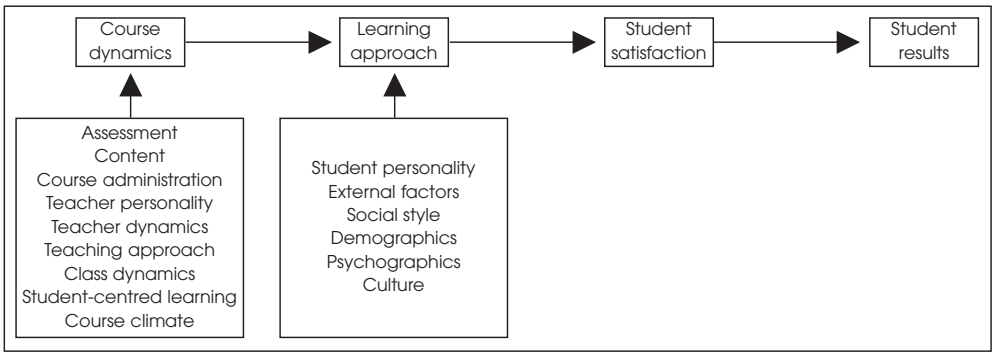

Figure 2: Factors impacting student approaches to learning

Finally, as a summary of the findings of this research, we propose a framework for future research. Figure 2 shows the accepted linkages between learning approaches, student satisfaction and student results (Biggs, 2003). We have expanded the notion of the teaching and labelled it as "course dynamics" encompassing not only the traditional areas of assessment, course content and climate, teacher personality, teaching dynamics and class dynamics. From the findings reported here, we also posit that additional student characteristics such as personality, external factors, social capital, demographics, psychographics and culture may impact upon an adopted learning approach. Broadly consistent with previous theoretical research (Heikkila & Lonka, 2006) we are of the belief that the learning approach exists on two planes – the students' overall predisposition to a learning style, and also the learning style adopted in relation to a particular course and learning environment. Linkages between learning style and course/program academic performance would constitute an interesting line of future research enquiry.

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