Research Portfolio

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ABSTRACT

This portfolio of work represents three research projects on issues related to teacher education. The research was undertaken at Dr. W.B. Rubusana College of education over a period of 2 years.

The first project is a situational analysis that attempts to determine whether the college is capable of meeting the challenges placed on it by the evolving South African Educational System. The key finding is that the college is not ready to embark on the changes required by the Ministry of Education chiefly because its educators and learners are seemingly not ready to embrace change.

The second project is a case study that attempts to determine whether a group of 12 Senior Primary students at the college are able to interpret photographs of the local environment and as such provide evidence of their ability to be environmental educators through the medium of geography. The findings indicate that they are only able to read the photographs at a very superficial level. Their poor communication skills and their disadvantaged backgrounds seem to prevent them from achieving the level of thinking required for them to be effective environmental educators.

The third project describes, analyses and evaluates a fieldwork study done with a class of Senior Primary students at the college. While the students did not achieve the necessary progression from 'look and see' to 'enquiry based' fieldwork the project was valuable in that it was an educative experience for both teacher and learner and provides evidence of the value of action research and reflective teaching.

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CONTENTS

A SITUATIONAL ANALYSIS OF DR. W.B. RUBUSANA COLLEGE OF EDUCATION, TO EVALUATE ITS RECEPTIVENESS TO EDUCATIONAL TRANSFORMATION, OUTCOMES BASED EDUCATION AND CURRICULUM 2005

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INTRODUCTION

This report offers a situational analysis of Dr W.B. Rubusana College of Education. The college is located in Mdantsane, a township and satellite city of East London in the Eastern Province of South Africa. It was established in 1976 under the auspices of the then Department of Education and Training (DET) to train black students as primary and secondary teachers. Today, despite the end to racially segregated education departments, the college remains very much a township institution, having undergone little change in its racial composition or its educational philosophy.

I have been a lecturer at the college since 1991, teaching geography method and content to senior primary and secondary pre-service teachers. I have become thoroughly involved in the affairs of the college and its Mdantsane environment, serving on the college senate and as a SADTU site representative for the lecturing staff. I have also spent up to 7 weeks of each year visiting our students during their periods of teaching practice at various schools in the vicinity. My involvement has made me aware of the problems facing both the college and the larger environment of which it is part. Education in this region has, it appears, still to escape the legacy of the recent past, when black education was at the heart of the political struggle (Morrow, 1996). Despite the enormous changes that have taken place in South Africa since 1994, conflict in educational institutions and poor attitudes towards education still prevail in the region.

This is the context in which the college is facing the task of transforming itself in accordance with the post-1994 educational changes associated with Outcomes Based Education (OBE) and as proposed in Curriculum 2005. In this report I investigate the extent to which the college is ready for change, describing, analysing and evaluating it from historical, biophysical and human perspectives. I hope to identify those factors that appear to support or impede the transformation process at the college.

Because this study is concerned with understanding the complex and interrelated social realities which affect the college, I decided to work within the interpretive paradigm. As a member of staff I am a part of the college and therefore a part of the process of transformation. As such, I would find it difficult to distance myself from the study and could not hope to provide an objective, value-free account of the college. The interpretive paradigm recognises subjectivity

and values as essential elements of understanding (Schwandt, 1994). Nevertheless, in order to minimise subjectivity and investigator bias, I decided to triangulate data from multiple sources, including *in situ* observations, questionnaires, interviews and document analysis.

The aims of the study

The aim of this study is to investigate the extent to which Dr W.B. Rubusana College of Education is ready for the kind of transformation advocated by the Outcomes Based Educational model adopted in South Africa. In seeking to illuminate and understand the process of change, I focus on the following questions:

- Is the college ready to change the theory that informs practice?
- Do the college lecturers understand the 'new' theory underpinning OBE and Curriculum 2005?
- Has the college's history affected its ability to change?
- Is the biophysical environment conducive to change?
- Are lecturers and students prepared and willing to undergo a process of transformation that will challenge their current teaching strategies and their relationships with their learners and fellow educators?

In an attempt to answer these questions and in the process gain a broad understanding of the college, I will describe, analyse and evaluate it in terms of its historical and current context, and its physical and human resources.

The report is structured as follows: first, I explain and justify the methodology used and describe how data was collected. The findings of the study are then presented and analysed. This is followed by a conclusion and recommendations.

RESEARCH PARADIGM / METHODOLOGY

This is an empirical study in that it relies on the direct observation of a specific case in its natural setting. It is therefore a case study within the interpretive paradigm. A case study is a research project in which an individual unit (e.g. a class or a school, in this instance Dr W.B. Rubusana

College of Education) is observed (Cohen & Manion, 1994; Yin, 1989). Understanding the individual unit rather than the larger environment is central to a case study (Stake, 1995).

In this research I attempt to understand whether Dr W.B. Rubusana College of Education is ready to embark on the sort of change envisaged by OBE and Curriculum 2005. According to Cantrell (1993:87), "the complex nature of education – entangled in interrelationships, replete with social, political, and economic context, and laden with values – demands that an alternative paradigm [to positivism] drive educational research". It is claimed that the interpretive paradigm is one such alternative, its aim being to explore and develop understanding in its broadest sense and to interpret meaning within the social and cultural context of the natural setting (Cohen & Manion, 1994; Cantrell, 1993; Yin, 1989). Understanding the complex and interrelated social realities that mould the college requires a holistic approach, which again points to the interpretive paradigm as the most appropriate. Contrary to the objectivity of positivism, the interpretive paradigm seeks the subjective perceptions of individuals, for which the researcher has to "interact dialogically with the participants. Within this interrelationship, values cannot be sidestepped" (Cantrell, 1993:84). As a researcher who is at the same time a member of staff, I interacted with the lecturers and students at the college in an attempt to analyse their feelings, attitudes, perceptions and knowledge about the college and the process of change currently underway. The interpretive paradigm also recognises the personal involvement of the researcher (Cohen & Manion, 1994). As an educator at the college I acknowledge that I am part of the college environment and part of the process of change, and would therefore be hard-pressed to distance myself from the research and provide an objective, value-free account of the college. In order to limit the investigator bias which is a possible drawback of the interpretive paradigm's valorisation of subjectivity, I have gathered data from different sources, including observations, questionnaires and interviews. According to Cohen and Manion (1994), the use of two or more sources of data results in "triangulation", which helps to counter subjectivity and increase the credibility of the study.

Data collection

I planned my research using a framework consisting of three stages suggested by Parlett & Hamilton (1976), namely:

- Observe

- Inquire further
- Seek to explain.

It is claimed that the three stages should overlap as well as interrelate and, more importantly, that each stage of the research should build on the previous stage (Parlett & Hamilton, 1976).

Working within this framework, data was collected as follows:

- *In situ* observations were made;
- Questionnaires were administered to a sample of staff and students at the college;
- Interviews were conducted with various stakeholders;
- Documents were read and analysed.

Each method of data collection is discussed in more detail in the following section.

Observation

Stake (1995) maintains that observation is the key to an investigative study, and observation has undoubtedly played a highly important role in this study. My observation of the college was more intense and structured during the couple of months in which I conducted the research, but my views are an accumulation of impressions gathered during the eight years that I have been on the staff of the college. According to Parlett and Hamilton (1976), observation does not consist simply of recording day-to-day activity over the research period; it also includes perspectives gained from interpersonal and work-related relationships. A variety of interrelated factors have influenced my perceptions of the college, including conversations with my colleagues and students, participating in social and formal functions, being present in the staff room, attending meetings, dealing with issues, observing students during teaching practice, and my background as a non-Xhosa speaker in an environment dominated by Xhosa speaking people. I was aware that my personal involvement in the college's affairs could cloud my judgement and influence my research. I tried to overcome the danger of personal bias and subjectivity by triangulating data sources and by remaining critically self-reflective throughout the research process.

Questionnaires

Two questionnaires were administered – one to a sample of lecturers, the other to a sample of students (see Appendix 1). The purpose of the questionnaires was to obtain both quantitative

information (e.g. concerning age and experience) and qualitative information (e.g. about attitudes and perceptions).

The sample of lecturers was chosen according to the different learning areas and diploma courses offered at the college, and it included some lecturers who were part of the college management. I saw this as being a fair representation of the college staff. Eleven of the 15 lecturers to whom the questionnaire was given answered and returned it to me.

Parlett and Hamilton (1976) maintain that one of the dangers of a questionnaire is that recipients might regard it as personally intrusive, and advise that from the outset the investigator needs to clarify his role, be open about the aims of the study and ensure that there are no misunderstandings about who will see the results. I found that some lecturers were reluctant to complete the questionnaire or to express their true feelings, which may indicate that I did not adequately allay their fears about the nature and confidentiality of the research. It is the view of Cohen and Manion (1994) that one of the advantages of the questionnaire is that it is more reliable because it is anonymous and therefore encourages greater honesty. But this was not my experience, possibly because of my involvement in distributing and collecting the questionnaires. Had I encouraged greater anonymity I might have received more open and honest responses. Often the successful completion and return of the questionnaire depended on my relationship with the respondents. Generally speaking, lecturers with whom I was better acquainted successfully completed and returned the questionnaire, implying that they trusted me, while lecturers with whom I was not as well acquainted were seemingly unsure of my motives and reluctant to commit themselves. Furthermore, my questionnaire proved too long and this in itself seemed to daunt the lecturers. I should have designed a more concise questionnaire.

The student sample was also selected according to the different learning areas and diploma courses offered at the college. Twenty-one students completed and returned the questionnaire, which again turned out to be far too long. While students were not unwilling to complete the questionnaire, they seemed to rush through it, trying to finish it as quickly as possible. As a result, the questions were often poorly answered. Some students struggled to understand the questions and express themselves in English. Newman (1997) suggests that extra care should be taken with questionnaires if the respondents are heterogeneous or come from life situations

different from that of the researcher. Given that the students were non-mother tongue English speakers and that their backgrounds were very different from mine, I should have given more attention to the design of the questionnaire and the way in which I framed the questions.

Tabulated summaries of the findings of the two questionnaires are shown in Tables 2, 3, 4, 5, 6 and 7.

Interviews

I conducted four interviews, one with the first rector of the college in an attempt to gain historical perspective, two with college lecturers and one with a group of 4 students. The interviews were conducted in order to extend and substantiate the findings of my observations and the questionnaires. According to Parlett and Hamilton (1976) interviews allow respondents to express their opinions and feelings more freely than in other comparable media. Parlett and Hamilton (1976) maintain that while brief structured interviews are convenient for obtaining biographical or factual information, more open-ended and discursive forms are suitable for less straightforward topics. Of the four interviews I conducted, the first was structured while the others were semi-structured to focussed (see Appendix 2).

The first interview was conducted with the Reverend Matabese, the first permanent rector of the college. I intended the interview to be chiefly a means of fact gathering (official records at the college being scanty), although I did on occasion ask more open-ended questions in order to elicit opinion. Reverend Matabese proved to be a willing participant with a wealth of information. His insights made the facts and their context come alive in a way that impersonal clerical records could never have done.

The other three interviews were conducted with lecturers and students at the college. Although the interviews were intended to be structured, in that they were designed using a schedule (Cohen and Manion, 1994), they did not turn out as planned because of the open-ended nature of the questions asked. Cohen and Manion (1994) cite Keringer's description of open-ended questions as those that supply a frame of reference for the respondent's answers but put minimum restraint on the answers and their expression. The open-ended questions that I asked resulted in deviation from the planned schedule, and thus the interviews became semi-structured

rather than structured. They also exhibited features of what Cohen and Manion (1994: 289) call focussed interviews, a distinctive feature of which is "the prior analysis by the researcher of the situation in which subjects have been involved". In this research my interview questions were formulated on the basis of the data I had collected from my observations and the questionnaires.

The second and third interviews were conducted with lecturers at the college. According to Parlett and Hamilton (1976), interviewees are usually selected randomly or by theoretical sampling (which implies seeking out informants who may have special insights). My choice of interviewees would approximate theoretical sampling as I chose one lecturer from the social sciences and one from the maths and science department. Owing to the problems experienced with the questionnaire and given that I was a novice researcher, I chose lecturers who were my friends. I thought that in all probability they would be willing respondents who trusted me, and who would therefore be more likely to express their ideas honestly and freely.

I have subsequently realised that choosing people who were my friends may have exacerbated the danger of researcher bias and increased the risk of my getting caught up in the political intrigues of the college (Parlett and Hamilton, 1976). However, Cohen and Manion (1994: 276) hold the view that an interview is a form of "social encounter", and as such all interviews are prone to subjectivity and bias on the part of the interviewer. It is my considered view that the advantages of choosing people with whom I was well acquainted ultimately outweighed the disadvantages. I believe I obtained rich data as a result of my decision to interview colleagues who were also my close friends.

The fourth interview was conducted with students at the college. Because of certain practical constraints, I decided to conduct a group interview with 4 students from the third-year Secondary Teachers Diploma class that I teach. I chose the sample according to their academic performance, assuming that students who performed better academically would have better insight into the changes taking place in education and the performance of the college in this respect. I asked each student whether they were willing to participate in the interview, as I wanted interviewees who were eager to participate and express their views; all of them indeed expressed their willingness. According to Hopkins (1993), group interviews are less intimidating for the interviewees, while Watts and Ebutt (as cited by Cohen and Manion, 1994) are of the

opinion that group interviews have the potential to develop into discussions and thus yield a wide range of responses. I found that the students participated openly in the interview but did not really get involved in lengthy discussions, which may be due to the fact that they are all non-mother tongue English speakers who struggled to express themselves in English.

I obtained the interviewees' consent to audio-record the interviews, which were then transcribed. I found this a time-consuming but valuable exercise because it forced me to listen very carefully to what had been said during the interviews. The transcripts were analysed in order to identify trends. According to Cohen and Manion (1994), the coding and scoring of open-ended questions is problematic and I decided not to attempt it; instead, I read and re-read the transcripts a number of times in order to identify themes that confirmed, contradicted or expanded on the insights I had gained from observations and the questionnaires.

Document analysis

In order to gather information on the location of the college, I studied a set of orthophoto maps and a topographic map of Mdantsane. I also made my Secondary Teachers' Diploma II class conduct a survey to establish where students lived in relation to the college (see Table 1). Records were limited, but I did find a list of primary and high schools in the Mdantsane district which gave me some indication of the extent of the college's student catchment potential.

With hindsight I realise that my data gathering was somewhat haphazard. I did not analyse the data collected during each stage of the research immediately after it had been gathered. I thus lacked focus and direction with respect to establishing what needed to be explored in more detail in the following stage (Yin, 1989; Parlett & Hamilton, 1976). For instance, I did not analyse the results of the questionnaire in sufficient depth before proceeding with the interviews, which resulted in the interviews being too long and lacking in focus. Had I analysed the responses to the questionnaires thoroughly prior to conducting the interviews, I would have been able to focus on specific areas, thereby avoiding a lot of unnecessary questions and saving myself a lot of time.

Data analysis also proved problematic in that my data gathering lacked structure and I accumulated vast amounts of data that were difficult to interpret and express in a meaningful

way. Parlett & Hamilton (1976: 95) warn us that one of the dangers of a questionnaire is the "mindless accumulation of uninterpretable data." If I had heeded the advice of Newman (1997) and piloted a draft questionnaire to detect problems with the formulation and sequencing of questions as well as with the length of the questionnaire, I might have avoided some of these problems.

THE FINDINGS OF THE STUDY

Historical overview

The interview conducted with Reverend Matabese revealed that Dr W.B. Rubusana College of Education started in 1976, when it was known as the Mdantsane Training College. It was originally located on the premises of Pagamile Lower Primary School in NU 1 (one of the 17 units that Mdantsane is divided into). A Mr Coghill was appointed acting principal in January 1976, and Reverend Matabese took over as permanent Rector of the college in September 1976. Rev. Matabese was responsible for naming the college after the prominent educationist and civil rights campaigner, Dr W.B. Rubusana. He was also responsible for the design of the current premises. He travelled the country, borrowing building plans from other institutions and fighting for a building that the people of Mdantsane could be proud of. The college eventually moved from Pagamile to its current site in NU 3 in June 1979.

Originally, the college only took students with a Junior Certificate and trained them to complete a Primary Teachers Certificate. According to Rev. Matabese, the college admitted students of a very low academic standard. Many of them had been out of school for 2 to 3 years, as they had not done well enough to be admitted to matric. This gave rise to the popular belief that a teacher's diploma was a lower qualification than a matriculation certificate. Rev. Matabese told me that the college was started with the aim of dealing with such students, who were poorly qualified with little prospects of employment.

Today the college offers Junior Primary, Senior Primary and Junior Secondary teacher diploma courses. The entrance requirements have increased, with students now needing a matric certificate with a Higher Grade E or Standard Grade D symbol for those subjects they intend

majoring in at the college.

According to Rev. Matabese, Dr W.B. Rubusana College started with 2 classes of students, numbering 70 in total. The college records show that student enrolment peaked in 1994 with 880 students and 60 staff members. The large enrolment in 1994 was due to mass action on the part of prospective students, who forced college administrators to admit anyone who qualified academically. This indirectly supports Rev. Matabese's view that students were obliged to study at the college because there were no other options in the immediate environment. This and other factors such as financial constraints, poor matriculation results and subject combinations, and a lack of employment opportunities in the township, forced school leavers to use the college as a gateway to better prospects.

At the time of this research (1998) there were 350 students and 56 members of staff. Numbers had dropped not because of a decline in demand for entrance into the college but because of a concerted effort by educational authorities to limit student numbers at teacher colleges. Generally speaking, student teachers were produced en mass: entrance requirements were low, very few of them failed as they were given numerous opportunities to pass through the provision of carry-over examinations. All this has undoubtedly had a negative impact on the educational standards of the region and will prove an obstacle to genuine change.

