

**AN EXPLORATION OF COLLABORATIVE GROUP WORK
WITH SCIENCE STUDENTS**

by

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ABSTRACT

Part of the transformation of education in South Africa emphasises the need to address historical barriers that have been impeding access into institutions of learning, and the need for empowering stakeholders democratically. Improving institutional responsiveness and focusing on Science, Technology, and Engineering and increasing the number of university graduates are amongst the more prominent strategies for changing the educational, socio-economic, and political landscape within a global context. This research, as the first cycle of an action research project, explores collaborative group work with a group of science students at a Vista University campus (that is now part of the Nelson Mandela Metropolitan University) as a contribution to institutional, professional, and personal responsiveness.

The treatise traces my development as a novice researcher within an evolving action research context that became a terrain for facilitating a collaborative approach to learning. I describe my personal experience and the experiences of my co-researchers as collaborative partners, the systemic influences considered during the study, and the process of action research that encouraged movement from feelings of apprehension and inadequacy to feelings of anticipation and excitement regarding collaborative interactive learning and development opportunities.

For the co-researchers and me an action research process in an interpretivist paradigm was not just suited to an exploration of collaboration, but also evolved into a vehicle for interactive teaching and learning, in a collaborative and student-centred way. Giving voice and being listened to, having perspectives validated, engaging in learning that could accompany academic and personal growth, and an acute sense of being empowered are ingredients that participants, and institutions of learning, can continue building on and building with along evolving spirals of life-long learning and meaning making.

Key Terms

Action research, science students, responsiveness, collaboration, empowerment, student counselling practice, critical cross-field outcomes, action learning, group work

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CHAPTER 1

INTRODUCTION

The idea for this research came after I started thinking about what institutional responsiveness towards students and society means in terms of the critical cross-field outcomes (Department of Education, 1997). At the time that I tried to identify potentially fruitful ideas for research in my area of practice I was on study leave from my job as student counsellor at Vista University, and I was experiencing again what it meant for me to be a full-time student. For that period I could relate to student experiences from a perspective of being a Vista University student, and not just from the perspective of being a Vista University staff member (It should be noted that the study was done prior to Vista University being incorporated into the merger of the Nelson Mandela Metropolitan University).

Many of my more prominent and memorable learning experiences, while on study leave, were based on my experiences as a student in certain group interactions and experiential learning activities in an academic setting. Two of my Counselling Psychology lecturers' (who were to become my supervisors for the study) academic practice consisted of providing opportunities for collaborative group participation that involved group discussion, reflection, planning, observation, evaluation and feedback. I felt that as a group and individually, we were learning not just about the content of our course but also about outcomes based approaches to education and about empowerment. I found that their approach was contributing to my development in terms of learning to reflect critically on myself as a student. I learned how rewarding and how difficult it could be to be part of a learning group and how we as students were being allowed to contribute actively in a classroom setting to our learning, through dialogue.

At that stage I did not consider the broader, systemic reasons why the lecturers might have implemented such an approach. For example, I was not aware of the link between their approach and the kind of responsiveness and approaches connected with suggested outcomes as stipulated by the South African Qualifications Authority (SAQA, 1998), and how such approaches were related to South African educational needs from the perspective of the Department of Education (DoE). Through discussions with a colleague in Academic

Development about curriculum issues and staff development issues I gained a better understanding of why such approaches were being expected from academic institutions. Critical cross-field outcomes were expected to be a part of curricula and were seen as contributing to democratisation of education and learner centred needs by the DoE.

As a result I did some reading regarding the link between critical cross-field outcomes and curricula requirements (DoE, 1997; Van Niekerk & Killen, 2000), and I started seeing more clearly the possible links between myself as student counsellor and the academic sectors within the institution. Part of my work as student counsellor involved student development, which some professionals argue should be integrated into curricula and not be dealt with in an adjunct way (Nicholas, 1998). I wondered whether exploratory research could assist me in examining potential collaboration in the area of critical cross-field outcomes between academic departments or faculties and I, as student counsellor.

I started questioning how my development as a counselling psychology student could specifically be linked with elements of my role as student counsellor, and where I could fit into the university system with regard to exploring what responsiveness could mean for the students we serve. In other words, I wanted to explore how I could improve an aspect of my practice as a student counsellor, while simultaneously involving students in the critical cross-field outcomes in an empowering and collaborative way. I reasoned that my training and experiences as a Masters counselling psychology student appeared to be linked with what the DoE and SAQA (DoE, 1997) were suggesting as preferred approaches in terms of empowered teaching and learning. As a result, I initially resolved to explore the perceptions and experiences of a group of students about their curricula, in terms of the critical cross-field outcomes.

Through this study I aimed to explore student experiences and perceptions of their learning while simultaneously exploring whether and how these interpretations relate to the critical cross-field outcomes as specified by the SAQA (1998) and the DoE (1997). The exploration of student perceptions could provide data that could contribute towards refining institutional objectives, such as increased sensitivity and responsiveness to the needs of students and the

community, in terms of the critical cross-field outcomes. However, over time and through the research process, the broader aims evolved to focus more on an exploration of collaborating with a group of Science students, and discovering the value of the research process in terms of teaching and learning, while also exploring the students' level of awareness about critical cross-field outcomes. As a result, one of the potential implications of the study was also the possibility of establishing and enhancing collaboration between the staff and students in the Faculty of Science, Student Counselling, the Student Representative Council (SRC), and other components and levels of the educational system within the Vista University campus.

The study also provided an opportunity for me to engage with university science students who were actively involved as tutors of Biology, Physics, Mathematics, Geography, Accounting, Computer Literacy, and Chemistry with Grade 11 and Grade 12 learners. These students could also then be referred to as practitioners for whom the study was a process, as it was for me, to reflect simultaneously on our roles as teachers and students. The research process could also be viewed as incorporating research as a means of teaching and learning that involved all the participants, including myself, as collaborators.

I also reasoned that in my role as student counsellor, which included working with student organisations and academic societies, I could explore ways of becoming more involved in understanding their organisational context. Such exploration could lead to better insight into how I could contribute towards fulfilling their organisational needs.

This treatise is a report of my struggles with finding my way to and along research pathways. The report tracks my initial feelings of anxiety and helplessness about setting out to develop a collaborative partnership with a group of students, and follows the adventure and the discoveries of memorable and exciting learning experiences gained in an action research vehicle on an action research journey.

The treatise is structured as follows: In Chapter 1 the research is situated as being the first cycle of an action research project, and provides some of the context in which I had planned the study and how the research aims had evolved. Chapter 2 expands on the context of the

research, and describes the methodology and various paradigms that served to guide the entire research study. A narrative account of events and situations that occurred during the study, written in a journal and diary format, forms the Appendix. Chapter 3 contains findings of the analysis, in the form of reflections and themes, based on the narrative account presented in the Appendix. The main focus of chapter 3 centres on issues of gaining access and the joint participation of both the Science Students' Council (SCIENSCO) and myself, in my role as student counsellor, as co-researchers and learners in a collaborative group process. In Chapter 4 these findings are linked to the relevant literature and theoretical perspectives in an attempt to provide a more comprehensive, integrated and critical discussion of the findings of the study. Chapter 5, the concluding chapter, is based on a review of the entire action research process and my experiences of the process. It gives an outline of my theory of collaborative group work, and culminates in an integrative discussion of the limitations of the study and a number of recommendations for future research in this field of enquiry.

CHAPTER 2

RESEARCH METHODOLOGY – A SEARCH FOR LIGHT

As student counsellor, and as a member of the Division of Student Affairs at Vista University, I had often found it difficult to integrate my services with that of academic departments and with faculties. Student counselling services at Vista University (and at many other institutions in South Africa) acted on the periphery, and they were often seen as not being part of mainstream academic pursuits. Nicholas (1998) critically observed that student counselling is not regarded as important or central to the education system, and that it might become more marginalised as higher education is transformed. He called for mainstreaming and integrating student counselling and academic development into core academic activity.

Historical boundaries between academic and non-academic departments at Vista University have hampered collaborative efforts, although some progress had been made in terms of increasing contact between the Student Counselling department and some faculties on the Vista University Port Elizabeth Campus. The White paper on Higher Education (DoE, 1997) mentions the need for inter-disciplinary collaboration and emphasises the need to increase the number of graduates in the science, technology and engineering fields.

Ludeman (2001) suggests a stronger involvement of sectors such as Student Affairs (of which Student Counselling is a part) within a curriculum that calls for matching outcomes to the needs of society. Gordon (2001) says that an integrated approach includes academics and what he terms “support professionals” who usually focus on the student experience and who could also provide a student-centred perspective on learning impacts. The implication is that a diversified, collaborative sharing of responsibility, by academic departments and Student Counselling for example, recognises students as fundamental stakeholders in their own education. This integrated approach to education and training is said to afford development opportunities that play a role in facilitating students’ transition into, through, and out of higher education, and includes life-long learning capacity, according to Ludeman.

Ancis, Sedlacek and Mohr (2000) refer to the importance of the student counsellor being

aware of the particular perceptions and unique experiences of students in order to provide meaningful services towards meeting student needs. Ludeman (2001) reflects a similar view regarding the role of higher education in addressing the personal and developmental needs of students. Schalock's (1995) comments, although specifically about outcomes-based evaluation, are relevant to critical cross-field outcomes as well. He describes these outcomes as person-referenced outcomes, some of which focus on adaptive behaviours such as communication skills, social skills, effective and critical use of science and technology, and health and wellness indicators. Exploring students' perceptions of their learning experiences may then be seen as one means of engaging with students to acquire knowledge about person-referenced outcomes such as their psycho-social development, expectations, satisfaction, motivation and behaviour. Exploring their perceptions and experiences of critical cross-field outcomes could provide information about their needs and their level of satisfaction with their needs being met, which could help with identifying and responding to their needs with relevant services. Ngqakayi-Motaung (1996) for example mentions a study by Maehr and Fyans in 1989 that assessed how school culture is associated with motivation and achievement, and which produced evidence that the psychological characteristics of the learning environment are an important factor in motivation and academic achievement.

Although Luckett (2000) expresses reservations about the adoption of outcomes-based programmes (which, from an academic's perspective, are seen as being premised on a linear, positivist and behaviourist type of predictability), making space for self-reflection and shared reflection, which includes student participation amongst others, is encouraged.

In the past my involvement with student organisations was limited mainly to episodic and often haphazard interventions, such as short-term training and skills development workshops, or crisis responses to student governance and electoral problems. My efforts at collaborating with academic departments had also been a source of frustration in the past as I found it difficult to get involved in faculty meetings, or to integrate student development work with formal academic pursuits. My need for collaboration with faculties arose from my dealings with students who sometimes had complaints about certain academic departments. I had also observed a lack of student participation at the few faculty meetings I had attended and

wondered about the possible reasons for their silence and absence at these meetings.

One of the ways I thought that I could contribute towards improving the responsiveness of Vista University, and the responsiveness of the Student Counselling department to provide a more effective service, could be to obtain feedback from students themselves. To my mind the students themselves were in a better position to inform me about their experiences in the University context.

I decided to approach the SCIENSCO about joining me in a research project. One of the reasons for considering SCIENSCO was that the government had prioritised science education as an area that required attention and improvement (DoE, 1997). Another reason was the government's objective of developing a higher education system that focused on responsiveness, quality and equity. My limited involvement with science students in the past, besides individual counselling, had been in marketing the university through careers exhibitions and school visits and through my attendance at meetings to discuss student admissions and access. Through my role as Co-ordinator of Student Affairs (a voluntary position) I had also observed that SCIENSCO was more active than other academic societies on campus. I thought that they could be relied upon and that their level of motivation might make them more amenable to collaborative work. I had previously also been partial to SCIENSCO when I had allocated it office space owing to its need and my perception that it was one of the more efficient organisations on campus.

I also wondered whether action research could be a suitable methodology for conducting this research. Action research seemed to have the potential to both explore the relevance of critical cross-field outcomes to student development and student organisational development, while simultaneously creating an opportunity for me to develop my practice as a more empowering and collaborative student counsellor.

The uncertainties and questions were what I wanted to explore. This led me to reading more about transformation in education and the importance of student participation and students' voices in this process. Although I had heard and read about action research, I had never

consciously or formally become involved in it. Through discussions with my research supervisors it appeared to me that action research could provide me with the means to conduct research while simultaneously working collaboratively and in an empowering way with a group of students, and enabling me to improve my student counselling practice.

2.1 The context of the research

South Africa, like many other countries, is looking for ways in which to provide a more responsive education and training system in a world that is becoming increasingly competitive. Ajayi, Goma, and Johnson (1996) warn about globalisation and global markets bringing about the emergence of a more competitive world economic system. At a local level it is possible to see the influence of globalisation and the competitiveness in terms of the social, political and economic forces that have moved the country towards privatisation, organisational readjustment, organisational relevance, and educational redress. Universities and other education and training institutions should ensure that their programmes are relevant and responsive to changing micro and macro socio-political and socio-economic influences in the country. Ajayi et al. refer to the need for continual appraisal of university programmes in order to ensure relevance and responsiveness.

The Council on Higher Education (CHE) report (2000) explains that the world, as an ever-changing place, has placed pressure on education systems to adapt and to develop more creative, adaptable and effective people. South Africa therefore requires an education system that provides quality teaching and learning, and an awareness of the changing context that students have to confront.

Nationally and internationally, developing countries are working on development challenges and on ways of strengthening their integration into the global economy (Reddy, 2000). One of the ways in which these countries, including South Africa, are approaching these challenges, is through the higher education sector. The Council on Higher Education report (2000) refers to the education system in South Africa, stating that the future economic, political, and social well-being of the country and its citizens lies in the quality of its academic programmes. As stated before, the call for the transformation of higher education is spelt out in the White Paper

on Higher Education (DoE, 1997), and includes critical cross-field outcomes that Luckett (2000) refers to as those generic outcomes that are supposed to inform all teaching and learning activities, and could be seen as general transferable skills. Among the stipulated goals mentioned in the White Paper on Higher Education are an increase in participation of historically marginalised groups, responsiveness to societal needs, and addressing the need to attract more students to the science and technology field (DoE, 1997).

The South African university, according to Samuel (2000), is constantly grappling with change and struggling to adapt to complex local and global challenges. If we consider that students may face similar and parallel challenges, grappling with change and trying to adjust, we also need to consider that the impact between the university environment and the student is bi-directional. Bohler (2000) says that the social context of students should be taken into account and be seen as part of the transformation of education. Her reference to social context includes the students' home environment, socio-economic status, and commuting difficulties. My view is that the social context also includes the university environment, so it would be important to explore this context with the students who are stakeholders in the transformation process. One of the aspects of the university context relevant to this study is training and development.

Vista University, as a historically black university, attracted students mainly from historically marginalised communities. In comparison with most other South African tertiary institutions, Vista University has a small Science Faculty. In addition, the problems of science education in schools in disadvantaged communities, where many of its students come from, are well documented (Breier, 2000; Mathews, Glencross, & Kentane, 2000). It is within the context of the request for increased responsiveness that I, as student counsellor and employee of Vista University, was interested to conduct research with science students in higher education.

Attending university has a profound impact on the lives of students, and can be viewed as one of life's transitions (Astin, 1977; Sedlacek, 1993). This transition can also be viewed as developmental change that includes a process of reconstructing relations between the individual and the environment (Tao & Dong, 2000). Although the main focus of the study

was to explore collaborative group work, the ideas of transition and developmental change was examined in terms of science students' experiences of their learning as it relates to the critical cross-field outcomes adopted by SAQA (1998) and the DoE (1997). The specific critical cross-field outcomes identified by SAQA are: developing responsible citizenship, self-management and self-organisation, critical evaluation of information, well-being, problem-solving, effective communication, understanding the world as a set of systems, using science and technology effectively, and effective teamwork. Additional guidelines are: developing awareness of alternative learning strategies, responsible citizenship, cultural and aesthetic sensitivity, entrepreneurial abilities, and exploring education and career opportunities.

These critical cross-field outcomes incorporate academic, cognitive, social, and non-cognitive elements. Sedlacek (1993) emphasises the importance of also considering non-cognitive elements when doing research with non-traditional students and the interaction between students and the university environment. The non-cognitive elements that Sedlacek refers to include: leadership experience, self-esteem, realistic self-appraisal, long-range goals, and community service. These non-cognitive elements are similar in certain respects to the critical cross-field outcomes, such as self-management and developing responsible citizenship for example. Critical cross-field outcomes could also be seen as developing evaluation and self-evaluation skills, which can be equated with Sedlacek's idea of realistic self-appraisal. Further similarities between Sedlacek's non-cognitive elements and critical cross-field outcomes is the building of social involvement such as community service, and long range goals that also include preparing for responsible citizenship, career planning, and enhancing leadership and responsibility.

The CHE also argues that higher education is well placed to help resolve many of the challenges and problems that face South Africa (CHE, 2000). The implication is that institutions are expected to refine their curriculum planning, taking cognisance of socio-economic development needs. One of these development needs is the education and training of a larger number of students in the science and technology fields. The Science Faculty at Vista University had implemented a foundation course as part of its response towards enhancing access for students. Coupled with this was a restructuring of the undergraduate

curriculum towards, amongst other goals, enhancing student retention and responding to the science and technology needs of the country.

As students have direct experience of the curriculum, I agree with Twombly (1995) who says that they are in the best position to describe how they interpret and experience the curriculum they are required to follow. She argues that one of the reasons students' views need to be examined is the assertion by critical theorists of the subjective, interpretive and political nature of the curriculum. Students are one of the most important stakeholders in education, and examining their experiences may contribute towards the evaluation of curricula as a form of research and academic planning. Dialogue with student stakeholders can be viewed as a source of feedback and interpretation, and could include a problem-solving orientation if required. Through an action research process, students and other participants in the wider Vista University system could define further areas of focus and possible action, according to their experience of the Vista educational system.

2.2 Finding a guide and a map

As mentioned before, I had settled on using an action research approach. I reasoned that reading up on action research would not only be a learning phase for me but also form the major part of my planning for the research. The reading about action research could be seen as a preparatory phase, which consisted of much uncertainty about my ability to facilitate and implement the research process. Although I understood what the literature and theory was saying about action research, I had not had any formal action research training. This concern reminded me of the idea that action research in itself could be seen as a developmental and a practical training approach to improving certain aspects of one's practice. When deciding on an action research approach I was not aware of the nature of the learning opportunities that would be created. During the initial phases of the research I did not think about the learning connected to the research process itself, but was more concerned about the research dialogue, and the questions and feedback about teaching and learning as experienced by the group of students. I was also then still stuck in a paradigm that viewed learning mainly as a formal exercise, where I was searching for answers from the experts such as theorists and academic authors. I realised later, once I became more immersed in the process, what a constructivist

and a postmodernist approach to learning meant. Although I had been reading about these topics, I had still been experiencing doubt and a lack of trust in myself that I could contribute relevant material based on my experiences. Further discussion in this regard follows later. However, the rest of this chapter deals with information garnered from the literature that served as the methodological guide for the study, and that I found suited to an action research approach.

2.3 Research orientation

For the purpose of situating my research, I briefly sketch the research orientations in Habermas's theory of knowledge that describes different kinds of legitimate knowledge production and distribution, besides a positivistic understanding of knowledge. In his theory he refers to "knowledge-constitutive interests", which are based on three kinds of reasoning, namely, "instrumental" or "technical" reason, "practical" reason, and "critical" or "emancipatory" reason (Kemmis & McTaggart 2000, p. 583). These three orientations could be seen as describing a broad categorisation of paradigms. These may be categorised as a positivistic (empirical-analytical) orientation; interpretivist (hermeneutical) orientation; a critical orientation (which coincide with Habermas's "knowledge-constitutive" interests), and also postmodernist/poststructural approaches in which the researcher deconstructs or reflects on his/her own approaches of enquiry.

2.3.1 Positivism

Usher, Bryant and Johnston (1997) describe positivism as the basis for the conventional picture of research. A positivist or empiricist epistemology makes the following assumptions:

1. The world exists objectively, independent of knowers. Objectivity is seen as scientific, and through systematic observation it is possible to investigate and discover the events and phenomena that are organised according to a certain order. It then becomes possible to explain, control and predict events and phenomena.
2. The objective world and the subjective knower are clearly separated. The researcher is concerned with facts that are objective, and the subjective should not interfere with the

discovery of objective truth.

3. Knowledge comes from research that is validated empirically. It is based on observation that requires experiment and measurement, and should be validated by others if they are exposed to the same data.
4. Life and the social world are ordered and have a cause-effect pattern. The goal of research then is to explain the universal laws that 'govern' the world.
5. The disciplines or sciences all need to use the same methods of finding out or verifying phenomena. By using a common approach, subjectivity and bias are reduced or minimised.
6. Critique and epistemological enquiry are discouraged.

Usher et al. state that a positivist approach rejects reflexivity, while it is methodologically critical, but excludes being self-critical. Research becomes a technical process that does not question the research process itself. However, each ontology and each epistemology is culturally specific, has a historical context, and is value-laden.

2.3.2 Hermeneutic/interpretive epistemology

The interpretive paradigm is also known as the constructivist or hermeneutic paradigm. Guba (1990) says that in such a paradigm reality exists as a construct, and that inquiry is value laden. Knowledge has multiple constructions and is manifested as mental representations or human constructions. Knowledge and reality are socially constructed, and the methods used in such a research paradigm are aimed at documenting, describing and understanding a specific context.

2.3.3 My research paradigm

Unlike the positivist assumptions mentioned above, I had intended to engage in collaborative research that involved developing critical awareness of ourselves as participants and of our own contexts through reflection.

The research was planned to be a qualitative study within a constructivist paradigm that used an action research approach. Guba and Lincoln (1998) say that in a constructivist paradigm the aim of inquiry is to understand and to reconstruct participants' constructions. The goal is to work towards a consensus of meaning. Such a paradigm requires that my constructions as researcher be incorporated into the inquiry, and that I function as both participant and facilitator. Schwandt (2000) states that the proponents of constructivism share the general goal of understanding the lived experience from the perspective of those who live it. In preparing an interpretation, I as researcher would also offer constructions of the participants' constructions. A qualitative study provides a way of getting closer to the participants' perspectives through dialogue and observation (Denzin & Lincoln, 2000).

The study was conducted from a hermeneutic perspective, which is congruent with an action research approach. Schwandt (2000) mentions that the hermeneutic process can be aligned with constructivism. Knowledge and experiences are constructed, and continually tested and reconstructed. In a constructivist paradigm the orientation is towards reconstructing understanding of contexts. In using a hermeneutic perspective my aim was to extract the essential meanings of the participants' constructions, in order to work towards what Guba and Lincoln (1998) refer to as consensus construction that is more informed and more sophisticated than previously held constructions.

The setting also provided an opportunity for exploring and understanding the topic within a particular context. Most of our gatherings occurred in SCIENSCO's office. Maykut and Morehouse (1994) say that qualitative research values sensitivity to context, which means studying phenomena in their complexity and within a particular environment. I was able to meet with SCIENSCO in their Vista University setting, which helped me to acquire a sense of their organisation's campus context. It is with this perspective in mind that I chose to do this study with members of SCIENSCO.

2.4 Aims of the action research project

I chose an action research approach because I was working in a context in which I could collaborate with students and student societies. A collaborative action research approach in

this higher education setting could be utilised to improve both practice and knowledge. Exploring my own and students' perceptions and experiences of collaboration, and of teaching and learning, provided opportunities for constructing and reconstructing knowledge and experiences from a hermeneutic perspective.

As the research project unfolded, and as I became more comfortable with the process, I realised that the students and I saw one of our main aims as improving our practices in terms of teaching and learning. I would be able to gather information

- that could enable me to improve my relations in the role of a student counsellor with student societies
- about the context of student societies in terms of how they experience the university system
- about the kinds of barriers that they face as Science students and as SCIENSCO, and
- about developing better collaboration with student societies.

The students on the other hand were interested in improving their tutoring, teaching and facilitation skills, as well as improving their organising and leadership skills for the benefit of SCIENSCO and science students generally.

Action research is a form of research as praxis. Greenwood and Levin (2000) state that action research implies that praxis and theory cannot be separated in social research. Carr and Kemmis (1986) define praxis as having “its roots in the commitment of the practitioner to wise and prudent action in a practical, concrete situation. It is action which is considered and consciously theorised and which may reflexively inform and transform the theory which informed it” (p 190). It also enables multimethod research where *a priori* limitation to one method or another is not required.

Greenwood and Levin (2000) refer to action research as “co-generative enquiry” that they describe as follows:

- 1 Action research is a form of inquiry in which researchers and participants co-generate knowledge. All participants’ contributions are acknowledged and taken seriously, and communicative processes are collaborative. The meanings that are constructed, or the reflections on action during inquiry, lead to social action or to the construction of new meanings.
- 2 Action research views the diverse experiences and capacities of a group as an opportunity for enriching the research process.
- 3 Action research results are valid.
- 4 Action research is orientated to context; an aim is to solve real-life problems within a particular context.

Smith (1994) says that praxis consists of reflection and action, and that it is informed, committed action. Action embodies certain qualities that include a commitment to wellbeing, respect for others, and a search for truth.

Action research is “a form of self-reflective 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 the practices are carried out” (Carr & Kemmis, 1986, p. 162). Action research consists of a self-reflective spiral of cycles of planning, acting, observing and reflecting. Carr and Kemmis also emphasise that the main aims of action research are improving practice, developing practitioners’ knowledge and understanding of their practices, and involving the participants in the situation that is being researched. Similarly, Jones, Siraj-Blatchford and Ashcroft (1997) note that the fundamental aim of action research is to improve practice, and that producing knowledge is subordinate to this aim.

Action researchers might think about how they could change their practices, their understanding of these practices and their work situation, by collaboratively changing the ways they participate with others in these practices (Kemmis & McTaggart, 2000). In the past I have not worked with student societies in a truly collaborative way. My role was more that of a student counsellor as consultant or expert who imparted or provided information and training. Therefore by working collaboratively I was hoping to gather information that could help me to improve student counselling services and my approach to student counselling.

For SCIENSCO as students and tutors, and for me as a student counsellor wanting to improve my practice, action research became the preferred approach. The relationship between the local stakeholders (SCIENSCO) and I as action co-researchers enabled the incorporation of their knowledge into working on a problem collaboratively. Generating local knowledge is a part of action research in particular (Greenwood & Levin, 2000).

Jones and Grant (1991) equate action for change with a form of resistance that is progressive. Giroux (as cited in Jones & Grant, 1991) describes resistance as intentional, emancipatory, and critical. Kemmis and McTaggart (2000) describe critical action research as expressing a commitment to self-reflective study of practice, how language is used, organisation and power in a local situation, and including action in order to bring improvement. Critical action research is strongly committed to participation and examining issues of disempowerment. It also examines disadvantages that could be attributed to gender, social class and ethnicity.

The focus on action is a common theme in the adult learning literature. Learning, critical reflection and experiences guide action. Hughes (1994) for example, says that action completes the learning cycle, which is a notion that is prominent in adult learning approaches that include action learning and action research, to learning from experience. However, as Hughes suggests, in many settings the possibilities for action are constrained. Learning approaches such as in action learning assume that the learner is fairly free to experiment and to act in a goal oriented way. Both Hughes and Jarvis (1995) mention critical factors that affect the implementation of adult learning approaches. They call for a critical look at the

possible disparities that exist in the different contexts, such as not only the workplace but also educational institutions. Some of the constraints involve issues of power, conflict of interest, cultural context, and lack of control. For example, a lack of control and issues of power could be seen as limiting creativity, or could be de-humanising.