Rev. Matabese claimed that lecturers in his day were given a syllabus and told what to teach. The DET set the examinations and the examiners were all white, even though there were competent black teachers. The process of prescription and control was perpetuated up until 1996, when the DET was phased out. But according to my observations the effects continue to linger. Lecturers have not used the freedom granted them to design their own syllabi and set their own examinations, but are instead simply using the old DET syllabi and examinations – which in effect means that the education system remains unchanged.

Theory informing practice at the college

According to my observations, teaching and learning at the college is classroom based and teacher centred. Lecturers are transmitters of knowledge according to a fixed syllabus and students are generally passive receivers of this knowledge. In the classroom, lecturers mostly talk

and use the chalkboard to transmit information or refer to the textbook. On occasion they may give the students photocopied notes. Assessment techniques consist of tests, assignments and end-of-year examinations. Tests and examination questions mostly require students to memorise and regurgitate facts, while assignments are similar in that they tend to require students to transcribe facts from the textbook or a reference book. Generally speaking, teaching and assessment techniques do not require students to interpret information, think or apply their knowledge.

My observations are confirmed by the findings of the questionnaires, represented in Tables 6 and 7, below. These findings reveal that most teaching is confined to the classroom. The chalkboard is commonly the only teaching medium used and assessment techniques are generally limited to tests and examinations. The interviews also served to confirm my observation that students are generally passive recipients of knowledge presented by the lecturers.

According to Van Harmelen and Irwin (1995), this situation is common to many educational institutions in South Africa. This is not surprising, as education in the 20th century has been dominated by the paradigm of Positivism, which owes its lengthy tenure to its ideological kinship with science. The tremendous success of science has meant that positivism has dominated educational philosophy and theory and is extremely resilient to change (Aspin, 1995). Fundamental to the ideology of positivism is a view of knowledge as something external and independent of human beings. Only knowledge capable of standing up to scientific scrutiny has been acceptable: scientific statements have been seen as truth statements, value-free and measurable (Aspin, 1995). This means that attitudes and values or any other inner states have been avoided as they could not be empirically observed or measured (Van Harmelen, 1995).

This narrow view of knowledge – as consisting of unchanging facts which can be scientifically proved – has affected teaching practice. It has resulted in educators trying to extract the "right answer" from their learners (Combleth, 1987). Faith in the "truth" of this right answer has resulted in the transmission and memorization of facts becoming the most acceptable way of teaching and learning (Combleth, 1987). The teacher has become a mere transmitter of prescribed knowledge, the learner a mere receptacle; as Kincheloe and Steinberg (1993: 301) put it, "the role of the teacher is to take knowledge and insert it into the minds of the students." Van

Harmelen (1998a: 8) maintains that this view "leads to the situation where the teacher is the one 'who knows' and the learner is the 'one who does not have knowledge,'" creating an unhealthy power relationship where the teacher is in control as he/she has the knowledge. This has resulted in autocratic classrooms where teachers are expected to control their students so that they can fulfil their roles as transmitters of information (Kainan, 1996). Furthermore, the evaluation system requires the learner to memorise isolated bits and pieces of information as the evaluation process emphasises the retention of knowledge. According to Kincheloe and Steinberg (1993), this means that the learner is evaluated on the lowest level of thinking, the ability to memorise.

What is more, it was not enough that educators were told what to teach; they were also told how to teach. According to Van Harmelen (1995), the behaviourists used Bloom's educational objectives model to formulate laws laying down how knowledge could best be acquired, thus indicating their possession of a recipe to make schooling scientifically observable and measurable. Van Harmelen (1998b) points out that followers of the objectives model, which included most educators in the western world, believed that learning and teaching could be organised according to a fixed schedule of learning experiences (a curriculum). In this way it was possible to predict and control learning outcomes.

Laws governing educational practice and an unquestioning view of knowledge as value-free and absolute opened up the school curriculum and educational institutions as a medium for political control (Carr and Kemmis, 1986; Giroux, 1988). According to Morrow (1989) this has occurred in South Africa, where positivism not only colonised our education but was domesticated to suit the ideology of the former ruling party. Under the guise of Christian National Education (CNE) and later Fundamental Pedagogics (FP), education in South Africa was used to dominate, control and maintain the stratified and hierarchical status of South African society (Schoeman, 1995). Dr W.B. Rubusana college was a good example of separation, prescription and control. According to Rev. Matabese (interview 1) the physical structure of the college was good, but the facilities were poor in comparison to white colleges. The lecturers at the college were given a syllabus and told what to teach, the DET set the examinations and all the examiners were white, despite the fact that there were competent black teachers.

Not only has this system produced unthinking educators and learners who are ill prepared for a

changing world that requires innovative and flexible people, but it has also contrived to educate people according to what was perceived to be their fixed station in life. Mark Henning, director of the Independent Schools Council, summed up our past when he wrote: "for a minority the examinations have been the climax of 12 years of substantial, acceptable schooling, but for the majority they epitomise an irrelevant system dominated by gross disparity of provision" (1998:14).

Furthermore, according to Morrow (1996), resistance to apartheid education has politicised education in South Africa in a particularly virulent way. Resistance to education became a way of life for people in the 1970s and 1980s and has had a very real effect on classroom practice. Poor attendance amongst teachers and pupils, the bucking of any authority figure, violence and tyranny in many educational institutions, the prevalence of corruption and fraudulent practices in the schooling system, "pass one, pass all" slogans – these are some of the negative symptoms of resistance that are still with us, despite attempts to correct the imbalances of the past (Morrow 1996).

Goodson (1990) points out that the curriculum will reflect the history of the time and must therefore change with the times. CNE and FP reflected our apartheid history – an ideology of indoctrination and prescription designed by autocrats. Our country has moved towards democracy, so our curriculum should follow suit and become democratic. Outcomes-based education, purportedly underpinned by the paradigm of social constructivism, is our new educational ideology that, it is hoped, will shake off the shackles of positivism and try to rectify the tyranny of CNE and FP (Van Harmelen 1998c). The following are some of the envisaged changes according to the principles of OBE (Van Harmelen, 1998c):

- There will be a move away from the narrow objective view of knowledge as the ultimate truth – knowledge will be contested, provisional, and changing.
- Conceptual understanding will replace factual recall, with concepts, skills, values and attitudes being seen as equally important.
- Classrooms will alter radically as teachers and learners together engage in the construction of knowledge in a free and yet structured environment. The learner and the teacher will take equal responsibility for the learning process and its outcomes.

- The teacher will no longer be the main source of facts but rather a multifaceted facilitator of learning situations where the learner is an active participant.
- A wide variety of teaching media and assessment strategies will (or should) be used.
- It will be recognised that the classroom is not the only environment in which learning can or should take place.

Despite a common belief that positivism is outdated (Giroux, 1988), and the undeniable fact that South Africa needs educational change to match its new-found freedom and prepare its people for the future, change is not something that occurs automatically. It will have to be embraced by all educators, which will mean a paradigm shift, a fundamental change in the way we think.

In the next section I will look at whether the college has the physical resources to allow its educators and learners to embark on educational change according to OBE.

Bio-physical dimensions

From the orthophoto maps and topographic maps it appears that the college is well situated. Although its situation in NU 3 is not central, it is located in one of the most densely populated areas of Mdantsane. Table 1 (below) reveals that most students live close to the college: 252 out of 302 students sampled were living in Mdantsane.

Mdantsane Units 1 – 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Number of students (N = 302)	30	25	20	11	13	17	5	32	27	10	18	7	17	4	3	11	2	252

Table 1: ***Place of residence (students).***

Evidence from the orthophoto maps and Table 1 reveal that most students do not have vast distances to cover, living as they do within a 3km-radius of the college. The maximum distance they had to travel was approximately 10 kilometres. The taxi industry is well developed in Mdantsane and the college is only 1 kilometre from the Highway commercial area, which is the major taxi rank for Mdantsane. The college is bordered by tarred roads on two sides and is therefore accessible to students from all parts of Mdantsane and further afield. There is also a

railway station approximately 1,6 kilometres away, which means that the college is accessible from East London, King Williams Town and Berlin.

According to available records, Mdantsane has 25 high schools and 62 primary schools. This would seem to imply that the college has more than enough local candidates to draw on as well as substantial local employment opportunities for graduates. There is certainly an abundance of schools available for students to utilise for teaching practice. The college appears to be in an ideal position to play a positive role in the implementation of educational change. Current students could be trained to become agents of change in the surrounding schools, their progress assessed during their approximately 7 weeks per year of teaching practice and afterwards, when they become teachers in local schools. With its favourable location, the college could moreover become an in-service centre, offering resources, both physical and human, to the surrounding educational institutions.

The analysis of the orthophoto maps as well as my observations revealed that the college is situated on a ridge, away from low lying-land or any natural hazards, such as rivers which are prone to flooding. The area is not subject to extremes of temperature as it is approximately 20 km from the sea. The classrooms are aligned north to south, which moderates room temperatures, and all the buildings are well designed, with ceilings and asbestos roofing which afford a pleasant microclimate conducive to teaching and learning.

The college has far better resources than most of the surrounding schools. The physical size of the buildings means that the college structure dominates the surrounding area. There are 21 classrooms with 5 extra classrooms that were used as a pre-school. There is a hall with a stage, 2 demonstration rooms, a media centre, needlework room, art room, home economics room, computer room, chalk board room, a staff room-cum-board room, and 12 offices for the management. The grounds are approximately 1000 m^2 and contain a rugby field, 2 tennis courts, a basketball court and cricket nets. Other facilities include computers, overhead projectors, televisions, video and film projectors, a limited library with 2 computers linked to the Internet, and three photocopying machines for staff use. There are two vehicles available for excursions, and in the past the college has provided funds for the hire of busses for educational and social events. In stark contrast, Isithembiso, a high school situated 500 metres from the college, like

most schools in Mdantsane has no electricity and a telephone that rarely works. There are three lines of classrooms there, containing desks, chairs and a chalkboard only: in comparison to the college, the school seems naked. Comparatively well resourced, Dr W.B. Rubusana College has the facilities to become a resource centre for the surrounding educational institutions.

In the following section I describe the most important resource at the college, the lecturers and students who inhabit the environment described above. Are they able and ready to use the available resources to implement educational change?

The human dimension

Table 2 (below) shows that the college has a wealth of human resources in that the lecturers are well qualified and have vast amounts of teaching experience.

Teaching experience & qualifications.	18 – 23 years of teaching experience.	Degree and teaching diploma.	Obtained a diploma prior to degree.	Degree & diploma plus further qualification.
Number of lecturers (N = 11).	10	11	8	3

Table 2: ***Human resources (lecturer).***

Table 3 (below) reveals that none of the lecturers studied to be educators because of a strong desire to follow this career (that is, when regarded as 'a calling').

Criteria	Chose teaching: 'A calling'.	Job satisfaction – Motivation.	Is there a need for educational change?	Prepared to change/ take responsibility.
Number of lecturers who responded positively. (N = 11)	0	8	10	8

Table 3: ***Attitudes towards education (Lecturer).***

Table 2 reveals that 8 out of 11 lecturers obtained a teaching diploma before obtaining a degree. This implies that they used the diploma to uplift themselves and quite possibly became educators because of it. In the second interview, the lecturer maintained that many educators had second jobs and that teaching was simply a pastime. While many lecturers at the college were busy studying further, they were doing so for economic gain rather than to further their education and

• Most students identified and described what they saw in the photographs.
• Most students did not identify or describe relationships between the various elements of the environment shown in the photographs.
• Most students did not describe the environment depicted by the photographs in terms of the interaction between social, political, economic and biophysical dimensions.
• A student's ability to identify and describe the environment even in moderate to rich detail does not necessarily imply the student has understood the environment holistically.
• The students exhibited a greater understanding of urban environments than of rural or natural environments.
• The students struggled to express themselves clearly, in acceptable English and using geographical language.

Table 3: ***Summary of findings of the diagnostic activity***

INTERVIEWS

Interviews were used as a data collecting technique in order to probe and enlarge upon the students' written responses to the diagnostic activity. Interviews are seen as enabling a greater depth of response and can be used to follow up and validate other methods, in this instance the diagnostic activity (Hopkins, 1993; Cohen & Manion, 1989).

Although I planned to interview all of them, for reasons beyond my control I only interviewed 10 of the 12 students. The interviews were divided into two stages: the first stage was semi-structured and primarily concerned with "fact gathering". The second stage was unstructured and concerned with discussing the student's response to the diagnostic picture reading activity.

In the first stage of the interview my aim was to probe the students' educational background. I wanted to see if their past learning experiences could help explain the findings that emerged from the diagnostic activity. I therefore asked them questions relating to their schooling, interests and whether they kept abreast of current events by reading the newspaper or watching television.

The findings of the first stage of the interview are summarised in Table 4.

teaching competence.

Similarly, Table 4 (below) reveals that 14 out of 21 students did not have 'a calling' to become educators.

Criteria	Chose teaching – 'A calling'.	Satisfaction with college (motivated).	See a need for educational change.	Prepared to take responsibility.
Number of student responses (N = 21).	7	16	18	7

Table 4: ***Attitudes towards education (students).***

The student interview supports these findings (interview 4); one of the students described a Rubusana diploma as a stepping-stone to greener pastures. Both serve to confirm Rev. Matabese's view that most students embarked on teacher training for the wrong reasons. If these findings are accepted, then it would seem that the majority of lecturers at the college and future teachers in the region have not chosen teaching as a profession, but have rather allowed circumstances to force them into this career.

Table 3 reveals that 8 lecturers responded positively to questions concerning job motivation, while Table 4 indicates that 16 out of 21 students viewed the college in a positive light. I find this strange, as both my interviews with lecturers and my observations indicated morale at the college to be low, with absenteeism, late-coming, poor standards of teaching and learning and divisions between lecturers, management and students being commonplace. This, together with the fact that both the lecturers and students interviewed implied that the academic performance of the college had declined over the years, would seem to indicate that lecturers and students at the college are de-motivated. What is more, the situation has since been exacerbated by the pending closure of the college and the concomitant threat of redeployment. My observations indicate that many lecturers are uncertain about their future. This has demoralised them and affected their attitude and commitment towards teaching.

Tables 3 and 4, as well as the findings from the interviews, suggest that nearly all the lecturers and students agreed that educational change is necessary. Lecturers also agreed that they needed to be retrained or upgraded. But according to my observations, very few lecturers actually attend workshops on OBE, and one of the lecturers interviewed admitted that while she lacked the

capacity to implement change, she did not consider herself responsible for empowering herself. This implies that lecturers see the need for change but are not prepared to initiate the process and are waiting to be told what to do. Similarly, Table 4 indicates that most students are not prepared to assume the responsibility for initiating educational changes. This is in line with my observation that students are passive recipients of knowledge and wait for lecturers to convey to them the 'relevant' information.

Table 5 (below) reveals that the students sampled were older than one would have expected from full-time tertiary learners: 3 out of the 21 students surveyed were older than 35, while a further 4 fell into the age group 30 to 35, and 10 fell into the age group 24 to 29. As one would expect, older students have greater responsibilities and commitments – Table 4 reveals that 14 students had a total of 25 dependents.

Criteria	Age of students				Students with children	Total number of children
	-24	24-29	30-35	35+		
Numbers of students (N = 21)	4	10	4	3	14	25

Table 5: ***Personal data (student).***

Table 1 (above) reveals that 252 of the 302 students sampled live in one of the 17 units found in Mdantsane. Besides a small area in NU 13 and NU 17, most of the housing consists of 'sub-economic' 4-roomed township homes. This suggests that most students experience economic hardship which compounds their personal responsibilities, factors that could impact negatively on their receptiveness and commitment to their studies.

Table 6 and Table 7 (below) reveal the following: 9 out of 11 lecturers and 16 out of 21 students had a fair understanding of the theory underpinning OBE. However, only 3 lecturers maintained that they were currently implementing OBE in their teaching practice, and only one was confident that his/her students would be able to implement OBE. A mere 4 students indicated they were confident enough to apply OBE principles in their teaching practice.

Criteria	Knowledge of OBE Theory	Currently implementing OBE.	Use of alternate teaching environments (classroom)	Use of alternate teaching media (chalkboard)	Perception of students' readiness to implement OBE
Number of lecturers. (N = 11)	9	3	1	2	1

Table 6: OBE competency (lecturer).

Criteria	Competent theoretical knowledge (OBE).	Confidence to implement (OBE).	Student participation in teaching and Learning.	Experienced alternative learning environments (classroom).	Experienced alternative media (chalkboard).	Experienced alternative forms of assessment.
Number of students who responded positively. (N = 21)	12	4	18	3	6	1

Table 7: OBE competency (student).

The students interviewed indicated that only 4 out of the 10 lecturers that taught them had tried to implement OBE strategies. The findings indicate that while most lecturers and students had a reasonable understanding of the theory underpinning OBE, the majority of lecturers are not putting the theory into practice and the majority of students lack the confidence to implement OBE in their teaching practice.

Tables 6 and 7 also reveal that the use of multiple teaching environments, media and assessment strategies are the exception at the college. Only one lecturer used a teaching environment other than the classroom and only 2 lecturers used teaching media other than the chalkboard. A mere three students maintained they had been exposed to alternative teaching environments, while just 6 indicated that their lecturers had used teaching media besides the chalkboard. Only one student indicated that alternative types of assessment were being used. Surprisingly, Table 7 reveals that most students (18) regarded their classroom experience as a participatory one. In contrast to this, the lecturers interviewed maintained that their students were passive, a perspective endorsed by the student interview, which indicated that only a minority of students participated in class. This would seem to be indicative of a classroom environment dominated by a question-and-answer teaching strategy, where the majority of learners remained passive and only a few were actively

involved. The findings imply that the teaching and learning environment at the college is classroom based and teacher centred, with little variety in terms of media use or assessment strategies.