Potter, Domeris, Mason, Dixie and Stuart (1996) used cooperative action research, which implies that the understandings that emerge from evaluation may vary for the different participants. They suggest that there is a need for a paradigm of research that tolerates diversity, ambiguity, and differences in opinions and values among different stakeholders involved in learning, teaching, and curriculum issues. Potter et al. say that research involving teaching and learning is essentially action research, and that evaluation forms part of the action research process. They view such research as essentially being a reflective process that aims at deepening awareness and understanding, as suggested by Carr and Kemmis (1986) as well.

2.4.1 Action research and action learning

Gregory (1995) says that action research and action learning each sees itself as both a methodology for improving practice and as a technique to educate. He sees both action research and action learning as relevant ways of building upon credit accumulation and transfer, and as enquiry that is directly related to the world of work. Kemmis and McTaggart (2000) view the fundamental idea of action learning as bringing a group of people together to learn from each other's experience. They suggest that the priorities include organisation efficacy and efficiency, clarifying what the organisation wants to achieve and trying to eliminate obstacles that may hamper these aspirations.

Action research and action learning may be compared to experiential learning. Action research is based on the “fundamental concepts of action learning, adult learning and holistic dialectical thinking...and on the principles of experiential learning and critical thinking” (Zuber-Skerrit, 1992, p. 88). Action learning theory focuses on organisation settings “where personal empowerment can be encouraged through learner interdependency” (Gregory, 1995, p. 127). Individuals are in a situation where they can learn from experience through reflection

and action. Gregory describes the learning group as a set, which provides a forum in which members' ideas can be reflected on and challenged in a supportive environment. Action learning places an emphasis on self-development and doing. Revans (as cited in Gregory) suggests a model founded on assumptions similar to the four-stage experiential learning model developed by Lewin and Kolb. The process involves a cycle of action, reflection and understanding. The learner can be actively involved in research rather than a passive absorber. Learning involves a process that could lead to acquiring the ability to "ask 'fresh' questions, to cope with new problems and deal with changing situations" (Gregory, p. 129).

Within an action research approach the learner is engaged at a level of experience that is emancipatory and critically reflective. Gregory (1995) cites Mezirow, who sees the experience as transformative by helping adult learners to "construe (their) experience in a way which they can more clearly understand the reasons for their problems and understand the options open to them so that they may assume responsibility for decision-making" (p. 132). Action research is a development process that encompasses action learning and process management, which Zuber-Skerrit (1992) says can provide a toolkit for developing general competencies. It can provide methods for solving new problems, and developing entrepreneurial skills and attitudes in working collaboratively within an increasingly global context. These competencies match those that have been identified as critical cross-field outcomes, such as critical and creative thinking, problem solving, developing entrepreneurial opportunities, and working in a team and understanding the world as a set of related systems (similar to working collaboratively within an increasingly global context).

2.4.2 The action research cycle

Action research seeks to unite the improvement in practice and increasing knowledge and understanding by linking them in an integrated cycle of activities (Winter, 1989). Each phase learns from the previous one and is used to shape the next phase. Kemmis and McTaggart (2000) suggest a process that is seen as generally involving a "spiral of self-reflective cycles of planning a change, acting and observing the process and consequences of the change, reflecting on these processes and consequences, and then replanning, acting and observing, reflecting, and so on..." (p. 595). The process is not a mechanical sequence of steps, but may

overlap. Success is not measured by whether participants have faithfully followed the sequence, but whether there has been a sense of development and change in practice, in understandings of practices, and of the situations in which practice occurs (Kemmis and McTaggart, 2000). Action research occurs in terms of learning from experience, and concerns actual, not abstract, practices. Jones et al. (1997) and Jarvis (1995) perceive action research and reflective practice as being closely related. Both action research and reflective practice require planning, action, observing, collecting data, and reflecting on that action and data.

An action research design allows the participants and the researcher to develop the necessary skills and sophistication to explore their social world (Kemmis & McTaggart, 2000). This approach also recognises that I, as researcher, am a subjective participant, who makes my own meaning, as espoused by von Glasersfeld (1995), and Neimeyer and Neimeyer (1993). The collaborative processes in action research recognise the importance of participants' contributions. The meanings that are constructed during the inquiry process might lead to one action, or the reflections on action might lead to new meanings being constructed.

Dick (2002), in describing the cyclic nature of action research and learning from experience, says action research allows for the progressive refinement of interpretation of data and the resultant actions as the study proceeds. He adds a review stage to the action research spiral, which is the alternation between action and reflection.

Winter (1989) says that the validation of hypotheses and the adequacy of interpretations are tested by the action phase. The action phase is a practical response to the initial problem regarding the inquiry that has been undertaken, and the action decided upon as a result of the inquiry usually generates further problems. These problems could become the topic of further inquiry.

The cyclical format of action research suggests a continuing openness to developing practice, and "the 'scientific' ideal of the continuing growth of understanding through critique and revision" (Winter, 1989, p. 14). The implication is that any phase of gathering data and of interpretation is not final, but a tentative step forward.

Kemmis and McTaggart (2000) add other key features for participatory action research, which they view as important as the self-reflective spiral. The features are as follows:

- 1 *“Participatory action research is a social process”* (p. 597). It explores the relationship between the individual and the social. It looks at individuals and a group trying to understand how they are formed and re-formed as individuals and in relation to each other.

- 2 *“Participatory action research is participatory”* (p. 597). People are engaged in exploring and examining their knowledge (skills, understandings, and values) and the ways in which they interpret their actions and themselves. Individuals look at how their knowledge shapes their sense of identity, and they reflect critically on how their action is framed or constrained by that current knowledge.

- 3 *“Participatory action research is practical and collaborative”* (p. 597). People are engaged in examining their social practices that connect them in social interaction with others. Communication and social organisation practices are explored with the view to improving and reconstructing social interactions.

- 4 *“Participatory action research is emancipatory”* (p. 597). An aim is to help individuals to release themselves from constraints of social structures that may hinder their self-development and self-determination.

- 5 *“Participatory action research is critical”* (p. 598). Relationships of power, ways of working, and language/discourses are examined, and contested if experienced as irrational, unjust, or unsatisfying.

- 6 *“Participatory action research is recursive (reflexive, dialectical)”* (p. 598). An aim is to help people to change their practices through cycles of critical and self-critical action and reflection.

7 *“Participatory action research aims to transform both theory and practice”* (p. 598).

Participatory action research involves looking at specific situations as participants within those situations understand them. Different perspectives, theories and discourses are explored that might help to develop insights about transforming practices. It also involves exploring theories and perspectives for looking at how these could help to understand specific situations. Dick (2002) says that action and research can enhance one another, and that action that is informed by research is more likely to be effective.

Dick (2002) describes action research as “action and research ... a family of processes which allow the dual pursuit of action, or change, and research, or understanding” (p. 5). Critical reflection is added as another essential characteristic of action research. Jones et al. (1997) say that our reflections need to be informed by principles of critical enquiry. They suggest that open-mindedness, commitment, and responsibility, are particularly important values and attitudes for encouraging reflective participation. Open-mindedness means the willingness to seek out and to explore the perspectives of others who may have an interest in the education process, and to evaluate them in terms of your own values and experience. Responsibility implies seeking evidence of the effects of our actions and values on those of other stakeholders in education.

2.5 Selection of participants

Cresswell (1998) suggests that a qualitative approach is appropriate for in-depth exploration and for a detailed view of a topic. Furthermore, Marshall and Rossman (1995) state that an ideal site for qualitative research is where there is access; where the probability is high that the processes, the programmes, the people, interactions, and structures of interest are all present. The setting also provides an opportunity for exploring and understanding the topic within a context. Maykut and Morehouse (1994) say that qualitative research values sensitivity to context, which means studying phenomena in their complexity and within a particular environment. It is within this context that I chose to do the study with members of SCIENSCO.

Initially the 10 executive members of the SCIENSCO were selected. The selected participants

did not necessarily follow the same curricula, nor were they in similar stages of their courses. Four members of the group were in their second year of undergraduate study, four members in their third year of undergraduate study, while two members were following an honours degree. Four of the executive members were women. The main consideration was to focus on the possible diverse experiences of the participants. Another consideration was that SCIENSCO, through its executive, interacts with the Science Faculty and has representation at faculty level. This interaction could be linked with processes of advocacy and activism on the part of SCIENSCO, as part of their role as a student organisation within the university system. It was valuable therefore to explore the experiences of the leaders of SCIENSCO in terms of their relationship with the Science Faculty. Guba and Lincoln (1998) suggest that a constructivist approach be informed by the values of altruism and empowerment, for example.

The selected participants made up a narrow sample that Cresswell (1998) refers to as a criterion sample that, he states, is suitable in that they all experience the phenomenon that would be explored.

In keeping with an action research approach, and with it being an emerging process, the implication is that extra participants could be included later if required. The process of selection could also be negotiated with the initial group of participants as the research unfolds and action processes need to be modified. This opportunistic sampling procedure enables the researcher to deal with the unexpected, or to follow new leads (Cresswell, 1998). In the case of SCIENSCO, my initial contact in 2002 was mainly with the chairperson and his deputy, until I met on a regular basis with the new chairperson and the new executive committee for 2003, consisting of 10 members. Occasionally individual non-executive members, who were also tutors for Grade 11 and Grade 12 students, participated in the research group and individual discussions.

With regard to the participants in the study, I would like to highlight a few contextual factors that I considered prior to planning the study but which became more meaningful for me as the collaborative research process unfolded, and more significant for me during the writing of the research report.

2.5.1 Disadvantaged students, student development, and learning

In an attempt to portray some of my values as a co-researcher who attempted to work collaboratively and systemically, I thought it appropriate to re-emphasise some of the contextual factors that SCIENSCO and I brought to the research process and that I had initially not considered enough, in a systemic way, for establishing collaborative partnerships with SCIENSCO members. The description of these contextual factors also gives a perspective that I found useful for explaining my understanding of the terms disadvantaged students and student development.

Odendaal-Magwaza (1996) is of the opinion that the success of many Black students gaining university access not only promises a better future, but also signals a time of “personal disjunctures” between their past and present experiences. She also highlights disjunctures, such as the tensions that may arise between them and their families, due to their privilege, especially if it is at the cost of the family’s sacrifice in terms of finance and feelings of indebtedness. Many Black students experience university as “...alienating, isolating, and isolated from their social reality and vision, disempowering rather than empowering, and seemingly geared to their failure and exclusion” (Odendaal-Magwaza, 1996, p. 6).

Although it is problematic to generalise about disadvantaged students, the aim here is not to lose sight of their individual abilities and their different contexts. Historically disadvantaged students could be described as under-prepared students if we consider the explanation provided by Moll and Slonimsky (1989), who argue that under-prepared students find themselves in “a context where they must compete, within an unfamiliar context and in terms of unfamiliar ground rules, in order to succeed” (p. 163). Vorster (1999) and Hendricks (1999) mention research in South Africa that found that under-prepared students, who often come from lower socio-economic backgrounds, did not see themselves as having responsibility for their own learning. The teacher was seen as the one in whom that responsibility resided. Rote learning and dependence on the teacher appeared as the dominant learning behaviours. Therefore such students could find themselves in a university context where it might be

difficult to rely on their repertoire of strategies previously acquired within the school setting. Moll and Slonimsky imply that rote learning is likely to encourage surface level approaches to processing information rather than the deep approaches prescribed by the DoE.

Odendaal-Magwaza (1996) feels that our educational processes should take into account the diverse strengths and needs of students, and these should be integrated into the education process. Students should be afforded conditions that provide opportunities for them to engage in a learning process that includes personal meaning-making and personal growth. She argues that institutions of higher learning do not allow for greater participation and engagement of students in order for them to articulate what their needs are, and for them to engage in constructing the kind of learning and developmental community they want. Tucker, Herman, Pedersen, Vogel and Reinke (2000) concur that such students are the real experts regarding problems that occur among themselves, and they often are excluded from giving input about interventions planned on their behalf. They describe benefits from exploring the opinions of students and mention numerous researchers who have found students' perceptions influence academic success. By listening to students their perspectives can be validated, they can be empowered, and their inputs may lead to more effective solutions for the problems confronting them.

With regard to exploring students' perspectives, Hurst and Morrill (as cited in Odendaal-Magwaza, 1996) describe the roles of student services professionals as:

- 1 To study and understand the student, the environment, and the outcomes of their interaction in order to identify potential mismatches and needed interventions.
- 2 Growing out of the first, to facilitate student resource development by providing students with the skills, attitudes, and other resources they need in order to take advantage of and profit from the learning environments.
- 3 To promote environmental resource development by restructuring, redesign, and modification interventions designed to create the optimal environment within which

human development may occur (p. 8).

Odendaal-Magwaza reflects that in the discourse used by Hurst and Morrill above, the students' agency is limited to receiving and not being actively engaged. She offers a critique of the term student development specifically in the South African context, and in terms of its First World connotations as practised in countries such as the United States of America and Britain. The critique revolves around a student development perspective that views students as underdeveloped, or that views students as having deficits.

In the discourse in the United States of America student development is coupled with the notion of wellness, and in much of the literature emanating from these sources student development has a First World flavour. This developed notion of student development assumes a resource-rich context, and has little relation to conditions in developing countries (Odendaal-Magwaza, 1996). Odendaal-Magwaza mentions recent British moves toward greater student involvement by promoting and supporting student development through student activities.

Selikow (1994) mentions research done in the 1980's and early 1990's that examined Department of Education and Training (DET) schooling and how it affected students entering tertiary studies. She refers to the kinds of deficits of black schooling, such as rote learning, lack of classroom discussion, and authoritarian style teaching that limits independent and critical thinking. The schooling was found to produce approaches to learning that limited students' preparedness for further education. She does add that Scott (1986) cautioned that DET education could not be understood only in terms of a deficit model. Students from former DET schools also brought much learning with them into the tertiary institution. I would argue that many of the problems mentioned regarding DET schools in the 1980's and 1990's still exist. Teachers generally are still confronted with the poverty of students in the township schools, where the majority of Vista University and other tertiary students come from. Pettman (1996) describes other factors having a negative impact on students from such contexts, such as pressure from the job market and from financial constraints that also affect students and their families.

Selikow (1994) however (citing Edwards, 1989) observes that language differences “are the most salient and observable characteristics of educational disadvantage” (p. 18). Therefore the point can be made that currently students from similar contexts are still experiencing a similar problem as in the past. English, which is many students’ second or third language, is the medium of instruction at the majority of South African tertiary institutions. The language issue therefore has highly significant and serious implications for teaching and learning in South Africa, and these implications need urgent and extensive recognition and action.

2.6 Procedure

Information was gathered through a process of participant observation, group discussions, discussions with individuals, and reflection. An audio-tape was used occasionally to record the dialogue during feedback and discussion sessions. These were later used for reflecting on the participants’ interpretations and on the themes. I also kept a research journal that was used to record and inform my reflection on my own experiences of the research process, and to reflect on my learning experiences. The participants were also encouraged to reflect through writing, which provided further opportunities for reflection and discussion.

The broad questions that were focussed on initially, in the process of exploring collaboration between SCIENSCO and me, were:

- 1 What are my own perceptions and learning experiences during the collaborative action research process?

- 2 What are the participants’ perceptions and experiences of tutoring Grade 11 and Grade 12 learners, in terms of the critical cross-field outcomes?

- 3 Secondary questions included:
 What are the participants’ interpretations and perceptions about what they are able to do or demonstrate as Vista science students?

How are their current capabilities related to Science Faculty objectives regarding

critical cross-field outcomes, and what other contexts might be contributing towards their training and development?

What changes have occurred regarding their and my teaching and learning experiences based on our roles as participants in the collaborative action research process? This last question later in the process became the main focus of our collaborative study in terms of the experiential learning opportunity presented by an action research approach, for the purpose of developing collaboration between SCIENSCO and me, for our empowerment practices, and for me as student counsellor.

2.6.1 Group and individual discussions, participant observation and reflections

The group and individual discussions were based on interview techniques used to stimulate dialogue. Frey and Fontana (1993) say that the group discussions, in addition to the individual interview, allows access to the group's level of meaning, and it could clarify and reveal diversity. Group discussion also provides an opportunity for reflection, elaboration, for modification and for consensus about previously gathered views and opinions.

The individual discussions I conducted were mainly with the chairperson, deputy chairperson, and the secretary, mainly to reflect on the accuracy of my interpretations about the group discussions, and to jointly reflect on the research. During later stages of the research I had discussions with more group members individually, as we were becoming more comfortable with each other. Even the less talkative members became more spontaneous in occasionally talking to me individually about some of their personal academic concerns.

Kvale (1996) describes the interview as a tool that has as its purpose the description and understanding of the participants' lived world. It seeks to understand the meaning, and to gather descriptions of relevant themes of the participants' life world. Kitzinger (1995) says that groups generate data by capitalising on communication between participants. Individuals are encouraged to talk to each other by asking questions, commenting on the experiences and views of others, and exchanging stories or anecdotes. The group method can help individuals to explore and clarify their views in ways that could be more difficult in individual interviews.

Kitzinger says that group discussions are popularly used in action research, in particular by those who have an interest in empowering research participants, enabling them to become actively involved in the process, including the analysis of data. Groups are also described as suitable for exploring how knowledge and ideas develop and operate in specific cultural contexts.

In both instances of group and individual discussions in this study the focus was on the themes as they emerged. Kvale (1996) and Ely, Vinz, Downing, and Anzul (1997) believe that dialogue is ideal for qualitative research, and allows flexibility for the participants.

The following section of the research report describes the collaborative research process and the findings in the form of reflections and a summary of themes.

CHAPTER 3

FINDINGS - A REFLECTION AND SUMMARY ON THEMES

The reflection and summary on themes are based on the information gathered (Appendix) during the action research process. I used a research journal with a diary format for capturing the information, and used that information to extract themes that were based on my reflections. The reflection was a way of trying to make sense and to develop a better understanding of the action research and the collaboration processes.

3.1 A search for partners - the courting process

When I started with the process of negotiating access in March 2002, I was working with the SCIENSCO leaders that would be completing their term of office in October 2002. Most of the research reported here occurred from January 2003. The previous leadership, and specifically the chairperson, were involved in re-negotiating access and orientating the new 2003 executive about the research. Part of their usual strategy of keeping two executive members as part of the incumbent executive was for facilitating the transition within SCIENSCO to a new executive committee, and to utilise the experience of the previous executive members. This strategy was helpful for the research process as well because it facilitated access with the new group, seeing that certain members had previously participated in the process and had already informed the members prior to the election of new officials.

In March 2002 I had discussions with the SCIENSCO chairperson about the student society and I collaborating on a research project. The chairperson and I initially had informal dialogue in order to establish a common understanding of how we could form a collaborative relationship within a research project and not in terms of my being a staff member only. I explained to him my rationale for specifically wanting to work with a group of science students, and why it was not solely for research purposes but also to develop my practice as a student counsellor. I then wrote a letter to SCIENSCO, which he agreed was acceptable procedure, to make a formal proposal that we collaborate as a group.

My concern at one stage was about how I could introduce my own ideas about the focus of the

research, which at the time I wanted to be about the critical cross-field outcomes. The dilemma was that I wanted SCIENSCO to contribute what they considered to be topics that we could research collaboratively, and yet I wanted to suggest ways in which we could try to link their ideas with the critical cross-field outcomes, which I saw as my main research aim at that point. In consultations with my supervisor I came to understand that I did not need to be too concerned about focusing on the critical outcomes initially, but that the critical outcomes could be used as part of a framework when reflecting on the research process and the learning that was taking place.

The plan then was to have a meeting where I would not initially mention what I specifically chose as the focus area. I would ask them about their interest in and thoughts on how we could collaborate, what they perceived to be their academic needs as science students and future graduates, and for me to answer any questions they had, and to reflect on the relevance of what they said about critical cross-field outcomes.

The reasons I gave for wanting to work specifically with science students, for example the prioritising of science education by government, the needs of society, and also the need to involve student voices in developing institutional responsiveness, resonated with the chairperson. He agreed that these reasons were relevant and said he would like to see SCIENSCO develop and contribute more effectively to science students and the university. Another reason for thinking that the approach regarding gaining access to SCIENSCO worked well was that I could use the feedback from the chairperson and two of his executive members to write a letter to their organisation requesting a meeting. I realised that by writing the letter the authority and insight of the chairperson and his colleagues were being acknowledged, which helped me to gain access to SCIENSCO.

The plan for approaching the group, based on reflection with the chairperson about our intended approach, was to repeat what I had said to the chairperson and his two colleagues about the rationale for choosing to work with science students. I was also going to describe how I perceived my role in order to distinguish between doing it for improving my student

counselling practice, and doing it for my own research requirement for an academic qualification and planning to find out what their needs were.

Our first meeting as a group allowed me to address some of their concerns, which included suggestions by some of the SCIENSCO members that "...the ideas about the research sound so theoretical". After clarifying the action research process and how it could be applied and function as a vehicle for learning, they agreed that we could implement the project.

Another question from them was whether the research could be applied to the kinds of problems they experienced in their role as tutors when they taught high school students on Saturdays. I used these questions as an opportunity to illustrate, by means of examples, how problems could be reflected on (e.g. reflecting on our own learning experiences as collaborative learners, which included science students and a student counsellor at Vista, to better understand the Grade 11 and Grade 12 students and the kinds of problems they may have been experiencing with regard to the tutors' teaching practices, and how we could utilise our own experiences in order to solve problems).

I was trying to relate these topics to critical outcomes, and I also wanted to show that the Saturday classes could be seen as part of the interconnecting systems involving SCIENSCO members. I was gaining a better understanding of how we were part of a larger system that could be explored for the purposes of reflecting on learning. I had gained the impression, from feedback from the group, that the problems regarding the Saturday classes were seen as separate from their organisation and their academic learning.

Another concern, raised by the chairperson, was that they wanted to receive some kind of formal recognition from the University for teaching the Grade 11 and Grade 12 Science classes. He said that they were playing a marketing and recruitment role on behalf of the University but did not receive any institutional support for this. Later on the meaning of "recognition" also came to include recognising that SCIENSCO could play a role in the Vista students' development and training, and recognising their activities by accrediting them in some way.

3.1.1 Apprehensions - towards a relationship of trust

After having been afforded access, there was a period of difficulty for me in trying to get momentum, to work with the whole group on a regular and organised basis. I had a need to set up regular discussion sessions, which I perceived as the formal part of the research project. I was often irritated by what I interpreted as a lack of progress with what I had initially planned to be my research aim, which was to focus mainly on critical cross-field outcomes. I also wondered whether my being off-campus as an intern at another placement centre was contributing to the difficulty of engaging on a regular basis with SCIENSCO. Perhaps this was one of the reasons I did most of my negotiating in a more indirect way. I was relying on communicating with and via the chairperson, which made me feel that I was not really in contact with the members in order to develop trust and to gain insight into how they experienced our collaboration. Eventually we agreed that we would work towards implementing the project in 2003, when a new executive would be involved, and because the difficulties were compounded by the looming examination preparation as well.

The new executive was elected in November 2002, and they had been aware of our efforts to work together. Two of the new executive members had also been part of the previous committee, which meant that they were aware of and had supported the continuation of the project. The new chairperson also reported his eagerness for the project to continue, and felt that it would be ideal to start again in 2003.

I felt that the difficulties or barriers to regular contact with SCIENSCO in 2002 were mainly related to my absence from campus, and that in 2003 I would be in a position to have easier access to more members of the group. I also later found that more regular and informal contact with the new chairperson developed trust, which increased SCIENSCO members' commitment and participation in guiding or facilitating the process, although it continued being difficult to meet with the full complement of executive members.

After access had been granted and established with both the first group and the new executive, I experienced difficulty getting started on the more formal arrangement of discussion sessions

with the group. During these attempts to get started I failed to realise that I was already doing research, and I experienced much frustration. My frustrations and anxiety at the time was about expecting to get feedback from SCIENSCO about critical cross-field outcomes and not being in a position yet to get that feedback. I saw the research process as entailing focus group or individual interviews, not noticing that the preliminary work that I was doing was part of the research process. As mentioned before, my idea initially was that the research was to have focused mainly on what I had planned to be the major aim of the research, which was to find out what they knew about critical outcomes and where and how these were experienced, based on their learning experiences as Vista University students. With the 2002 executive, after numerous disappointments in trying to set up meetings that did not materialise and relying mainly on the chairperson as go-between, I realised (with the help of reflection with my supervisor) that these events were already part of my research. I was focused mostly on establishing discussion sessions with the view to exploring critical cross-field outcomes (which I perceived as the research project, and when these sessions became difficult to establish I felt anxious and frustrated). He suggested that I also needed to look at "...what is not happening and why it is not happening." I was focussing on progress instead of exploring the lack of momentum, trying to gain an understanding of why members were not available. For example meetings that were planned, with a commitment by the chairperson that the members would be available, did not materialise.

After our first session it took numerous consultations with the chairperson to arrange a meeting with the other SCIENSCO members. When I arrived at the agreed time and date, I found that the chairperson was awkward about informing me that the intended discussion regarding the research project could not be accommodated on the agenda, owing to other more pressing issues that needed their attention. We then agreed to postpone our meeting.

I thought about my apprehension about the meeting taking place, and my awareness about not being in a position to impose on them my need to get the sessions going. During this phase I also experienced a feeling of relief when the meetings did not transpire, perhaps because I still felt anxious about whether I had the necessary ability to facilitate the project. This was linked to my concerns about trying to focus on critical cross-field outcomes as the main topic. During

this phase I also judged SCIENSCO in a critical way and took the lack of movement personally. I was still unable to accept that the sessions were also inconvenient for them at times, as the chairperson informed me later that most of them were tutors and laboratory assistants who were kept busy until late in the day.

The follow-up meeting, which had been confirmed with the chairperson two hours before it was to commence, was again postponed at the suggestion of the chairperson. During this phase I was doing my counselling psychologist internship at an off-campus location, which meant that I had to travel to campus at the scheduled times, without receiving prior warning that the meetings would be cancelled. If I had not telephoned to find out whether the meeting would take place, I would have gone to their office only to find that it had been cancelled. I got the impression that the chairperson shared similar irritations with these hurdles, based on the expression of his frustrations and his apologies at the frequent postponements. The two of us ended up discussing previous suggestions from him that I facilitate career guidance workshops or seminars for Grade 12 students and for science students generally, also as a way of marketing the role that SCIENSCO could play for the purpose of attracting more students to their organisation. When I thought about this discussion with him, I realised that I was trying to show him my continued commitment to working with them and that although I was disappointed at the lack of progress, I was perhaps viewing the project with them in a self-centred way. I was more concerned about achieving my idea of progress for the sake of the research as an academic requirement. A month later he informed me that the career guidance workshops, which they were to organise and which I was to facilitate, were cancelled. This was also communicated to me only when I asked and not on their initiative. I perceived a contrast between the lack of action and the enthusiasm and motivation expressed in the beginning, when we discussed collaborative opportunities between SCIENSCO and me.

I felt that we could explore together what the barriers were to us getting together, so that we could try to solve the perceived problem of the times and dates of meetings. The chairperson, the deputy chairperson, and I looked at possible barriers. Some of the suggested barriers were the different roles and responsibilities students had, the difficulty in rescheduling their tutorials, the looming tour to the Vista Bloemfontein campus that had attracted their interest,

their involvement in organising the closing function for their Grade 11 and Grade 12 students, and working on preparing the syllabus which they would use for the Grade 11 and Grade 12 students the following year. Another reason, added later by the chairperson, was that the examinations and holidays had also resulted in a lack of continuity since June 2002, while there were students who were starting their end of year examination preparations.

The solutions that were planned were: rearranging the tutorials with the approval of their lecturers, who had also commented on the poor attendance of tutorials by Science students; starting the meetings half an hour earlier in order to accommodate the research discussions; the chairperson saying he realised “ we don’t have to wait for everybody until something can be done. We can work with some who are there” (he was referring to action with those who were present, and not necessarily expecting to do work until all were present. This can be linked with me having suggested that we did not have to wait for every member of the executive to be present in order for me to proceed with discussions or interviews). We had also agreed to request written feedback about what SCIENSCO members perceived as their needs as future Vista Science graduates.

A subsequent meeting was arranged with the chairperson and his deputy to get feedback about progress made to arrange group discussions with SCIENSCO to further reflect on my observation that the process had stalled. I wanted to know whether action had been implemented as we had discussed previously regarding solutions to get started. Three written responses were received from the group of 10 executive members. The reasons given by the chairperson and his deputy why only three responses were received was that some members “may not find it easy to express themselves”, and “some students are more senior than others”. They explained that some members felt self-conscious about their language writing ability, while less senior students sometimes felt that they were not capable of providing appropriate feedback. They also reported that the meeting to reschedule their tutorials had taken place. After I discussed issues of valid and relevant feedback or opinions, they agreed that all their members could provide information that could be relevant and valid. I also got the impression that the group may have had difficulty distinguishing between my role as collaborative researcher and staff member. I gathered this from the comment by the chairperson that the

students were not used to being consulted by their lecturers, and may not have known how to respond to such situations. The students were possibly concerned that I was going to judge the feedback they presented, and how they presented the requested feedback. While I was writing my research report, I thought that their concern about being judged may possibly have been one of the barriers to getting started generally as well, where the students were not yet comfortable with my presence in terms of collaboration and us being equals. In the beginning of our contact their enthusiasm may have been related to their expectations that I would offer, as a staff member with the necessary expertise, a service to them in the form of being a resource for training workshops. The chairperson, after I had discussions with him, suggested that we again explain to the group what the research would entail, what the process involved, how it could benefit SCIENSCO, and what benefits collaboration could bring for both SCIENSCO and me.

I used the opportunity during this meeting with the chairperson and his deputy to explain how this meeting could be seen as an example of our planned research process. I explained that the meeting process that we followed was like an action research process, where we were doing an evaluation of the process thus far, we critically reflected on the problems, we explored possible solutions, and we implemented actions. We also agreed that this session could be seen as a learning experience which occurred through our practising action research type processes, and which created awareness of individuals' views through having shared our thoughts and ideas with each other.

In comparison with the 2002 group I felt it was easier to develop trust with the 2003 chairperson and the group. The previous chairperson and I had a number of contact sessions that also included my being invited to join them on one of their private sector company visits. Although informal contact had not been part of my plan of action, I realised that the opportunities were limited to get involved with the group in a more informal way. In 2003 I had more informal contact with the group, which enhanced conversation about, and focus on, issues other than the intended research. Some of the members were also involved in the orientation programme for new students, of which I was the co-ordinator. Examples of such informal contact are that I could call on the assistance of other members when I co-ordinated

the administering of the Tertiary Education Linkages Project (TELP) tests for all new and first time entering students, and when the chairperson and deputy chairperson were invited to join me at a quality assurance meeting at Rhodes University in Grahamstown.

I found that it was easier for me to relay messages, to make requests, and to negotiate meetings with different groups or individual members. I did not have to talk mainly through the chairperson as in the past. I also experienced a change in that I was sometimes approached not only by the chairperson but some of the other members as well, at their own initiative, when they would request advice about personal matters, or to give some feedback regarding certain arrangements or verbal reports.

Being back on the Vista campus after completing my internship made access to the group and the individuals more convenient, and much of our contact, unrelated in a way to the research project itself, was mutual sharing of ourselves as resources. For example, I would be consulted in my capacity as student counsellor about student services, while I could request some assistance from them for certain tasks within the student counselling domain, such as providing academic advice to some science students.

I reflected on the recurring feelings of anxiety and ambivalence when I thought that we were not making progress in the beginning. I thought that much of the anxiety had to do with the difficulty of getting to know the students with whom I was expecting to work intimately, unlike previous experiences of working with students for brief, intermittent and limited periods, such as in workshops and during student orientation. I also reflected on my own experience of anxiety and feelings of inadequacy at times as a student in certain situations, in an attempt to try to understand what the group members may have been experiencing. This was one approach that helped me to be less judgemental and less blaming of them as the cause of the lack of momentum as I perceived it. My anxiety could have been connected to self-consciousness, like that of the students who later reported that they would feel inhibited in class, avoiding embarrassment regarding their poor English language usage, and being afraid to ask questions for fear of being labelled as stupid. I became less critical of myself in the process as I started realising that I did not have to blame myself in the way I had been doing. I

was gaining a better understanding of how the students' classroom experiences could have caused their inhibitions, and a lack of trust towards me.

Another experience that helped to ease my anxiety about a lack of progress in the research was the dialogue and the reflection done during my supervision sessions with my research supervisor, where I gradually came to realise that I could focus on the process rather than constantly worrying about anticipated outcomes of the research process. My expectations and assumptions were often linked to certain daunting standards I had in mind. Another reflection arrived at with the assistance of my supervisor, which reduced my anxiety, was that I was not solely responsible for bringing about change. Although I had tried to promote the idea of collaboration, I still seemed to think that I had to take charge to achieve the planned outcomes. Tensions and ambivalence arose in me because I wanted to avoid being pushy or coming across as demanding or domineering, while simultaneously being concerned about what I interpreted as a slow pace of working towards achieving our research aims.

I also experienced anxiety and avoidance of contact with my supervisor when I thought of regularly submitting written work regarding my research to my supervisor. I, at times, informed him of my awareness of gaps in information or the editing still required prior to any discussion, assuming that he was going to judge my work negatively. I had difficulty seeing that regular interaction and submitting written work was part of a learning process, and that the process could lead to developing the expected learning outcomes linked to one of my research aims regarding the improvement of my research practice. I had to learn that the critique was about the work and not about me as a person. I also came to realise that research was not only about what the literature or theory expounded, but also that my perceptions, experiences and reflections were relevant. Like some of the students who feared being wrong or making mistakes, when they were concerned about being labelled by their lecturers, I had been avoiding making mistakes rather than seeing them as opportunities or learning moments. I was learning to develop more trust in my own experience, and learning to become more comfortable sharing that with my supervisor, both in text and in joint consultation sessions.

3.2 Getting to know – relationships and systems

When I started out with the research and tried to gain access to SCIENSCO, I focused on establishing trust and negotiating with the consecutive chairpersons, seemingly oblivious to SCIENSCO's organisational and leadership structure. I assumed that the chairpersons' way of functioning was more of a personal, individually determined style, and that as chairpersons they had claimed power to negotiate individually. I later realised that like I had done, their organisation provided them with the context to perform their roles in a way where the leadership appeared to be expected to act as authority figures. In other words, the chairperson was being held responsible for taking initiative and to perform certain tasks as if this was exclusively the chairperson's role. Positions and duties appeared to be clearly demarcated and rigid, and delegation and collaboration within the organisation was difficult because SCIENSCO members expected that each executive member be solely responsible for each portfolio.

When I was in contact with the group in the beginning, most of the responses and feedback came through the chairpersons, who sometimes spoke on behalf of the members. I was also vesting power in the chairperson, while I was modelling a kind of interaction that possibly showed the group that I was making a distinction between them and their leader. This may have been another reason why it was difficult in the beginning to get more involvement from certain members, who also seemed to depend on the leadership to speak on their behalf. It was as if I was forming an alliance with the one who had the most power.

Gradually I came to realise that the kind of relationship that was being developed with the chairperson could be detrimental to me establishing a relationship with the other members. It was as if I was undermining or underestimating them by communicating mainly with the chairperson, and yet I was talking about collaborating and about being equals.

The same kind of interaction existed between SCIENSCO and the SRC, with the SRC being vested with the power and SCIENSCO playing a submissive role. The relationship, from what I had gathered from feedback from students, and about which I had been aware from my co-

ordinating role within the Student Affairs Division, was mainly adversarial. SCIENSCO did not enjoy satisfactory support from the SRC in terms of developing SCIENSCO as an academic society, and was not being effectively assisted with their organisational endeavours. This complaint was similar to the complaints the members had about their lecturers, as if they expected and were entitled to that support. I then started considering how these systems were related, and my understanding developed further about how our perceptions of others, of relationships, and of events can change once we recognise the overall context in which systems function. In other words, if we could be aware of and understand how we were operating within SCIENSCO, we could have related that to our relationships with the SRC and with the Science Faculty. We could have become aware sooner of how we related with those who were in positions of power and authority. We could then have changed our own submissive behaviour for example, and not just assume that those in authority should be aware of our dissatisfaction or concerns. Simultaneously that reminded me of previous experiences I had had as Student Counsellor with the Science Faculty, where I had expected and taken for granted that I should have access to their faculty meetings. After negotiating access to their meetings, I was able to attend and I was able to understand that barriers do not just disappear. They also required dismantling by gaining mutual insight and by discovering different perceptions and perspectives, and by changing specific actions.

In order to gain another perspective and a better understanding of the system in which SCIENSCO operated, I thought it appropriate to meet with the subhead of the Science Faculty. My plan was based on the supportive role and the relationship that he had developed with SCIENSCO. My subsequent contact and consultations, with the approval of SCIENSCO, with the sub-head of the Science Faculty, allowed me to gain a better perspective of the system in which SCIENSCO was operating as an academic society. The subhead reported that SCIENSCO had recently approached him to request his support and guidance and to get him involved in their activities to improve their organisation. After getting him involved, SCIENSCO members reported that they found lecturers more interested in their organisation's activities, and some lecturers said that they had not even been aware of SCIENSCO's existence. They also found support in the Dean of the Science Faculty, with whom they had a meeting and telephone contact to discuss assistance from his side with their activities.

We had discussed whether I should attend their meeting with the Dean of the Science Faculty, to discuss issues concerning their planned awards ceremony and some of their concerns around what their role should be as an organisation. Initially I thought it a good idea to attend, but on reflection I reconsidered, wondering about the effect my presence would have on how the members would interact with the Dean. I was concerned that my presence could perhaps have contributed to a self-consciousness and anxiety on their part, about me judging their interaction with the Dean. I also wondered how comfortable the Dean would be because he was expecting to meet with students, and I may have been seen in my capacity as a staff member. Once I mentioned these concerns to the chairperson and the educational officer they accepted that my presence might be uncomfortable for them and the Dean.

After their meeting with him they reported feeling excited by his response and promise of his support and that of the subhead of the Science Faculty. They saw this expression of interest as contributing to the success of their awards ceremony for science students, which they described as "...beyond expectation". One member ascribed the presence of all their lecturers, except one, to the "...instruction and directive" from the Dean via the sub-head to the lecturers, while the majority view was that this was not the case. Their view was that the participation of the two professors added status to the event, and that lecturers were encouraged and not instructed to attend. They also received assistance and advice, in terms of academic criteria, from him and certain lecturers for identifying those who were to receive awards. There was also an agreement that lectures would be cancelled to allow students to attend. The awards ceremony was seen as an incentive to science students by SCIENSCO. They said that their aim was to motivate the science students in terms of rewarding achievement, and they found that the exposure they got as SCIENSCO created more interest amongst other science students to become members of SCIENSCO.

Just before the June 2003 examinations there was the threat of students with debt being de-registered (See journal entry dated April 15, 2003). During this period I observed a shift in focus from what we as a group had intended to deal with to the effects that the situation was having on some of the members. This was also when I more clearly understood how markedly different their context was to mine. I was a privileged staff member, unaffected directly by the

threat of de-registration, and I could not assist them with solving their debt problem, even in my role as student counsellor. However, I could also relate to this tension between the personal and collective needs, the needs of a member and the needs of SCIENSCO. At times in the beginning of the study I felt that there was no progress with the research and that the group was not committed. I realised later that I had been focusing on my own needs and not on our collective or collaborative needs and our collective pace. I was looking for solutions within myself rather than reflecting on possible reasons for the lack of progress towards our goals as a collaborative group task.

During this time SCIENSCO found that their relationship with the SRC was different to their previous interactions. They reported feeling supported and in agreement with the SRC, who had been challenging the decision to de-register students. Within SCIENSCO, students experienced tensions between their individual positions with regard to de-registration and the collective position. SCIENSCO, as an organisation, felt constrained, saying that they could not speak on behalf of individual science students, as this was the domain of the SRC. They had also informed their members that those under threat of being de-registered had to take up the matter as individuals. Later I wondered whether the chairperson was being compromised, because while he was under threat of being de-registered other members were not, and he felt that his financial predicament was a personal matter. This was also possibly a reason for his gradual disengagement, as I discovered later, when I noticed that he was less active and less authoritative in his role as chairperson.

As I reflected on this later, perhaps this could have been a reason for his decision, “to expose other executive members to chairing meetings so that they can develop their skills.” Initially I reflected that this was purely a change in him, as a result of him becoming more comfortable with the idea of SCIENSCO as a site for developing skills, and of a democratic and collaborative approach to achieving goals. The SRC and SCIENSCO’s attempts to oppose de-registration were futile, which meant that individuals were faced with having to resolve their problems or to accept the consequences individually.

Through my involvement with SCIENSCO I was also able to meet some of their Grade 11 and Grade 12 students, and I became more sensitised about their students' cultural and community context through conversing with them directly. Although I had previously assumed some knowledge of Vista University students' school backgrounds, I had not personally interviewed school learners specifically about their needs and expectations in the past. I realised more fully, on reflection, how SCIENSCO's role could have been expanded to help prepare learners not just for Grade 12 examinations, but also for tertiary education. Further empowerment of and collaboration by SCIENSCO could have been actualised by providing its members with training and development in collaboration with the Science Faculty, based on curricular elements that would assist learners in the transition from school to university. An example would have been negotiating a shift from traditional, content-based evaluation by examination, to a more learner-centred teaching and learning approach by SCIENSCO and the Science Faculty. Learners would then be exposed to such an approach before they entered university, if it was adopted as the University's teaching approach and if it was suited to the needs of students and the particular discipline or learning module.

3.2.1 A power struggle – lessons for empowerment

The SCIENSCO members felt that their role as a student organisation was not recognised by the university management and the Science Faculty. They also mentioned the barriers experienced in their relationship with the SRC. The students reported that their lecturers did not consult them, but at the same time they admitted that they had never approached lecturers about their (students') concerns, such as career issues or their views regarding changes in the classroom environment.

During my interaction with SCIENSCO I got the sense that we both had difficulty with sharing decision-making. When I consulted with the chairperson about arrangements for interview sessions for example, we had difficulty initiating a compromise for a mutually acceptable date and time. We knew we had to negotiate these times with the group, but even then we had difficulty with effectively guiding or facilitating the process. I then relied mainly on him initially to speak to SCIENSCO on my behalf, which gave me a sense of powerlessness. Much of our contact initially was by telephone or involved me relaying

messages to him via a third party, when I was trying to follow-up on our previous discussions. I later ascribed some of this behaviour to our awkwardness in trying to establish a collaborative relationship, to work towards seeing ourselves and acting as equal partners.

As mentioned previously, the group discussions were initially dominated by a few members of the executive, namely the leaders who were perceived as being more senior in terms of their greater number of years of study. When we reflected on this in the beginning, the chairperson's view was that the members expected them (the leadership) to speak on their behalf. None of the other members disputed his comment. During a later session, when these quieter members became more trusting and more involved in discussions, they mentioned their feelings of inadequacy, saying that they sometimes were reluctant to contribute because they doubted whether they had the experience to provide relevant information. They said that at times they felt intimidated because they did not have the necessary status, in terms of years of study, and did not think that the more senior members and I would value their views. As more members became more involved in discussions, the group became more exposed to additional information. Members commented on how they were pleasantly surprised at times to find out that certain views were shared, and also that they were relieved to know that there could be different views to their own. They had assumed that when they spoke on behalf of others that there was consensus.

I was anxious about being seen as having a position of authority and on numerous occasions I expressed this concern to the group. When we evaluated the research process they agreed that in the beginning they had difficulty distinguishing my role. They also agreed that the chairperson was allowed to speak on behalf of certain students because of their understanding of the role that a chairperson plays. He was seen as "the one who is supposed to take charge". They reported that their view had changed and that they had come to realise that they could hold their own opinions. This had to do with them having gained in confidence and having understood that they had expected someone to verbalise on their behalf. Similarly, they initially expected that I would provide them with skills training in a format to which they were accustomed, namely having me as the expert instructing them to acquire such skills.

The students discovered that they could approach lecturers to assist them in their SCIENSCO activities and to help them develop their organisation. They did not do this initially because they were fearful of rejection and were not sure that they would be taken seriously. When they got the support and interest of certain lecturers, they discovered that some of their perceptions of personal powerlessness had changed.

During the research process there was the de-registration crisis mentioned earlier, that forced us to shift our focus. The students were affected by the threat of being de-registered (as mentioned previously) owing to outstanding debt. In previous years they would not have been faced with the possibility of being de-registered because of student debt. The mood during our sessions during this time was sombre. Students appeared to be de-motivated and their morale was low. Some of them mentioned that their interest in SCIENSCO activities had waned and that their priority was to have the matter resolved. However, they felt powerless to resolve it in a way that they expected it to be resolved. They expected that management would back down and would change its decision about students with too much debt.

The de-registration threat brought into more prominent focus the difference between SCIENSCO and I as co-researchers. I felt that they were also looking for answers from me in my role as student counsellor but I was unable to offer any practical assistance. I was reminded of my privileged position of being a staff member. Similarly, there were some members in SCIENSCO who were not under the threat of being de-registered. The leadership reported that they were not in a position to speak on behalf of those about to be de-registered, and felt that it was a matter that needed to be dealt with by the individuals concerned. The tensions were about collective responsibility versus individual responsibility. Those students under threat of being de-registered did not get support from their organisation. The lack of support from others in SCIENSCO may have been partly motivated by anxiety about getting involved and the consequences that may have affected their own status.

Part of my privileged position, in comparison with SCIENSCO, was that I could look for support, which for me also meant emotional support, from peers, and my supervisor. My personal group of critical friends, who I consulted with individually for discussion and

reflection, included a fellow Masters student and friend, a colleague and friend working in Academic Development, a staff member in the Education Faculty, a staff member in the Science Faculty, and my supervisor. My involvement with my Academic Development colleague since 1996 had exposed me to the nature of collaborative work across various disciplines.

My contact with the subhead of the Science Faculty led to him offering ideas for future collaboration. One of his suggestions was that student counsellors could be part of a faculty team, implementing parts of curricula and being involved with evaluation and feedback of academic programmes, and inclusive of students' perceptions of teaching and learning. While writing this I reflected on how we could move from seeing colleagues as opposition or adversaries in certain work-related situations, to seeing them as potential collaborative partners. Through sharing our ideas I sensed that we built rapport and trust, which made it easier to understand each other's perspectives. This seemed to assist me in conceptualising a collaborative vision for responding to student and institutional needs.

Many of my consultations with my supervisors, and in particular my senior supervisor because I had more regular contact with him, developed increasing trust in myself through feeling affirmed and having some of my concerns interpreted as being part of the experience of the action research process. My colleague from Academic Development regularly showed interest in my progress. Talking to her about my research helped me to clarify certain issues that I was grappling with, and her own research experiences helped allay anxieties and confirmed my supervisors' feedback. My learning sometimes became clearer when I could relate or connect some later readings with what was earlier said by my colleague or my supervisor and was not clearly understood by me at the time. I concluded that much of my paradigmatic influence and preferred approach to my research was gained from their inadvertent mentorship and practice. I also recognised that seeing them as more knowledgeable and expert contributed to feelings of intimidation and avoidance behaviour on my part, perhaps related to being assessed or adjudged in terms of traditional, dichotomous passing or failing, right or wrong, evaluations. I was still shifting towards accepting and trusting the experts as mentors rather than as judges. It reminded me of a similar shift from a positivist influence to a postmodern one, where different

knowledge systems and sources are valued.

3.3 An action adventure – a critical search

My understanding of the critical cross-field outcomes and their link with an action research process evolved during the course of the study. In this section of the treatise I describe my evolving understanding, from the time I saw critical cross-field outcomes as a topic for exploration, to when SCIENSCO and I could make a connection between the development of critical outcomes and our action research process.

One of my research aims had been to explore what SCIENSCO knew about critical cross-field outcomes, what their learning experiences were at Vista University in this regard, and whether they perceived critical cross-field outcomes as relevant to their academic training and development. I also wanted to know whether their student society provided an environment or context for integrating these outcomes in the work that they did. My concern, mentioned previously, was whether I would have been imposing my research idea on them instead of us having collaborated on finding a mutual area of focus. I had mentioned, while negotiating access, my aims to the chairperson and later to the group members. After I had given them a brief description of the list of critical cross-field outcomes they reported that they had not been exposed to the critical outcomes as part of their curricula. I realised upon reflection that I could sell critical cross-field outcomes to them if I tried to link the existing list of outcomes with the activities they were involved with in SCIENSCO. In other words, based on our collaborative activities, we could later reflect on their experiences of these activities in order to look at whether and how these activities were related to the critical outcomes. I found that being involved in dialogue, reflection, planning, evaluation and problem solving or implementing action we could relate events to the critical outcomes in an indirect way, without necessarily using the SAQA terminology. For example, their written responses, with regard to what Vista graduates should be able to do upon graduation, contained many elements related to the critical outcomes. These were stated in the form of requests such as wanting skills that were transferable to the world of work, language proficiency and report writing skills, and alternative ways of learning, such as forming links between students and industry so that students would be able to relate theory to the practical work situations in

industry.

Upon reflection I could link some of the students' needs to the critical outcomes, such as leadership, self-management and organisational development, the possible systemic nature of solutions to problems, exploring career issues, investigating forms of learning, responsible citizenship, critical and evaluative activities, and service to their communities, to mention only a few. The subsequent plan and action then was to link the critical cross-field outcomes to the examples that were provided by the students' existing activities and problems. Their needs and concerns, which were communicated to me by the chairperson and his deputy and later by some of the other members, included: developing their skills as tutors; developing awareness of teaching and learning methodologies; developing their organisation so that they could better serve their members and their communities, and to market themselves through relevant student activities and programmes in order to attract more members; their concern about and interest in the possibilities of accreditation and recognition for their work as a student organisation; seeking closer links with the Science Faculty so that they could experience more support and work towards collaboration, for example with regard to the Science Faculty organising field-trips to companies in the private sector.

The students also confirmed that the development of these skills, albeit described in their own terms, were relevant to their training and development needs, although they reported that they had not been specifically exposed to formal training in this regard within their academic programmes.

The development of these skills and the learning experiences and environments in which they occurred, as perceived by the students, were explored and reflected on by the group. For example, their tutoring practice was generally based on modelling their lecturers and past teachers. Interactions within the organisation were hierarchical, influenced by the power vested in the leadership and their leadership status. The problems they were faced with were usually worked on for solutions by "an active few".

The critical cross-field outcomes also became a framework for SCIENSCO and me to

collaboratively evaluate changes in our learning through the action research process, once we had established a clearer understanding of what those outcomes meant. This evaluation framework is further discussed in 3.3.3 and in 4.3.1

3.3.1 Reflexive journeying – valuing evaluation

Both SCIENSCO and I incorporated evaluation and reflection in a more continuous and meaningful way as we acquired more collaborative action research experience together. In the past I had evaluated my student counselling practice in an ad-hoc, and haphazard way, and not necessarily for the purpose of improving my practice. SCIENSCO reported that the evaluation of their teaching and tutoring practice was limited to getting feedback from their Saturday classes, but that this was not reflected on critically to bring about improvement in their teaching and tutoring practice. The sub-head of the Science Faculty also referred to the limitations of evaluation in the Science Faculty as it did not include student feedback regarding the teaching practice of lecturers and students' perceptions about their learning contexts.

The students and I also focused on the links and influences amongst the different systems connected to their learning in the University. We looked at our relationships and our interactions with authority figures across and within systems, such as within SCIENSCO, with the SRC, the Science Faculty, and University Management, and we came to realise that a change in one system could be used to change another system. An example was the apprehensive approaches they made to two senior lecturers, who then later provided unexpected support to their organisation. They saw this as helping them to develop more confidence and to experience how creating a network can contribute to problem solving.

Practising evaluation for me also meant that I became less anxious about my inadequacies about doing research, realising that the research was part of a developmental process for me. I had assumed that I had to match an imaginary unattainable standard, given my relative lack of experience in and knowledge of action research, thereby confusing the process with an outcome. I have also been adjusting my perception of collaborative critical reflection and evaluation not as judgement of the self, but as a process of observation, reflection and action

for the purpose of learning, particularly aimed at improving practice. I often felt that I had to remind the students of that purpose because I sometimes got the impression that they perceived certain of my comments on their practice as criticism of themselves and their performance rather than observations of or feedback on their practice in our collaborative learning context. There were times, for example, when I would ask a question for reflection about future activities that they had not reflected on or planned for, and they would offer excuses as if I were the authority figure policing them. This is similar to my own initial perceptions about the research and my contact with my supervisors.

Part of the research process involved reflecting on our own experiences that influenced our collaborative and teaching practices, and how these experiences could sensitise us to improve our practice. For example, feedback gathered from the Grade 11 and Grade 12 students was compared to the students' own university classroom experiences, in order to develop awareness of the similarities in experiences. This collaborative reflection and evaluation for improving practice made SCIENSCO and I realise the value of exploring seemingly dichotomous roles, that of being students while simultaneously being tutors.

3.3.2 Bridging the divide - students as teachers

An important learning for SCIENSCO and me, as reported in various sections of the research report, was finding value in our knowledge gained through our experience, and much of our reflection on learning from experience was done through making links between the roles of student and tutor. Through our critical collaborative reflections we discovered the value of using our experiences from being students, and utilising those experiences for reflecting and developing insights into making adjustments or improvements to our facilitation and tutoring practices, as well as our collaborative practices. Simultaneously, the role of student was also being informed by exploring what it meant for us to be tutors and facilitators, where we were able to recognise that as students we could become more participatory, and express our views more readily for example.

An important focus area in this study, as mentioned before, was SCIENSCO's involvement with tutoring Grade 11 and Grade 12 students on campus on Saturday mornings. The student

tutors reported that much of their tutoring style was modelled on their own lecturers and teachers. They did not evaluate their teaching practice but when we reflected on it they reported weaknesses and complaints about certain aspects, such as problems with classroom control, not knowing how to deal with students' personal or emotional concerns and needs, shortage of space, and changing of tutors for certain subjects. They also reported that they had not included evaluation or feedback from the students, but that they had implemented a suggestion box. The purpose for the suggestion box was to gather complaints or suggestions from their students about the lessons. The limited feedback from the students was not really discussed or acted upon by SCIENSCO, although the SCIENSCO academic officer was tasked with the responsibility of giving a verbal report. She reported on the students' feedback, which included complaints about teaching style, lack of discipline of tutors in certain subjects but also satisfaction with certain tutors. I thought it appropriate to ascertain for myself what a sample of school students' views were in this regard, and with SCIENSCO's approval I interviewed the students one Saturday morning. I asked them about their satisfaction, complaints, and possible solutions with regard to their experiences with the SCIENSCO tutors (See Appendix, journal entry dated May 31, 2003).