The findings from the questionnaires and interviews support my observations, as follows:

- educational resources are barely utilized, and most lessons appear to be chalk, talk and the textbook;
- the fact that lecturers are well qualified does not appear to have had much impact on their teaching practice; in terms of innovative and alternate teaching strategies;
- most students do not make use of the resources available at the college.

My observations also indicate that the college's comparatively favourable biophysical situation does not necessarily lead to a problem-free and positive teaching and learning environment. For example:

- students often leave the premises during tuition time and do not return;
- heavy rain on the 1st and 2nd of March 1998 resulted in some classes having as many as 50% of the students absent;
- taxi strikes and electricity cuts also affect attendance negatively;
- students often hold mass meetings during tuition time, giving little warning of their intention to hold such meetings;
- students generally do not participate in their lessons and do not take responsibility for their education.

It appears, in sum, that the college has the physical and human resources necessary for change, but that this potential has not been realised. In the following section I will analyse and discuss the findings with respect to how they impact on the college's ability to transform in accordance with the principles of OBE.

ANALYSIS AND DISCUSSION OF THE RESEARCH FINDINGS

The findings reveal a number of positive aspects in respect of the college's ability to transform. First, the college is comparatively well resourced and well situated, and therefore adequately equipped both to transform itself and to play a role in the transformation of the region. Secondly, the college's lecturers are well qualified and have vast amounts of teaching experience. This would appear to equip them to be potential agents and initiators of change in the surrounding area. Thirdly, lecturers and students agree that educational change is necessary, and most lecturers concede that they need to be retrained or upgraded in accordance with OBE and Curriculum 2005. Fourthly, lecturers and students have a fair understanding of the theory underpinning OBE, which implies that they are aware of the changes that need to be implemented.

The above findings would suggest that the college has the potential for change and the potential to initiate educational reform in the greater Mdantsane region. But these findings by themselves are misleading: the college environment is enormously complex and beset with seemingly insurmountable problems that are preventing meaningful change from taking place.

For example, despite the fact that the college has the resources to allow and even encourage departure from 'normal' teaching and learning practice, it appears that the lecturers and students do not make use of these resources. One must infer that the provision of resources and a congenial teaching and learning environment does not necessarily conduce to motivated and positive educators and learners. Furthermore, the fact that lecturers are well qualified, experienced and accept that change is necessary is apparently in itself not enough to initiate the process of change.

It appears that the college, its learners and its educators, are shackled by the past. The world view of positivism, with its narrow conception of knowledge, its emphasis on facts and their transmission in a controlled environment, still dominates teaching and learning at the college. Lecturers are still transmitters of information and students still receptacles for that information. Despite our newfound freedom, teaching strategies at the college have not changed. Neither the freedom from DET prescription nor the freedom embodied in the change to OBE has been embraced. Freedom of course entails responsibility, and it seems as if lecturers are not ready to accept this responsibility. After years of been told what to teach, how to teach and when to teach

it, it is perhaps not surprising that lecturers appear to lack the initiative to implement the desired changes. According to Wilmot (1999: 3-4), "for the majority of teachers in South Africa who were 'trained' to simply implement the previous top-down curriculum in which they had no say, the removal of traditional support structures – syllabuses detailing the content to be covered each year and textbooks interpreting the syllabus for them – the envisaged changes are positively threatening." She maintains that it is no use just telling teachers to do it: what they need are experiential and participatory learning programmes. And indeed, it would appear that lecturers and students at the college have been told how to do it (hence their knowledge of the theory), but have not been exposed to practical learning programmes and are therefore unable to implement the theory. Furthermore, they are seemingly making no attempt to develop their own competencies by experimenting and trying to implement alternative teaching and learning strategies in their everyday teaching. Greater autonomy has not brought about educational change and, if anything, has resulted in a decline in educational standards. This does not augur well for the introduction of OBE, which requires innovative educators who are expected to use multiple teaching and learning environments, teaching strategies, media and assessment techniques in an attempt to find out what works in relation to their local circumstances (Flanagan, 1998).

We remain caught in a historical pattern, with the effects of a discriminatory educational system still with us. Educators who were forced by circumstances to pursue teaching careers will not have the same commitment to the profession as those who actively chose the profession. Older students who already have a lot of personal responsibilities are less likely to embrace change as enthusiastically as younger students who are relatively free. The divisions within the institution and the way in which students 'deal with problems' are indicators that the volatile history associated with black education is still with us. Past experience has de-motivated lecturers and students, while the current threat of redeployment and closure of the college has caused morale to drop even further. In such circumstances, the implementation of OBE, which requires motivated and committed educators who are willing to make sacrifices and work together for the good of the system, seems somewhat unlikely.

A disturbing aspect that emerged from the research is that, despite compelling evidence that lecturers and students are de-motivated, the majority of them indicated in the questionnaire that

they were satisfied with the situation at the college. This implies that absenteeism, late-coming and poor academic performance is considered normal and acceptable. While lecturers may admit there is a need for reform, they might well not truly want it. In the second interview the lecturer maintained that experienced teachers are not necessarily receptive to change as they are set in their ways. If they are comfortable and secure in their passive role as transmitters of externally prescribed knowledge, why should they embrace a system that will require them to take responsibility for developing their own syllabi and teaching strategies?

CONCLUSIONS AND RECOMMENDATIONS

From this research I have learnt how complex, interrelated and sensitive educational matters are, and how difficult it is to understand them holistically. As an educator within the institution under scrutiny I was able to gain insights that would not have been available to an outside investigator. But I also became 'guilty' of investigator bias as I was inevitably caught up in the politics of the institution, particularly in the upheavals of redeployment which affect me personally. These factors put me under constant pressure to collect data quickly and to some extent compromised the ethics of the research. Furthermore, as a novice researcher my data collecting methods were haphazard, I lacked direction and often only realised I had made mistakes once I was analysing the data and it was too late. The findings of this research are therefore to be regarded as tentative.

But the core finding – that the college is not ready to embark on the changes envisaged by Curriculum 2005 and OBE – is surely to be trusted. I say this because there are indisputable signs that the most important element in this educational environment, the educators and learners, are not ready for change. They seem to have failed to shake off the effects of a separate and inferior education that has steered them, for want of better options, into a career in education, and then set permanent limits on their progress in that career. They have not managed to escape the negativity of the past, which remains apparent in their poor attitudes towards teaching and learning. They still seem entrenched in a system of dependency, in part an aspect of the legacy of positivism, and one which is proving very resilient to change. While educators at the college are aware of the required changes, profess to want them, and have been given the freedom to implement them, there appears to be little if any change being made in the overall teaching and learning environment at the college.

Although few would admit it, educators are no doubt afraid of change and will continue unwittingly to resist it. Or is the problem that OBE, like our previous educational system, has simply been imposed on us? As one interviewee remarked: "OBE was decided somewhere, somehow at the top echelons of the government. I don't know of any situation where people were consulted at grass roots level" (interview 2). This situation will surely encourage educators to sit back and wait for OBE to be implemented, to be told what to do. As was the case with our previous educational dispensation, we are faced with the prospect of disenfranchised educators, educators who will never gain the experience or competence to assume the roles of participants and planners as envisaged in the theory.

If Dr W.B. Rubusana College of Education is going to realize its biophysical potential we will have to heed the advice of Wilmot (1999) and empower its educators through experiential and participatory learning programmes. As revealed above, educators are aware of the theory but are unable or unwilling to implement it. In order to escape from the shackles of the past, educators must be made aware of how the ideologies of positivism and its South African progeny, CNE and FP, have manipulated and moulded their practice. Critical reflection on their past will allow educators to embark on a new educational journey as wiser and more able practitioners. However, as Prawat (1991) points out, epistemological empowerment by itself is not enough to liberate teachers: amongst other things, teachers also need to take control, gain autonomy and show commitment to their fellow educators. Holistic empowerment will possibly lead to the desired productivity and commitment to the workplace that is seemingly absent from the college and yet necessary for educational change to occur. This implies that it is not enough for the college to change in isolation: rather, the whole educational environment of which the college forms part will have to change if it is going to fulfil its role as a resource centre for educational change in the region.

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APPENDIX 1

QUESTIONNAIRES
LECTURERS
&
STUDENTS

The following questionnaire forms part of a research programme that I have to undertake concerning Dr. W.B. Rubusana College of Education.

All information given in this questionnaire will remain confidential.

Your name is not necessary.

Please answer the question as accurately as possible.

Try to use your innermost, most sincere feelings to answer the questions.

1a. Current position: Lecturer/senior lec/ head of Dpt. at Dr.W.B. Rubusana college of education

.....

1b. Please list all your educational qualifications and subjects you teach at Dr. W.B. Rubusana College.

.....

.....

1c. How long have you been an educator?

.....

2. Why did you become an educator?
(Make a Tick next to the most appropriate reason).

[ ] Desire to be a teacher
[ ] Economic reasons -I could not afford to pursue other courses at University.
[ ] Desire for employment and to improve my situation in Life.
[ ] Prestige associated with the profession.
[ ] Results - my qualifications did not allow me to pursue other career choices.
[ ] Lack of alternate study options at that time.
[ ] other reasons .....

.....

3. How do you rate your job at the moment?
(Make a tick next to the most appropriate response).

stimulating ( ) challenging ( ) fulfilling ( )
monotonous ( ) problematic ( ) intimidating ( )

4. Has your job motivation waxed or waned (positive/negative) over the years.

Waxed ( )
Waned ( )

5. How do you feel before you are about to present a lecture.
(Make a tick next to the relevant response)

[ ] Excited.
[ ] Confident.
[ ] I wish it were over.
[ ] Indifferent.
[ ] Its my job/duty.

6. How does the prospect of redeployment/retrenchment affect your attitude to teaching/lecturing.
On a scale of 1 - 7 decide how it affects you.
Make a circle around the appropriate position.

No impact 1 2 3 4 5 6 7 Despondent.

7. How do you feel about the imminent changes to our education, ie OBE and curriculum 2005.
(Tick the most relevant response)
Excited ( ) Curious ( ) Interested ( )
Disinterested ( ) A waste of time ( ) Frightened ( )

8. Do you think there is a need to change the old education system. Yes ( ) No ( )
If yes, what changes do you think are most necessary?
.....
.....
.....

9. Do you think you need to change your teaching style?
Yes ( ) No ( )

10. Do you agree with the statement that the culture of teaching and learning has diminished over recent years?
Yes ( ) No ( )

10b. If your answer is yes, do you think that it is your duty to try to change this situation or is it out of your control?
My duty ( ) Out of my control ( )

11. Are you prepared to be retrained?
Yes ( ) No ( ) Not necessary ( )

12. Do your students participate and show an interest in your lessons?
Normally ( ) Sometimes ( )
Occasionally ( ) Never ( )

13. Are your students punctual for your lessons?
always ( ) normally ( )
occasionally ( ) never ( )

14. Do you think Rubusana is producing quality teachers?
Yes ( ) No ( )

14b. If your answer is no, please give a reason why.
.....
.....
.....

(If your answer to Q14 was no)
14c. Do you feel responsible for the poor quality of teacher produced?
Yes ( ) No ( ) partly responsible ( )

15. Choose one of the terms to describe your relationship with your students
Mutual respect ( ) Student respects lecturer only ( )
Little respect for each other ( )
Student and lecturer feel at ease with one another and there is an atmosphere of trust ( )

15b. Do you expect students to respect you because you are a lecturer. Yes ( ) No ( )

16. Do you think it is acceptable for students to challenge the lesson content presented by the lecturer.
Yes ( ) No ( )

16b. Do you encourage your students to challenge and argue with you during your lessons?
[ ] I don't give them the chance.
[ ] Yes I encourage them but they never argue.
[ ] My students often challenge my views and I encourage them.

17. Would you like to be involved in curriculum/syllabus planning?
[ ] Yes I would
[ ] No! leave it to the experts.

18. Do you think that exams, tests and assignments which mostly require the recall of facts, are an adequate way of measuring the ability of our students?
Yes ( ) No ( )

18b. If your answer is No, please briefly describe what alternate assessment methods you would use.
.....
.....
.....
.....

19. If you were given a choice between the following syllabi, which one would you choose?
[ ] A detailed syllabus with specific teaching details such as content, time and methods.
[ ] A flexible syllabus with freedom to make choices concerning content and style of teaching.

20. Have you attended workshops on Outcome Based Education?
Yes ( ) No ( )

21. Are you ready to train teachers in the new methods?
Yes ( ) No ( )

22. Some of your students will become teachers next year, are they able to implement the changes envisaged by OBE?
Yes ( ) No ( )

22b. If the answer to the above question is No. Do you think it is your duty to train them?
Yes ( ) No ( )

22c. If your answer to Q22b is No. Whose responsibility is it to train student teachers so they are familiar with the new methods?
.....

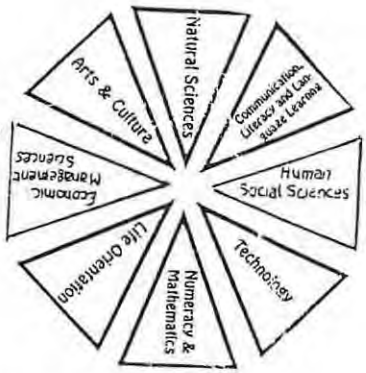
.....

23. Is environmental education relevant to your teaching/ lecturing? Yes ( ) No ( )

24. Do you think it is your duty as an educator to inculcate in your students attitudes and values that lead to sustainable living ?
Yes ( ) No ( )

25. What do **you** consider to be the meaning of knowledge?
Rate the answers below from 1 - 3, where 1 is important, 2 is fairly important, 3 is not relevant.
Learning of facts ( )
Understanding ( )
Attitudes & values ( )
Acquiring skills ( )

26. Learning areas as opposed to separate subjects?
Look at the diagram -
If you are a subject Lecturer,
which learning area do you fall into?



.....

26b. How do you feel about the change to learning areas? Make a tick next to the most appropriate statement:
[ ] The change is not necessary as subjects will be taught within the areas anyway.
[ ] I feel threatened as I do not fit in or I will be replaced by a person who can teach all subject areas within the learning area.
[ ] Learning areas will put an end to the compartmentalization of knowledge and the repetition of facts.

27. **The classroom is the most common teaching environment.**
How often have you used an alternative teaching/learning environment in 1997 and 1998?
Never [ ] often [ ] once or twice [ ]

27b. Do you think it is important to used a variety of teaching environments? Yes ( ) No ( )

28. What is the **most commonly used** teaching media amongst the lecturers at Rubusana. Rate the media from 1 to 4.
1 = very often 2 = often 3 = seldom 4 = never.
Please circle the appropriate position.

a. chalk board	1	2	3	4
b. overhead projector	1	2	3	4
c. video	1	2	3	4
d. prepared transparencies.	1	2	3	4
e. slide projector.	1	2	3	4
f. computer	1	2	3	4
g. newspaper/magazines	1	2	3	4
h. library	1	2	3	4
i. models	1	2	3	4
j. charts/pictures.	1	2	3	4
k. talk and textbook.	1	2	3	4

29. **Do you practice what you preach,** ie do you carry out your educational beliefs in the classroom?
Always ( ) Never ( ) Occasionally ( )

30. Evaluate the following educational statements and decide whether they are appropriate to your educational experience. Rate them between 1 and 4
1 = very important 2 = fairly important.
3 = not very important 4 = Unimportant.

[ ] -We must have a scientific approach to our education - values and attitudes should be avoided as they are not easily measurable.

[ ] -critical thinking can only take place when a learner has reached a certain age/stage of development.

[ ] -Scientific knowledge is the only worthwhile and true knowledge.

[ ] -We must move from an emphasis on factual recall to conceptual understanding.

[ ] -To know is to understand.

[ ] -Concepts, skills, values and attitudes are an important part of teaching.

[ ] -Understanding and skills cannot be acquired before the facts have been learnt, in other words memorization of facts is essential for teaching and learning.

[ ] -The way learning occurs is as important as the content.

[ ] -The main point of teaching is to teach facts and obtain the right answer from the pupil

[ ] - The role of the teacher is to create the correct environment for teaching and learning to take place and to a lesser extent impart knowledge.

[ ] - Environmental education is only important for the people teaching Geography

[ ] - Education should be for sustainable living and not only for economic success.

[ ] - The goal of educators is to work with the learner for the learner.

[ ] - The ideal classroom situation has a strong teacher who leads the dialogue between himself and the pupils.

[ ] - Knowledge is the memorization and recall of facts.

[ ] - Assessment should be multidimensional and ongoing, not exam driven and isolated.

Student questionnaire.
These questions are not directed at any particular person. They require your most common(average) experience at Rubusana.
This is not a test and it does not reflect on you in any way.
I am simply trying to gauge student attitudes to their learning experience at Dr.W.B. Rubusana College of Education.
All information in this questionnaire will remain confidential.

1. Indicate which age group you fall into: make a tick next to the appropriate age group.
   younger than 19 ( ) 19 to 23 ( ) 24 to 29 ( )
   30 - 35 ( ) over 35 ( )

2. How many dependants do you have? .....
3. List your major subjects .....

.....

4. Why did you decide to attend a teachers training college? Choose the most appropriate answer and make a tick next to your choice.
   [ ] Desire to become a teacher.
   [ ] No other study options in Mdantsane.
   [ ] Hope of finding a job and improving my situation.
   [ ] Results - did not qualify for university or technicon.
   [ ] Economic reasons - could not afford university fees/ travel expense/residence fees.

5. Do you think you will find a job when you graduate?
   Yes ( ) No ( )
   If your answer is no, does this affect your motivation and desire to study while you are a student?
   Yes ( ) No ( )

6. Do you think there is a need to change our education system?
   Yes ( ) No ( )
   If yes, why do you think so?

.....
.....

7. Who do you think is chiefly responsible for your education and development as a teacher while you are studying at Dr. W.B. Rubusana.
   Make a Tick next to any of the answers you consider relevant.
   lecturers( ) Bisho( ) yourself( ) parents( )

8. What was the biggest problem you encountered during your teaching practice last year.

.....
.....

9. When you start teaching, do you think it is your duty to try to rectify the problems mentioned in question 7?
   Yes ( ) No ( )

Remember these question do not apply to any particular person. They apply to a group of people and your answers must be your **most common experience**, ie the **average not the exception.**

10. Classroom situation.
How would you rate your classroom experience at Dr.W.B. Rubusana?
Exciting ( ) boring ( ) informative ( )
A waste of time ( ).

11. Which of the following teaching methods do you most often experience as a student at Rubusana?
[ ] Participatory (dialogue and debate between students & students lecturers and students)
[ ] Teacher/lecturer dominated (lecturer talk & chalk)

12. Which one will you aspire to when you become a teacher?
Teacher dominated ( )
Participatory ( )

13. Are you required to think in the classroom or are you simply provided with information.
Think ( )
Fed information ( )

14. Do your lecturers try to teach you attitudes and values during their lessons or are lessons aimed at the memorization of facts.
Attitudes and values ( ). Memorization of facts ( ).

15. If you challenge your lecturer during a lesson and disagree with the content or their viewpoint, how do they respond to you?
Annoyance ( ) Aggression ( ) Ignore You ( )
Positively, lecturer engages you in debate ( ).

16. How would you describe your relationship with your lecturers?
Mutual respect ( ) subservience on part of student ( )
arrogance on part of lecturer ( ) Student arrogance ( )

16b. How do you see the issue of respect at Rubusana?
[ ] Lecturers expect you to respect them because of their position.
[ ] Lecturers earn respect because of their ability.

17. Do you feel the students relationship with lecturers is an acceptable one ? Yes ( ) No ( )
If not, what is the problem?
.....
.....
.....

18. How will you relate to your students when you start teaching.
.....
.....
.....

19. What learning environments have you experienced. Read through the list of learning environments you may have experienced as a student at Rubusana college. For each learning environment you must decide how often they are used.
Rate them from 1 - 4. 1 = very often. 2 = often.
3 = seldom. 4 = never.
Classroom ( ) Rubusana grounds ( ) library ( )
Museum ( ) University ( ) Field trip ( )
Laboratory ( ) Visiting lecturer ( )

20. What teaching media are commonly used by your lecturers:
Rate the media from 1 - 5. 1 = used very often.
2 = often 3 = seldom
4 = on one occasion 5 = never
Chalk board ( ) Overhead projector ( ) Newspaper ( )
Magazines ( ) Prepared transparencies for OHP ( )
Video/television ( ) Slides ( ) Models ( )
Computer ( ) Prepared charts ( ) Maps ( )
Talk and textbook ( )

21. Have you learnt how to use teaching media ?
Yes ( ) No ( )
21b. If your answer is yes, list some of the teaching media that you feel you can use with confidence.
.....
.....

22. Do you ever get personal attention from your lecturers during the classroom situation?
Often ( ) Seldom ( ) Never ( )

22b. If seldom or never, would you like to change this situation?
Yes ( ) No ( )

23. On average how many times do your lecturers assess you during the year(tests, assignments exams)? .....
.....
23b. Besides tests, exams and assignments, what other methods of assessment are used? .....

.....
23c. Would you agree with the statement that the recall of facts is the most common requirement during assessment(tests, exams)? Yes ( ) No ( )

24. Since you joined Dr.W.B. Rubusana college how would you describe the performance of the college over the years?
Please tick the relevant option(s).
Progressed well ( ).
Progress was minimal ( ).
Remained the same ( ).
Declined steadily ( )
Progress showed ups and downs ( )
Can't gauge whether there was progress or not ( )
24b. Please give some contributing factors for your response to question 24.

25. In general, how would you rate your lecturers in terms of the following criteria listed below:
Rate them according to the following scale of 1 - 4.
Good = 1 average = 2 poor = 3 terrible = 4
Punctuality ( ) Preparedness ( ) Stimulating ( )
Versatile ( ) Knowledgable ( ) Organized ( )

26. Do you think your Rubusana education will prepare you to cope with the reality of teaching?
Yes ( ) No ( )

27. At the end of your diploma, if you feel you are not ready to cope as a teacher who do you hold responsible:
(Tick the most appropriate reason(s)).
lecture ( ) institution ( ) yourself ( )
education department ( )
legacy of discriminatory educational practices ( )

28. Have your lecturers introduced you to the concept of OBE (Outcomes Based Education)?
Yes ( ) No ( )

28b. Have you attended any workshops?
Yes ( ) No ( )

29. Do you realise that you could be expected to teach according to OBE when you join the teaching ranks.
Yes( ) No ( )

30. Who do you think is responsible for your education and development according to outcome based education.
Make a tick next to any of the options you consider relevant.
Lecturer ( ) Education Department ( ) Myself ( )

31. Rate the following education related statements in terms of what **you consider** important in the teaching learning environment. Give it a score from 1 - 4.
1 = very important. 2 = fairly important.
3 = slightly important 4 = of no importance to me.

[ ] The ideal classroom situation has a strong teacher who commands the respect of the pupils and tests retention of facts with regular questioning.
[ ] The way learning occurs is as important as the content.
[ ] Understanding and skills cannot be acquired before the facts have been learnt, in other words memorization of facts is essential.
[ ] The main point of teaching is to teach facts and obtain the right answer from the pupil.
[ ] The role of the teacher is to create the correct environment for teaching and learning to take place and to a lesser extent to impart knowledge.
[ ] We must move from an emphasis on factual recall to conceptual understanding.
[ ] Active community involvement is vital for the smooth running of any school.
[ ] Environmental education is only important for the people teaching/learning Geography.

APPENDIX 2

INTERVIEWS
1 - 4

INTERVIEW 1

Interview with Reverent Matabese.

Questions are in **bold.**

I believe you were the first Rector of Dr.W.B. Rubusana college of education.

No I wasn't, It was a Mr. Coghill who was asked to become acting principal in January 1976.
I took over in September 1976.

I believe the original premises was in Nu 1.

Yes it used to be Pagamile Lower primary school.

Who decided on the name?

I did. We had 3 names of prominent educators and we eventually decided on Dr. W.B. Rubusana the local man.

Was it always a teachers training College?

No it started as Mdantsane training college - taking only Junior certificate.
It only took on matric in the new building.

Junior certificate was a STD 8 and they did PTC?

Yes.
SPTD, STD and JPTD came later at the new premises.

New premises was my plan. Given the plan of Kulani a nearby school. We protested and they said find a plan. Travelled the country and looked for plans. Eventually plan was a mixture of plans they borrowed.

When was the original college started and when did they move to the new premises?

I wasn't there when they moved to the new premises but it was in the middle of 1979.
Original school January 1976.

How large was the enrolment.

Started with 2 classes - one girl class of 30 and boys 40.
By March that year there were 6 classes - 5 girls 1 male

Were there other tertiary institutions in Mdantsane.

None

Even in 1991 there were no options for students?

There was Batcule - 1990 - technical JC and Matric not tertiary.

A lot of student went to Rubusana because there were no other options?

There were no other options, and our intake was based largely on considering these students. they came with a very low pass but we had a entry examination to see whether they could write English.

A lot of them were people who had been our of school for 2 or 3 years because they couldn't get into matric as they did not have the matric qualification. This is what made people think that a teachers course was a lower qualification than matric.
We took very low standards but we were hoping to develop them along the teaching profession. At the end of 1976 we had 9 classes but still only one male - showed how many girls wanted to become teachers.

How do you think that only having one tertiary institution has impacted on the quality of the teachers that we have produced.

Well I cant give you a standard answer, as apart from Rubusana there were other tertiary colleges - Zwelitsha, Lennox Sebe, St Mathews.

Some of the early students came from Johannesburg.

Would you say Rubusana was a typical homeland, DET institution?

In terms of facilities Yes - We had no epidiascopes, no blackboard room, no machines of any sort. Had to make our teaching aides. We mad our own blackboard room.

But the physical premises are good?

They are good - we had planned a boarding school but it never materialised.

Nice looking building -

Yes, but we had to fight for our building -
Rubusana looks better than Lennox Sebe.

Do you think the education was imposed - FP?

We did not think in terms of what to do or what to teach.
When we visited white training schools we did not look at what they were teaching but we looked at buildings because we did not want anything inferior - and rubusana is not much poorer than the white training colleges - much smaller and not as many facilities but the buildings were comparable.
In so far as the syllabus was concerned we were just given what was been done at Saint Mathews - that is what you must use.

I think it is similar until recently - syllabus given by DET. No freedom.

Yes.

Lovedale, gone to pieces - Missionary schools were closed.

Did you have discipline problems in those days.

First problem was with teachers - not well qualified. We encourage them to improve their qualifications while they were there. Miss Nama was one of the first teachers NPH -native primary higher.

Miss Nama is still here with 33 years service.

Originally no discipline - students come late, go early and did not prepare properly. But following year we would go round in the Kombi and pick up errant students. Discipline improved.

Do you think the culture of teaching and learning has declined in recent years.

Yes, most definitely so - in our day we were stricter - students were scared to come late as we took regular register. We did not use canes but we suspended students for a week. We don't want people who don't want to learn.

Do you think we need change today?

Yes and No
A lot of irrelevant stuff, inaccurate, history books biased against the black person.
Strange system of languages - had to do 3 languages English, Afrikaans and the vernacular. If you failed English it doesn't matter if you got a C aggregate you failed. We were against that.
People who set exam papers were all white, despite there being good black teachers. Some of the blacks eventually became moderators but not examiners, except with Xhosa.
We need scrap certain subjects.
The examination system should change - rigid one answer exams.
Examinations have never been a true judgement of one's ability.
They do not show ones progress.

INTERVIEW 2

Questions are in bold.

How would you describe the performance of the college since you started?

Performance was good until about 2 to 3 years ago then student performance became a bit disappointing. We used to get 100% passes in our exams, but in the last 3 to 4 years things have changed.

How long have you been teaching at Rubusana?

10 years exactly.

Are you blaming the students for the downturn in academic performance?

Well, no not exactly. I would not blame the students more than I would blame the political situation in the country. This democracy brought out a lot of laxity amongst students and lecturers.

Do you experience job satisfaction as a lecturer at the college?

Not any more no. Not any more.

For the same reasons?

Yes, lack of student discipline and self motivation amongst the students. Students are not keen to learn, they like to take short cuts in everything they do.

How does this lack of motivation on your part affect your job performance? Are you motivated when you go to the classroom. For instances do you prepare hard?

Yes I do prepare hard, but I get disappointed when I come to class. I am well prepared but the students have no pre-knowledge. They are showing interest, but they are not following up on the interest, they are not motivated.

Have you tried to change your teaching style in order to motivate them?

Definitely, I have. I have been trying the problem centred approach, but I get little response from the students. They are lazy to learn.

When students leave Rubusana, and graduate, do think they will they move into a more positive environment in the schools?

I'm not sure, as I don't really know what is happening in the schools at the moment with this outcome based approach and curriculum 2005.

Do you think there is a chance that our students could become positive hard working educators?

Definitely so. I think so.

Earlier you said students are negative and they are not hard working. When they become teachers are they not going to take these ideas with them?

Yes, maybe if they get a challenging environment in their schools, they might pick up. There is room for improvement.

We teach students to become teachers, a lot of whom are teaching the current matric's. Our matric results are poor, are we not to blame?

No definitely not. We are not to blame. I blame the primary and secondary schools. Std 6, 7, 8 the students are not getting enough foundation for Std 9 and 10. I don't think we at the college are too blame. When they get to the college they are infested with wrong knowledge or they did not get enough teaching, basics during their secondary school period.

Do you agree that the culture of teaching and learning has all but disappeared in the majority of institutions?

Well the other lecturers from other colleges also complain about the culture of learning amongst the students.

Mark Henning, director of the Independent Schools Council summed up our past when he wrote "For a minority the examinations have been the climax of 12 years of substantial, acceptable schooling, but for the majority they epitomise an irrelevant system, dominated by gross disparity of provision".

What do you think about that statement? The majority have been discriminated against and the minority have reaped the rewards.

Well of course according to the demographics of South Africa, there are many more Blacks, Coloureds and Indians than Whites, so I agree with the statement. There are exceptions, black schools that are doing very well, some that are doing better than the advantaged schools.

The irrelevant system stems from CNE & FP, an ideology imposed on people, especially on black people against their will. Has this ideology of CNE & FP made a difference to you as a teacher, has it possibly discriminated against you?

Well, I would say we benefitted a lot from CNE, because we were not so much politicised. We wanted education at that time. We were not interested in the politics at that time, saying that education was imposed is not entirely true, we wanted to learn.

During your schooling?

Yes during my schooling, never cared about what was imposed on us, we wanted to learn whatever we were given. For an example some of our students were doing 4 languages, Latin, English, Afrikaans & Xhosa. They did well. They never complained.

Were students not discriminated against, in that they could not do Maths and Science as there were no teachers?

It depended on the individual schools in those years. I went to a school were there was no maths and science, so I had to go to a special school that offered maths and science only after passing Junior Certificate. There were very few teachers who could teach maths and science not necessarily that they were discriminated against.

It has been said that the DET is very prescriptive. They give you a syllabus, a curriculum which you have to follow. For maths and science it is not as prescriptive. How do you feel about it?

It is not easy to prescribe sections to be taught, because it depends on previous knowledge of other sections as some sections are interdependent. You can't run away from sections, as they are needed for another section, as they are interlinked, it is not like History, were you can leave out some sections, eg South African history, and teach only European history. You can hide things which you don't want them to know.

Do you agree that the old education system has failed for the majority of the people?

Well, I won't say during that time. I can only say now it has failed for the majority. We could make the best of the little education we were given and we were able to advance our education.

You are talking about a minority. You are the minority. The majority of people in your time did not make it to matric, to university or teachers training college.

Do we need change?

Yes, the old system failed, due to the laws prevailing at the time. To quote Verwoerd "why teach a Bantu child mathematics if he is just going to work in the mines?" Reflects that the old education system was favouring one kind. We definitely have to have a change, I think that the change that is on the go now is going in a positive direction.

This OBE, curriculum 2005 is obviously our change?

Yes.

Has it been imposed on us? Have you had any input into curriculum 2005?

As far as I know, it was decided somewhere, somehow at the top echelons of the government. I don't know of any situation where people were consulted at grass roots level. I am not against it.

My problem is that the old system was imposed, now curriculum 2005 is also being imposed. This is a danger I think. People are not happy with being told what to do.

Yes some people are reluctant to change. But in any case if you come to think about it, compared to the old system curriculum 2005 is quite a good change.

Do you know when it is due to be implemented?

Well in some schools it has already been implemented. It has been going on and practised unawares, unconsciously, but not called curriculum 2005.

When is the formal date for us to start teaching OBE?

Well they said it's going to start from Grade 1, Sub A, and then gradually be introduced into the higher standards. Grade 1 and Grade 6.

Which year?

They started it last year in grade 1.

What do you understand by an outcome? We have outcomes based education, what does an outcome mean?

Outcome means what the students gained at the end of the lesson, the application of what he has learnt. Outcome is the application of the theory which he has learnt. Can he use the knowledge he has gained practically? Is the knowledge he has gained functional?

Do you think most people know what the objectives are and how to implement OBE. Thinking of teachers - educators at the moment in our environment.

Not many people are clear about this outcomes.

Whose duty is it to inform us and to prepare our students?

It is the duty of those people who came to introduce this. Either they introduce it to the teachers and the teachers introduce it to the students. If the teachers know it themselves, it is the duty of the teachers to sow the seeds.

This change will involve you yourself changing the way you think about education and possibly relinquishing power. Power seems to be a big deal at Rubusana. Lecturers walk around thinking they are better than the students. With OBE are you prepared to accept a student as a fellow learner and relinquish your dominant role in the classroom. Are you prepared to accept democracy in the classroom?

I am prepared to accept democracy in the classroom, but provided that democracy goes with responsibility from the students. If the students are going to behave anyway because of democracy, it means they don't understand what democracy is. It must go with responsibility, it doesn't mean they can do things their own way. They must have responsibility and discipline with democracy.

Teachers should be working with the learner for the learner. Do you teach in this manner?

Not yet.

Do you want to change?

Not exactly. I give the learner the work, the learner must do the work and then I want to see the results.

Do think you need to be retrained - need help in changing your outlook?

Not necessarily, but in service training is very important in any case. Refreshment, updating and upgrading.

You have taught for 20 years, can you teach an old dog new tricks? You are an old educator can one change their way of thinking?

Yes you can change, but you must be very diplomatic about it. You must have a very special way of trying to introduce the person into the way you want him to think.

You can but it depends on the way you approach it, the way you approach it must be very diplomatic. Explain the advantages and disadvantages. Compare different methods.

Is the young teacher more receptive to change?

Yes definitely, knows nothing he is blank!

Knows nothing! blank!

Relatively, he wants to know something, he doesn't have experience, he doesn't know much, so he will be very happy to know something because he doesn't know anything.

The young teacher hasn't learnt all the bad old ways so he can be moulded.

Yes that's right.

Many teachers and lecturers are totally absorbed with their own lives - at Rubusana there are taxi owners, shop owners,people studying continuously for their own benefit. In other words teaching and lecturing is not their priority - do you agree with this statement?

Definitely

How does it influence their teaching? Are they putting their life and soul into their teaching?

No, because of the economic situation of the country people want to learn more for more pay,they want other jobs because of poor pay, there is no motivation in the salaries that they get so they try to supplement their living.

Despite the history of discrimination, some teachers are comfortable in the old system, they use the pupils as scape goats. Failure blamed on the pupils.

Will these people be willing to change?

Those are the type of people who are resistant to change.

Are they the majority?

No it is just a few, it couldn't be the majority.

Do you think effective change is possible if people are not willing to change?