The Saturday classes could be described as the main community service provided by SCIENSCO, and incorporated utilising Vista University facilities which had been negotiated with the Science Faculty, and charging the Grade 11 and 12 students a nominal annual fee of R30-00, of which tutors received R20-00 per student.

My reflections on these actions concerned the similarities in the experiences of both SCIENSCO and the Grade 11 and Grade 12 students in terms of teaching practices. This focus of my reflection also reminded me of the role that learning from experience could play in changing our practices. I later also realised how certain practices could be perpetuated, based on the kinds of experiences the tutors were exposed to in relation to their own lecturers that they used as models.

3.3.3 Structuring a compass

Initially SCIENSCO and I followed an entirely unstructured approach to reflect on the

collaborative group work. After having come some way through the research process I realised, with the help of my supervisor, that the critical cross-field outcomes could be used as a structured evaluation instrument, which I describe in 4.3.1. After the reflection with my supervisor about SCIENSCO members' and my changes in learning during the action research process, I gained a better understanding of the link between an action research approach and the critical cross-field outcomes, that action research also provides opportunities for developing critical outcomes. With the help of my supervisor I realised that the potential value and relevance of the study for higher education in South Africa would be enhanced by using the critical cross-field outcomes as a structured guide for reflecting on our experiences during the study. As a result the critical cross-field outcomes gradually became incorporated as a framework that could be used to reflect and evaluate the exploration of our collaborative actions and the research process. I came to view it as a framework for action and reflection, as well as providing a relevant and contemporary structure for implementing a plan of action to focus and improve the teaching and learning practices of both SCIENSCO and myself.

At the beginning of the research process I was confused about the critical cross-field outcomes as emphasised in my initial research proposal, and how they could fit into the research. My main aim at that time was to ascertain what the group knew about these outcomes and how the critical cross-field outcomes were experienced in their curricula. I became frustrated when my attempts at collaboration appeared to take time, which I saw as hampering me in the beginning from finding answers about the critical cross-field outcomes. I later came to realise that through action research we were participating in, and directly experiencing, these outcomes without us having specifically planned to do so. Towards the latter stages of the research process I found it easier to relate what was transpiring in the research process to the critical cross-field outcomes, for example, that through collaboration we were developing teamwork, and that the Grade 11 and Grade 12 lessons were related to community work, and an alternative form of learning for students. The critical cross-field outcomes also became helpful to us as novice collaborative learners and teachers in structuring our initial attempts at continuous evaluation and reflection.

3.3.4 Obstacles of course - barriers to collaboration?

The students initially described their lack of interaction with the Science Faculty as a barrier to the development of their organisation. They reported that their society could be more effective if they were given more development support. They felt that they were inadequately prepared for the faculty meetings, where they were expected or required to contribute on issues of academic importance for example. They felt that they could contribute if they were provided with documentation timeously, if they were consulted about issues prior to meetings, and if they were better informed about the role of their organisation. They had not been aware of some of the university regulations regarding the role of academic societies that were required to participate in faculties, particularly in faculty meetings.

With regard to their complaints about their lack of involvement with the Science Faculty, I later reflected that it could possibly be related to a lack of continuity, where the previous executive had to play a development and training role with the incumbent executive. On the other hand, my own experience, having attended past faculty meetings, was that the students appeared to be ill prepared for participating in discussions or decisions that impacted on academic issues, although their presence legitimised those discussions or decisions.

Another barrier, described by the students, was a lack of interest shown in their organisation by lecturers. Later they discovered that most of their lecturers had not known of their existence, but that lecturers became more supportive once they attended a SCIENSCO event. I was wondering about the level or lack of communication between academics and students, seeing that lecturers were aware that students attended faculty meetings, although they may not have been aware that the students represented a student organisation (which represented science students), and which was involved with other student activities as well.

The students also reflected on numerous oppressive social structures they experienced in their communities. Generally they were faced with socio-economic constraints and lived in households where academic activities were difficult because of a lack of sufficient space, time

and conditions conducive to learning, for example not having a quiet place to study. Their experience of the teaching environment, where they experienced their lecturers teaching mainly in the traditional, transmission mode (as described in 2.5.1), was also seen as a barrier to developing less dependency and more collaborative teaching and learning approaches. For example, they felt they were not exposed to practices that encourage leadership and the development of teamwork. In addition, the Science Faculty sub-head reported that the Science Faculty was understaffed, and that the problem was exacerbated by the large number of Foundation Courses for Science students that the lecturers were responsible for.

The group members' (who tutored the Saturday classes) own teaching and tutoring practice was based mainly on the traditional model of teaching that they had experienced as high school and university students. They felt constrained and inadequately trained or experienced in dealing or assisting with the affective and personal types of problems their learners were presenting in class, much like their own experience as university students with their lecturers.

The main barrier to empowerment and collaboration that I experienced was the difficulty adjusting to a context in which we were trying to work towards increased collaboration between us. Students concurred that they had difficulty seeing me as a co-researcher rather than as a staff member, although there was some change in that regard over time as trust developed between us, in our new roles as collaborative co-researchers and learners. However, the problem was not completely resolved. There were issues of status differences, such as privileges that I enjoyed as a staff member; their financial constraints; my non-involvement physically in some of the activities of their organisation; my inhibition at times due to my uncertainty about being perceived as taking charge; and uncertainty about the postmodern paradigm which informed my practice as a researcher and student counsellor.

Initially much of the communication between SCIENSCO and me was via the chairperson. At that stage much of my frustration was about my own needs not being met, and not recognising that the communication pattern, via the chairperson as authority figure, was possibly a preferred means of communication within the group or organisation. I was left wondering whether the barriers that I perceived should be seen as barriers, rather than identifying them as

elements that reflected certain aspects of our context. In other words, in the beginning I was looking at what was occurring, and after consultations with my supervisor I became aware that I could also observe what was not happening. I had learned to evaluate differently, not in terms of judging in a dichotomous, right or wrong way. I was starting to develop more insight that a research process could be used for planning solutions and for mutual learning, and that observations and reflection did not have to be about deficits or criticism only, but about critical thinking in order to understand and to gain knowledge.

The reflections and the themes that I have summarised in this chapter, that are based on my research diary, guided me towards exploring relevant readings and theoretical perspectives. The readings, in the form of a literature review, were used for developing deeper insights and understanding of the data that I had gathered. As mentioned in a previous section of the treatise, I viewed the presentation format of the report and the sequence of the chapters as aligned with an action research process, and that was also how I approached the literature review. The literature review, that forms part of the next section of the research report, was part of an action research approach that helped me to engage more effectively to observe, reflect, act and evaluate the research process. Reading and writing about the study then also formed a part of the action learning process for me.

CHAPTER 4

DISCUSSION OF FINDINGS AND THEORETICAL PERSPECTIVES REGARDING COLLABORATIVE GROUP WORK

The following section is a discussion of findings and theoretical perspectives that were guided by reflections and themes in the previous chapter. The literature review and theoretical perspectives that I explored were mainly about teaching and learning, with an emphasis on the contexts in which collaborative teaching and learning could be enhanced, and an emphasis on the learning provided within a collaborative action research process. The literature review and theoretical perspectives assisted me to build a deeper theoretical understanding of this action research study and the exploration of the collaborative learning process that SCIENSCO and I had engaged in.

4.1 Relationships and trust

The action research process enabled me to strengthen my relationships and develop trust with the group members, although the level of collaboration with the SCIENSCO executive, as a whole group, leaves much room for improvement. In trying to work collaboratively with group members, I needed to develop an understanding of the difference between working with university students as opposed to working with youths attending school. In my previous profession as a teacher I worked mainly with adolescents, and although I often used group work approaches, I acted more authoritatively than I would with university students. Much of my teaching or facilitation approaches during workshops were also based on involving students as much as possible, but I still considered myself as being the one in control and taking all the responsibility of seeing that the work was done. During the action research process I had to adjust my approach so that I could develop a more collaborative way of working, and I had to reduce my need to take charge. In the beginning I found it difficult to see myself as part of a group, where the group members were to share responsibility for solving problems. I found that for developing a collaborative relationship with SCIENSCO, I had to develop an empowering approach, which also meant that I had to constantly be aware

of my own potentially disempowering practices.

Part of an approach to establishing collaboration with SCIENSCO required awareness that the SCIENSCO members were adult learners, and that both SCIENSCO and I could utilise the action research process for learning. The action research approach that we used was conducive to facilitation, as it lent itself to developing group participation. Dewey (as cited in Jarvis, 1995) suggest that in working with adults, we recognise the importance of facilitating and guiding learning rather than interfering or controlling the process in a didactic way. Jarvis says that Dewey understood that experience leads to growth and maturity, and that learning must come through experience. Therefore my role, in accordance with Dewey's suggestion, was to explore appropriate opportunities for experiences through which SCIENSCO and I, as students and adult learners, could acquire knowledge and understanding, which would facilitate not just their growth and development, but also my own.

I tried not to see myself as the teacher or educator. One of my aims was to work with students in an empowering way, which meant that I should be less controlling. Establishing a more collaborative way of working with students may have played a role in the change of the chairperson's earlier more authoritative leadership or "power over" style to a more "power with" style where he was more comfortable allowing other members to share executive duties.

Charmanz (2000) asserts that a constructivist approach means listening to respondents' stories in their terms, and with openness to their feelings and experience. In the present study I was interested in the students' experiences and perceptions, not only in terms of a general view they had of experience, but also their private thoughts and feelings. For example, group members gradually became prepared to share their anxieties and fears regarding their lecture room and de-registration experiences, without fear of being labelled or judged. This approach is aligned to what Charmanz sees as becoming more intimate and familiar with respondents, which lessens the problems inherent in seeking meanings of both the researcher and the respondents or collaborators. She says that in a constructivist approach, the paradigm that I chose for the study, we also need to look for views and values, as well as acts, facts, beliefs, ideologies, situations and structures to study tacit meanings. By studying these meanings we

do not challenge but rather clarify the respondents' views of reality.

Developing a relationship of trust and of collaboration also helped the collaborative partners to take mutual responsibility for their learning and for decision-making. I experienced a sense of relief once I had learnt that the research process was not just my responsibility, but also the responsibility of SCIENSCO as my collaborative partner. The mutual responsibility of our relationship coincided with a stronger level of commitment observed amongst SCIENSCO members as the research process evolved, although it was often difficult to have the full SCIENSCO executive present during discussion sessions. Our committed relationship formed a sound basis for exploring our interconnectedness with other related systems.

4.1.1 The ecosystem and relationships

When I was planning the study, I located the research within the broader South African educational system, when my initial intention was still to explore mainly the relevance of critical cross-field outcomes at a local Vista University level. At that stage I had not fully considered exploring, through action research, the context and environment in which SCIENSCO and I were connected to each other and to other systems. During the course of the research process the SCIENSCO members and I developed a clearer understanding of the interconnected systems in which we operated as members of the Vista University fraternity (explored further in 4.2). We also started recognising and valuing ourselves, in terms of our histories and personal contexts, as part of the ecosystem. Exploring the ecosystemic connections enabled us to develop better insights into the meaning of collaboration, and into factors that were influencing the development of collaboration. For example, SCIENSCO's relationship with the SRC and the Science Faculty was often characterised by SCIENSCO playing a submissive role, which we needed to acknowledge if we wanted to develop a relationship in which SCIENSCO and I were to be co-researchers and equals.

Action research helps us to explore how past experience could facilitate or hamper participation and collaboration. During the research project SCIENSCO and I became aware of how past and present experiences and perceptions of relationships with authority figures influenced the affect and behaviour of certain group members. For example, one of the

reasons for their lack of participation in their academic classes included a lack of trust in their lecturers, in terms of group members often avoiding classroom contact with their lecturers in order to avoid potential embarrassment. Group members reported that they were sometimes afraid of asking questions in class for fear of being labelled as being unprepared for the lecture, or as being stupid. In contrast, as the group and I developed trust, group members became less inhibited, and were more prepared to express their views and opinions, and to ask questions without a fear of being labelled as stupid. Similarly, after SCIENSCO members had contact with some of their lecturers during their awards ceremony preparations, they started feeling more trusting towards their lecturers. Their trust towards the subhead of the Science Faculty was another example of a relationship that enhanced their receptiveness to involve him in collaborative support.

Entwistle, Thompson and Tait (1992) support the view of higher education as a system, in which the various elements of the learning environment interact. Individual characteristics of students, lecturers, and other role players, and their previous experiences in education, need to be recognised. Entwistle et al. mention research that examined influences on student learning, namely the experiences of students within the courses they were taking and the perceptions that students had of the whole learning environment or ecosystem. The action research project, which allowed SCIENSCO and I to explore our collaborative work and our learning, and to develop a better understanding of ourselves as part of a broader system, underlines for me that learning is not an isolated activity but takes place within an interconnected ecosystem.

In the past in my role as student counsellor I had not been present in situations with students where I could witness first-hand how their behaviour was affected or their aspirations impeded by environmental influences. For example, in the period when students were threatened with de-registration I noticed how certain group members disengaged from SCIENSCO activities and spoke of their loss of motivation to study for the impending examinations. Boud and Miller (1996) suggest that the affective experience of learners (such as the loss of motivation of SCIENSCO members) may be the most powerful determinant of all kinds of learning. Emotions can play a role in facilitating learning but can also act as barriers to learning.

Learning environments can be conceptualised as having a cognitive and an affective press. Pace and Stern (as cited in Clarke & Dart, 1991) refer to the notion of press, which is the tendency of a learning environment to impede or to facilitate the goal attainment of individuals. This press, because it has a cognitive and affective element, is “...as perceived by the students” (Clarke & Dart, p 37). Similarly, performance has been broadly categorised by behavioural scientists into cognitive and affective domains. Astin (1977) describes the cognitive domain as incorporating high-order mental processes such as logic and reasoning; and the affective domain as including values, self-concept, aspirations, social and interpersonal relationships, and attitudes. It is therefore relevant, if not essential, that students’ perceptions be explored and reflected upon in an attempt to enhance their learning, and in this instance mine as well. This notion fits the importance of reflection in learning as exemplified in the action research approach adopted in this study. Jones et al. (1997) suggest that, as action researchers, our reflections need to be informed by principles of ‘critical enquiry’, and a willingness to investigate or explore the perspectives of other stakeholders. As reported in the study, examples of exploring perspectives of other stakeholders include the survey I did with a sample of Grade 11 and Grade 12 students and discussions with the subhead of the Science Faculty.

Gaining an understanding of relationship development and its connection with ecosystems can be seen also in the example where the group members initially had difficulty seeing the connection between their school learning experiences and some of their expectations that they had about some of their lecturers. They expected their lecturers to be the experts who imparted knowledge, which was the kind of teaching they experienced when they were at school. The group members also modelled their own teaching styles on their teachers and lecturers. They did not see their prior knowledge as being relevant, and doubted that this knowledge was valued by their lecturers. It appeared to me that they developed dependent behaviours in their relationships with their teachers and lecturers, and that they did not have sufficient experience and confidence in certain abilities such as leadership and organisational skills. Research in disadvantaged schools found that rote learning and dependence on teachers were dominant learning behaviours (Hendricks, 1999; Vorster 1999).

4.2 Collaborative action research and empowerment

Action research is empowering, and provides opportunities for exploring and learning about the value of experiential and action learning, and for using such learning for changing one's practice. During our collaborative action research project we did not work in a mode where the emphasis was on memorising facts, but in terms of developing understanding and skills related to collaboration and empowerment. The collaborative action research project allowed SCIENSCO members and I to experience change in terms of our understanding and skill development, transforming our relationships, for example, in order to work more collaboratively and in an empowering way. We were able to look at how we related in the past with lecturers and others in our social contexts, and to use that information reflexively to guide us towards more collaborative and less authoritarian behaviours during our group work sessions and during the tutoring sessions conducted by the members. Through regular discussion and mutual feedback in our collaborative group work the group members and I were able to transform our understanding of learning, from viewing it as mainly an individualistic pursuit, to seeing it as an interactive, collaborative process.

After we discussed their tutoring role as a form of community service, I could use aspects of Stalker's (1996) framework to facilitate awareness about different perspectives of how we could critically reflect on SCIENSCO's position within the university system. The framework also served to expand this reflection to the broader South African society, and to look at the difference between community service as voluntary work and community service as a form of community service learning, which is not voluntary work, but work that is accredited by an academic institution. In the case of SCIENSCO their community work was not accredited nor recognised by the University, but the members practised it as a form of entrepreneurship, charging their students a nominal fee as a way of earning some money for themselves and their organisation.

Stalker (1996) says that students should be given the tools and the opportunities to analyse and critically reflect on their environments. Such analyses can foster more honest encounters

between learners and facilitators, and among learners themselves. Learners and facilitators can gain more insight by uncovering the assumptions that underlie learners' and facilitators' approaches to the learning experience. Stalker presents a framework that helps learners to analyse and understand their own experiences and those of others. She suggests introducing students to a framework, consisting of four categories, to assist them in working towards understanding their own and others' experiences. The four categories are:

1 The Consensus Perspective

This perspective views society as harmonious and stable, where some individuals have power, authority and control over others. Hierarchical relationships are viewed as normal, and those with a consensus view accept, maintain and perpetuate the current social, economic, political and cultural structures.

2 The Conflict Perspective

The focus here is on the dynamic nature of society, where groups exist in a society in conflict, in a state of tension and confrontation. The conflict view finds power differentials and authority unacceptable, and the status quo is challenged.

3 The Interpretive Perspective

The interpretive perspective views the consensus and the conflict views as too rigid and simplistic. The world and society are seen as constantly reshaping themselves. Within this context, rules and understandings are created and maintained by groups and individuals. The groups with different levels of power are seen as interconnected and regularly interact. Interpretivists discover shared beliefs and practices among and between different groups and individuals. Notions and conditions of equality and equity are examined, and differences are valued. In the interpretivist framework there is curiosity to understand individual or group situations from the position or perspective of those who experience them.

4 The New Right Perspective

This view has as one of its premises that the state should not intervene in the life of society. Those who follow this perspective have the notion that freedom should be unrestricted and

that opportunities exist for all in the market place. They argue for privatisation, the vocationalisation of education, and volunteer work in sectors serving society.

Stalker (1996) says that many of her students have found this framework helpful for reflecting on lectures and lecturers, and to understand the differences and tensions between their views and those of others. She also sees this framework as helping students to analyse and evaluate the skills, information, and knowledge they have assimilated.

In SCIENSCO's case it should be noted, as depicted by examples in the Appendix, that the Interpretivist perspective was most favoured (See journal entries dated September 10, 2002, and June 2003 to July 2003). The group saw a need for equity in society at large, and agreed that the critical cross-field outcomes could contribute towards achieving it. They also identified the need for the Government, through SAQA, to intervene in education, by prioritising science education for example. Some of the Government's intentions, such as promoting volunteer work and privatisation, could be viewed as fitting into the New Right Perspective. Some of the students' written responses to the question of what they thought a Vista graduate should be able to do supported the vocationalisation of education. One comment was that "the Science Faculty should form links between students and industry and in that way students will be able to relate the theory [they] study to the practical situation in industry." Another comment was that, to improve their chances of finding jobs, "[they] need report writing and presentation skills", and it should not only be the responsibility of the students to find jobs, but also the responsibility of their lecturers.

Kemmis and McTaggart (2000) say that action researchers might think about how they can change their practices, their understanding of these practices and their work situation, by collaboratively changing the ways they participate with others in these practices. For SCIENSCO and me, part of changing our practice meant exploring our understanding of critical cross-field outcomes, and reflecting on their relevance for us as collaborators within a Vista University context. As reported in chapter 3, SCIENSCO members and I discovered the empowering force of action research, and the action research process, that allowed us to experience some of the critical cross-field outcomes in an empowering way. The action research process became both an action learning process and an experiential learning process

as explained by Winter (1989). Entwistle et al. (1992) state that they see meaningful learning occurring when students try to make sense of new concepts when they create connections or links with existing sets of concepts or factual knowledge, or with previous learning. Experiential learning, or active learning as it is known in some circles, encourages students to reflect on their own experiences and previous knowledge. Their use of the reflecting process can ensure that they develop their own understanding of the information or subject matter (Entwistle et al.). An example of SCIENSCO members and I making links between previous knowledge and existing concepts such as critical cross-field outcomes occurred when we reflected on the link between being students and being tutors, which will be discussed in more detail later.

As mentioned previously the development of skills, such as those specified in the critical cross-field outcomes, were not experienced by SCIENSCO members in their formal lecture room settings, but mainly within their work for SCIENSCO. Members enjoyed the team approach to learning. One of their comments was that in the classrooms they felt that they only had responsibility towards themselves, while during the research process they discovered that they also had a responsibility towards the group. Empowerment through collaboration is empowerment for the group, empowerment that is gained through the development of social skills. Empowerment of individuals is connected to empowerment of the group or the community (Sullivan, 2002).

During the action research process SCIENSCO members and I learnt to give voice to and value our experiences through working collaboratively. The socialisation processes inherent in action research showed me that the process of socialisation, as in the teaching and learning process, was not about enforcing consistency and coherence upon students, but about recognising the contributions that students bring to the environment. Taylor (1999), citing William Tierney's postmodern perspective on socialisation, describes socialisation as becoming "...less a matter of the adjustment of the individual to the organisation, and more a matter of taking advantage of the experiences/identities that new members bring with them" (p. 137). In relation to student empowerment Jones et al. (1997) state that in a postmodern environment we would want to encourage students to "...find their own voices" (p. 115). They

say that students will identify themselves with the perceptions that others might have of them. For example, if a lecturer has a prejudiced perception that a student is not bringing valued 'knowledge' into the academic environment, it could lead to student underachievement. Pettman (1996) describes the insidious aspects of oppression as learners of a given group internalise labels that may have been placed on them by those from other groups. By internalising oppression, in terms of the relationships of power that may exist in wider society, individuals are reinforcing external oppression.

In working collaboratively with SCIENSCO we had the opportunity to mutually discover or explore our experiences of power and oppression in different contexts of learning in our past and the present and to equip ourselves through action and research to confront these experiences in the present and the future. Recognising that students, and in this instance science students, bring their own perspectives into learning contexts, is what Mashishi (1995) refers to as a paradigm shift in research on learning. He cites Entwistle and Greeno, amongst others, who believe that using the learner's perspective as a point of departure implies that learning occurs in a context. Furthermore, he also mentions the perspective in cognitive psychology that the learner's past experience and existing knowledge have a bearing on what will be learnt.

SCIENSCO members' experience of being students and tutors, like my experience of being a student and a Vista University staff member, allowed for us to develop insights into empowerment and collaboration by reflecting on those experiences. Knowing the school context of their Grade 11 and Grade 12 students, and the similarities in their own learning experiences, where teachers were expected to teach in the transmission mode, helped the group members to understand why they had similar expectations of their lecturers. Brookfield (1996) argues that learners' experience provides a rich resource for problem-solving. He also suggests that an important task for the facilitator is to develop learners' confidence in the usefulness of their experience. He acknowledges that learners may have expectations of being taught by the expert, which may have been influenced by how they have been taught previously.

4.2.1 A postmodernist perspective – additional lessons for collaborative empowerment

Being involved in collaborative research with SCIENSCO meant that in exploring and learning about collaboration, I could develop a better understanding of working with adult learners and about their socio-cultural contexts. The socio-cultural context of the research group members could be generally described in terms of socio-economic and educational disadvantage. They attended schools in their communities that were overcrowded and under resourced in comparison with the historically more advantaged Model C schools. The members also came from a schooling system where rote learning and memorisation was favoured (Hendricks, 1999; Vorster, 1999). Their mother tongue is isiXhosa and most of the group members reported feeling self-conscious and intimidated when they first came to Vista University owing to their self-consciousness about speaking English. Inversely, through the survey I did with the Grade 11 and Grade 12 learners who attended the Saturday classes, I came across two learners from former Model C schools who spoke eloquently (in English) of how they felt more comfortable, in comparison with their school experience, approaching the SCIENSCO tutors who could communicate with them in Xhosa, their mother tongue. They initially felt anxious that they would be marginalized by their fellow students in the Saturday classes because of their Model C schooling background. They said that their experience at the former Model C schools that they attended was different in that they were less comfortable with asking questions in class. The examples mentioned here could be aligned to what Freire (1970) critically observed to be the subordination of the heritage, the self-identity, the values, and the realities of the oppressed through transmission of the “objectified culture”. Since reality is constructed and contained within language, the masses are presented with a reality that is alien to their own heritage.

Boud and Miller (1996), writing about power and the disadvantaged learner, suggest that it should be recognised that learners are whole persons with feelings and emotions, and not just instrumental or social beings, and they should be treated as such. Habermas (as cited in Boud & Miller, 1996) emphasises the importance of social communication as a way of addressing power differences in relationships. He refers to an ideal speech act in which the

communication pattern is not distorted by power differences or by status although he recognises that this is an ideal situation. However, these authors suggest that in normal conditions communication can be improved along with recognising the influence of power.

Adult education involves processes that are assumed to lead to desirable changes. This notion implies that adult change or learning is dependent on assumptions regarding adult learners, e.g., autonomy and other conceptions of self. Boud and Miller (1996) and Usher et al. (1997) point out that autonomy, within the adult learning context, refers to both a goal of self-awareness, empowerment in the sense of the ability to exercise choice with regard to needs, and to active involvement and self-direction. Autonomy is seen as freedom from dependence and under the control of the self. The adult learner is therefore seen as a source of experience and knowledge, including self-knowledge, in adult education. Usher et al. say that autonomy is both a goal and an approach when working with adults. They see empowerment as the common theme that links the different adult learning approaches or traditions. In our collaborative research project I tried to facilitate discussions that included group members' personal experiences that could be linked to their tutoring and leadership skills for example. My aim was for us to share our experience and knowledge gained from such experience in order to empower ourselves and to explore the value of such past learning.

Boud and Miller (1996) mention four traditions of learning in adult education: training and efficiency in learning, self-directed learning (andragogy), learner-centred or humanistic pedagogy, and social action. Although these are different traditions, they all share a common approach towards removing barriers that may impede the learner.

Boud and Miller (1996) and Usher et al. (1997) recognise the problematic nature of these traditions. For example, the emphasis on experience assumes that the adult is an active learner who brings experience to the learning situation as a resource. Andragogy is also seen as not fully acknowledging that individuals are linguistically and socio-culturally embedded; and they should not be seen only as giving meaning to their experience but that individuals' meaning of experience also comes from others. In other words, the individual should not be seen in a decontextualised or isolated manner. Usher et al. argue that adult learning and experiential learning are open to numerous interpretations and ambiguities. For example, they

refute that experiential learning is either inherently emancipatory or oppressive, but they believe that it could fluctuate between and across the two polarities. It can be seen as having a potential for both emancipation and oppression, depending on how it is being used by different groups. The critical element in these processes seems to be praxis and the intentions of particular facilitators.

Freire (1970) refers to praxis as the combination of action and reflection, such as in the experiential situations he designed where learners were able to reflect on their understanding of themselves within their socio-cultural milieu. Reflection may enable individuals to become conscious of other realities, not just the one into which they have been socialised. Freire says that this conscientisation “...is a permanent critical approach to reality in order to discover it and discover the myths that deceive us and help to maintain the oppressing dehumanising structures” (p84). The education process is regarded as one through which learners discover themselves and realise that they can be liberated only if they try to transform oppressing structures. Freire is therefore concerned with knowledge for social change.