No! It's not easy because of passive resistance. difficult - lead a horse to water but can't make him drink. Attitudes are involved in the whole thing. Depends who is trying to change the people.

Do you think change will have to be imposed?

No, it doesn't have to be imposed - people must be give the advantages of the new system as opposed to the old system.

Then we must empower people, educate them, ideology of OBE.

We must in service them.

At the moment its 1998, OBE was already meant to start, but so many people know very little,they are not part of it. How can we get them involved

Because of ignorance, laziness, coupled with reluctance to change - those are the main factors.

How will we overcome this?

Well I think the people, the new teachers, if they can see see where it is working, taken to these places and given practical demonstration then maybe they can change.

INTERVIEW 3

Questions are in bold.

Are you a lecturer at Dr W B Rubusana, how long have you been an educator and how long have you been at Rubusana?

Yes, twentieth year of being a teacher and 6 years at Rubusana.

How would you describe the performance of the college since you started ? For example have standards improved or deteriorated?

Standards have deteriorated. Since 1996 things have gone down down.

Why do you feel this way?

I can attribute it to low morale of lecturers with the change in the department and low morale of teachers to get to classes, because there is no drive from the management of this college.

Do you experience job satisfaction?

No

Major problems?

You can do your work well, but there is no thank you, or the show that you have at least done well, nobody to give you the surety, so you can do the work and that is causing the low morale.

Active community involvement is necessary for the smooth running of any school or college, do you agree?

Yes I do.

Does Rubusana have active community involvement?

Not at all. It is not involved. It doesn't know what we are doing here. Even the lecturers here have got programmes to put forward for the community but the management is hindering that.

Do lecturers, students and other stakeholder's work together, the community being the lecturers, students and stakeholder's, do they work together for the good of the college?

No not at all. Its about individualisation. Every stakeholder is holding its policies and principles so there is no correlation.

Are your students motivated and enthusiastic about their studies?

In a way. It depends on the lectures concerned. Most of them are quite enthusiastic.

How do you try to motivate your students, give some examples of how you try to encourage them.

We are trying to make the courses as practical as possible. Most of the time we are lacking the capacity to do this, but otherwise we are trying to improve.

Is it likely that Rubusana students will become good positive educators?

I don't think so. They don't focus on development and empowerment of themselves. They are involved in minor things, nothing to do with improvement or empowerment.

Are we to blame for the poor matric results in the Mdantsane area? We are, after all, producing the teachers who teach the matric's in Mdantsane.

I cannot say that, cause not all high school teachers are from this college. Some are from universities. The whole higher level of education is to blame.

Do you agree with the statement that the culture of teaching and learning has declined alarmingly in the majority of institutions?

Yes, I agree.

We have been described as teaching machines. All the old ideologies, curriculum, syllabus, CNE, FP, methodology has all been imposed on us. We have no say. We are given a syllabus, told what to teach, how long to spend on a section etc.

Yes we are not given the opportunity to take the initiative to change the system of teaching. That is why most of our teaching is theory based and content based more than practical and outcomes based, that doesn't develop our students.

Since 1996, we have been given a bit of freedom since we have been aligned with Rhodes University. They allow us to set our own exams. Have you made any changes away from the DET syllabus?

I have tried but the university doesn't give me that chance. It doesn't empower me or my students. They are endorsing whatever I send, there is no follow up.

The old system of education has failed for the majority of people. Do you agree with that?

Yes. It is mainly theory and content based There is no way for development from our side as educators and for our students?

Do you agree that we need change? What change do you envisage?.

Yes. We should be part of restructuring the syllabi. There is a need to expose our students to in service training. They must not come with all the theory and content. They should have a little bit of practicality on their work.

One of the obvious changes is OBE and curriculum 2005. This is our change, change for the good of the people. Has it been imposed on us? Are we implementing OBE?

Even if it wasn't imposed on us, it would not make any difference, because we need to change. The problem is we haven't had capacity building and we haven't been empowered with the new system. We don't know it ourselves. It is still in its infancy, so there is no way we can implement it.

What do you understand by an outcome? The whole thing is called OBE.

Have insight, the ability to solve the problem, what you are able to interpret and analyze in a manner that will have practical impact.

Most of us at Rubusana don't know too much about OBE. Whose duty is it to inform us and to prepare out students?

I blame the university we are affiliated to. They have the capacity to do that. I therefore also blame the management, they must make means to expose us, working together with the department so that we are trained.

When we move to OBE, change will involve us changing the way we think about education and possibly relinquishing power. For example, when we teach, there is a power struggle. The teacher must dominate the students. OBE says that is not acceptable any more, we must have democracy in the classroom, relinquish our power, have student participation. Are you prepared to have equality, have a mutual respect, have a sharing of this power and decision making?

Yes I am prepared for that.

The teacher should be working with the learner for the learner. Do you teach in this manner?

Our students are very passive recipients, that is the problem. I think as a person that is proper.

Do you think you need to be retrained?

I cannot say to be retrained, because my experience is enough, but I need capacity building to improve and develop.

You have been a teacher for 20 years. Can one teach an old dog new tricks?

Yes but it depends on the individual and the environment.

Is it not more difficult for teachers who have been doing something for a long time to change?

Yes. They fear the change.

There is a lot of inequality in our education. Do you think a single curriculum will meet the needs of all South Africans?

Yes, accompanied with capacity building for those who are under-qualified, they must be trained.

Many teachers seem to be totally absorbed with their own lives. For example I know of Rubusana lecturers who own taxis and businesses, some are also studying. In other words teaching and lecturing is not their priority. Do you agree?

I do.

How does this affect their teaching at the college?

The standard of learning and teaching at this college is very low.

These people are comfortable, they are earning a lot of money, will they want change?

No because they feel safe.

Do you think effective change is possible if people are not willing to change?

No, but there must be a strategy done by the Department.

That brings me back to the question, our old imposed system was a failure, now if they impose OBE, is this not also going to rub people up the wrong way and also make them negative?

I don't think so. If somebody needs to go on with education, there is a need for change. Enforce change.

INTERVIEW 4

Questions are in **bold**.

Group interview: looking at the problems facing education, facing Rubusana and our road forward towards OBE and curriculum 2005.

How long have you been students at Dr W.B. Rubusana college?

Third year.

Describe the performance of the college, in the past three years, has it improved? has it gone down? what do you think?

The college is going down it is not improving. Some are coming late, others are running away from studies.

I think the college is going down even in the financial side. Otherwise finances could be used to improve the college.

The smooth running of any institution depends on the involvement of the community, community being every one not only parents. Do think this is happening at Rubusana?

I think the community around Rubusana is not taking part. There are things that need the community to help, but they fail to do so.

Do you think the lecturers and students are working together towards the good of the college.

In certain things there is that togetherness, but in some things they differ.

What about the management of the college? Students , lecturers and management are they working together, I'm not talking only about the class room situation.

Students are involved in terms of leadership, standing for the whole students, but the people who are interested in education, like organisations outside the school situation, are not very active, you cannot see their effect.

Do you think your lecturers are motivated? By that I mean are they on time are they prepared for their lessons, do they spend time after hours helping you. Do they show enthusiasm for their jobs?

Some of them are giving good lessons, some of them are not good.

Are students motivated? Not necessarily you 4, but are students in general motivated to work hard, to learn?

As time goes on, the motivation is fading. During my first year, I have seen that activity of prize giving, the second year I noticed that the prizes were just old books to be brought back again. In the third year I have not seen a single motivation from that prize giving.

When you are studying at Rubusana, are you after the diploma or after the education?

I am after the diploma, because I am greedy for the green pastures.

I think that this is my step to other spheres of education so I take this as an education.

Really I wanted to become educated, after this diploma I would like to further my studies, maybe at University.

Democracy in the classroom. By democracy I mean, when you are going to write a test do you discuss it with your lecturer or do they just tell you, "Monday you are writing a test". Is your general classroom situation is it democratic or is there autocracy?

I think it is democratic. Everybody has the chance to say something, and to decide.

It may be democratic in terms of tests, but when it comes to assignments, the lecturer says I want this assignment by a certain date, you have no area to discuss it.

In the classroom, do you generally sit quietly and listen or are you actively involved? If your lessons is say for 40 minutes do you talk for 10 minutes, discussing things, or are you sitting quietly for 39 minutes and saying something for one minute. How would you describe your classroom activity?

Some students are participating but some others are not participating including myself. We are just given a hand-out, read it and tell what is going on. Some participate others find it difficult to do that they are waiting for the lecturer to give them something.

Would you say that is the majority of the students?

Yes majority of the students are sitting quiet.

I am also sitting quiet, but I am good at writing down facts and points, but I am not good at talking.

It is true that the majority are passive in the classroom situation. The minority are active.

Yes

When you pass and move onto the schools, how are you going to cope with the problems of late coming, absenteeism, lack of discipline. There are so many problems at these schools, how are you going to cope?

We want to apply some discipline to the pupils. You have to involve them by having some of their leaders in discussions about the conduct at the school. It would be better if you just act as the conduct is saying.

Problems in schools are a big problem how are you going to cope?

I think I would get into some agreement with them.

The matric results last year were very bad, only a 50% pass rate, Rubusana produces teachers who teach matric's. Are the Rubusana lecturers to blame for the poor matric results in say Mdantsane?

We are talking about negotiation, we are talking about something which involves, the parents the students and the teachers. We cannot only focus on the lecturers who teach the student teachers, we have to look at it holistically, who fails who is not capable who is not responsible.

CNE the old system has been described in many quarters as irrelevant and unequal. Do you agree with that statement? Especially irrelevant to people like you with the DET they didn't give people much choice.

I think the system is irrelevant and has some separation in it. The ideology of CNE, I don't think it really is Christians who invented it.

We have poor matric results, has the old system of education failed?

I think it has failed. When we are in this era, considering what has happened in the past being done by the department of education. People who are the product of that type of education, are not capable of doing things.

We agree that the old system has failed. We are going to have changes, we are already having the changes, what sort of changes?

They are talking about uniting the education to make a single department of education which was previously divided according to race. This is going to take more time than expected. Also the OBE and trying to apply it step by step.

This is what I was getting at OBE and curriculum 2005. That is going to be our change. Are you ready to teach OBE? Are you ready to implement it when you start teaching next year?

Not ready as such because this OBE has started with us, so we are not having enough of this practice. I think students who come after us at the college will have more practice. Even the students at the high school are happy when you come with this OBE. For example when I come with rocks and I want some information, they just keep quite, they want you to say something.

It is going to be difficult to implement. Do you think you know all the ways of implementing OBE?

No.

Yes, my point of view is I have strategies to teach the theory.

One aspect of OBE that will be very different will be assessment. What do you know about assessment according to OBE. How will it take place?

I think when they are putting this it is still a theory. No way I can say it exists.

It is meant to exist.

It is meant to exist, but we don't have proof of it. I am a little confused when they talk about passing and failing.

Anything more on assessment?

They talk of continuous assessment. Assessing your student each and every day. At the end of the year you collect all of that and come up with your results.

What sort of things will be used to asses the students on a daily basis?

I would think the projects can be taken into consideration.

How many of your lecturers have actually tried to tutor you on OBE?

Four.

How many lecturers do you have?

About ten.

Have they given you a proper workshop?

They just say we will be teaching students in this way. No actual workshop.

Do you think lecturers are ready to change? I know a lot of lecturers and teachers who are taxi owners, shops owners etc. They have a lot of interests other than teaching. Maybe teaching in this situation suits them. Do you think they will want to change?

I think they will want to change, cause some are trying to introduce this OBE, they will influence the others.

Under the whole context of changing there is much more theory. People are talking about transformation, but when it comes to the practical you cannot see the actual change. The minority can be able to change, some are resistant.

How will this change take place? Will it have to be forced. Will teachers be allowed to contribute or will it just be forced on us.

Government will have to appeal to the educators to try to change. Change is difficult, talking of change is one thing but in reality there will be no change.

Talk about change in one generation, something will happen in the next generation

PRESEVICE GEOGRAPHY TEACHERS PERCEPTIONS OF INTERRELATIONSHIPS IN THE LOCAL ENVIRONMENT USING PHOTOGRAPHS: A CASE STUDY

ROBERT DAPHNE

INTRODUCTION

I work as a geography educator at a pre-service teacher college in Mdantsane. I teach a group of 12 third-year senior primary student teachers. During the course of my work I have established that these students know very little about the nature and goals of geography. They are seemingly unaware of interrelationships and their importance to geography: lacking a holistic understanding of the environment as composed of interrelated and interdependent dimensions, they tend to focus on isolated phenomena, and offer descriptions which have apparently been memorised with little thought or understanding. This seeming lack of understanding casts doubt on their ability to use geography as a vehicle to build on the experience of young children (Catling, 1987), or to make appropriate use of geography as a medium for environmental education (O'Riordan, 1996).

The goal of this research is to determine how these student teachers perceive and make sense of the local environment. I use colour photographs of the local environment and focus on students' perceptions and understanding of the interrelationships among the environmental elements portrayed in the photographs.

The paper is structured as follows: first, the theoretical perspectives informing the study are discussed; secondly, the research methodology is described; thirdly, the findings of the diagnostic photo reading activity are analysed and discussed; fourthly, interviews conducted with the students are analysed and discussed in relation to the findings of the diagnostic activity; and lastly, the findings are evaluated and their implications for South African school geography are assessed.

THEORY INFORMING THIS STUDY

Geography, as a subject in the formal school curriculum, is seen as worthwhile to the extent that it develops in learners an understanding of their own and other worlds through a conceptual framework of place, space and time. According to Catling (1987:19):

Geography is a study of places. As a discipline it has its origins, roots and distinctive contributions in the places, the whole world of which children are a part and which they will later help shape. The focus of geography lies in exploring the nature of places: what are they like? where are they? why are they as they are? what interactions occur between places, how and why? in what ways do they change and for what reasons? what is it like to be part of them? what issues of concern arise in different places and how can they be tackled? These questions lie at the heart of children's interest in and exploration of places.

Catling (1987; 1988) claims that without a sense of place we could neither survive nor grow and that the development of a sense of place is fundamental to the education of the child. It is this sense of place, of making sense of and understanding the world around us, that lies at the heart of geography and should be the cornerstone of the school geography curriculum. Contemporary geography educators concur that an ability to understand place and the broader environment of which it is part is one of the central goals of geography (Binns, 1996; Bradford, 1996; Johnson, 1996; Heally and Roberts, 1996; Hunter, 1996; Rawlings, 1996, 1987; IGU, 1992).

Likewise, Environmental Education emphasises the need for developing in learners knowledge and understanding of the environment as a complex system of interrelated and interconnected dimensions (as shown in Figure 1).

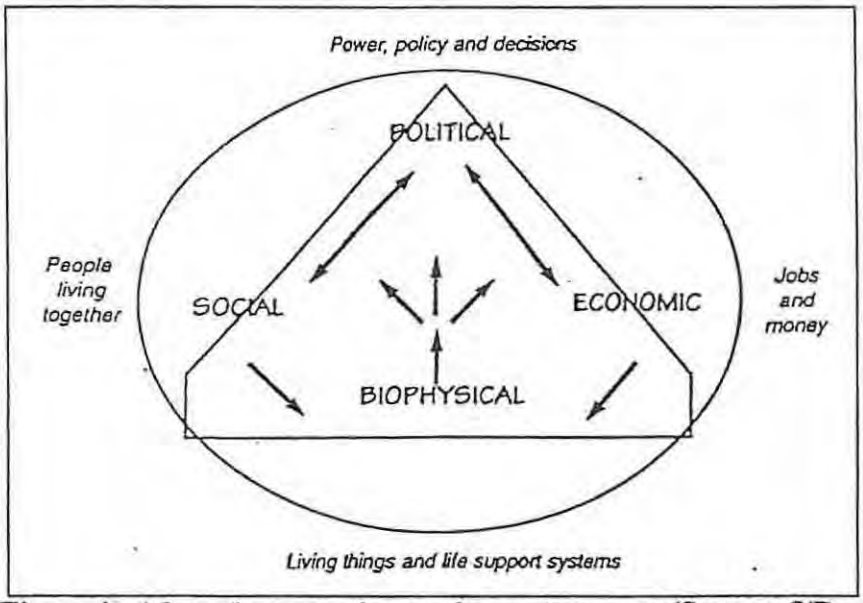


Figure 1: ***A broad perspective on the environment*** (Source: O'Donoghue & Janse van Rensburg 1995)

If we accept the notion of the environment as a complex system of interrelated and interdependent parts, then we need to ensure that our learners develop an ability to recognise and make sense of the interactions and interrelationships which exist among social, political, economic and biophysical dimensions of the environment (Janse van Rensburg & Lotz, 1998; Carter, 1996; Robottom, 1996; Fien, 1993a; Martin, 1993; Orr, 1992). Catling (1988) contends that an ability to make sense of interrelationships and their effect on the environment is not something that occurs naturally, but needs to be nurtured. If this is so, then it follows that such nurturing is only likely to occur if teachers themselves are able to recognise and make sense of the environment in a holistic and integrated manner.

Environmental educators (Fien, 1993a; Huckle, 1993) argue that education should be more than just education **about** and **in** the environment (essentially knowledge and understanding, and experiential learning); it should also include the further dimension of education **for** the environment. Huckle (1993) claims that education **for** the environment builds on education **about** and **in** the environment in such a way as to promote appropriate values and attitudes and develop in learners the competencies necessary for becoming actively involved in environmental issues. As is the case in contemporary geography education literature (Hunter, 1996; Rawlings, 1996; Unwin, 1992), environmental educators have called for a critical enquiry approach to achieve the necessary conceptual understanding of increasingly complex, modern environments (Huckle, 1995; Fien, 1993a).