During our collaborative research the group members gained greater awareness of being disempowered, as mentioned previously with regard to SCIENSCO relations with the SRC and with the Science Faculty for example. The members also recognised their own contributions to perpetuating their disempowerment by their attitudes of entitlement, expecting lecturers to support them without initiating contact with lecturers. Similarly, part of the systemic pattern of disempowerment could also be recognised in my own expectations and assumptions of support from the Science Faculty in my role as student counsellor, and my initial practice of using SCIENSCO leaders as go-between power figures.

In our efforts at collaboration I tried to encourage the group members to see themselves as co-researchers and as fellow learners with equal status in the group. Although it was difficult for us initially to distinguish between my role as student counsellor and co-researcher, there was some progress towards the latter stages of our research, when members became more spontaneous and more willing to talk to me informally. However, there was room for further improvement in this regard. It seems that the journey and not a specific destination is the most

important in this type of learning.

Although I tried to eliminate perceptions of myself as the expert or authority (and not being the teacher) during the research process, I wanted to use Maher's (1995) view that teachers and students are seen as co-investigators. I gradually learnt to reduce my anxiety through allowing the group members to co-determine the direction in which our research should proceed, such as the focus on their tutoring role and the change in direction to deal with their concerns about de-registration. Tisdell (1996) states that a power imbalance gives rise to ethical issues that need to be confronted in describing and theorising about the experience of others. Difference and social divisions need to be taken into account. Gender, culture, and ethnicity factors influence how students are perceived, as well as the expectations that apply to them. A similar process would apply to the perceptions and expectations that students have of their teachers and lecturers. These ecosystemic, circular feedback processes, and their interrelationships and embeddedness within historical and broader local and global systems, should alert us to the complexity that participants in research and learning contexts encounter.

4.3 A vehicle for the terrain – finding the missing link

As I have mentioned repeatedly in this report, prior to SCIENSCO and I developing a collaborative working environment, my main aim for the study initially was to explore critical cross-field outcomes. I have also previously mentioned that SCIENSCO members and I discovered that action research also became our vehicle for developing critical cross-field outcomes in an experiential way. The methodological process became a teaching and learning process, and provided a context in which learning and change could be reflected on and evaluated. That evaluation also became more structured through using the critical cross-field outcomes as a framework. SCIENSCO members and I experienced the social, interactive collaborative approach to working and evaluating as a useful and enjoyable way of developing conceptual understanding of critical cross-field outcomes, representing a deep approach to learning as espoused by Entwistle et al. (1992).

The action research process, as I have stated before, provided for a collaborative approach to learning and was suited to learning about and developing critical cross-field outcomes. The process represented for me a less dependency producing approach to learning, and represented

an approach that promoted or enabled more collaboration and autonomy. Hendricks (1999), in discussing traditional curricula and assessment practices in the South African context, says the traditional curricula reflected the view of knowledge as information, and the main aim of assessment was to test recall of content. She viewed the restructuring of our educational system and curricula as moving from an epistemology of positivism to one of constructivism. She states further that a curriculum that is based on a constructivist epistemology (such as Outcomes Based Education and which includes the critical cross-field outcomes) prioritises students applying their intelligence to data (not necessarily within subject boundaries) to construct their own understanding. Khoapa and Mzamane (as cited in Hendricks, 1999) argue that until recently, the dominant type of teaching in South African classrooms has been the jug and mug approach or transmission mode of teaching. Although transmission teaching in itself does not equate with poor teaching practice, numerous writers (Breier, 2000; Hendricks, 1999; Odendaal-Magwaza, 1996; Waghid, 2002) refer to critical and evaluative interaction being undermined through the dominance of the transmission mode of teaching.

The following section about experiential learning clarified and confirmed the usefulness of experiential learning in the study, and provides some theoretical insights into the relevance of exploring and implementing critical cross-field outcomes in collaborative group work.

Weil and McGill (as cited in Jarvis, 1995) say that experiential learning may be categorised into what they term “Four Villages”.

Village One: Involves assessing and accrediting learning from work and life experience

Village Two: Looks at experiential learning as a basis for bringing about change in post-school education structures

Village Three: Focuses on experiential learning as a basis for raising group consciousness

Village Four: Looks at personal growth and self-awareness

Jarvis (1995) suggests that the idea of practical experience is missing from Weil and McGill’s categorisation. Practical experience is viewed as a most important form of learning in professional education. Jarvis reasons that perhaps practical experience is not included by

Weil and McGill because practical experience is often regarded as the transfer or application of previous classroom learning. However, potential learning experiences actually occur in practice situations. New practical situations provide for primary experiences because they are new learning situations. However, individuals still bring their biographies to the new learning situation. The more that has been learned from previous experiences, the more likely that some knowledge can be used in the new situation. However, that knowledge can also interfere with effective learning taking place. For example, during our research process group members realised that they had both positive and negative experiences from their school years, some of which they found useful when tutoring their learners. Group members also recognised that their SCIENSCO activities and duties provided them with training and development opportunities that matched most of the critical cross-field outcomes that were meant to be part of their curricula.

Entwistle et al. (1992) list different beliefs that students might have when they enter higher education. They are conceptualised as forming a hierarchy, increasing in sophistication and complexity, as follows:

- | | | |
|----|-------------------------------------|----------------------------|
| A. | Increasing one's knowledge | |
| B. | Memorising and reproducing | <i>Reproducing</i> |
| C. | Utilising facts and procedures | |
| | | |
| D. | Developing an initial understanding | |
| E. | Transforming one's understanding | <i>Transforming</i> |
| F. | Changing as a person (p. 3) | |

The first three conceptions require the reproduction of information in the same form as it was presented to the learner. This may be appropriate in situations where facts are being learned, but Entwistle et al. view this as insufficient in higher education, where effective learning depends on transforming what is being presented. Transforming knowledge is making personal sense of it and relating it to what is already known. The more complex and sophisticated conceptions emphasise the learner activity in "...making sense of the material (D), developing personal understanding further (E) which, in the process, may involve change as a person (F) (Entwistle et al. 1992, p 4)." These notions of the more complex conceptions

of learning tie in with the notion of applied competence as proposed by SAQA (1998), which suggests a “...broadening of the behaviourist notions of knowledge usually associated with outcomes and competence models” (p. 6). SAQA refers to applied competence, which implies foundational competence, practical competence and reflexive competence. Foundational competence is seen as an understanding of what is being done and why it is being done. Practical competence is a demonstrated ability to do, to perform a particular skill. Reflexive competence is a demonstration of the ability to connect or integrate the performance and the understanding of that performance in such a way that learning and adapting to change can occur from the actions.

As mentioned before, the context from which the SCIENSCO students came into the university is one that emphasises the teacher as the expert, who should not be questioned or doubted. The student is supposed to receive the knowledge that is imparted by the teacher. One group member, during our discussion about the group’s experiences when they had attended Saturday classes while they were still at school, referred to their disappointment when they realised that they were going to be tutored by young Vista students (the implication being that the young tutor was not an expert). She explained that as learners, they were used to being taught by more senior or mature people, and found it difficult to adjust to someone not much older than them. Her disappointment also stemmed from the fact that the tutors were still students. Initially she stopped attending classes. However, when she eventually got used to the idea of having such young tutors, she continued her attendance at these Saturday classes and said that they helped her to do well academically. Awareness is needed about the interrelationship of the individual and the social context as learning does not take place in isolation. This supports Vygotsky’s (1978) view that the essence of an event should not be seen in isolation, because meaning would be lost if it was studied without reference to the socio-cultural context. Newman, Griffin and Cole (1989) are of the opinion that affording individuals the opportunities to talk about shared activity is an ideal means for learning.

In the social constructionist view, knowledge is socially constructed and learning takes place owing to the dialogue and interactions between learners and teachers, as well as between the learners themselves. Vygotsky (1978) describes learning taking place on two planes. The first

is on the inter-mental plane, between people, and later on the intra-mental plane, within the mind of the learner. The inter-mental plane is the process of learning that is mediated by others, while the intra-mental plane is a dialectical process where old and new conceptions of learning interact.

Masenya (1996) argues that exploring students' experiences are crucial if a culture of experiential learning and a student centred approach to learning are to be pursued, as implied by the DoE (1997), and in terms of developing critical cross-field outcomes in a collaborative way, I would add. Masenya adopts Freire's idea of "dialogical pedagogy", which encourages students to develop analytical skills, critical thinking, and creativity, amongst other outcomes to learning if students are to develop more holistically.

Usher et al (1997), in referring to adult learning for citizenship, say that a postmodernist approach should not be a tool for social engineering, but should acknowledge localised knowledge, skills, attitudes and values. They argue that there is a place for what may be perceived as dialectically opposed views, on the one hand where individualism is prioritised, and on the other the social. They perceive the issue of empowerment for example needing to link empowerment of the individual with economic, social and cultural empowerment. Experience in developing knowledge, skills, attitudes, and values of empowerment emerged as one of the important outcomes of our collaborative group work that has direct relevance to critical cross-field outcomes and global educational needs.

4.3.1 A summary of the research process outcomes

The section below is a summary of perceived change and development as reflected on by SCIENSCO and me, in terms of the critical cross-field outcomes, which are closely tied to collaboration and empowerment outcomes. As stated previously in chapter 3, the critical cross-field outcomes, as stipulated in the White Paper on Education (DoE, 1997), provided SCIENSCO and me with a framework that could be used to evaluate the outcomes of the research process. However, in our collaborative group work and in the writing of the research report, we developed a summary of that mainly focused on some of the CCFOs. Therefore, the evaluations described in chapter 3 were linked in the summary with relevant critical cross-

field outcomes in terms of only the following categories:

1 **Problem solving:** The action research process helped SCIENSCO and me to develop awareness and experience of problem solving and potential strategies for problem solving that are connected to critical reflection and evaluation. Examples are: SCIENSCO's awards ceremony arrangements and the participation of science lecturers, many of who were not previously aware of SCIENSCO's activities; and our finding that SCIENSCO could take responsible, collective decisions, for example to solve a problem in their student organisation resulting in the disciplinary hearing mentioned in a previous section.

2 **Teamwork:** SCIENSCO members reported an improvement in delegation of duties and getting tasks done. They also reported that teamwork was enhanced through their SCIENSCO activities rather than in their lecture rooms. I had also learnt that collaboration between SCIENSCO and I became coupled to stronger mutual commitment and co-responsibility as the research process unfolded.

3 **Effective communication:** I observed an improvement in communication, that was reported by SCIENSCO members as increased willingness to make comments, to give feedback, and to express personal opinions for SCIENSCO to make more informed collective decisions. In the past decisions were taken more autocratically by chairpersons and other leaders of SCIENSCO for example. I also became more relaxed with expressing my own views, with less fear that I was going to be seen as imposing my will on the group members.

4 **Systems:** During the course of developing more awareness of ourselves as interconnected systems interacting with other Vista University systems and in relation to the wider South African and international education context, SCIENSCO and I were able to enhance our understanding of collaboration. As described previously, through exploring our relationship experiences with and in different systems we became more aware of how and why SCIENSCO and I initially found it difficult to work collaboratively.

5 **Alternative learning strategies:** Both SCIENSCO members and I discovered the

value of experiential learning and action learning through having adopted a participatory and cooperative action research approach. Coupled to the kind of alternative learning strategies mentioned was also our development of critical reflection and evaluation skills as previously highlighted.

6 Education, career, and entrepreneurial opportunities: An example of exploring and developing education, career, and entrepreneurial opportunities, and abilities linked to these, was to be found in SCIENSCO members' role as tutors to Grade 11 and Grade 12 students, as previously discussed. The members saw their tutoring role as contributing to their own personal development while also contributing to the educational development of their communities. Similarly, I felt that I was developing my own facilitation skills and that I was learning about collaboration through the research process, for example.

4.4 Constructivism, social constructionism and metacognition: a-mazing we will go

Although I have reported at length on collaboration and empowerment, and postmodernist perspectives thereof, I want to conclude this section by briefly discussing constructivism, social constructionism, and metacognition. My intention is to show, metaphorically, that part of my research paradigm discussed in the methodology section brought me back to where I initially thought it all (the research process) started, but from a better vantage point. Initially I saw the research and my development as potentially following a particular linear route with potential detours, from planning to reporting on the research, a maze with a fixed entry and exit point. I now find, after having completed this section of a collaborative research journey, that the maze I thought I was going through had become "a-mazing", a process in a state of flux, with no pre-determined structure or pathway to discovery, but with its construction having evolved interactively and systemically. I have also shown that going "a-mazing" is for me a continuing, upwardly spiralling search for meaning where potential new learning is keenly and continually anticipated and sought. I now have a better understanding of a travelling perspective (in the form of a social constructionist paradigm), and a metacognitive sense that knowing where a path may lead me may be less exciting for me than finding and exploring numerous paths, with varying perspectives.

Ernest (as cited in Dison, 1997) distinguishes between three forms of constructivism: information processing constructivism, radical constructivism, and social constructivism. von Glasersfeld (as cited in Dison, 1997) distinguishes between two principles of constructivism. The first one, which is common to all constructivist approaches, asserts that “knowledge is not passively received but actively built up by the recognising subject” (p. 32). The first principle is recognised by the information processing approach, but the second principle, which underlies radical constructivism, is rejected. This second principle is that “the function of cognition is adaptive and serves the organisation of the experiential world, not the discovery of ontological reality” (p. 32). The traditional notion of ‘truth’ is rejected by constructivists, and by what Moll (2000) refers to as the different constructivisms. In terms of a constructivist approach an individual generates cognitive schemas in order to represent her/his experiences and to guide actions. The schema that fits best is adopted tentatively.

Burr (1995) describes how knowledge is constituted through social processes. Interactions between people are the practices through which they construct and share versions of knowledge. Our understanding of the world is produced by the social processes and interactions in which we are engaged. Social constructionism is described as insisting on a critical stance towards ‘taken-for-granted’ ways of understanding the world. The view is that in the course of social interactions individual versions of knowledge are being shaped. Social constructionism challenges the view that conventional knowledge is based on objective and unbiased observation.

Metacognition, like social constructionism, emphasises the collaborative nature of learning. For students to become effective learners they should be aware of the learning process and take charge of their learning (Puntambekar & du Boulay, 1999). Metacognition, as described by Puntambekar and du Boulay, is based on Vygotsky’s notion that understanding one’s own learning can be enhanced by interacting with others in learning. Social context, such as learning with peers, can support the individual’s learning, and reflection can help the individual to develop metacognition. Metacognition, or “learning how to learn”, also refers to a person’s knowledge about that person’s cognitive processes, and to regulating and monitoring those processes. The first aspect of metacognition, awareness or knowledge about

cognition, refers to the knowledge we as students have about our cognitive resources, about ourselves, and about the learning tasks. The second aspect, control or regulation of cognition, consists of skills such as goal setting, evaluating, planning, and modifying (Puntambekar and du Boulay, 1999). These aspects can be viewed as mirroring the cycles of the action research process, which were utilised by SCIENSCO and I to explore collaborative group work.

Similarly, in the writing of the research report I was further enhancing my learning, collaboratively, reflectively, and experientially, through my interaction with my supervisors and the research report.

In the concluding section of the research report the emphasis is on summarising, integrating, and drawing conclusions based on the collaborative nature of our action research and exploring the relationship of these conclusions to the learning of science students in a local tertiary context.

CHAPTER 5

CONCLUSION

In concluding the exploratory part of my journey I want to share my action theory of collaboration and collaborative learning, constructed from the experiences of SCIENSCO and myself, while simultaneously discussing the difficulties I experienced during the research process. The limitations of the study and recommendations for future research are also integrated into this concluding chapter.

5.1 Lessons learnt and recommendations

Embarking on this collaborative research and group work with SCIENSCO, a student organisation, has been a mostly rewarding experience. When I started out I experienced a lot of apprehension, anxiety and fear of the unknown. Much of this anxiety had to do with uncertainty about my capabilities of gaining access to SCIENSCO, and about establishing a collaborative approach with a group of students, an approach that at the time I had only recently adopted.

In the beginning I assumed that SCIENSCO would readily accept my proposal to work collaboratively, but I soon discovered that our assumptions about the research process were different. I had identified a topic of interest without having consulted adequately with them; while they expected that I would be solely responsible for facilitating and conducting the research. My impression was that they expected that I would conduct traditional teaching where they would be taught about critical cross-field outcomes for the purposes of developing themselves and their organisation. For both SCIENSCO and I involved in a collaborative project, the research process became more of a collaborative, experiential learning process, and not just a process for doing exploratory research about collaboration.

After a lengthy process of negotiating access for more participation of the whole group, I realised that my assumption that the group would readily agree to the research topic served as an impediment. My reliance on the chairperson as go-between, although frustrating for me, served to remind me, through experience, that I had difficulty in relinquishing and sharing

power. I was trying to get students to respond to my introduction of the research idea, as I understood it, instead of also exploring what their interpretations and expectations were from the beginning, as suggested by Usher et al. (1997). I concur with Schwandt (2000), who says that it is necessary, in a constructivist paradigm, and in any human learning effort I would add, to gain an understanding of participants' contexts.

When I started the research process I had difficulty with exploring what the SCIENSCO members' ideas and constructions were about the research, because I had already initiated unilaterally what I wanted to research. My initial approaches for developing effective collaboration and participation were thus hampered. It could have been easier to work towards collaboration and to develop a clearer understanding of why initial access difficulties were encountered had I considered Guba and Lincoln's (1998) approach that encourages developing consensus constructions prior to involving other participants in the research process.

During the early phases of the research, after I had negotiated access and we had agreed on meeting as a group at specified times on a weekly basis, I found it difficult to follow a cycle. I was so focussed on getting started on the research, which at the time meant, for me, the 'formal' interview sessions, that I did not see the difficulties in "getting started" as forming part of the exploratory study. I was blaming myself for this lack of movement. My reflections were more about my own anxiety and feelings of inadequacy about initiating and implementing the collaborative research process. It appeared that I was taking sole responsibility, which might indicate my difficulty moving into the role of co-participant.

The planning of the study was done in an isolated, individual way, as if I was solely responsible for the entire project and for finding solutions for problems experienced along the way. It was only later, through discussions with my supervisor that I came to realise that I did not have to take sole responsibility for effecting change in that context, as it was a collaborative process that was part of the group interaction. I was more focused on my own intended action rather than involving the leadership in the group. It was only later that I involved the leadership, namely the chairperson and the deputy chairperson, with whom I was having on-going discussions about the difficulties in

getting started, in planning our intended action. I found their suggestions, such as writing a formal letter to SCIENSCO, as well as orientating the whole group about what the process could entail, more helpful because they had authority, and they had more experience about initiating such collaborative action projects with students.

One of the most important lessons that I learnt from the collaborative study was the potential advantage and power of “power-with”, of working collaboratively with a group of students. Both SCIENSCO and I had been unprepared for what collaboration could mean. We all had expectations of each other’s roles based on our past experiences that took a while for us to clarify. I had assumed that mentioning to them that I was not coming to work with them from a position of power would be enough to convince the group members about my intention to work collaboratively. My assumption was that they would be eager and would unhesitatingly accept such a proposition to work as equals. Yet I could have spent more time trying to understand their socio-cultural context and their previous experiences with teachers and lecturers to make me realise that there may have been reason for their uncertainties as well. For example, I was blaming myself for not being able to implement a cooperative approach, but I could have looked at what the group members’ concerns or difficulties were regarding working with me as a member of staff.

During the early stages of the research process I discovered that making a distinction between my roles as researcher and as student counsellor was difficult for them to grasp. I concur with Kemmis and McTaggart (2000) that collaborative action research explores relationships between the individual and the social. We could have explored more fully our previous social experiences in order to gain a better understanding of our relationships at the time we started the research process. Such insights could have created better awareness of how we were relating, and could have alleviated initial mutual access difficulties.

I now realise that we could initially have spent more time exploring issues of power and power relations, in an ecosystemic way, in order for us to develop greater awareness and understanding of our different contexts. Such an approach may have allowed us to build trust amongst ourselves much sooner, as it might have contributed to us gaining more insight about

our assumptions and to transform our previous experiences. By this I mean that by looking at our previous ways of interacting as staff and students we may have come to a common understanding of issues of mistrust and power differences, and by reflecting together we could perhaps have discovered sooner how culpable we were in perpetuating such interactions. With reference to easing access, we should guard against the trap of seeing participants as operating on a similar level as our own, and should take cognisance of past experiences of participants regarding power relations (Santoro, 2003; Smith, 1994; Sullivan, 2002).

Based on the comments of the group members, they had not experienced being consulted by or worked collaboratively with staff previously. Although I had assumed that I had experienced working collaboratively with students before, I now realise that I had taken most of the initiative and responsibility in my past dealings with groups of students in workshop settings and arrangements. Such arrangements had been ad-hoc and brief, and did not involve really getting to know the participants' previous experiences as Vista students by spending lengthy periods with them in conversation. What I had seen as my empowering and democratic approaches in the past were actually top-down approaches, with me assuming a central leadership or didactic role.

I came to realise that working collaboratively has implications for power relations within systems. A critical stance, in terms of what Kemmis and McTaggart (2000) describe as critical action research, requires that a commitment needs to be expressed to self-reflective study of practice, and how language and power are organised in local situations. To develop collaborative work therefore requires sensitivity to, and awareness of, issues of disempowerment. Critical action research is strongly committed to participation and examining issues of disempowerment.

Another lesson that I learnt through experience, through experiencing aspects of it, was the potential of working collaboratively in a cross-disciplinary way. In the past, in my role as student counsellor, I had assumed that by promoting the idea of working collaboratively with staff from different faculties that they would be willing to cooperate. I would become critical of them when they did not cooperate as I had expected. I now recognise that collaborative

work can be initiated through establishing relationships with other components of a particular system, for example with lecturers, through conversations about work, which was related to learning that is in progress with students. Through such conversations I was able to understand the nature of the constraints faced by other staff members, and together we could discuss possibilities for future cooperation when it was felt that the work being done could contribute to the Science Faculty's responsiveness to and education of students. A different approach, as I had practised in the past, appeared to be more confrontational and prescriptive in terms of me assuming and expecting that lecturers should readily agree to my requests that they participate in student counselling programmes. Ajayi et al. (1996) suggest that greater flexibility may be needed in academic programmes in order to incorporate interdisciplinary approaches, and that greater emphasis may be needed for developing critical thinking and problem solving capacities.

Another area that could have enjoyed additional attention was to involve the SRC, especially because I had been serving as Coordinator of Student Affairs, and such information would have been useful to ascertain how we could enhance collaboration within the Student Affairs Division, another component of the interconnected educational ecosystem. Perhaps the SRC was not aware of the perceptions that student organisations have of the SRC's way of operating, and vice versa, and such information may contribute to solving mutual relationship problems. Gregory (1995) refers to the interdependence of learning, which is aligned to gaining insights and understanding of different perspectives that could contribute to collaboration.

A recommendation for future research would be to include the experiences of lecturers and the SRC, which could assist and enhance collaborative action. By consulting other lecturers and the SRC I could also have been able to get a better understanding of their own perceptions instead of only getting information about them via the students. Consulting with lecturers may have given me additional insight into students' perceptions about their academic experiences as well, seeing that I had been more subjectively involved with SCIENSCO and would tend to value their perceptions more, and thereby limiting myself to non-systemic and non-collaborative research and learning perspectives antithetical to my intentions in this study.

A major gap that I have identified in the relevant body of research, and which could form part of future research, is that we as a collaborative group could have implemented a monitoring process to more clearly identify change. I feel that we could have accomplished more if we had implemented more consistent evaluation. An example is the tutoring role, where we could have consulted the Grade 11 and Grade 12 learners, as well as using fellow SCIENSCO members as observers, to monitor change in teaching approaches. I recognise that action research is not only about changing how we do things, but can also be about changing and creating awareness of perceptions and understanding. However, whilst the participating members and I both perceived change, I cannot be certain how much of the change may be rhetorical. If I had a clearer idea of how to compare the changes I had experienced with what had transpired in the past, it may have given me a better way to ascertain levels of change. An example is that if I had included staff and students in evaluating my student counselling role in the past and subsequent to the study, this data would have been useful to compare or contrast the changes that I have identified during the research process.

In the collaborative action research project with SCIENSCO, the research became a vehicle for learning for all participants, including myself as researcher. One of our research aims was to facilitate inquiry that leads towards understanding, and to utilise that understanding to make changes and to bring about improvements in our teaching and learning practices. The research process then also became an experiential learning process that allowed us as participants to reflect on our competencies and our practice. In the beginning, when I wanted to ascertain what the group knew about critical cross-field outcomes, they indicated that they had never heard of these outcomes, and reported that they had not been exposed to them within their academic setting. The research thus assisted us in not only gaining an understanding of what these outcomes were and could mean for us, but also in providing a means, through collaborative group work and action research, for developing competencies such as teamwork, problem-solving, critical awareness, and a better understanding of community service for example.

I have come to recognise that it was difficult for me to shift into a paradigm of doing research where there would be much uncertainty owing to collaborative work as part of a group of

individuals, each with their own way of making sense and their own values for example. When I developed my plan of action for the research I had more conventional models of research in mind where I expected that a traditional formal sequence would naturally follow. I, like the group members, did not in the beginning think of my subjective thoughts and feelings as valuable in terms of using them to gain insights and seeing such insights as part of the research process. I placed more emphasis on trying to develop insight through referring to extant literature instead of acknowledging the importance of personal experience. Maher (1995) states that in our research and our learning processes we can acknowledge our own subjectivity, and can transcend it by listening to and drawing on others' experiences as well. This was confirmed in the collaborative group work of this study.

Through the collaborative action research project I have confirmed for myself the unsettling yet empowering potential of experiential learning through practising participatory action research. Together with SCIENSCO I developed a better understanding of how developing knowledge and developing competencies do not have to be the prerogative of academic institutions or their academic experts only. Usher et al. (1997) refer to the role experiential learning could play in challenging the power of academic institutions to define what worthwhile knowledge is, thereby echoing one of the central tenets of postmodern knowledge creation.

SCIENSCO, as a group of science students, felt a need for doing research, and reported that after having participated in such a process, to have learnt to work better as a team and to have become more aware of the systemic nature of the University and indeed, any learning situation. This awareness has placed them in a better position to recognise that they are not necessarily entitled to be supported by staff and the SRC, and that as an organisation they could also take the initiative for developing better relationships with other systems and subsystems.

I would strongly recommend that collaborative group work and research be extended to empower other groups of students and their lecturers, and that such efforts focus on specific areas that faculties and students have collaboratively identified as needing change, such as

improving the nature of faculty representation of student organisations through collaborative research and action. Such research may provide information about what both students and lecturers desire, but from a more informed perspective in terms of mutual insights regarding curriculum issues for example. Breier (2000) refers to Gibbons' book, *The new production of knowledge* (1994), in which he predicted that generic competencies, of which the critical cross-field outcomes and collaborative group work in particular are examples, would be required in future, and that local knowledge would increasingly be recognised and accredited as part of learning courses. This prediction was confirmed spontaneously in our collaborative group work when group members expressed their dissatisfaction that the University did not accredit their Saturday teaching of science to the Grade 11 and 12 students. If the Science Faculty and SCIENSCO worked collaboratively in an attempt to initiate a project to explore the real possibility of implementing such accreditation, it would be a tangible demonstration of the creative application of the principles that emerged from, and were confirmed by, the exploratory collaborative action research project.

Another area of potential learning that could be explored more systematically, in terms of Service Learning, is the community service of SCIENSCO in the form of tutoring Grade 11 and Grade 12 learners in Biology, Mathematics, Geography, Physics, Accounting, and Computer Literacy from their communities. Brown (1998) and Sedlacek (1993) describe Service Learning as bringing students, teachers, and community members together to construct solutions to real problems. It provides a learning approach through which students apply academic and vocational skills and knowledge to address work and real life situations. A more systematic approach for exploring Service Learning could include reflections on how students interpret their work experiences in relation to problems of their communities, in order to engage them in a deeper critical awareness of issues within their community contexts.

A systematic approach could also include using the critical cross-field outcomes as a framework for developing and evaluating outcomes specifically connected with SCIENSCO's community work, and linking the outcomes to vocational education. However, we should be vigilant and guard against programmes such as Service Learning becoming exploitative and disempowering for those participants for whom it is intended to be empowering by exploring,

interrogating, and addressing our potentially oppressive practices and those of others in authority (Santoro, 2003; Stalker, 1996). Santoro and Stalker refer to the New Work Order and the New Right Perspective respectively in this regard, where they remind us of the implications of emphasising the vocationalisation of education for example. SCIENSCO have mentioned their need for job preparation skills during the research, and although we linked their work in their organisation with developing critical cross-field outcomes, we did not explore in depth the potential of their tutoring role to develop critical outcomes. I feel that what was lacking in numerous situations, after experiencing several action research cycles, were more systematic action research cycles where new insights could be applied in new problem situations. Future researchers could consider undertaking such research.

As mentioned in a previous section of the research report, the exploratory study enabled us as a research group to also reflect on critical cross-field outcomes. Although the exploratory study focused on collaboration, it enabled me to become more sensitised to the opportunities that exist within an academic setting for exploring critical cross-field outcomes and the possibilities for integrating them into academic programmes. My experience during the research process was that the action and research inherent in action research, particularly in collaborative action research, provide a way for developing critical cross-field outcomes, and that it is possible to apply such an approach within different academic disciplines.

The DoE and its policy-makers, by restructuring education, are hoping to encourage university responsiveness to both local and societal needs for equity, and to the global paradigm change in the conceptions of what constitutes teaching and learning. Gipps (1996) says that not only are the basic skills needed to prepare students for the new millennium, “but also the higher order skills of problem solving, critical thinking and evaluation...to become effective learners aware of, and in control of, their own learning” (p. 7).

The White Paper on education proposed a diversity of programmes and curricula that were responsive to national and regional contexts, expanded engineering, science and technology programmes, and community service programmes (DoE, 1997). Breier (2000) refers to the community partnership model of responsiveness where new forms of applications-driven and

trans-disciplinary knowledge production are involved. Breier says that this approach integrates and mutually enhances teaching, research and outreach. She adds that the concept of generic skills such as interpersonal communication and problem solving, among others, is written uncritically into curriculum plans. Although she argues that generic skills cannot be learned outside of a specific discipline, I would argue that collaboration between an academic department or a faculty, and a department such as Student Counselling, creates an ideal context for exploring collaboratively creative ways in which to develop and integrate critical outcomes in diverse academic disciplines.

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APPENDIX

CROSSING OVER AND BEING THERE - A DATA SUMMARY

Introduction

This appendix presents a description of the qualitative data, in a diary format, collated during my contact with SCIENSCO. In 2002 I was working as an intern, spending the first six months in the Vista Psychology Centre on campus, and the following six months at community clinics off-campus.

In certain sections the format will cover single sessions while in other sections it will be combined so that the most important points could be related in narrative form without having to include all the meetings that may not have contributed to gathering 'valid' information. The major part of our contact occurred in the SCIENSCO office during pre-arranged meeting sessions, mainly on a weekly basis during 2003. The research project was initiated in 2002, and most of the initial discussions and consultations were with the then chairperson. The data encompasses my observations, my reflections and the group's reflections as captured in my journal entries. During follow-up sessions I described to the group what the journal entries were in order to ascertain whether they agreed or disagreed with my perceptions, or whether I had captured the information as accurately as possible.

First meeting – March 11, 2002

I had written a letter to SCIENSCO requesting a meeting with the chairperson. The purpose of the meeting was to explore the possibility of myself working with SCIENSCO, and to find out from the chairperson what his views were regarding our trying to establish a collaborative approach. I had contacted the chairperson to invite him to my office for this meeting, and he arrived punctually at our pre-arranged time. He allowed me to explain the reasons for selecting SCIENSCO for this project. The reasons were that Science education has been prioritised by the government in terms of institutional responsiveness and the needs of society; that I had observed that SCIENSCO was more active than other academic student societies; and that SCIENSCO's office, that I had organised for them in 2000, was in close proximity to my office. I also suggested that one of my aims was to find out how I could combine my role

as Student Counsellor with my role as researcher, so that the research could contribute to improving my practice as Student Counsellor in terms of collaborating with a student society such as SCIENSCO.

I explained that my values regarding this research project included my wanting to work towards empowering their student society, which for me meant that I wanted to become a co-participant and not be seen as an authority figure. Prior to this meeting my intention was to spell out what I considered to be the focus of enquiry, which was explore their perceptions and experiences of the critical cross-field outcomes (CCFO's). However, I felt it would be inappropriate for me to mention it until we had explored SCIENSCO'S ideas as well. I wanted to be seen as a co-participant. In addition, the chairperson expressed his eagerness for collaborating, but emphasised that he had to consult with his executive members first. We agreed that we would meet with the executive on the 14th of March, where I was to be given an opportunity to present my ideas to the group. The chairperson agreed that SCIENSCO would arrange the venue for the meeting.

The approach of writing a letter to the chairperson arose from an informal discussion I had with two SCIENSCO members about what their suggestion was on how I could approach their society with the view to sharing a research idea that I had. I felt that this approach worked well as it 'formalised' my approach to them. In the past my approaches to student societies varied from telephonic, informal contact to letters of invitation, but I did not want to assume that my usual approach would suffice for SCIENSCO. I felt that first consulting informally with the two members provided me with an idea of their preference.

The plan for the next meeting, as agreed with the chairperson, was for all of us to introduce ourselves and to describe our roles as executive members, as student counsellor and co-researcher, and to repeat the explanation for having chosen to work with SCIENSCO. It was also agreed that at the next meeting we could discuss planning for future meetings and to suggest that members prepare ideas and questions about collaborating.

Second meeting - March 14, 2002

The meeting was supposed to have been held at a 'neutral' venue on the University campus, namely the Boardroom. On my way there I passed one of the SCIENSCO members who informed me that the venue had been changed to the SCIENSCO office. When I arrived at the office I was offered the seat behind the desk. I refused the seat because I felt that it represented a position of power. I mentioned to the group that I would prefer not to sit there as I was coming to them as "an outsider", and that I was hoping that I could become part of their group as a participant and as an equal.

The meeting commenced in the absence of the chairperson. I was informed by one of the group members that "he (the Chairperson) instructed that the meeting continue", and that the deputy chairperson would take charge. I repeated the purpose for choosing to do research with SCIENSCO, and that I was hoping the research was not just for research's sake but that it could be research that helps us to improve our practices as student counsellor and as a student society working collaboratively. At this point the chairperson arrived. I expanded on my view that the research process could also provide a learning experience in terms of using action research processes for developing skills and enhancing change if the group agreed that these were necessary. I had in mind the list of critical cross-field outcomes (CCFOs), and suggested that the research process could expose us as a group to developing CCFOs such as teamwork, problem-solving, effective communication, and exploring various strategies to learn effectively.

One of the members remarked, "It all sounds a bit theoretical. Will it be theoretical?" The question gave me an opportunity to explain aspects of the action research process and cycles, namely the planning, action, reflection and evaluation phases, so that I could highlight the practical application of such research. The majority of the group approved and agreed that they were interested in participating in the project.

A second question was whether the project could include their Saturday Matric project which involves them tutoring Grade 11 and Grade 12 learners on campus. The member mentioned that they sometimes have difficulty, "...some problem areas, for example in teaching students,

we sometimes do not know how to deal with areas not related to teaching content, but that may involve other areas that may cause students to drop out of the Saturday classes.” I responded to this question by providing examples of how we could use action research to approach such a problem. I mentioned, for example, that as Science students we could reflect on our own experiences at Vista University to try to understand the Matric students’ problems. We could also interview or discuss the matter with the Matric learners themselves in order to get their views about the problem. Such information could then be used to plan and implement changes that could then be evaluated.

A third question, from the chairperson, was about SCIENSCO gaining recognition from Vista University for their Saturday programme. He felt that they play a role in recruiting students to Vista University and added that as a student society they do not get institutional support for this role. He said “Vista should recognise that SCIENSCO plays an important role in public relations and recruitment.”

Another ‘complaint’ from the chairperson was that SCIENSCO would like more opportunities to be provided for, and easier access given, to visit private sector companies. His view was that the Science Faculty could do more to establish links with the private sector, that could benefit the Science students by exposing them to the world of work, and to provide future job opportunities.

I got the impression that SCIENSCO was putting these questions to me, via the chairperson, because they had expectations that I would perform tasks on their behalf. I queried this with them and the response confirmed that they perceived me as playing a role in liaising with the Science Faculty. I explained to them that this was not how I perceived my role in terms of action research. A question from one of the members then was what I thought the focus areas should be. My response was that I did not want to impose my ideas or criticisms about the relationship between SCIENSCO and the Science Faculty at this stage, mentioning first establishing of relationships with SCIENSCO members as one of my aims.

The chairperson then requested that I repeat to the group what action research entails. When I

mentioned that action research is about change, the chairperson responded, “We don’t want change as such, but we want to see more members join.” I saw this an opportunity to illustrate, through this example, of how action research can be applied. The example was that SCIENSCO could do a survey to establish the needs of new students. They could organise workshops to address those needs and in such a way new students could see SCIENSCO as a service provider, which might interest them in joining the society. We discussed possible advantages such as involving the Science Faculty in such activities, and the chairperson mentioned the word “collaboration” in reference to gaining institutional and Faculty support.

At the end of the session I asked the group what they saw as the way forward, referring to SCIENSCO’s thoughts and willingness about us collaborating on a research project. The chairperson said that the group would discuss this and then inform me about their decision.

Meeting with chairperson - July 30, 2002

From the beginning of July I was doing my internship off-campus and had to specially travel to campus to meet with SCIENSCO.

The purpose of the meeting of 30 July was to discuss the group ‘commencing’ with action research. However, our discussion evolved into the chairperson talking about his role as a tutor and not being consulted by his “students”. He also referred to SCIENSCO not understanding the importance of student leadership, and said, “hey don’t take their positions (as executive members) seriously.” He also added that SCIENSCO needs a workshop on job-search skills, and that they would like to offer career guidance workshops to their Saturday Matric learners. We had agreed on a follow-up meeting to be held on 5 August 2002 with the rest of the group, but he informed me that they would have a problem attending the meeting. A suggestion to find out what skills SCIENSCO thinks a Vista Science graduate should possess, an idea which I had been given by my supervisor, was then presented to the chairperson as an idea that could be presented to the group. We agreed that they could submit their ideas in writing by 13 August 2002.

Journal entry – August 13, 2002

I had expected to collect SCIENSCO's written responses. When I contacted the chairperson he informed me that he had not collected the written work as yet. He promised to do so later that day seeing that they had a meeting scheduled for the afternoon. I became agitated because I was feeling that we needed to get the research process started, and I felt disappointed that the promise to receive the written responses had not been kept.

Journal entry – September 10, 2002

I had finally received three written responses regarding comments about what a Vista University science graduate should possess in terms of skills and training. Some of the responses were:

“We wish more could be offered to equip students with skills that are convertible to the real world.”

“[We] need report writing and presentation skills.”

“Science Faculty should form links between students and industry and in that way students will be able to relate theory to the practical situation.”

“The Science Faculty lacks contact with student needs. They should know more about problems that hinder the progress of students.”

“We need a transformation workshop where they will be shown the poor state of the students in terms of emotions so that the lecturers can act as counsellors to such students.”

“Our lecturers should promote a culture of learning by involving students with many academic activities.”

I mentioned to the chairperson that the comments were mainly complaints or suggestions rather than what they perceived graduates should be able to do once they have completed their studies.

Numerous attempts between the chairperson and I to arrange another meeting after 8 August had been unsuccessful, but we eventually agreed on a meeting for 10 September. The meeting was confirmed with the chairperson two hours before the time for which the meeting was

scheduled (15h00). When I arrived at SCIENSCO's office it was locked. Two members arrived and confirmed that they knew about the meeting. They then left after five minutes. At 15h20, as I was about to contact the chairperson telephonically, I met him in the passage on his way to the office. He appeared apologetic and awkward about explaining that seeing that their meeting would be starting late, they would have a problem to include the discussion of the research project on their agenda. He said that many of the SCIENSCO executive members are laboratory assistants and tutors, and they are occupied until late in the afternoon. We then agreed to have a meeting in my office on 12 September. The meeting would be with the chairperson, and any other executive members whom he wanted to invite to discuss ways in which we could stimulate more consistent gatherings with the view to working collaboratively.

Journal entry – September 12, 2002

The scheduled meeting for 12 September, which was earlier confirmed telephonically with the chairperson, was later postponed at his request. The reason given for the request to postpone the meeting until 17 September was that none of the other executive members were available. During our conversation I also enquired about the plans for the career guidance workshops. It was then that he informed me that their plans for such workshops and seminars have been cancelled.

Meeting with chairperson and deputy chairperson - September 17, 2002

At the start of the meeting I mentioned my observation that we had not made 'progress' with regard to the research project in that we had been unable to meet on a regular basis as a group thus far. I also asked them what their view was about the commitment of SCIENSCO to the project, the reason for only three written responses being forwarded, and the possible reasons for the process having been hampered.

Their response to the lack of written responses was that "members may not find it easy to express themselves," and "some students are more senior than others, and the less senior students may not think they are able to provide appropriate feedback." We discussed the meaning of "appropriate feedback", and they agreed that it meant that students feel that their

views may not be “valid”. The chairperson and deputy chairperson agreed that students are not used to being consulted by lecturers, and perhaps do not develop trust in their own views.

The explanation for the lack of progress regarding arranging meetings since June 2002 was that the loss of continuity came about as a result of the June examinations and subsequent recess, as well as their commitment to tutorials.

Their solution for establishing more consistent meetings was moving tutorials to an earlier time slot, which they had discussed with their lecturers. They reported that their lecturers also felt that this arrangement may be more suitable seeing that the lecturers had noticed that few students were attending the tutorials, and rescheduling them may have been more convenient to improve attendance.

The chairperson and deputy chairperson also said that they did not receive accreditation (“recognition”), training and assessment or evaluation for their tutoring role. They approach their tutoring role “in a problem-solving manner”, they said, implying that after having been provided with the syllabus, they had to prepare and plan the lessons on their own. I asked them about their approach to tutoring and facilitation. They reported that their facilitation and tutoring ‘style’ was modelled on teachers they admired at school, which involved transmission modes of teaching and giving instructions. The chairperson said he also relied on his status as a leader when interacting with students, “because then students look up to [him] and are more prepared to listen.” They felt that they needed some form of recognition from the Science Faculty for their role as tutors.

Our agreement for future meetings was that I could interact with whomever of the members were present. The chairperson said, “I realise that we do not have to wait for everybody before something can be done. Work can go on with those who are there.” His comment referred to the postponement or cancellation of meetings owing to certain members not being able to attend discussion sessions at times. He further explained that in his experience this problem had occurred with many of SCIENSCO’s activities in the past, and that much of their activities are organised by an active few.

We agreed to meet on 1 October 2002 at 14h00.

Journal entry - October 1, 2002

The purpose of the meeting on this day was to meet with SCIENSCO to discuss the way forward regarding their commitment to collaborate on the research project. I met with the chairperson before 14h00 by accident and enquired about the arranged meeting. He appeared hesitant and awkward about responding. I then commented that it appeared that it would be difficult to meet as planned, and he agreed that this was the case. He suggested that we meet in a week's time. His reason for the need to postpone the meeting was that students had to attend practicals, which had not been mentioned previously. I was also pondering about my irritation at having to come to campus unnecessarily, wondering why the chairperson did not warn me telephonically about the problem for example.

Meeting with SCIENSCO – October 8, 2002

This was the first meeting with a full attendance by the nine current executive members besides the chairperson. The meeting was scheduled for 15h00, when four members were present. At 15h30 five additional members arrived, and I was informed by one group member that we could start as the chairperson had indicated to him that he would be late. I reminded the group that my agreement with the chairperson was that our meeting would be an information giving session, where I would share my views about working collaboratively, and what possible benefits there could be for us. Some of the possible benefits that I mentioned are that we could view research as a possible source of information for the Science Faculty; that research could be an opportunity to learn about group interaction; that it could be an opportunity to develop action research skills such as problem-solving, reflecting and evaluation skills; that we could possibly develop or improve our practices as a student society; that it could help me improve my practice as a student counsellor in my work with student societies; and for us to possibly learn about and utilise critical cross-field outcomes. I also referred to the issue of improving my, and the institution's, responsiveness to student needs regarding curriculum for example.

The unanimous view was that SCIENSCO saw benefits from getting involved in such a research project. Some of their comments focussed on their view that they have not previously been exposed to CCFOs, and that “[they] would find it useful to explore their needs as future graduates.” A question from one of the group members was “how can we contribute information to the Faculty about curriculum planning? Lecturers have experience and we as students do not.” I took this opportunity to explain that as a group we could explore our experiences as Vista students regarding teaching and learning, and mentioned the value of prior knowledge. I also asked them whether they had been consulted previously by lecturers about their curricula and about evaluating teaching and learning, and they said they had not.

I reiterated my efforts to get them to see me as an equal, not wanting to be seen as being in a position of power. One member said that it is difficult for them because in class they are used to viewing lecturers as being in a position of power. It was at this point that the chairperson arrived at the meeting.

The deputy chairperson raised the matter of the imminent change in terms of electing a new executive. It was agreed that the incumbent chairperson would serve as liaison between the new executive and me in order to assist in developing access with the new SCIENSCO executive. We also agreed that owing to the impending examinations it would be preferable to postpone further discussions until I had arranged a meeting with the new chairperson to plan for continuing our collaboration.

Meeting with supervisor – December 10, 2002

I had arranged an appointment with my supervisor to discuss my anxiety about the research process not progressing as I had anticipated. I wanted to share my perception that it had ‘stalled’. I had difficulty exploring the CCFOs as I had intended, which was mainly to ascertain what they knew about CCFOs, whether and how they have been exposed to them in the formal setting and if so, what their experiences were in this regard. Initially my intention was also to find out whether they saw the CCFOs as relevant to themselves as Science students.

The discussion with my supervisor focussed mainly on suggestions that I explore SCIENSCO's approaches to teaching as this had been the recent topic of discussion, and to discuss transmission modes of teaching to create awareness of their methods. I also shared with him my concerns and anxiety about my eagerness to introduce the CCFOs, as I had initially viewed this as the main focus of the research. My anxiety abated somewhat when he suggested that I do not have to focus on the CCFOs but that I could explore their role as tutors and the process involving teaching and learning. We agreed that the CCFOs could be used as a guide to evaluating our collaboration.

The discussion with my supervisor made me aware that much of my anxiety had to do with my seeing the research in terms of the anticipated outcomes, rather than focussing on the process. This realisation made me feel that the research process would be more manageable by looking at it in terms of dealing with fragments or sections of research, rather than worry about the overall picture in advance. Through this discussion with my supervisor I came to understand that I could also reflect on my own learning during the research process and that my own perceptions of the process are valid and relevant as well. The discussion included the systemic nature of the interaction between SCIENSCO and myself, and allowed me to look at the barriers hampering consistent meetings previously mentioned by SCIENSCO in a systemic way. For instance, I now saw the context of the group members as including their responsibilities as Science students being tutors and laboratory assistants interacting with a system that also encompasses not only myself as student counsellor and researcher, but also lecturers and the Science Faculty. By exploring the systemic nature of the research with my supervisor, he showed me that I was blaming group members for what I perceived as inaction, rather than exploring "why there is no participation and what does it tell us about the students' contexts," as he put it.

January 24, 2003

I went to SCIENSCO's office to initiate contact for arranging the first meeting for 2003. There I found two of the executive members who promised that they would consult with their new chairperson. I had met with one of them during student orientation in the previous week, where she had assisted me as a group leader for science students. I had not been aware that she

was an executive member.

January 30, 2003 - meeting with SCIENSCO

This meeting (January 30, 2003) was arranged with the student I had met during orientation and with the new chairperson. They came to my office earlier in the week to confirm that the meeting was taking place. When I got to their office at the appointed time all those executive members who had been expected to be there by the chairperson were present. The purpose of the meeting was to re-establish links with the new executive and to ascertain their willingness to continue our collaboration. In addition, I wanted to reflect with them on the barriers that may have hampered our collaboration in 2002; to share with them my perceptions and experiences regarding my approaches towards collaboration in 2002; and to plan how we could move the process of collaboration forward in 2003.

I initiated discussion by mentioning my ideas about collaboration that included trying to explore issues of our power relations in the group and to develop an approach that allows us to work as co-researchers. I wanted to clarify my position of wanting to be seen as a co-researcher rather than student counsellor/staff member.

When I raised the question of what the possible barriers were last year in their view (after sketching what my approaches entailed in trying to arrange meetings and my perceptions about poor attendance), there was a lengthy silence. The chairperson and another executive member who were both on last year's executive commented on the awkwardness of the silence. I then asked about their interest in continuing with our collaboration, which they unanimously confirmed. The third question was "What suggestions do [they] have for the way forward?" There was silence until the chairperson intervened and said apologetically that it was "because members may not have ideas" at that stage. He said that they had planned to have a suggestion box for members to place their suggestions about how we could work towards collaboration, and these suggestions could then be discussed. When I asked whether I could use the suggestion box as well there was an enthusiastic response of agreement from the group. It was also suggested that a separate suggestion box be provided for Science students for exploring the needs of students and expectations that they may have of SCIENSCO.

During the meeting I also commented on the difficulties I experienced in 2002 regarding developing collaboration between SCIENSCO and me. One member asked what I thought the problem was with SCIENSCO, and I responded that I was not implying that SCIENSCO was the problem but that I was reflecting on the possible problems resulting from my approaches to SCIENSCO. I mentioned issues such as my anxieties, power relations, my being a staff member, and the possibility of us not having established appropriate trust. I included other examples of power relations such as that which may occur in lecture rooms between students and lecturers. One group member wanted clarity on what I meant about power relations between lecturers and students. My response was that it would be possible for us to explore what the nature was of their relationships with lecturers and to critically look at their own roles in these relationships. The chairperson then commented that just recently they had discussed how lecturers were seen as “experts teaching and students being passive.” He raised the matter of lecturers discouraging them from personally contacting private sector companies regarding site visits, saying that lecturers were “prohibiting student activities.”

When I enquired about a list of school names that I had noticed in their office they told me that those were the fifteen schools they had already visited to recruit Grade 11 and Grade 12 learners for their Saturday classes. They were planning to visit more schools soon. The subjects that they offered were Biology, Physics, Mathematics, Geography, Accounting, Computer Literacy, Chemistry, and they were considering English because “[they] have discovered a language problem.” Their classes were to start on 15 February 2003. They charged the learners R30, 00 per annum, with the tutors being paid R20, 00 per learner.

I used their initiatives regarding tutoring Grade 11 and Grade 12 learners and their arranging company visits as examples that could be used to reflect on and to collaboratively explore teaching and learning experiences. I suggested that we could look at how these activities contributed in a collaborative way to their training and development. It appeared that there was greater interest from the members because their level of participation during this discussion increased. One comment was “we have a better understanding... [what research could entail] ...and it could be used for us and staff to learn about student issues.” The group

members agreed with one member's comment that they had initially felt "threatened and not prepared about being expected to involve [themselves] with research."

They agreed that they had a need for developing their knowledge and skills about tutoring, and we decided that we would in future look at sharing our teaching experiences and to use these experiences in a reflective way to aid our learning from one another.

The discussion about their tutoring and the company visit initiatives were used to introduce the topic of CCFOs. We specifically spoke about outcomes in terms of examples that they could give of problems that they had to solve. Some of the problems that we discussed were about recruiting learners; problems that they had to resolve in arranging company visits; the teamwork that they were developing in planning their Saturday classes and the sharing of SCIENSCO tasks; their learning about entrepreneurship with regard to the financial arrangements with tutors and learners; and critically reflecting on their own experiences of power relations as Vista students, in order to create awareness of power relations between themselves and their Grade 11 and Grade 12 learners. The idea was to develop more awareness in future, not only for SCIENSCO but also for myself, about relating CCFOs with our research activities as well.

When I expected the session to end one member wanted to further our earlier discussion about power relations. He mentioned the example of SCIENSCO having Faculty representation but feeling "used" at the Faculty meetings. He reported that "[they] are not informed about things but just expected to attend" and that they usually received minutes at a late stage. They agreed that they have not complained to the Science Faculty about this. I gave them an example of similar problems that I had experienced regarding my attendance at the Faculty meetings in the past, and eventually contacting certain lecturers and Faculty coordinators personally, which appeared to remove certain perceived barriers about access to Faculty meetings.

I had observed that two members had been silent throughout the meeting. After the meeting I inquired from the one what her name was, and she did not answer immediately but smiled shyly. The other members overheard my question and laughed. She then gave me her name

and confirmed that the other members were laughing because they prefer addressing her by her nickname.

I also lightheartedly suggested that I would like to visit their office occasionally for informal discussions, to which the deputy chairperson and secretary agreed apparently on behalf of the group. The deputy chairperson later confirmed that he would not have responded in this way if he had a suspicion that the group did not agree with him.

Session with chairperson – January 31, 2003

I had requested to meet with the chairperson when I saw him earlier today. I saw our meeting as an opportunity to develop our relationship further as I have had more contact with the previous chairperson, and also to triangulate the information and the observations that I had noted regarding the meeting of 30 January 2003. He also mentioned that he was aware of my concern about my possibly imposing my views on the group, but added, “Maybe at a later stage we can all be more comfortable with challenging each others’ views.”

He agreed that my information reflected what had transpired. He informed me that he was on his way to a workshop off-campus with campus management, and that he would be missing an examination in order to attend this workshop today. The workshop was important, he said, because it would be dealing with student and SRC related issues. He insisted that he chose to attend the workshop and that he felt that “[he] would not be disadvantaging [himself] much by not writing the examination.” He is a final year Statistics and Chemistry student, and the examination was for a module of one of his second year courses, which he could rewrite in June.