Thus geography – as a broad and interdisciplinary subject with a strong tradition of developing understanding of physical-human relationships – is seen as an appropriate vehicle for achieving the goals of environmental education (Corney & Middleton, 1996; Lambert & Matthews, 1996; O'Riordan, 1996; Rawlings, 1996; IGU, 1992). According to Daugherty and Rawlings (1996), the multifaceted nature of geography, in combination with a critical questioning approach, renders the subject an appropriate vehicle for education in the broadest sense. However, while geography and environmental education are seen as pursuing the same goals and advocating similar strategies for achieving these, Symmonds (1996) argues that, as part of the South African school curriculum, geography still needs to prove that it is an appropriate vehicle for environmental education.

My experience with pre-service students at the teacher college in Mdantsane has taught me not to assume that students have a holistic awareness of the concept of environment. Unless we, as teacher educators, understand how our students actually construe the environment, there is a danger that the goals of geography education as adumbrated above will not be achieved. This is particularly so in South Africa, given that in the past, emphasis was placed on the memorisation of facts at the expense of skills, values and conceptual understanding (Van Harmelen & Irwin, 1995).

As future primary school geography teachers, the students with whom this study is concerned have the responsibility of ensuring that a conceptually sound foundation is laid for future education to build on (Wilmot, 1998; Catling, 1987). It is claimed that a geography educator's role is to enhance the understanding of place and to build on the environmental experience of the young child (Catling, 1987). If the educator is unable to do this, the child may struggle to develop a sense of place and to acquire the conceptual understanding and skills necessary for further education (Van Harmelen & Rozani, 1995).

If geography is going to play a meaningful role in the education of young South Africans and realise its potential as a vehicle for environmental education, then as a geography educator it is my responsibility to ensure that my students, as future teachers, are able to recognise and understand how the various dimensions of the environment, as shown in figure 1, are interrelated and interdependent.

Photographs and the local environment

Contemporary geographers emphasise the need for educators to make use of the local environment as a site for teaching and learning – one on which subsequent understanding of the wider global environment can be built (Bailey, 1996; Daugherty & Rawlings, 1996; Catling, 1987; Hale 1986). However, according to Adonis (1993) and Van Harmelen & Irwin (1995), the local environment is not much used as a site for teaching and learning in South African schools. Fieldwork, as an experiential approach to teaching and learning which utilises the local environment, is seen as posing enormous organisational problems for educators and consequently is rarely used (Adonis, 1993).

On completion of their pre-service teacher education, the students whom I teach will take up positions in township schools. Given the financial and logistical constraints in these schools, fieldwork may not be possible. I therefore decided to use colour photographs of the local environment as an alternative to first-hand field experiences. While colour photographs cannot replace experiential learning in the environment, they do nevertheless approximate reality and enable a form of access to it. Further, photographs are the most common secondary source of information about the environment included in primary geography learning support materials (despite the fact that the interpretation and understanding of photographs is sadly neglected in most South African schools) (Wilmot, 1998). Thus while using colour photographs primarily for the purpose of investigating students' perception and understanding of interrelationships in the environment, I was aware that I would at the same time be demonstrating to them the value of photographs.

METHODOLOGY

In seeking to investigate pre-service teachers' awareness and perceptions of the local environment using photographs, this research is concerned with *understanding* as opposed to measuring or proving what they do or do not know. I am interested in what they see, how and why they see what they do, and how they interpret and make meaning of what they see. I concur with Martin (1993) that, as unique individuals, each of us sees the world through our own set of lenses and that these are informed by our values. The present research project is thus aligned with the interpretivist paradigm, which focuses on understanding and interpreting reality within a particular context. It accepts that reality is subjectively constructed and that there is an inseparable bond between values and facts in the construction of knowledge (Fien & Hillcoat, 1996; Schwadt, 1994; Cantrell, 1993; Cohen & Manion, 1989).

The research comprises a case study of one class of twelve pre-service senior primary student teachers. It does not seek to generalise but rather is concerned with interpreting and understanding how these particular students perceive interrelationships in the environment (Stake 1995). According to Cohen and Manion (1989) a case study is a research approach in which observation of the characteristics of the individual unit, in this instance a class of pre-service student teachers, is central. The case study researcher concedes the "fragility" of his

interpretation and that the recommendations based on the results of the research should be viewed as tentative, provisional and context-specific (Walker, 1993: 174).

Data for this study were gathered as follows:

- A diagnostic photo reading activity was done with the students.
- Semi-structured interviews were conducted with the whole class. The purpose of the interview was to clarify and probe individual responses to the diagnostic activity.
- Data was analysed using qualitative and quantitative means in order to identify trends, patterns and anomalies.

The diagnostic photo reading activity: findings

The purpose of the diagnostic photo reading activity was to investigate the extent to which the students were able to identify and describe the interrelationships in the local environment as depicted in figure 1. To this end, ten colour photographs were selected for use in the activity. These photographs show a variety of scenes ranging from the street adjacent to the Teachers' College to Cove Rock some 20 km away (for copies of the photographs, see appendix 1). The photographs depict scenes of urban, rural and natural environments. While the students, as urban residents, are familiar with the urban environment, to teach geography they need to be able to make sense of rural and natural environments as well. According to Huckle (1995) and Unwin (1992), natural environments have ceased to exist as entities independent of human actions: learners need therefore to understand the interrelationships at the physical-human interface in order to make sense of the environment.

Orr (1992) also maintains that it is important for learners to be able to read cues that indicate an environmental problem. It is argued that an ability to do so requires an individual to see and make sense of the various dimensions of the environment in an integrated, holistic way. I thus photographed scenes that I perceived as having multifaceted and interrelated dimensions that breach the physical-human interface.

Before doing the diagnostic photo reading activity the students were briefed as follows:
First, I showed the students figure 1. We then discussed the various components of the

environment according to the premise that modern environments are multifaceted and interrelated. We went on to discuss terms such as 'interrelated' and 'interdependent' in an attempt to establish what it means to view the environment holistically. Secondly, I told students that I was interested in finding out how they read and made sense of the local environment. I told them that I had photographed scenes in the local environment and asked them if they would look at the photographs and write down their interpretations.

The students were given approximately 10 minutes to read and describe in writing what they saw in each picture. More specifically they were asked:

* What do you see?
* How do you feel about the environment portrayed (positive, happy etc.)?
* Is there a problem?

The analysis of the diagnostic photo reading activity was based on the framework developed by Wilmot (1998) in her study of the spatial conceptual and perceptual skills that children utilise when reading and making sense of pictures. She argues that in order to be an effective communicator of space, one has to utilise spatial perceptual skills which are linked to and dependent on one's spatial conceptual understanding. I decided to adopt the criteria used by Wilmot in her analysis of children's picture reading abilities (Wilmot, 1998). Tables 1 and 2 (see pp. 9 & 10) show the 6 criteria selected for use in this study. I shall now justify why I chose these criteria.

While the primary goal of this study is to illuminate how students perceive and interpret interrelationships in the environment (Criterion 4), the study also seeks to shed light on other dimensions (see Criteria 1, 2, 3, 5, 6) perceived as linked to and complementing the primary goal of the research. The criteria are additionally useful in helping to identify possible problems and/or difficulties that students may encounter when making sense of the environment.

Criterion 1 is seen as appropriate to this study in that it measures the extent to which a student is able to *observe* and *identify* the shape and form of 2-D objects or features in a picture and relate them to 3-D reality. Unless students are able to *recognise* and *identify* individual features shown in a photograph, it is unlikely that they will be able to *describe* them (Criterion 2). Likewise, an

ability to *describe* what one sees in a photograph does not necessarily imply that one understands how or why the various elements are linked or *interrelated* (Criterion 4).

Criterion 3 is seen as relevant to this study because one cannot claim to know and understand one's environment and the interrelationships within it unless one is able to articulate and communicate one's knowledge in some or other form, be it written, oral or graphic.

Criterion 5 is seen as relevant to this study in that it assesses the extent to which the students are environmentally aware. Curriculum 2005 advocates the infusion of environmental education into all learning areas. It is argued that achieving this goal will depend on the extent to which teachers are themselves environmentally aware. Criterion 5 thus evaluates the extent to which these students, as future teachers within the Human & Social Science Learning Area, are able to recognise and explain problems and issues in the local environment.

Criterion 6 is intended as a means by which to evaluate the students' sensitivity, values and attitudes towards their local environment. Fien (1993a) maintains that values are integral to a holistic understanding of the environment.

ANALYSIS AND DISCUSSION OF THE FINDINGS OF THE DIAGNOSTIC ACTIVITY

The students' responses to the diagnostic picture reading activity were analysed for the class as a whole and for individuals within the class in order to identify trends, patterns and anomalies. Their responses to specific photographs or groups of photographs were also analysed, in an attempt to see whether their level of understanding varied according to the different environments depicted. Tables 1 & 2 (pp. 9 & 10) provide a tabulated summary of the findings.

N = 12	PHOTOGRAPH NUMBERS									
NUMBER OF PICTURES WHICH THE THE PRESET TEACHER:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Recognised and identified individual features shown in photograph	12	12	12	12	5	12	12	6	9	10
2. Describe what they saw										
* little detail	3	3	5	2	2	3	1	7	5	8
* moderate detail	7	8	5	9	9	7	9	5	7	4
* rich detail	2	1	2	1	1	2	2	0	0	0
3. Expressed their ideas										
* with difficulty, poor syntax and vocabulary	6	5	6	6	6	4	5	5	8	5
* clearly using simple language	5	6	6	3	4	7	7	6	2	6
* clearly using more sophisticated technical (appropriate) language	1	1	0	3	2	1	0	1	2	1
4. Identified interrelationships										
* poorly, simple description, without meaningful links between phenomena	2	4	2	0	0	2	2	6	5	6
* only some obvious relationships	4	6	6	7	7	8	3	4	4	4
* fair, saw some relationships that showed a broad understanding	3	2	2	2	5	2	4	2	2	2
* showed holistic understanding – interaction between social, political & economic with biophysical	3	0	1	3	0	0	3	0	1	0
5. Identified a problem										
* Named the problem only	3	5	3	2	5	2	1	1	1	2
* saw causes/consequences of problem	5	2	9	10	2	0	0	0	0	0
6. Did the photograph illicit an emotional response?	2	1	2	0	1	1	2	3	0	0

Table 1: ***Summary of results of the diagnostic activity for the class as a whole***

N = 10	PRESET TEACHERS NAMES											
NUMBER OF PICTURES WHICH THE PRESET TEACHER:	Baka	Tuku	Louse	Mandla	Gadu	Goje	Wontoti	Mzondo	Somana	Leni	Ncula	Peter
1. Recognised and identified individual features shown in in the photograph	8	8	9	9	9	8	9	9	7	8	9	10
2. Describe what they saw												
* little detail	3	9	2	2	6	7	1	6	5	0	2	0
* moderate detail	6	1	6	7	4	3	6	4	5	7	7	10
* rich detail	1	0	2	1	0	0	3	0	0	3	1	0
3. Expressed their ideas												
* with difficulty, poor syntax and vocabulary	10	9	1	9	2	4	0	5	6	9	6	0
* clearly using simple language	0	1	8	1	8	6	3	5	4	1	4	5
* clearly using more sophisticated technical (appropriate) language	0	0	1	0	0	0	7	0	0	0	0	5
4. Identified interrelationships												
* poorly, simple description, without meaningful links between phenomena	2	7	0	2	0	6	2	4	1	4	1	0
* only some obvious relationships	6	3	3	5	3	4	7	5	8	5	6	0
* fair, saw some relationships that showed a broad understanding	1	0	3	3	4	0	1	1	1	1	3	7
* showed holistic understanding – interaction between social, political & economic with biophysical	1	0	4	0	3	0	0	0	0	0	0	3
5. Identified a problem												
* named the problem only	4	1	1	3	0	3	2	1	1	2	2	2
* saw causes/consequences of problem	2	2	3	1	5	1	2	3	1	2	2	4
6. Did the photograph illicit an emotional response?	0	0	1	0	0	1	1	1	4	1	2	1

Table 2: ***Summary of results of the diagnostic activity for individual students***

The findings for criteria 1, 2 and 4, according to Table 1, are as follows:

Criterion 1: With the exception of photographs 5 and 8, the class recognised and identified individual features in the photographs.

Criteria 2: With the exception of two students the class described what they saw in little to moderate detail.

Criterion 4: Generally, the class either did not identify relationships or only described the most obvious relationships between phenomena.

The above findings suggest that while the students are generally able to read the photographs – in that they can recognise and identify individual features – they struggle to make sense of the environment as a complex system composed of interrelated and dependent components. The findings support the claim that an ability to describe one's environment does not necessarily indicate or lead to environmental understanding (IGU, 1992).

The following is an unedited quotation from Leni's written response to photograph 2:

I think this is Mdantsane area. This is builted in rows. The others have been extended their houses. In between these rows there are big lights. We get lines for telephone in front of the rows. At the edge of this area we get some condensed trees, shrubs, including the hard grass. We get big trees each and every two rows and they are helpful because they prevent them from blowing winds and they help them when they are summer days. Between each of the two rows we get roads. From these roads there is some erosion. There is fertile topsoil. The top area is eroded by people and even by heavy rains. The colour of these houses are different. Some have bright colours and some have dark colours. We get a few people running in the road.

The quote reveals that Leni has identified the most prominent features in the photograph and described them in moderate to rich detail; however, she has not discussed how the individual features are interlinked and her description has not answered the question as to why this environment is unique or different. As such leni has failed to give this environment meaning.

From this it may be inferred that the fact that students have recognised and recorded individual features does not mean that they have understood the more complex whole of which these features are part. Rubilian and Caillon (1996) claim that understanding comes with studying the *whole* system, and that learners need to develop skills to see the environment in all its complexity. According to Fien (1993a), Orr (1992) and Bailey (1987), these skills are multifaceted and emanate from an interdisciplinary approach to environmental understanding. This has implications for geography educators at teacher education colleges, for geography as a broad and interdisciplinary subject has the potential to develop such skills.

Criterion 3: The findings suggest that the majority of students had difficulty expressing

themselves clearly in English and using appropriate geographical language. There appears to be some correlation between the ability to communicate effectively and the capacity to describe and understand the environment holistically. For example, the findings from Table 2, criteria 3 and 4, reveal both that Tuku, Baka, Leni and Mandla struggled to express themselves clearly and that their perception of the environment was narrow and descriptive. The following unedited quotations are from Tuku's and Baka's responses to photographs 1 and 4.

Tuku's response to photograph 1

In this picture there is a family standing near the fire sticks. I think they are going to make a big fire, which will cause a big smoke. After that smoke, pollution of air will take place. Pollution will damage the environment. Another thing there is grass which surrounded them. If they can keep making that fire, it can destroy the grass and bushed there, then erosion will take place. There is also houses there that can also be damaged by that fire.

Baka's response to photograph 4

The ghetto place. Ghettoes are close to each other. They are made up of zink and plank and easily burn. They are of a poor people. There is a tar road outside from the ghettoes. In one room there is a family of about 12 people who stay there. Others on their roof. There is a big stone that cause another danger in the community. How? If the wind is blowing too strong the zink is going up stone go down and beat another house. The door are not in one side. There is a problem of people who stay close to one another's ghettoes.

Their responses to the photographs reveal that these students struggled to express themselves, providing literal descriptions of what they saw rather than looking for meaning in the interplay between phenomena.

Louse, Peter and Gadu, on the other hand, had a better command of language and described the environment more holistically. The following unedited quotations are Peter's and Louse's responses to photographs 1 and 4:

Peter's response to photograph 1

I see a house made of plank and zink and some wood in front of it and a family portraying that

they earn their living through selling the wood of making fire. I am unhappy about this situation, because men are destroying our ecosystem by cutting the wood. The government is failing to create jobs for the jobless.

Louse's response to photograph 4

It is C section of Duncan Village where people are living in shacks. It is overpopulated area. In one shack living 6 people – aunt, cousins and brothers. Poor health. But the government provided them with electricity for better health. High crime rate because of unemployment and lack of life skills. The high problem is the continuous burning especially in winter.

Peter and Louse are able to communicate better and have recognised certain links between phenomena, indicating on their part a more holistic understanding of the environment.

However, good communication skills do not necessarily imply an ability to describe the environment holistically. Wontoti had a far better command of English than his peers (see Table 2, criterion 3), and yet his responses to the photographs were generally simply descriptive. The following unedited quotation is Wontoti's response to photograph 4:

In this photograph I see a concentration of shacks. The area is unplanned. There are very few trees. There are some electricity poles around. It is near the tarred road. There is a problem about this environment. The concentration of shacks makes it impossible for the area to be developed. You will find dirty water around this area. If there are toilets, they will not be in a good condition.

This suggests that whilst a good command of language assists in the accurate description of the environment, it does not necessarily imply a holistic understanding of the environment.

Criterion 6: The findings for the class as a whole (see Table 1) reveal that the photographs did not elicit an emotional response from many students. Possibly this can be attributed to the effects of an education in which the affective domain is neglected (Van Harmelen & Irwin, 1995). But it also raises the question of whether the students see themselves as part of the environments depicted in the photographs. Are they, on the contrary, looking at the environment from a

detached, external perspective? (This is apparently a common malaise associated with 20th century society: see Fien, 1993a; Orr, 1992). If, as Orr (1992) and Brennan (1991) claim, people must develop values and attitudes necessary for a sustainable future, then the teaching of values should form an integral part of our education (Corney & Middleton, 1996; Fien, 1993b). It would seem from the findings that, as Van Harmelen and Irwin (1995) claim, this is not taking place in many South African educational institutions.

Criterion 5: The findings show that where the class identified a problem in a photograph, they generally did not elaborate on the problem in terms of its causes or consequences. This supports the idea that while most students are able to observe and describe what they see in the environment, they do not necessarily see the environment as consisting of elements that affect one another.

The findings reveal a large range in ability amongst individuals in the class. There is evidence to suggest that only three of the students (Peter, Louse & Gadu) are able to utilise the range of skills needed to understand the environment as an interrelated and interdependent system.