Discussion with chairperson – February 11, 2003

The chairperson had contacted me while he was working as a student assistant, assisting with student registrations. He suggested that we could meet soon to plan for the way forward regarding our research project. He also reported that SCIENSCO had not yet implemented the suggestion box, and that they had received my suggestions. My letter to SCIENSCO, dated 6 February 2003, was worded as follows:

To: The Chairperson (SCIENSCO)

6/2/03

I would like to suggest, in the form of a request, that we take the opportunity to learn from each other. We could see ourselves as joint researchers to look at the following:

- 1. What have we learnt/can we learn about ourselves with regard to our organisational practices (SCIENSCO and Student Counselling)?*
- 2. What kinds of outcomes are achieved in collaboration between SCIENSCO and Student Counselling?*
- 3. What are our experiences at Vista as learners (myself included)?*
- 4. How can we improve our practices (e.g. as teachers/facilitators) by reflecting on our own experiences as learners?*
- 5. How and what does SCIENSCO contribute to our development and to the general outcomes expected of learners?*

Yours faithfully

Aadiel Adams

February 17, 2003 - meeting with supervisor

When I had arranged this appointment I was uncertain about what I wanted to discuss. I had felt that I needed some kind of reassurance that I was indeed progressing with my research, and I wanted to reflect on the recent meeting with SCIENSCO. Our discussion evolved into speaking about the uncertainties that I was experiencing regarding the action research process. I had been finding it difficult to implement action research cycles because I was not satisfactorily connecting my reflections with planning for example. I had been attempting to

find solutions on my own, instead of involving the group members more by asking them sample questions such as the following suggested by my supervisor:

“How can we plan next time?”

“Let us try to understand why we got stuck.”

“Why did the suggestion box not get done?”

My supervisor also reminded me that action research could also entail going to the literature to gain understanding about issues that may have arisen or to explore and find answers to reflections. Such readings could then guide me towards more effective planning.

I was made to realise that I was still waiting for an action research process to happen when I was already in such a process. I was still viewing what was “not happening” as barriers to achieving what I considered to be the focus, namely regular sessions to now explore teaching and learning issues. I again learnt in this discussion that when I was reflecting on the process, I was forgetting to look at the research as a learning experience. My supervisor said that it appeared that I was not trusting the process. I told him that my assumption was that research is “something more than what I was doing” and that I felt inadequate because I thought of research as having to produce a “masterpiece” of work. I had been doubting that what I was doing was good enough to pass as research.

My supervisor reminded me that I could look at my own learning in the research process as well. I had been so eager to find out what the group members’ learning experiences were and ignoring what I could be learning from this process.

Meeting with SCIENSCO – February 27, 2003

The aim of the meeting was to reflect on the research process thus far and to plan the way forward. I specifically wanted to find out what has been hampering progress of the research process and to find out how we could organise regular meetings. I also wanted to know what SCIENSCO's views were regarding our achievements so far.

The chairperson's first comment was that the suggestion box had not been implemented, and pointed out that my letter had been placed on the wall in their office for the benefit of SCIENSCO members. His reasons for the suggestion box not being implemented were: "Time management is a problem because students are occupied by office duties. It is not seen as a priority because students have other priorities at the moment, such as assisting during student registration and having to register themselves."

The SCIENSCO secretary responded that the suggestion box was available but that they needed some masking tape before they could use it. The rest of the members present said that they thought the suggestion box a priority. A reason given was that they wanted to see SCIENSCO get involved with "student matters" and they wanted to "engage more". This suggestion sparked further discussion about how these goals came about. The members related past experiences when they were new students. They felt that at the time they did not get assistance from SCIENSCO in terms of their needs. They felt that SCIENSCO at the time did not know what their needs were as new students, such as their need for information or advice regarding career options; their need to interact with other fellow students in order to deal with feelings of isolation and loneliness. The feeling was that in the past SCIENSCO was not engaging with Science students in order to help them adjust to university.

The goals for SCIENSCO, mentioned at this meeting, included providing a service to Science students generally in order to provide careers information, to promote interaction, and to empower SCIENSCO to develop knowledge and skills in these areas. I attempted to relate these specific goals to our general goal of collaborating towards improving our practices by illustrating that the suggestion box could be seen as part of a research process towards improving our responsiveness to student needs.

In response to my question of what we have achieved from our collaboration thus far the responses were:

“We can give our views more freely and feel that they [our views] are valued.”

“We can share our views and I can know what your views are now. If we didn’t meet I would not be aware of your views about us as SCIENSCO, and about teaching and learning, and academic matters.”

“Our contact allows us to realise mistakes from the past, for example when we didn’t cater for students in a more general way.”

Meeting with chairperson - February 27, 2003

After the group meeting with SCIENSCO I met with the chairperson. The meeting was unplanned. The meeting turned out to be informative in that it ended up focussing on the chairperson’s experiences as a school learner and as a tutor. He related his experiences when he preferred attending Science classes with Vista University tutors rather than with the Vista University Science Project (VUSP), which catered for Grade 11 and Grade 12 learners. The VUSP was a Science Faculty initiative. He felt that the VUSP tutors taught in the same way as lecturers would, while with the Vista tutors (which was a SCIENSCO initiative) he was allowed to participate and to feel involved. They were also allowed to evaluate the teaching of the SCIENSCO tutors.

He recalled being asked by one of his tutors about how they felt about the teaching process and about the classes they attended. He referred to his Maths tutor who allowed them to participate and interact in class, which resulted in him having an interest in attending the classes. He contrasted this with sitting in a lecturer’s class and not having an interest because he was not made to feel involved, and the lecturer “trying to show how clever he or she was”. He also related the example of a former Biology teacher at his school who served as a role model. She constantly requested that learners comment on whether they felt they were being taught effectively, which he saw as a form of evaluation.

I asked him whether SCIENSCO tutors have been examining and evaluating their own tutoring. He said they have not, but that the Accountancy tutor once discussed his classroom problems and the chairperson advised him about allowing more student participation.

We agreed that another meeting with SCIENSCO would be scheduled once the registration period has been completed.

Meeting with SCIENSCO - March 26, 2003

The members agreed that I could record the discussion with an audio-tape. As I was connecting the tape recorder, the chairperson informed me that the Vista University National SRC had taken a decision that lectures and academic programmes were to be discontinued as a result of a dispute with Vista Management in Pretoria. The purpose of this meeting was to focus on the tutoring experiences of SCIENSCO members and to find out whether there was a need for them to incorporate critical cross-field outcomes in their teaching practices. In the process I wanted to find out how their experiences as students have influenced their tutoring, and what their experiences were with regard to critical cross-field outcomes at Vista University. However, the meeting could not take place as planned because SCIENSCO felt that our collaboration might be construed as part of an academic programme, and that it would be unacceptable to the SRC.

The chairperson promised that he would meet with me later in the day to discuss with me the difficulties that would prevent SCIENSCO from meeting with me during the “boycott crisis”, as he described the situation.

Meeting with supervisor – March 26, 2003

During my discussion with my supervisor I mentioned my feelings of disappointment about the research process, in terms of the meetings with SCIENSCO, not progressing as I had planned. He asked what my conclusions are about the “stop/start” process. I replied that I was finding it difficult to ascertain what my contribution was to the problem. He suggested that I “expand the reflection” to include looking at the contribution of SCIENSCO and other

systems to the problem. We agreed that my feeling frustrated could be linked to feelings of powerlessness in terms of the political issues that were affecting students on campus generally. SCIENSCO as a student organisation is “governed” by the SRC, which meant that they were obliged to accede to the decision to suspend academic programmes and activities. During my consultation with my supervisor I felt more comfortable accepting that the student boycott, as a general student matter, took precedence over my research. I also mentioned to my supervisor that I was perhaps over-sensitive to being perceived by SCIENSCO, in this instance, more as a staff member than as a co-researcher. The last meeting with SCIENSCO had highlighted for me the dilemma I had in feeling disempowered in the dilemma that SCIENSCO had in certain situations where I became a staff member implicated in student politics.

Meeting with chairperson - March 26, 2003

The chairperson visited me in my office to discuss the difficulties that would prevent us from meeting while the boycott was in progress. He expressed his and SCIENSCO’s “need to be visible as representatives of other students” by participating in the planned activities such as the student procession to present a petition to campus management. He committed himself to meeting with me again once the situation has normalised.

The chairperson and I discussed the campus systems as a whole, and he agreed that the word “governed” conveys the structure of SCIENSCO’s links with the SRC. In a way he conveyed to me the idea that they had an obligation to participate in the SRC organised activities regarding the student boycott. I conveyed to him my dilemma, which he agreed was similar to his own position as chairperson, of Student Counsellor/ staff member versus co-researcher. His tensions were connected to being chairperson, leading SCIENSCO, as well as being a student.

During our meeting the chairperson of SCIENSCO appeared to be apologetic, expressing his regret about the inconvenience of us not being able to meet as a group at the moment. He added that he was grateful for the discussion because it also helped him to better understand how SCIENSCO as a system is connected to and “influenced by other systems”. He added, “it

is something that we can reflect on and learn from as a [student] society”.

Telephonic contact with SCIENSCO office – April 8, 2003

I contacted the SCIENSCO office in order to find out whether SCIENSCO would be meeting soon, as I had noticed a reminder to their members that they were to meet today. My concern was that the Easter holidays were approaching, and I wanted to avoid a situation where our meetings might be discontinued as a result of the looming May examinations that would soon follow. I spoke to the deputy chairperson, who said that SCIENSCO would be meeting today and that he was “concerned that time was running out” with regard to our research meetings. He felt that the holidays and the examinations, subsequent to the student boycott, could hinder “our progress”. He suggested that he would inform the chairperson to contact me as soon as the chairperson arrived at the office.

The chairperson contacted me telephonically an hour later. He was hesitant about committing himself to an agreement to my having a meeting with the group. I suggested that I could attend their meeting anyway so that we could discuss concerns that the group might have about us meeting in future. I informed him that I was afraid of postponing when I could meet with them. I felt that I was acting more assertively by suggesting that I meet with them during their planned meeting. I wanted to be more involved in participating in the decision about us meeting again, and did not want to rely on the chairperson to first discuss the matter with SCIENSCO in my absence.

Meeting with SCIENSCO – April 8, 2003

My aim initially for this meeting was to find out whether there was a need to discuss how we would plan and proceed with future meetings. The group agreed that today’s meeting would be the first of a series of meetings to explore their experiences and perceptions as Vista students and tutors, which was our intention when our meeting was cancelled during the student boycott. I viewed today’s meeting as a kind of survey, where I could get an idea of what the group’s views were generally regarding their role as students and tutors. I felt that this would allow me to ascertain their level of knowledge and understanding of issues such as critical cross-field outcomes, and teaching and learning. At this stage I felt uncertain about my intended approach of initiating discussion with questions, without wanting to explore their

possible responses in detail. I decided to proceed the way I had intended anyway.

The first question I asked was “What were your experiences as Science students regarding the kind of teaching that you were receiving?” The chairperson was the first to respond, by complaining that leadership skills should be taught in a formal way, and that they were not being exposed to opportunities in the academic setting to develop leadership skills. The deputy chairperson responded that he viewed the question as “referring to quality assurance” (he had attended a workshop with me at Rhodes University on quality assurance in teaching and learning, organised by the higher Education Quality Assurance Committee). He added that as students at Vista University they have not been provided with opportunities to evaluate, or comment on, the teaching practices of their lecturers. The two responses gave me an opportunity to link the comments with critical cross-field outcomes such as critically evaluating information, working effectively as a team or group, and exploring a variety of strategies to learn effectively. The aim here was to illustrate that their ideas could be linked with some of the terms of reference in the list of critical cross-field outcomes, which in a way also served the purpose of gradually introducing the group to ideas about OBE and critical outcomes.

Meeting with supervisor - April 10, 2003

Again the purpose for arranging the supervision session was related to my feeling of uncertainty of being stuck. After my recent meeting with SCIENSCO I was still concerned whether I was “doing the right thing” regarding my approach to the discussion we had. My supervisor responded that I should “be more trusting of [myself]... and less fearful of making mistakes”. His comments again served as a reminder that I was in a learning situation and that my own experiences were also a source for learning. Another question he asked me to think about was “What has been meaningful past experiences regarding learning?” This question arose when I was relating to him that I was uncertain about the level of motivation and engagement of the group in the research process. I had suggested to him that I was considering teaching SCIENSCO about CCFO’s in order to create awareness about critical outcomes. Through my discussion with the supervisor I came to realise that I had opted for such an approach because I had become more anxious in terms of time pressures, to get to a point

where the research would have a kind of “outcome” or a result. I recognised that, with the help of my supervisor, I could try to focus more on the research process by continually reflecting and exploring with the group.

Meeting with SCIENSCO - April 15, 2003

The meeting started late because of the late arrival of four of the group members. The chairperson ascribed their late arrival to the preparations for examinations that were to start during this week. Another executive member mentioned that the threat of de-registration could be another factor that might have affected the ‘non-punctuality’ of certain members.

The main topic of our discussion was about the systemic effects that the boycott and de-registration were having on individual SCIENSCO members as well as on SCIENSCO as an organisation. A general feeling was that they as students had initiated the boycott, which had given them a sense of power and of having taken the initiative. However, they later found themselves in a position of powerlessness, feeling dejected about not being able to deal with the threat of de-registration.

I related to the group members the difference in how I was being affected (compared to the SCIENSCO members’ experience) by the boycott and not being under the threat that they were experiencing. I raised the matter probably because I was experiencing a sense of unease about my ‘privileged’ position both as a student who did not have their financial constraints, and as a staff member who was powerless to assist them in terms of finding concrete solutions to their problem.

Group members also stated that they are not informed about what was expected of them in their role at Faculty level. They described it as “...difficult to be activists in this situation [the de-registration] because some lecturers may be compromised, possibly being seen as supporting us as students and getting disapproval.”

I asked them how they would have dealt with the situation if their students had negotiated with them (as tutors). I wanted them to look at how their experience could possibly have been

used from one setting to another. Their view was that the current situation was difficult for them as leaders seeing that many of them were being confronted with the same problem as the general student body. They felt that they were not in a position to take the initiative to speak on behalf of other students, and encouraged their members to approach lecturers individually. They said that they have not explored, and were not aware of, what role they could play within the Science Faculty. One group member mentioned that as SCIENSCO members they felt the most comfortable consulting with the sub-head of the Faculty. I suggested that as SCIENSCO they could consult with him about ideas for the role that they could play, and also asked their permission for me to consult with him.

It was noticeable during our discussion how one of the members who had mostly been quiet during our previous meetings became more vocal and spontaneous. He readily spoke about his concerns and lowered morale and motivation linked to the de-registration threat, and how his concentration and preparation for the examinations have been affected.

Consultation with supervisor - April 16, 2003

The supervision session was unplanned but my supervisor allowed me to discuss the meeting I had with SCIENSCO on 15 April. After I described the perceived powerlessness of SCIENSCO and myself with regard to the deregistration threat, he questioned me about the systemic aspects in order to remind me about the links between myself and SCIENSCO, SCIENSCO and the Science faculty sub-head, SCIENSCO and the SRC, and their links with the Acting Vice-Chancellor who 'decreed' the de-registration. My supervisor clarified for me how tensions may have arisen from SCIENSCO having initially felt empowered by taking initiative to boycott, and then feeling powerless through having difficulty with the consequences of their actions.

My supervisor and I also reflected on issues of engagement and disengagement in learning, which were linked to the students' feelings of lowered morale, fears and anxieties about the coming examinations, and the decreasing involvement in SCIENSCO activities probably resulting from their feelings.

Consultation with SCIENSCO Chairperson – April 24, 2003

I visited the SCIENSCO office unannounced on the morning of 24 April to ‘informally’ enquire from whoever was there about their progress with regard to the recent events, examinations and their worries. I was informed by one of the SCIENSCO members that they would be meeting with the Dean of the Science Faculty, and that I could attend the meeting. I got the feeling that the invitation was an ad-hoc one, and decided to consult with the chairperson. I later met with him while he and the secretary were planning an agenda for their meeting. I asked the chairperson whether I could attend their meeting with the Dean, saying that I was interested in an observation role. He was silent for a while, while the secretary responded unhesitatingly that I was welcome to attend. The chairperson then suggested that I allow them five minutes to discuss my request, and that he would inform me of their decision.

The chairperson and secretary then came to my office to tell me that they had agreed that I could attend. I asked them what the reason for reluctance was about my presence, and the chairperson said he “consider[ed] the other members who may not be willing to talk” in my presence. The secretary said that he definitely wanted me to attend. We ended up discussing whether it would be a good idea for me to attend, because I was now also considering how the Dean might interact with SCIENSCO if I were present. I explained to them that I was concerned that my presence might hamper the interaction because I suspected that the Dean would see me as a staff member rather than as a researcher as well. While the chairperson still stated his willingness to have me attend, the secretary agreed with me and expressed his doubts as well. We eventually agreed that their meeting with the Dean might be more effective if I did not attend.

Meeting with SCIENSCO - April 29, 2003

The purpose of the meeting was to gather feedback about the de-registration situation and about SCIENSCO’s meeting with the Dean of the Science Faculty. The chairperson and deputy chairperson were absent from the meeting. Members reported that some of them were still anxious about being de-registered. The student who in the past hardly spoke at our meetings reported that he felt more at ease after he found out that, according to the criteria, he

would not be de-registered. The criteria included a requirement that students were allowed to have not more than a certain amount of outstanding debt. He said that he coped well and prepared well for the examinations after he was informed of the criteria.

I asked the secretary, who was chairing the meeting, what the purpose was for the meeting with the Dean. He described it as “wanting to ascertain the status of SCIENSCO, whether we are recognised.” He explained that they wanted to know what role they could play as representatives of Science students, and they also wanted to discuss assistance with funding for SCIENSCO. The general feeling was that the meeting with the Dean gave them a feeling of recognition, that they were seen as representatives, and that they realised that they could “develop channels for approaching people” other than via the SRC. They described the Dean as “approachable”.

An additional topic that was covered was to get some feedback about their tutoring experiences. One female student mentioned her experiences when she used to attend Saturday classes at Vista University while she had been at school. She said that she had quit attending the Saturday classes after a while, after she had found out that the tutors were Vista students rather than “teachers” as she had expected. She reported that she had made a mistake by quitting because her results then deteriorated. The general feeling was that when they had attended the classes as school learners they found them most helpful. Their main complaint as current tutors was about the lack of classroom control.

Meeting with academic officer - May 8, 2003

Today I ‘bumped’ into SCIENSCO’s academic officer in the passage on his way to the SCIENSCO office. I noticed that he had a stopwatch and enquired what he was busy doing. He replied that he was busy organising the SCIENSCO awards ceremony for the following day. He asked me whether I had been informed about the event, and told me that they had invited their Science lecturers. I had not been informed about the awards ceremony, and he told me that I was “welcome to attend”. He also enquired whether I had already received the information and the invitation to accompany SCIENSCO on their planned visits to companies, and seemed surprised that I had as yet not received the information. I told him that I could not

commit myself to attending their awards ceremony owing to a prior invitation to attend the official inauguration of the B. Psych programme at UPE. I said that if I do not attend the awards ceremony, I would like to find out how they had gone about organising the event and to reflect with them on the responses of lecturing staff.

Meeting with SCIENSCO – May 13, 2003

The purpose of the meeting was to ascertain how the awards ceremony was organised, to discuss aspects of teamwork, and to explore their experiences regarding the event.

Prior to focusing on the awards ceremony I inquired when we would be having the ‘special session’ about tutoring as previously discussed. The reply was that the matter had not yet been discussed. I was irritated because I felt that promises were made to deal with certain issues and then agreements are not kept. Two of the members suggested that we discuss it during this meeting. We agreed, and after much deliberation we settled on the next Tuesday slot of 20 May 2003.

With regard to the awards ceremony the group members appeared excited and eager to report on the success of the venture. This time members had to be restrained from responding collectively so that we could allow individual responses. The general responses were that all the invited lecturers had attended except one; that SCIENSCO did not expect such a “good response”; and that the sub-head of the Faculty was instrumental in the success of the event. Two members disagreed that the sub-head may have contributed to getting lecturers to attend, saying that they felt it was a directive from the Faculty head in Pretoria which made lecturers feel obliged to attend. The majority view was that the lecturers had been made aware by the sub-head about the existence of SCIENSCO and that his involvement with staff had encouraged them to attend. One member reported that some staff had told him that they had not known about SCIENSCO previously, and that they were impressed by SCIENSCO’s ability to organise such an event.

SCIENSCO’s purpose for the awards ceremony was to inspire science students and to provide an incentive for students. They described the purpose as “providing a competitive environment, to get students to compete, which can motivate them.”

The criteria for selecting the academic award winners, which they worked on in collaboration with the sub-head, included identifying the top three students of each academic module. The certificates were organised by the faculty head.

The group members felt that their previous contact with the faculty head was important because it made them feel affirmed and that their student organisation had a purpose. They identified changes from how they operated in the past. They were marketing themselves more effectively, describing the awards ceremony as a marketing exercise. In the past they did not identify marketing their organisation as one of their aims. Some comments about marketing were: “They can see that we are active”; “We focus on activities that favour the core business of SCIENSCO, so people in Science are interested”; “The awards ceremony created publicity.”

The members described some of the outcomes of the event, referring to their rising confidence in their ability to function as a body representative of science students. They felt that in the past they did not always feel that they were leaders because of a lack of recognition by staff as well as many science students. They also felt that they had worked better as a team compared to the past because each SCIENSCO executive member had taken responsibility for the different tasks required to organise the event successfully. In the past such an event would have depended on the efforts of one or two members. The general feeling was also that “lecturers are now more approachable, and they promised to help in future activities.”

The group reported that no real difficulties were experienced in organising the event. Lecturers had cancelled lectures in order to attend and to allow science students to attend. The involvement of the head and sub-head of the Science Faculty, and their possible request to cancel lectures were seen as the factors that gave status to the ceremony.

I mentioned to the group that it is not the first time that I had been informed about a SCIENSCO activity at the last minute. I told them that I felt that we have reached the stage where I have become comfortable raising issues of concern, which are not meant to judge or

confront, but for me to get their perspective. In the past I may have hesitated mentioning my concern, fearing that the group may feel judged, and that I may take their responses more personally and become offended. The first response from one of the group members was surprise that I had not been “officially informed or invited”. The member tasked with coordinating the event was blamed for not informing me. Both the chairperson and the academic officer said that it was the coordinator’s task, to which he replied that he was not aware that this was to be one of his duties. I asked the chairperson about their methods of delegating tasks and how they encourage teamwork. He replied that “executive members sometimes feel undermined or that you are underestimating them when you give them instructions.” He said that was a reason for sometimes avoiding asking a member whether an expected task had been completed. One member added that tasks were not always clearly defined or agreed on prior to carrying them out. The chairperson also added that he in any case assumed that I might not have been so interested in attending their awards ceremony “because it was only an awards ceremony which would last for half an hour.” The chairperson then reminded me that they were inviting me to accompany them on their tour to South African Breweries on 28 May 2003. I had accompanied SCIENSCO on a similar visit in 2002, but I was uncertain about doing the same this time. My uncertainty stemmed from personal considerations based on my values regarding alcohol, as well as my previous experience on the plant tour where part of the plant tour included the company doing a beer promotion and allowing the students to consume beer once the tour had been completed. My feeling then was that I was compromising myself as well as the university, as I had no jurisdiction over the students and I was not in a position where I could guarantee good behaviour.

During this session I again wanted to discuss the topic of evaluation. I asked the group whether they regularly evaluate their activities. The reply was that they do it occasionally, but I got confirmation from them that they did it haphazardly, and not on a regular or organised basis. For example, one member would be asked to evaluate the Saturday classes, but the information is not communicated to all the members and no action is implemented towards improving or changing their approach. They agreed that evaluation on a monthly basis, for example, could be considered in future.

Meeting with Science Faculty sub-head – May 19, 2003

I informed the sub-head that SCIENSCO had praised and appreciated his role in assisting them with their awards ceremony. He replied that he was “flattered to hear that.” He mentioned that SCIENSCO had approached him about two months ago “to be their guardian.” He had laid down certain conditions before agreeing to assist them. The conditions were: ” that they have a definite plan of action; that they consult with their constituency; that they have a budget; and that they follow strict financial measures and control.” He said that after requesting a financial report from SCIENSCO recently, he detected an improvement in their financial affairs compared to previous years. He was concerned though that they had bought expensive jackets for themselves and asked whether they had consulted with their constituents in this regard.

The sub-head and I also discussed the de-registration problem, and I informed him that the chairperson was one of those who might be de-registered. He informed me that “the chairperson is a wonderful person, but [he was] concerned about the effect his de-registration would have on his role and the influence it would have on SCIENSCO.” The sub-head mentioned that he had requested that students threatened with de-registration consult with him so that he could provide some assistance. He said “initially many of them avoided coming because they are scared, assuming that they are in trouble with [him]”.

We discussed the research in terms of critical cross-field outcomes, and he agreed that SCIENSCO could be a site for developing these outcomes. The sub-head said, “It is important to develop things that are not necessarily science related, such as writing and communication skills for example.” He expressed his wish to see such skills being incorporated into the curriculum, and added that the University of Natal has Faculty Counsellors who are involved in skills and life-skills training “that incorporates these non-Science kind of courses.” The sub-head said that he would like to see a similar arrangement at the Vista University campus. He described a Faculty based counselling system as allowing for regular contact between students and a Counsellor. Such contact could assist in providing an evaluation and feedback function, where academics could be kept informed about students’ perceptions of problems and about issues of teaching and learning. He agreed that Science students have not been

involved in evaluation exercises, but that he and the Faculty head have recently discussed giving Science students the opportunity to evaluate a Science module. He described it as being “a first at Vista.”

I also presented the sub-head with an explanation of how I perceived SCIENSCO’s contact with him, with the Faculty head and with lecturers as part of a systemic approach that had been beneficial. He agreed with my explanation and added that he observed an improvement in SCIENSCO’s functioning, which could be ascribed to having broader links compared to the past. I informed the sub-head that the success of the awards ceremony was found by SCIENSCO to be inspiring and that they described it as improving their confidence. The rest of our discussion focussed on the plan to utilise SCIENSCO’s student experiences as a basis for developing their tutoring skills.

Meeting with SCIENSCO – May 20, 2003

This session was to have been audio-taped but I discovered after the meeting that the recording was not done probably as a result of a fault with the electric lead I had used. The focus of the session was on tutoring. This was done by looking at the SCIENSCO members’ own experiences when they were tutored at Saturday classes, and how they compared their own experiences with what they perceived to be the experiences of their learners. The aim was also to look at possible solutions to problems that they have been experiencing as tutors.

The chairperson was not present at the meeting and nobody could say what the reason was for his absence. I inquired whether, in the absence of the chairperson, any decisions could be taken. One of the women executive members, who had initially raised the issue of tutoring problems, said that his absence does not mean that we cannot take decisions.

The feedback regarding their classroom experiences as tutors included:

“Learners like Maths because the tutor is active and he makes lessons lively,” explaining that he involves students in a participatory way.

“They [the learners] complain about the Accountancy tutor because he speaks too

soft.”

“Some students are disruptive, they just come to relax. They are just excited because they are at Vista.”

“The learners don’t respect the tutors, seeing them as young students.”

One member added that a learner had once said, “The tutor speaks with a child’s voice.”

“Tutors sometimes feel powerless because learners attend voluntarily.” Tutors feel that they have difficulty implementing classroom discipline because they do not have the authority that teachers might have. They also stated that few learners pitched up when tests were given, for example 89 learners out of 200 came for the computer literacy test.

Another comment was: “Some tutors don’t prepare and some like to joke.”

Other problems were late arrivals by learners, and large groups of learners causing overcrowding in the classrooms. Some learners, for example in the Information Technology classes, have dropped out owing to not getting enough access to practising on the computers.

Most students felt that they could not implement disciplinary strategies, while two members said that they tried to embarrass latecomers by seating them in the front of the class and picking on them to answer questions. They said that such actions have stopped late coming. SCIENSCO have implemented an evaluation strategy which they described as requesting written feedback from learners about their suggestions for improving the lessons. The members confirmed that as Vista Science students they had never been asked for feedback by their lecturers. They often felt afraid to respond verbally in class and to ask questions for reasons such as shyness, avoidance of embarrassment, and fear of being exposed as “stupid” because of not being well prepared for the lecture. One member added that students try to avoid ridicule from lecturers and fellow students, but the rest of the group disagreed that their

lecturers had ridiculed them before. Lecturers, according to them, dealt with students' late coming by either locking the doors of the lecture halls or refusing entry to latecomers.

The group agreed that their own experiences as Vista students were possibly similar to those of their Saturday learners. For example they shared a fear of participation and embarrassment, and the Science students saw their Vista lecturers and their school teachers as authority figures, but their Vista tutors were not accorded similar respect when the members had attended the Saturday classes while they were still at school. As school learners and initially as Vista students they preferred the instructional mode of teaching, but added that they have now reached a stage of development where they have learnt to take more responsibility for their own learning.

The group members felt that they were not in a position to initiate solutions to the problem linked to overcrowding in their Saturday classes. The members were non-committal about working on and implementing a plan to find solutions. SCIENSCO mentioned that they were attempting to acquire an extra venue for computer classes, and have recently approached the head and the sub-head of the Science Faculty in this regard. However, they were not hopeful that the problem could be resolved in the near future. Members agreed that if SCIENSCO had been given "more formal status" by the Science Faculty and their activities given "recognition", then they could have had access to more venues for example.

The group members did not agree with the suggestion that they reduce the numbers of learners per class because of its financial implications for the current tutors. It would mean involving extra tutors, which would create a reduction in earnings.

Consultation with supervisor – May 22, 2003

The consultation was arranged in order to share the information that had been gathered from the recent meetings with SCIENSCO. Our discussion evolved into contextualising the responses from SCIENSCO in terms of quality in teaching and learning. For example, a question from my supervisor was "What is affecting or influencing the learning in the Saturday classes?" The question made me think about the links between the mode of teaching

used by the Science tutors. I thought about how their teaching approaches were connected to their own experiences as learners. Their perceptions of lecturers as power figures appeared to be related to their perception of themselves as powerless (and being disrespected by their learners) and such perceptions possibly matched those of the school learners attending the Saturday classes.

My supervisor emphasised the point, “You are not doing the changing”, reminding me that I was not responsible for possible changes in the way SCIENSCO operated, and that I should see myself as an observer.

Meeting with chairperson - May 29, 2003

The visit to the SCIENSCO office was unannounced. The purpose of the visit was to follow-up on a telephonic request I had made to SCIENSCO that I intended doing a survey of their Saturday class learners. The chairperson informed me that he had not been informed about my request but that he would find out whether the executive had discussed the matter. When I asked about their visit to SA Breweries the day before, he instead responded that “SCIENSCO had a meeting, which was bad, very bad. There were some arguments, guys having a go at each other.” The meeting he referred to had been chaired by the deputy chairperson in the absence of the chairperson. The chairperson also informed me that he had not accompanied SCIENSCO on their visit to SA Breweries. He was hesitant about giving me details about the meeting, implying that he would rather not discuss what transpired at the meeting.

I informed the chairperson that I had observed a change in his commitment to SCIENSCO, and he confirmed that it was the threat of deregistration that was “affecting [his] role and [his] status”. He added, “It is affecting me emotionally. I am not performing my duties as I should.” He described his ‘withdrawal’ as “not official” and he did not want to discuss it with the SCIENSCO executive because his problem was personal.

Meeting with chairperson – May 30, 2003

I needed feedback about my reminder to SCIENSCO that I was intending to survey their Saturday classes on 31 May 2003. The chairperson informed me that SCIENSCO had

accepted that my intention was to conduct a survey about the learners' experiences in the Saturday classes. He also confirmed that he had met with the sub-head of the Science Faculty (after I had reminded him on two occasions in the past) to discuss the de-registration problem facing him as a student. He found the consultation helpful in that he was "feeling less stressed", although the uncertainty about being deregistered remained. He stated that "[he] would have been in a worse position by now, and more de-motivated" if he had not met with the sub-head.

The chairperson requested my assistance to make copies of SCIENSCO's financial report. He agreed that I could keep a copy after I requested one, and he reminded me of its confidentiality. I told him that I would seek his or SCIENSCO's permission if I wanted to share information about the financial report with someone, or if I wanted to include it in the research report.

Survey with Saturday class learners – May 31, 2003

Thirteen learners were interviewed. Of these seven were females. Four of them were 17 years of age, two were 18 years old, and one was 20 years old. Six were in Grade 12 and the others in Grade 11. Of the six males three were 17 years old, two were 18 years old and one was 16 years old. Five of the males were in Grade 11 and one in Grade 12. The main questions put to them were:

"What are you satisfied with regarding attending Saturday classes?"

"What problems have you experienced?"

"If there were problems, how have they been resolved?"

Survey Responses

Generally the respondents expressed satisfactory experiences regarding their attendance.

Some of the comments were:

"We enjoy coming because we learn so much."

"It is different to school and we find Maths easier now."

"I like coming because I learn more than at school."

"I like coming because the environment is different, and the teachers here are more

approachable and show more interest in us.”

“I like the teachers. They can speak our language (isiXhosa).”

“At school I am afraid to ask questions. Here you can ask questions because the teachers are younger and more approachable.”

The complaints consisted of experiencing problems with one of the tutors who was accused of “spending too little time teaching and too much time just talking (having conversations) with certain learners.” This tutor was also accused of occasionally being absent. (The problem has not been resolved and the tutor for the specific subject is the third one they have had for the year).

Another problem was that learners from different schools expected the tutors to focus on different areas of the syllabus according to what was emphasised by their school teachers, as well as what was neglected by their teachers. The learners indicated that this problem has not been discussed with their tutors. The implication was that the different groups of learners had different needs and expectations regarding the work that they wanted to be covered.

A general complaint was that some of the classes were overcrowded, and that their time spent on computers was too short. Although some agreed that the tutors were aware of the problem, they also acknowledged that they as learners have not complained to the tutors.

Two of the female respondents were from Model C schools, and both commented that in the beginning they felt marginalised. They described it as, “ We were not feeling accepted and there were attitude problems between us and learners from the township schools”. These problems were resolved when “They (the ‘township school’ learners) found out we were not arrogant and that we also wanted to learn.” The two also felt that it was a positive experience for them to be able to communicate in their mother tongue during the lessons.

Consultation with Supervisor – June 3, 2003

The consultation with my Supervisor consisted of clarifying what my approach could be when I next had to meet with SCIENSCO. I wanted to find out from him how I could elicit their ideas regarding what has transpired so far during my involvement with SCIENSCO, in

relation to what our initial aims were when we started out. My supervisor and I agreed that I could refer to the agreement I had with SCIENSCO, which was that we wanted to collaborate on a research project that dealt with their experiences as Science students. We also wanted to discover what we could learn as a group about using an action research approach as a vehicle for teaching and learning. I agreed with my Supervisor that the focus could shift to finding out what changes had occurred with regard to their learning. As a group we could explore what we had learnt about relationships in terms of power and empowerment; whether there has been a change in awareness (“Do they think differently from before?”); whether the CCFO’s were explored in our group sessions and how they were experienced. The follow-up sessions were to become “wrapping up sessions, to take stock” owing to the looming academic exams.

The next session, for the purpose of reflecting and evaluating what had been achieved thus far, was going to start with me providing a statement about the task SCIENSCO and I had agreed to. The statement was, “We had started off by agreeing to collaborate, in order to see how my and SCIENSCO’s involvement could play a role in our learning in terms of the CCFO’s.” I wanted to know what we have learnt so far and what has changed.

July 2003 to August 2003: Summary of evaluation feedback in terms of some CCFO categories, and collaboration

The following section is an overview of the data gathered during the research process as well as follow-up sessions that were used for evaluating the whole collaborative process. The reflections and writing of this information during this period also coincided with the process of me developing a better understanding of the possibility for categorising changes, which SCIENSCO and I had experienced during the study, in terms of CCFOs such as teamwork, community links, and critical awareness for example, and the themes based on the findings.

The changes during the research process, as identified by SCIENSCO members, included becoming more aware and more observant of their university context; more aware of how reflection and experience could be utilised to effect change for the individual and the organisation; developing confidence; building trust; awareness of alternative learning contexts; becoming more comfortable with the research process; reduction in perceptions of

entitlement; developing more self-directed approaches to their activities; awareness of the systemic links and systemic possibilities for their activities; recognising the credibility of their own views, and increasing willingness to voice different opinions; changing their general perception that lecturers were not supportive; and recognising that they bring skills acquired in their cultural, community and school contexts which may previously have been seen as deficits.

One of the SCIENSCO executive members mentioned that the group had become more observant about the issues that could affect students. The group members felt that they had gained a better understanding of how they could represent Science students and that they could liaise better with lecturers to resolve some of the Science students' complaints. The group members reported that through being exposed to reflection on and evaluation of their activities, such as their tutoring and their meeting procedures, they were able to change some of their past practices in these domains. For example, they recognised that they had been using authoritative teaching styles to enforce discipline prior to the study. Their awareness then allowed them to change their actions towards working more collaboratively with the Grade 11 and Grade 12 students. I also observed that more members were given opportunities to chair meetings, which they said developed their leadership skills. The members spoke of their increasing confidence when they realised that they had successfully organised the Awards ceremony, and had set up a meeting with the Dean of the Science Faculty.

Some of the group members reported an improvement in the organisation, based on the development of trust amongst SCIENSCO's members. The trust that developed had allowed more members to start expressing their views and certain members felt that they did not have to feel intimidated because they were less senior or because they did not have the same experience as the senior members. The trust that developed also meant that members became more comfortable with the research process and with my presence. We, as a group, came to see the research process as a means of practically learning how to deal with organisational problems, and a method for developing leadership, research, and communication skills simultaneously. Another change that was identified by the group members was the realisation that they could not just assume that they should get support from staff and students. The group

members felt that they could raise awareness of SCIENSCO's role through involving science students more directly, and approaching lecturers directly for support. Obtaining support seems to be an important dynamic in learning or change.

I experienced improvement in my level of confidence and a reduction in anxiety about doing research. When I understood that I did not have to take sole responsibility to get the research process moving, and that I did not have to impose on SCIENSCO what I had initially considered to be the focus of our research, I became more relaxed and also more comfortable with the research process. I also became more comfortable when I started seeing action research as activity that provided opportunities for experiential and action learning. I gained a better understanding of an alternative learning context, similar to that experienced by SCIENSCO, by sharing and discussing personal learning experiences.

At the start of the research process I was more concerned about whether I could elicit information from the students, which I viewed as the main source for gathering data. It took a while to also focus on the learning we were experiencing through the research process itself. The students, in the latter evaluation sessions, remarked on how the process helped them develop their observational skills. They referred to becoming more aware of student issues and the campus environment, with the view to investigating areas where they could play an activist role on behalf of the students. They also referred to feeling more equipped to do research and evaluation as a student society wanting to improve their own organisation.

Through action research we were able to reflect on, and evaluate, our experiences of the academic settings and certain elements of their curricula. We became aware of what the critical cross-field outcomes meant through what we had experienced in class and with SCIENSCO, and reflected critically on the local relevance of the critical cross-field outcomes for us. The group members identified critical cross-field outcomes as most relevant for their needs, and were able to connect examples from their experience with critical cross-field outcomes in the South African Qualifications Authority documents. They concluded that the outcomes were experienced and had been developed within SCIENSCO rather than in the academic setting. One member's comment, when we conducted our final evaluation and

reflected on the accuracy of my observations, again confirmed what was said on a number of occasions in the beginning of the research, that they were “not exposed to the critical outcomes in the classroom”. By then the group members had developed an increased awareness of the critical cross-field outcomes and what they meant for them in their context of being SCIENSCO members.

Teamwork

The SCIENSCO members agreed that their teamwork was not satisfactory, although they later identified some improvement in that regard. They experienced difficulties arising from their perceptions of the different executive roles. Their organisation was hierarchically structured, with the chairperson, the members and myself expecting the chairperson to be the leader who gave direction and who would take charge. The chairperson agreed that his role required taking most of the responsibility and that he often had to take decisions because of a lack of input from others. The general feeling from the SCIENSCO members was that members may have felt inadequate and lacking in confidence, and treated the leaders as authority figures that they expected to lead the process.

Lack of understanding about delegating tasks and communication problems were perceived by the group as affecting teamwork negatively. Group members explained that delegation of work was perceived as undermining the person being asked to perform a task, and as underestimating a person's ability to perform a task. The deputy chairperson explained that if a colleague were requested to perform a task, the colleague would be hesitant because he or she would feel that the task was menial or that the person with a “higher position” could have carried it out without needing to delegate. To me it was as if the one vested with power was expected to deliver independently and then to be judged accordingly. This contributed to avoidance of sharing duties or tasks. These difficulties were accompanied by communication barriers. For example when instructions, from the SCIENSCO leadership, were given to SCIENSCO committee members to perform certain tasks that were part of their portfolio, there was a problem with following up on whether the task was completed, and a problem with getting feedback about the task. Other examples included the evaluation that was supposed to be done by one of the SCIENSCO executive members with the Saturday classes, and when I had to be invited to some of their

activities. One reason given by the chairperson and his deputy why the members tasked with these duties were not asked for feedback was that they would feel undermined. Another example of communication problems was when the chairperson, who was absent from one of the discussion sessions, informed me, when I enquired, that he had not been given feedback nor been told about the topic of our discussions by the members who were present.

Towards the latter stages of the research process the smaller group of the SCIENSCO executive committee felt that there was an improvement in getting tasks done when fewer executive members were active and the co-opted members were no longer actively involved. The six remaining members, because of the pending election of a new executive, felt they did not have to rely for assistance on others, “therefore the work gets done”.

During the evaluation the group agreed that SCIENSCO had contributed to improving their teamwork. One member summarised the general view by stating that “in class we work for ourselves as individuals, and we are not exposed to working for the group”. They said that they had recognised the change in their organisation that had come about as trust developed amongst the different members over the last few months of the research project. This led to them deciding to have a “disciplinary hearing”, which I did not attend, after some members were allegedly insubordinate in one of their meetings. The situation arose during the period when the chairperson was less active owing to his being affected by the de-registration process. I reflected that the tensions brought about by the threat of de-registration during this period might have influenced the “crisis in the organisation” as they described it. They decided to approach the sub-head of the Science Faculty to discuss some of the difficulties they were experiencing in their organisation. He then contacted me with their consent, as student counsellor, to organise a training workshop dealing with ‘role division’, functions of these roles, and devising strategies for effective communication within the organisation.

The changes in teamwork were also reflected in more members contributing ideas and views. They saw this as progress, where the less confident members were prepared now to risk after trust had been built, and there was a change in perception that they could be more active in participating in decision-making, instead of passively accepting decisions made on their

behalf by the chairperson and other leaders for example. They started realising that the process could be more democratic, which they said they preferred. They also agreed that by the chairperson allowing others to chair meetings they could develop their own leadership skills and gain confidence about taking on a leadership role. This helped to change the idea of leaders being authoritarian figures and enhanced collaboration within SCIENSCO.

My communication links with SCIENSCO expanded to include all the members of the group. I became more comfortable speaking to them as a group and individually, even outside of our arranged sessions. The least talkative members became more comfortable and more responsive during conversation, and two of them had also approached me on a number of occasions to seek career guidance and to discuss concerns unrelated to the research. I stopped feeling that I was intruding or that I was usurping the chairperson's power. I also sensed that the chairperson became more comfortable and less threatened with us as a group reflecting on ourselves.

The members also agreed that the action research process had provided them with knowledge and experience of a model they could use to enhance their collaboration, teamwork, and inclusivity in other contexts.

Community links

Although SCIENSCO viewed itself as a student society representing mainly the science students on the campus, they felt that they had not been as effective as they would have wished to be. They often spoke of their wish to recruit more students, and had not done so adequately in the past. Our discussions revolved around marketing strategies such as presenting or organising activities, which students would find useful, presented in a way that would lead them to identify with the work that SCIENSCO was doing. In my experience student societies on campus had small numbers of active participants, and they appeared to cater mainly for the interests of a small group of students. Some of the current members mentioned the role that SCIENSCO had played in helping them to adjust to the university environment. They also benefited from the relationships and friendships in SCIENSCO, which they found supportive of their academic activities as it made it possible to consult with the

more senior students who could give valuable advice.

The general perception of SCIENSCO members was that compared to the political organisations on campus, SCIENSCO was less privileged. The members felt that as an academic society it should have been getting more support from the University management and the SRC because of the student interests that they served. They also felt that the Science Faculty could have been more supportive by providing them with additional training and development opportunities. That would have prepared them better to play a more effective role in representing students within the Science Faculty, and have kept them better informed about academic matters pertaining to students.

When they did involve staff in their activities, such as the SCIENSCO Awards Ceremony, they felt their effort was legitimised and that it raised their profile amongst other science students. They described the main purpose of the Awards Ceremony as serving as an incentive to Science students. At the same time it also served as a marketing exercise because more students became aware of SCIENSCO's existence, and witnessed the link between SCIENSCO and the Science lecturers that attended the event.

My involvement with SCIENSCO made me feel closer to a student community than I had in the past. Although I still feel that I was not as involved with them as I had hoped, I became more relaxed and was able to interact with them on an informal basis more than I had with other students in the past. Many of the informal conversations gave me a better understanding of their concerns and contexts.

One of SCIENSCO's roles was providing a link with their own community contexts. That link was established through their active involvement in Science education for Grade 11 and Grade 12 students from their communities. They described their own experiences when they were high school students also attending similar Saturday classes at the University as positive. One member stated, "It helped me a lot" and another said, "When I came to Vista I already knew something about it [Vista University] and I did not feel so worried". The implication is that they became familiar with the physical structure of the University by attending Saturday

classes, which helped them to acclimatise and adjust to, and not to feel intimidated by, the previously unfamiliar university context. They perceived other students as feeling intimidated and having difficulty adjusting if they have not been on campus before.

Another of SCIENSCO's roles was marketing the university, and one way of doing this was through tutoring the Grade 11 and 12 students from the surrounding communities. Based on their experience, many of the students that they tutored proceeded to register at the University. The SCIENSCO members also saw themselves as role models and mentors in their communities.

As I reflected on the link between SCIENSCO members and those students, I also wondered about the possible similarities and differences between their practices as tutors and the teaching styles of their lecturers. Generally their students were satisfied with their tutoring. The language and communication of the tutors in the classes were described as positive experiences by the Model C school students and others, and they experienced that as an advantage compared to their experiences of being taught in school. For the Model C school students it meant a different experience to be taught in their mother tongue, which is isiXhosa.

The only negative experience mentioned by some of the Saturday learners was that they were expecting to be taught by adult teachers but discovered that they were to be taught by young students. That matches the comments made by some of the SCIENSCO members who had mentioned similar personal experiences in the past when they attended Saturday classes provided by the Vista students.

My reflection about the similarities and differences between the Vista students' tutoring and the Vista lecturers' tutoring, as mentioned in a previous section, was about the students modelling their tutoring practices on those of their high school teachers and their lecturers. Yet the major style was a repetition of the instructional mode and teacher as expert role. The SCIENSCO Mathematics tutor was unanimously described by the SCIENSCO members as effective, and he later explained that his interaction, which was about "involving the students and not embarrassing them", and his caring and respectful demeanour, were possible reasons

for the learners enjoying his classes. He was referring to his behaviour towards the Grade 11 and Grade 12 learners in the classroom, which made them feel comfortable with him.

In some of our collaborative discussions I related their work to community service learning. We arrived at that after we had been reflecting on their experiences and what they were learning from those experiences that matched certain aims of community service learning. The difference is that community service learning forms part of curricula, but in the University's it was not recognised as service learning. Important in this regard is that in the beginning of our research students bemoaned the lack of recognition and non-accreditation of their tutoring.

Other than reading about learning communities, I became more aware of what is meant by a learning community in an informal context through the action research process. I also became more open to seeing opportunities for my own learning with and through others than in the past. In the past I knew that I had learned from others but was less conscious of it at that time, and less willing and less 'directed' towards the goal of co-operative, collaborative learning that simultaneously included action and research by all participants.

The group members said that as they developed trust in one another, they were able to contribute more freely and to take risks during discussions. This helped them to understand better what other members' views were, and they discovered that they could disagree. In previous situations tensions arose because of uncertainty about what others were thinking, or because others were not contributing but were unhappy about certain decisions. The members also agreed that the action research process contributed to their learning through reflection and evaluation as a group. They became more comfortable with reflecting critically on what they perceived as problem areas that needed to be improved, such as communication, delegation, marketing the society, networking, organising the Saturday classes more effectively, and strengthening links with the Science Faculty.

Feelings and engagement

In the beginning, when the members reflected on their formal classroom experiences, they mentioned their lack of engagement or lack of interaction with lecturers. Initially this was

described as “lecturers ...not involving us actively”. After further reflection they mentioned their avoidance of opportunities for interacting in class discussions or for answering or asking questions. They reported that feelings of apprehension about being embarrassed, about “looking stupid”, about lacking confidence to communicate in English, and about not wanting to show that they have not prepared for the lecture as possible reasons for their lack of participation.

The SCIENSCO members later also learnt that, as tutors, they were possibly contributing to their own learners’ lack of engagement because many of them used “embarrassing the student” as a strategy to try to implement classroom control and discipline. The SCIENSCO tutors reported that such strategies, although not common in their own experience at the University, were modelled on lecturers’ approaches. They felt that fear was often a coercive force. The members said that they were scared of arriving late for certain lecturers’ classes because the lecturer would cause them to be embarrassed. The members would then decide to rather stay away from class even when only a few minutes late. They also related their fear of being seen as stupid or unprepared if they should ask a question in class. The majority of the group said that they felt more comfortable approaching their lecturers outside of lectures to consult them about their academic queries. They also reported that generally they did not engage with their lecturers about their more personal concerns, saying that they “do not have such a kind of relationship”. However, their experience with the sub-head of the Science Faculty brought about some change in that regard. For example, through involving him in their activities he also became more involved in offering support regarding personal concerns. He had tried to assist some students threatened with de-registration, and had invited them to consult with him. Some of them had consulted with him, while others still felt awkward, but were considering consulting him in future. The awkwardness was also related to embarrassment about their financial constraints and admitting their financial predicament.

During the de-registration process I also observed de-motivation and the feelings of being demoralised amongst the members in SCIENSCO. Members spoke of their personal anxieties about possible de-registration having affected their feelings of commitment to SCIENSCO activities. I also experienced anxiety about my not being in their situation, and wondering how

this threat, of de-registration, influenced their perception of my status as a staff member.

For a while SCIENSCO was hampered in its work because of the effects of the de-registration process on some of their leaders, which impacted on the effective functioning of the organisation. SCIENSCO had to respond to the crisis by finding replacements for those who were going to be de-registered, and these changes for which they were unprepared, brought about a transition that was accompanied by tensions in the organisation.

After I had reflected on possible reasons for a subsequent disciplinary hearing involving certain SCIENSCO members, one of the leadership agreed that the alleged insubordination and lack of appropriate meeting protocol and behaviour may have arisen due to the structural and management changes in SCIENSCO. These may have led to “negative behaviour and attitudes”. Although there was reluctance to talk about the details of the disciplinary hearing, I sensed that relationships became strained amongst certain members. It was also confirmed by SCIENSCO members that this matter was discussed with the Faculty sub-head, who then requested that I facilitate a workshop about meeting procedures and portfolio functions. My view was that the affective issues surrounding the problem should have been dealt with in such a workshop as well. In my planning discussions with the new chairperson I suggested a more inclusive and democratic approach that could include the group members in deciding who, what and how functions would be performed. He also agreed that the action research approach we had been using that included dealing with the affective issues around this matter, that may have resulted in the transitional problems, be used (That workshop had not been facilitated at the time of writing this report).

Critical awareness and learning from experience

The action research process served as an experiential learning context. The action research itself allowed for the utilisation of the different cycles of action research, which helped develop the observational and reflection skills of the group members and myself. The research process provided concrete and practical experience in reflecting and observing what was happening, discussing our proposed actions based on our preceding observations and reflections and then again observing and reflecting on the consequences of our implemented

actions. We were constantly exposed to situations that required problems to be solved. The group members commented on the awareness that they had developed during the research process. This included awareness of how they had been relating to one another within SCIENSCO. Their relationships with SCIENSCO members had changed in terms of developing more trust, and the changing relationships had improved their communication and contributed to them “gaining more understanding and insight” about each other’s views and about their lecturers. One member commented that they had “developed an advantage in that [they] have become more observant about what is happening on campus” because of the research experience gained.

Another element that we became more critically aware of was the ecosystemic network on campus, and how it influenced problem-solving and support. Although I had an idea of the systems operating on campus, I had, for the first time, experienced ways in which the Science Faculty could offer assistance to a student society. I had also gained some insight into the difficulties in working with a student society from the perspective of the Science Faculty. The Science Faculty sub-head explained how their lack of human resources affected their work in terms of not being able to involve students in meaningful evaluation of the Faculty for example. I also became more aware of the need for students to take some responsibility in approaching lecturers if support was needed, and not merely to assume or expect that lecturers should be aware of student needs. I also reflected on the possibility that the Science Faculty could collaborate with SCIENSCO to develop strategies to train SCIENSCO regarding their representative role within the Faculty, and that such involvement could be developed by students initiating contact with the sub-head and certain lecturers as happened with the SCIENSCO awards ceremony. Such initial contact contributed to mutual trust and awareness of other perspectives (such as lecturers not necessarily having been disinterested, but as not having been sufficiently aware of SCIENSCO’s existence and their student activities).

The group also reported an increased awareness for improving their representative role at Faculty meetings that would require more preparation to increase their awareness of curriculum issues, which, in turn, would require more informed feedback to, by or from students.

Part of our critical reflection, in terms of learning from experience, was to evaluate our student and tutoring roles in the context of community and societal needs, which are related to the stipulated critical cross-field outcomes. The aim for us was to develop critical awareness of the political and the social contexts of these prescribed outcomes. Through critical reflection the members for example realised that they could have been perpetuating undemocratic practices both within SCIENSCO and in their role as tutors. Earlier in the research process they mentioned that their main needs, as future graduates, were to develop job related or vocational skills. It appeared that at the time they were expecting that such development and training should occur in an adjunct way, and it appeared that they did not look at their needs in a systemic way. In other words, their need for job skills was individualistic, while the stipulated critical cross-field outcomes are related to what can be described as societal needs, as defined by the Department of Education. The process of reflection therefore also included looking at the political and socio-economic contexts in which we operated. It is within this context that the members concluded that the critical outcomes were relevant, and they could acknowledge that their being Science students could contribute to the response for prioritising Science as an aspect of societal needs. That was congruent with the focus on the Science, Engineering and Technology needs of the country. During our collaborative group work a shift occurred from viewing their job-related needs, which are similar to elements of the critical outcomes, in isolation, to a view that included the broader ecosystemic context in which their curricula fit. We could then discuss their tutoring role for example as having a community service component and an entrepreneurship component. During the initial phases of our research they saw the tutoring and Saturday classes mainly as a source of a small income for them as tutors, and expressed their need to receive recognition from the Science Faculty and University Management for marketing the University to prospective students. During the latter phases of the research the SCIENSCO members identified the development opportunities, in terms of the critical outcomes, that they were exposed to such as developing teamwork and leadership skills as part of their SCIENSCO projects.