The findings for Criteria 1, 2, 4 and 5 suggest that students are less able to identify, describe and explain the natural environments depicted in photographs 8, 9 and 10 than the urban environments depicted in photographs 1, 2, 4 & 5 (see appendix 1). This is evident in the findings for photographs 8, 9 and 10. Only 4 students saw a problem in these photographs and none of them expanded on the causes or consequences of the problem identified. Similarly in photograph 6, which shows a residential area bordering on a rural area, only 2 students mentioned the rural area, despite the presence of a badly eroded hillside. Neither student described the causes or consequences of this erosion. This apparent inability to identify problems occurring at the interface of the natural and built environments does not augur well for these students as future teachers. Hunter (1996) and Catling (1987) maintain that it is only when the interrelatedness of people and environments are recognised and explored that a holistic view of geography can be attained. According to Fien (1993a: 12), "education **for** the environment emphasises the development of a critical environmental consciousness based upon: the holistic view of the environment as a totality of the interdependent relationships between natural and social systems."

The inability of the class as a whole to identify and explain processes in the physical environment (the erosion shown in photographs 6, 9 and 10), as well as their narrow view of thermal electricity (shown in photographs 2, 4, 5 and 7), seem to indicate that they are not linking or integrating theoretical ("book") knowledge with the real world. This finding supports the claim that geographical education in South African schools is classroom-based, theoretical and divorced from reality (Van Harmelen & Irwin, 1995). Furthermore, the responses to photograph 7 – an environment which the class had visited previously, and discussed – as compared to their responses to the pictures of other non-urban environments, supports the view that we have to use reality in our teaching if we hope to motivate our learners and break down the barriers between school and the real world (Carter, 1996; Rawlings, 1996; Robottom, 1996; Fien, 1993a; Hale, 1986).

The response of the students to photograph 2, which shows NU 9 Mdantsane, an area familiar to all, revealed that most of them were unable to identify or discuss the connections between the political, social and economic elements which together have shaped the environment shown in the photograph. None of the students identified the tall searchlights as a remnant of apartheid. Instead some students identified and described the lights in more positive terms as being a source of light for the area and a means of crime prevention. The following quotation is typical of the students' response to photograph 2:

This is a place of houses. This is a neat vicinity with trees and grass in the yards. They have tall lights to make their vicinity bright at night. There is also tall grass and short trees not far from the houses. This is a planned vicinity because the houses are taking a straight line. This place is good because at night you can see people who are doing wrong things because of the flood lights. This place is good because it is surrounded by tall trees.

A summary of the findings resulting from the diagnostic activity is shown in Table 3:

• Their high school educational experience was one of transmission and memorisation of facts with interpretation, application of knowledge and conceptual understanding rarely, if ever, required. • Their teachers relied solely on the textbook for learning support material and rarely, if ever, used newspapers, television or examples from the local environment or fieldwork activities to compliment their teaching. • Most students are not mobile, having spent most of their time in Mdantsane. • Most students have limited access to information. They do not follow news events on a regular basis.

Table 4: ***Summary of the first stage of the interviews***

Generally, these students have been schooled in an environment divorced from reality and conceptual understanding, one in which memorisation and rote learning have been emphasised. Their experience matches that described as common in many South African schools (Van Harmelen & Irwin, 1995; Van Harmelen & Rozani, 1995).

Peter is a notable exception to the general school experience mentioned above: he was schooled in Alice and had a teacher who took the class on excursions, and used the local environment and news events to complement her teaching. Peter is also an older student who drives a taxi in his free time, reads the newspaper and listens to the news on a regular basis.

Findings of the interviews: Stage 2

The findings of the second stage of the interviews suggest that Peter, Louse and Gadu have a more holistic understanding of the environment than other members of the class. On occasion, these three students displayed the skills and conceptual understanding necessary for describing interrelationships in the environment. For example, in photograph 4 they linked the electricity pylons in the Punzana squatter settlement to political change and the RDP. They also managed to identify issues in the environment: the leaking water (photograph 3) and the poor state of the roads (photograph 2). The latter was linked to the non-payment of services. They mentioned the link between poverty and the environment in photographs 1 and 4. From their apparent awareness of issues it may be inferred that these students utilise and apply the sort of critical

thinking and questioning skills which are claimed to be necessary for environmental understanding and action competencies (Fien, 1993a; Catling, 1987). This suggests that these students have the potential to be educators **for** the environment.

However, many students seem to lack the basic skills needed to make sense of the environment as a system consisting of interrelated and interdependent dimensions. For example, some students struggled to recognise the environment shown in photograph 3 (the road adjacent to the college) and did not notice the leaking water, despite its having leaked for a number of years. Similarly, in photograph 1, some students did not recognise that the people shown on the side of the road were cutting down trees to obtain wood to sell to passing motorists.

The findings of the interviews were that most students struggled to describe the local urban environment (photograph 2; NU 9 Mdantsane) in terms of interactions between social, economic and political elements. This is surprising, considering that these students are part of this environment.

The findings of the interviews indicate that the students are generally less capable of interpreting natural or physical environments than urban ones. For example, even with prompting the students could not describe the consequences of erosion (photograph 6); and, even when questioned, did not see the deeply incised footpath leading out of the dune forest (photo 10) as a problem. The following extracts from the interviews illustrate this:

Researcher pointing to the erosion in Photograph 6:
Do you see a problem here?
Louse: I see something like ...er...soil erosion here. I don't know whether this is a river this one?
What is the erosion going to do?
Louse: Take off soil and take it to the sea.
What does this mean, the consequences?
Louse: It will destroy the animals in the sea especially those living in the start of the sea.

Researcher pointing to the deeply incised footpath leading out of the dune forest in Photograph

10:
What about that there, where Ncula is standing, do you see anything bad there?
Peter: No I don't see anything bad here, I mean Ncula is standing on the sand and this sand is build up by the sand from the sea.

The students were likewise unaware of the importance of and need for water conservation, despite all the recent media coverage and the 'Working for Water' programme. They were not aware of the impact of exotic trees on the water supply (photographs 7 & 8). They did not 'see' the wastage of water (photograph 3) as an issue or a problem despite the water crisis that South Africa is facing.

Generally, in the photographs the students did not describe relationships and/or problems at the physical-human interface. This implies that they are either reading photographs literally and are unable to recognise the relationships, or that they do not see the relationships or problems as sufficiently important to be worth mentioning. Either way there is a problem: firstly, geographers and environmental educators emphasise that seeing the interrelatedness of physical and human dimensions in the environment is the key to a holistic environmental understanding (Hunter, 1996; Orr, 1992; Unwin, 1992; Catling, 1987). Secondly, that one does not see an environmental problem as important implies that one is lacking certain values. If we accept Fien's (1993a) claim that environmental problems cannot be understood without reference to social, economic and political values, then the findings of this study have implications for teacher education programmes. They support the claim that the teaching of values has been neglected in South African schools (Van Harmelen & Irwin, 1995).

The findings also suggest that while students may have learned about the interplay between various dimensions of the environment in theory (these students have all dealt with the causes and consequences of soil erosion and the importance of water conservation as part of their geography syllabi), they are unable to apply this knowledge when reading and interpreting photographs of the local environment.

The students' written responses to the diagnostic activity and their verbal responses to interview questions have shown that most of them struggle to communicate their ideas in English. The

significance of this should be recognised, given that many of them will take up posts in schools where English is the medium of instruction. There is a danger that unless they are proficient in English and are able to use acceptable geographical language, they may not be able to frame questions that stimulate their learners' thinking.

CONCLUSION

This study has focused on how students read and interpret photographs of the local environment and has provided insights into the way in which they communicate their ideas – both in writing and verbally.

The findings of both the diagnostic photo reading activity and the interviews have shown that:

- By and large the students are able to read and interpret photographs of the environment. They identified and described different phenomena in the photographs but seldom, if ever, mentioned or explained how the various phenomena were linked. They thus read and interpreted what they saw in a literal sense, without identifying or explaining the relationships implicit in the scenes depicted in the photographs. There is evidence to suggest that most of the students do not view or understand the environment as a complex system consisting of various interrelated and interdependent parts (as shown in Fig 1., p. 2). Only 3 students, on occasion, displayed the skills and conceptual understanding needed to understand the environment as an interrelated and interdependent system. These students, unlike the others who merely described what they saw, were able to read between the lines and to identify and interpret issues. On occasion, these students displayed the critical thinking and questioning skills necessary for environmental understanding and action competency, which – according to Fien (1993a) – implies that they have the potential to be educators **for** the environment.

- Generally, the students struggled to communicate their ideas – both in writing and verbally – in English. They struggled to find appropriate words to describe what they saw and thought. Their lack of proficiency in English and their inability to utilise appropriate geographical language therefore affected the way in which they interpreted the photographs. This possibly accounts in part for their often-simplistic descriptions of

the environments depicted in the photographs. It emphasises that language ability is one of the skills needed to describe the environment holistically.

- On the whole, the photographs did not elicit an emotional response from the students. Possibly this is a result of their education, which has neglected the teaching of values. This in turn has affected their ability to identify, understand and care about problems in the environment. The phenomenon was particularly evident in the students' interpretation of photographs depicting natural environments, where they did not identify relationships and/or problems at the physical-human interface. This, according to Fien (1993a: 12), will prevent them from becoming educators **for** the environment, which requires one to "view the environment as a totality of interdependent relationships between natural and social systems."

- Students are not relating their formal education to the reality of the local environment. They were seemingly unable to apply their classroom-based learning to the environments depicted in the photographs. In common with many learners in South Africa, these students have been schooled in a classroom-based environment, divorced from reality, where rote learning and memorisation are practised at the expense of conceptual understanding.

The findings of this study have implications for geography teacher education programmes. Given the educational background of many South African children, we should not make assumptions that student teachers are able to read and interpret pictures of the environment holistically. While they may see and describe features and phenomena, this study has shown that they are unable to identify and explain connections among the various components. This suggests that they do not understand the environment as an interrelated and interdependent whole, consisting of political, economic, social and biophysical components. If we accept the claims made by contemporary geography educators (Hunter, 1996; Huckle, 1995; Rawlings, 1996; Fien, 1993a; Unwin, 1992) that education **for** the environment requires the development of a critical consciousness that views the environment in this way, then this study has highlighted a deficiency which needs to be addressed, as a matter of urgency, in teacher education programmes.

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APPENDIX 1

TEN COLOR PHOTOGRAPHS TAKEN IN THE LOCAL ENVIRONMENT

FIELDWORK IN THE LOCAL ENVIRONMENT: A CASE STUDY WITH PRESET PRIMARY TEACHERS AT DR.W.B. RUBUSANA COLLEGE OF EDUCATION

Robert Daphne

INTRODUCTION

Contemporary geography educators (Carter & Bailey, 1996; Catling, 1987; Rawlings, 1987) argue that fieldwork is vitally important to geographical education. It is also claimed that fieldwork in the local environment is an ideal medium to develop the enquiry-based skills (Chambers, 1995) which geography and environmental educators believe to be requisite for the development of environmental understanding (IGU, 1993; Fien, 1993). Yet despite recognition of its importance, this approach to teaching and learning geography is not practised in most South African schools (Van Harmelen & Irwin, 1995; Adonis, 1993; Boqwana, 1991).

The Senior Primary preset teachers to whom I teach geography at the Dr W.B. Rubusana College of Education, Mdantsane, have generally had no experience of fieldwork prior to encountering it in my course. Before embarking on this study, my feeling was that I had not adequately assessed or evaluated these students' fieldwork skills, and therefore could not be sure that they had developed the knowledge, understanding, skills and confidence to use fieldwork as a teaching and learning strategy in their own classrooms.

The new South African educational dispensation currently being implemented in schools, Curriculum 2005, stresses the importance of cross-curricular integrated learning experiences (Flanagan, 1998). The broad scope of geography - a subject viewed as bridging the humanities and the sciences - endows it with the potential to draw together various parts of the curriculum (Bailey, 1987). Furthermore, fieldwork offers enormous possibilities for learner-centred, participatory learning as advocated by Curriculum 2005 and, as such, is one of many approaches to teaching and learning through which learners can demonstrate the learning outcomes of the Natural Sciences and the Human and Social Sciences learning areas. However, these goals are only likely to be achieved if preset student teachers are taught the procedures for fieldwork. What is more, their learning should be experiential and participatory so that they can develop the confidence and ability to infuse fieldwork into their own teaching (Wilmot, 1999).

To this end I set about designing a number of field activities in the immediate environment of the college grounds. It was my intention that these activities take place within the constraints of the existing timetable so that fieldwork could become an integral part of the three-year college curriculum. The fieldwork programme described and critically analysed in this report should be viewed as linking up with and building on the students' prior experience at the college. The activities planned outlined a progression in terms of which the students developed skills and autonomy as they moved from the look-and-see and investigative type fieldwork to enquiry- and issues-based fieldwork (Fosket, 1997; Bland, Chambers, Donert & Thomas, 1996; Chambers, 1995).

Besides my intention to identify and implement do-able, manageable fieldwork activities, in which progression was evident, the fieldwork programme discussed in this report also represents an attempt on my part to make my teaching more rigorous. Unlike the fieldwork I had previously conducted with this group of students, the programme embodies an intention on my part to be more critically reflective and reflexive about my practice. I see this as a prerequisite for my own professional growth as a curriculum designer at the college where I work.

In this report, I describe, critically analyse and evaluate the process of designing and implementing a set of fieldwork activities with the second-year senior primary student teachers at Dr W.B. Rubusana Teacher Education College. The fieldwork programme started in the last semester of 1998 and extended into the first two semesters of 1999.

The report is structured as follows: first, the theoretical perspectives informing the fieldwork activities are identified and discussed; secondly, the research methodology is described; and thirdly, the design and implementation of the fieldwork activities are described and analysed. The report concludes with reflection on and an evaluation of the entire research process.

THEORETICAL PERSPECTIVES UNDERPINNING FIELDWORK

In this section I argue that fieldwork is intrinsic to geography, and that geographical fieldwork is an effective teaching and learning strategy of the kind advocated by Curriculum 2005. I also identify and describe different fieldwork approaches and explain how the theoretical perspectives informing them have influenced the fieldwork study which I planned and implemented with my students.

Why fieldwork?

Bailey (1987:12) claims that if a school pupil is going to learn as a geographer, he or she must be given opportunities to learn from direct observation whenever possible; that is why fieldwork is so vitally important to geographical education. He argues that

> *the main purpose of teaching geography is to equip the learners to use geographical insights, ideas and skills. The skills of observation, description, mapping, measuring, etc., can only be learned in the field by doing the job. There is no substitute for real world experience* (Bailey, 1987:12).

Contemporary geography educators (Carter & Bailey, 1996; Catling, 1987; Pearce, 1987; Rawlings, 1987) concur that fieldwork is essential for the development of geographical skills. According to Catling (1987), the role of geography educators is to build on the skills that young children have already acquired through observing their environment. He argues that, in order for these skills to be extended and developed, children's educational experience has to be grounded in fieldwork (Catling, 1987).

Geography and environmental educators emphasise the importance of an enquiry approach to teaching and learning (Barratt, Burgess & Cass, 1997; Carter & Bailey, 1996; Hunter, 1996; Rawlings, 1996; Fien, 1993; IGU, 1993). In a statement issued by the IGU (1993:12), student engagement in questioning and enquiry is seen as necessary for them to "develop the geographical skills of seeking solutions to current and future problems in the organization of space." Enquiry-based teaching and learning must, moreover, be integrated with young people's experience and relate directly to the real world (Daugherty & Rawlings, 1996). Fieldwork in the local environment of the learner is perceived as meeting these requirements.

According to Chambers (1995: 35), local issues have an "immediacy and a relevance" which makes them ideal for study. Enquiry into local issues involves active learning, through which learners can develop informed opinions concerning political, economic, social and environmental perspectives, become aware of attitudes and values, and develop the skills and knowledge to enable them to seek solutions to conflicts (Chambers, 1995). These ideas are congruent with the views of the Minister of Education, Dr Kadar Asmal (2000), who claims that if South Africa is going to be competitive globally we need to produce a flexible labour force, with workers who are adept at changing their way of working and even their occupations. It is argued that fieldwork - particularly enquiry- and issues-based fieldwork - offers exciting possibilities for South African learners to develop knowledge, skills and values for use in the real world.

Curriculum 2005 calls for the development of key concepts and skills which should be incorporated into all programmes of teaching and learning. According to Flanagan (1998) there is an underlying shift from a content-based, prescriptive, top-down curriculum, to a more flexible, integrated and outcomes- or skills-based curriculum. Because "geographical explanations are almost always multidisciplinary . . . geography is uniquely able to draw together the parts of the curriculum" (Bailey, 1987:9); geography, with its ability to synthesise and "demonstrate the relatedness of all knowledge" (Bailey, 1987:9), is therefore a highly appropriate medium through which to achieve cross-curricular critical outcomes. If it is agreed that fieldwork is essential to develop geographical skills, then the combination of fieldwork and geography would seem to constitute an ideal medium for the integration of learning across different subject areas as envisaged by OBE. Further, the attainment of learning outcomes according to OBE means that teachers will no longer be implementers of a fixed syllabus. They will have to select knowledge and ways of teaching appropriate to particular contexts of learning that will help learners towards attaining specific outcomes (Flanagan, 1998). The local environment accommodates this need by offering a variety of contexts and resources for teaching and learning (Flanagan, 1998; Carter & Bailey, 1996). But if our geography educators are going to make meaningful use of this educational resource, they will have to be taught how to use it through well-planned exercises in fieldwork.

According to Wilmot (1999) the scope and flexibility of the new curriculum will enable South African school geography for the first time to fulfil its role as an integrative discipline and a medium for environmental education. However, she cautions that the rhetoric of policy is only likely to translate into classroom practice if teachers have themselves had experiential learning opportunities, have themselves grappled with the new participatory, learner-centred approaches advocated by policy documents. The implications for teacher education courses are evident. Pre-set teacher programmes need to infuse new approaches into their curricula in a hands-on and participatory way. Simply 'telling' teachers about new approaches will not suffice: they need to experience them at first-hand (Wilmot 1999).

Fieldwork, while not a 'new' approach in geography education, is nevertheless one which is neglected in South African schools. The importance of fieldwork is apparent when one considers some of the learning outcomes of the Natural Sciences and Human & Social Sciences (H&SS) learning areas. For example:

- *Demonstrate an understanding of interrelationships between society and the natural environment (H&SS: SO 6).*
- *Use a range of skills and techniques in the human and social sciences context (H&SS: SO 9)*
- *Use process skills to investigate phenomena related to the natural sciences (NS: SO 1).*
- *Apply scientific knowledge and skills to problems in innovative ways (NS: SO 3).*

These outcomes stress the need for South African learners to demonstrate investigative and problem-solving skills. According to Barratt *et al.* (1997) and Chambers (1995), the local environment provides the learner with the opportunity to explore a whole range of issues, and this will inevitably involve asking questions and solving problems. Local issues have an immediacy which renders them truly relevant for the learner (Janse van Rensburg & Lotz,1998; Chambers,1995).

Fieldwork in South African geography classrooms

It is argued that fieldwork is a valuable teaching and learning approach both in geography and in terms of new educational policy in South Africa. Curriculum 2005 supports the notion of active

field investigation in the local environment of the learner. However, the reality is that fieldwork is the exception rather than the norm in South African schools (Adonis, 1993; Boqwana, 1991; Opie, 1989). Van Harmelen and Irwin (1995) describe current geography practice in the majority of South African schools as being classroom based and teacher-centred, with transmission and teacher-tell being the most favoured methods of teaching, and factual recall and rote-learning being encouraged at the expense of conceptual understanding and skill development. Responses to the questionnaire (Appendix 1) on the part of 12 Senior Primary Teacher's Diploma (SPTD 2) students at Dr. W.B. Rubusana College of Education revealed that these students' fieldwork experiences reflect what Van Harmelen and Irwin (1995) claim to be the norm. Most of the students had not experienced fieldwork at school, and their teachers had seldom, if ever, used the local environment as a resource for teaching and learning.

There are three further claims relating to fieldwork which are worthy of notice. First, fieldwork is seen to have the ability to motivate learners and positively transform the teacher-learner relationship (Bailey, 1987). Secondly, fieldwork is seen to be one of the most satisfying aspects of a geography teacher's job (Nowicki, 1999). Thirdly, the "immediacy of studying in the field is often so engaging that the evident result is more permanent learning. People learn best when they are excited, interested and involved" (Pearce, 1987: 36). If one accepts these claims, then it follows that teacher educators - myself included - need to capitalise on the potential of fieldwork to develop positive attitudes and enthusiasm towards teaching and learning. This is especially important in respect of students such as those I work with, given their prior school geography experiences.

The twelve SPTD 2 students' responses to the questionnaire (Appendix 1) concur with the research findings of Adonis (1993), Boqwana (1991), and Nightingale (as cited in Opie, 1989), with regard to the reasons why fieldwork is not commonly practised in South African schools. These are as follows:

- Teachers lack the confidence and skills to organise and implement fieldwork
- An apparent lack of resources
- Timetable constraints
- Negative attitudes by principals and teaching colleagues

- Teachers do not see the value of fieldwork.

In designing the fieldwork programme which forms the focus of this report, I identified two areas in particular that needed to be addressed with my students. The first was their apparent lack of the confidence and skills necessary to conduct fieldwork. The second was their perception that fieldwork requires vast resources (see Appendix 1), which implies that it is not possible to use fieldwork as a teaching medium in under-resourced institutions. An additional concern was that, while the students seemed to perceive value in fieldwork (Appendix 1), they did not realise just how important it is if we, as geography educators, are going to realise the true potential of our subject. All of these dimensions need to be addressed if we are to produce enthusiastic, confident and skilled teachers capable of making fieldwork a reality in schools.

It has been argued that fieldwork has a valuable role to play in school geography. It is an approach to teaching and learning advocated by educators both internationally and nationally. This, together with my own personal interest in demonstrating the value of the local environment as a resource for teaching and learning, and the fact that fieldwork is a neglected dimension in most South African schools, encouraged me to seek ways of introducing it into the curriculum at Dr W.B. Rubusana College of Education. I saw this as a worthwhile and manageable undertaking and one through which I could make a real difference to the teaching and learning of geography at the college where I work.

Background to the field study

The fieldwork study was designed for use with a class of twelve Senior Primary Teacher Diploma (SPTD) students at Dr.W.B. Rubusana College of Education, situated in Mdantsane near East London. While the SPTD class consists of students with different attitudes and abilities, there is homogeneity in respect of their previous educational experience and their future as prospective teachers. All 12 students are the products of a historically disadvantaged education system, and when they qualify they will almost certainly end up teaching in the same system. Further, as SPTD students they will be teaching primary school children whose success or failure in further education could depend on the foundation these teachers provide for them (Wilmot, 1998). If we accept that fieldwork is an appropriate if not essential method of developing geographical skills (Catling, 1987), then it is of the utmost importance that these

students be capable of implementing their own fieldwork programmes. This will necessitate their acquiring the confidence, skills and desire to use fieldwork as a teaching strategy when they start teaching.

Having taught this class geography for a period of 18 months, I had prior to this undertaking developed their fieldwork abilities in a variety of ways, including a 'Cooks tour' to introduce them to the rich possibilities for fieldwork in the local environment and numerous small field exercises in the college grounds that involved the reading of weather instruments, drawing scale diagrams and using the sun, shadow stick, watch and compass to determine true north. While these students had thus acquired some experience of fieldwork, I had not thoroughly assessed or evaluated their fieldwork skills and therefore did not know whether they had the confidence or desire to conduct their own fieldwork when they started their teaching careers. The present study was intended to investigate their fieldwork abilities, and to consolidate and develop their prior fieldwork experience, while at the same time developing their confidence and capacity to implement fieldwork in their own teaching. I wanted to be far more rigorous in my approach to the use of fieldwork as a teaching medium, and therefore decided to continually assess the students' fieldwork abilities and attitudes during the duration of the research. I also wanted to become a critically reflective practitioner, and to both assess and develop my own potential as an educator and curriculum designer by implementing fieldwork in the local environment.

I chose to use the college grounds (local environment) for this field study for a number of reasons:

- The local college environment offers endless educational opportunities.
- Fieldwork in the local environment does not require vast resources or incur great costs as more distant fieldwork can. It is therefore ideally suited to under-resourced institutions.
- It is manageable and problems can easily be addressed.
- Fieldwork can become part of the existing school timetable, which will encourage learners to see it as part of their normal learning experience.
- It allows the classroom and the outdoors to merge, making learning more meaningful and relevant (Daugherty & Rawlings, 1996).

- Fieldwork in the college grounds will be easily transferable. The students will be able to apply these ideas to their school environments when they begin teaching.

In short, fieldwork in the local environment is far less daunting and more manageable than more distant fieldwork, and as such, more likely to be used by students when they become teachers. Furthermore, it provides the ideal platform for both learners and teachers to develop their fieldwork techniques, skills and confidence before embarking on more distant and possibly more challenging field environments (Carter & Bailey, 1996).

What sort of fieldwork?

A useful overview of fieldwork is provided by Foskett (1997). He identifies and describes a number of phases in the historical development of fieldwork which he claims reflect different perspectives on teaching and learning. These phases can be summarised as follows:

Phase 1: Prior to the quantitative revolution of the 1960s.

Two approaches to fieldwork - the expedition and 'Cook's tour' approach. Both were concerned with the description of the landscape and were essentially teacher-led. Low level of pupil participation.

Phase 2: The quantitative revolution - 1960s and 1970s.

Scientific methods are applied to geography. Fieldwork develops into active field investigation. The development of skills is emphasised, with a strong focus on data collection and hypothesis testing. High level of pupil participation.

Phase 3: Enquiry and issues-based fieldwork - 1980s to the present.

This approach to fieldwork was born out of the perceived weaknesses of the scientific approach of Phase 2. While pupil participation was seen as a positive step forward, the Phase 2 approach came to be seen as over-emphasising data collection and technique at the expense of human attitudes and values (Fosket, 1997; Hart & Thomas, 1986). In contrast, enquiry-based fieldwork focuses on environmental issues and engages intellectual, practical and affective skills. The framework fieldwork model developed by Hart & Thomas in the mid-1980s is an example of enquiry-based fieldwork. Hart & Thomas (1986) maintain that framework fieldwork is an attempt to challenge the scientific quantitative approach by making geographical fieldwork more relevant and useful as a means to achieve environmental understanding. Framework fieldwork seeks to achieve this goal by emphasising the importance of people-environment interactions

where questions, issues, problems and challenges requiring a solution will materialise (Hart & Thomas, 1986). Framework fieldwork attempts to achieve a holistic understanding of the environment which recognises the subjectivity of human responses to situations. This is necessary because the objective scientific approach not only dehumanises fieldwork but also separates the human-physical dimensions of geography. Hart and Thomas (1986) therefore suggest that the scientific approach fails to demonstrate the worth of geography as a contributor to environmental understanding; nor does it provide meaningful and worthwhile learning.

Despite the perceived strengths and weaknesses of the different approaches to fieldwork as described above, Foskett (1997) maintains that there is no one right approach to fieldwork. The selection of a fieldwork strategy depends upon a wide range of factors relating to content, educational objective, the teaching environment and available resources, and the nature of the class being taught (Foskett, 1997:193). Table 1 summarises three commonly used approaches to fieldwork which, according to Bland *et al.* (1996), are appropriate for teaching and learning geography.

FIELDWORK ACTIVITIES	**LOOK AND SEE** 'Out of the window you can see ...'	**INVESTIGATIVE** 'If it moves measure it'	**ENQUIRY-BASED** 'There is no simple answer'
type of activity	eye-balling Cooks' tour talk and look guided tour field teaching	field study field testing investigating process studies model testing pure	field discovery hypothesis testing issues problem-solving applied
characteristics	passive transmission teacher-centred factual knowledge prescriptive specific qualitative observation-orientated non-participatory information-based	active finding out teacher-led,l-centred methodological systematic scientific qualitative & quantitative measurement-orientated participatory activity based	interactive evaluating pupil-centred, pupil-led interpretive open-ended scientific and humanistic qualitative & quantitative outcome-orientated fully participatory discovery based

Table 1: ***Fieldwork approaches*** (after Bland *et al.*, 1996)

While the look and see approach would appear to offer the least in terms of pupil participation and the development of geographical skills, this does not mean that the approach should be avoided. Foskett (1997) maintains that even though there is currently an emphasis on the enquiry approach to fieldwork, the look and see approach may be used as an introduction to an enquiry task. Likewise the importance of data collection and analysis associated with the investigative,

scientific approach will lead to the development of skills and expose learners to issues, which can lead to further enquiry. Foskett (1997) cites Barlett and Cox's idea of a continuum of teaching and learning, and argues that there should be progression in fieldwork: progression in terms of distance from the school, duration of fieldwork, complexity and range of skills required, and degree of pupil autonomy.

Theoretical perspectives in relation to this fieldwork study

Hall (1986:11) claims that "our views of knowledge largely determine our styles of teaching". According to the empiricist view of knowledge, the mind is like a bucket which needs to be filled with facts (Hall, 1986). Such a perspective would seem to inform the look and see approach to fieldwork as it is characterised by Bland et al. (1996), that is, as the transmission of knowledge to passive recipients. The dominant approach to knowledge in the 1960s and '70s, on the other hand, was positivism, in terms of which worthwhile knowledge could only be acquired through the objective collection of data using scientific methods. According to Hall (1986) this was a period when thought and action were subject, through the educational system, to (state) control, and the acquisition of knowledge was devoid of human values and feelings. Positivism led to the investigative 'if it moves, measure it' approach to fieldwork described by Bland et al. (1996). While the investigative approach actively involves learners in the fieldwork, it is similar to the look and see approach in that it is teacher-centred, with learners simply following instructions.

Before embarking on a Master of Education degree, I was unaware of the theory underpinning my teaching. Through the Masters programme and attendant critical reflection, I have become more aware of how I teach and why I teach as I do. I have come to understand the theory that informed my previous fieldwork activities. New windows have opened and alternate routes to knowledge, learning and teaching have become discernible. The following section describes how this has affected my thinking about and practice of fieldwork.

Until this fieldwork study, my ideas of fieldwork were based on the look and see and investigative approaches. For instance, I did not recognise the role of values or the importance of the students' own views on an issue (Chambers, 1995; Hart & Thomas, 1986). My fieldwork did not include investigative questions such as why? where? and how? It consisted essentially of data collection, which may well have lacked relevance and purpose from the students' perspective. I

focused on the mechanics of measuring and recording and tended to neglect analytical and interpretational skills - an inherent weakness of the scientific approach (Foskett, 1997). Further, I was driven by a syllabus which I saw as consisting of a body of 'facts' to know about the world: this rendered fieldwork as a means of teaching content instead of a vehicle through which to develop students' conceptual understanding and skills. More importantly, my fieldwork lacked learner-participation and initiative. I see myself as guilty of what Opie (1989: 136) describes as "hijack[ing] the thinking process by pointing out something that could be perceived by the pupil without assistance, thereby reducing the exercise to an academic game of collecting the right answer." In setting about this fieldwork study, it was my goal to change my thinking and practice of fieldwork. More specifically, I wanted to move towards a fieldwork approach characterised by increased student responsibility and autonomy, with what Pearce (1987) characterises as the task doing the teaching and not the teacher.

I nevertheless saw my original fieldwork endeavours as a useful starting point from which my learners and I could develop. I envisaged a form of fieldwork progression based on the following criteria proposed by Foskett (1997):

- An increase in the complexity of the fieldwork, from simple descriptive and observational tasks, to issue-based enquiries
- An increase in the demand of fieldwork skills
- An increase in learner autonomy.

It was thus intended not only that the fieldwork programme which forms the focus of this report should build on our previous fieldwork experiences, but also that our fieldwork skills and techniques should develop as the programme progressed. It was hoped that a more sophisticated and learner-centred enquiry approach to fieldwork would thereby emerge - one which included a role for the students in its development and implementation. Progression would be possible because the fieldwork programme was to be introduced within my normal teaching schedule. I intended the project to be ongoing and to progress from year 2 to year 3 of the SPTD course, thus enabling new ideas to be implemented and encouraging more teachers to come on board.

Outline of the fieldwork study

The fieldwork study designed for use with my SPTD 2 students was divided into five phases. An outline of each phase is included as Appendix 2 to this report. Keeping in mind the theoretical

perspectives outlined in the previous section, this section discusses the theory underpinning each of the phases. Further, I explain how each phase was designed to build on the previous one.

Phases 1 and 2 were planned as co-operative investigative fieldwork. Using the co-operative learning framework proposed by Wilmot and Euvrard (1998), the students were grouped and sent out into the field to collect data, after which they returned to the classroom to share their findings. The activities were designed in such a way that co-operation and sharing between groups was essential for the successful completion of the task. In Phase 1, student groups were required to investigate and record different aspects of the college. In Phase 2 they had to return to the classroom, share their information and prepare land use maps of the college (see Appendix 2: Phase 1 & 2). Despite co-operative learning being a new group work experience for both the students and myself, as their tutor, I did not anticipate problems as the students had worked in groups prior to this field activity. I saw co-operative learning as providing an opportunity for improving and refining our experiences of group work and as such, part of the progression I had intended for the fieldwork study.

In Phase 3, I tried to get the students to go beyond the mere measurement, recording and representation of data. I was influenced by what Pearce (1987: 35) refers to as the "Brunerian notion of going beyond the information given", which he explains as learners being

> *signposted along the route for enquiry by the judicious posing of questions . . . until they find themselves at a junction which can only be pursued if they themselves collect data from the local area. Problem solving then lies in the pupils own hands.*

I introduced students to enquiry by posing questions including: What? Where? Why? and How? (Appendix 2: Phase 3). My intention was that these questions should encourage the students to think about what they were doing and stimulate their own enquiry-based questions.

Phase 4, consisting of the student presentations, was intended as an information sharing and assessment phase. The students were not only required to present their interpretations and analysis of the land use graphically, but were also expected to share their ideas and findings in respect of the enquiry in Phase 3. I hoped that, through the presentations and ensuing

discussions, the groups would identify issues that would stimulate debate and lead to further enquiry in Phase 5.

In Phase 5, the students were required to come up with and develop their own investigative fieldwork strategies. I hoped they would identify issues that required investigation and plan accordingly, and that there would be evidence of critical thinking which, according to Barret *et al.* (1997), is one of the outcomes of enquiry-based fieldwork.

The design of my fieldwork programme was strongly influenced by the framework fieldwork model developed by Hart & Thomas (1986). A key dimension of this model is its integration of data gathering to encompass both factual and opinion-related information. Phases 1 and 2 involved the gathering and recording of facts, whereas Phases 3, 4 and 5 required the students to investigate and develop their own ideas and opinions. Further, Hart and Thomas (1986:213) propose that "fieldwork must be followed up rigorously as most issues are multi-dimensional and individually students cannot be expected to cover all facts." Phases 2 and 4 were thus designed as a form of follow-up to enable students to compare their findings and come up with an answer to the question of land use in the college grounds. Through the questionnaires (Appendices 1 & 4), the interview (Appendix 5), and the assessment of student presentations (Appendix 3), I show how the progress and feelings of the students were continually assessed, with a view to improving the fieldwork.

METHODOLOGY

This research is a case study. According to Cohen and Manion (1994) a case study is a research approach in which observation of the characteristics of an individual unit (be it an individual class or school) is central. In this study the case comprised a single class consisting of 12 students. According to Stake (1995) the goal of a case study is to understand the case rather that to seek to establish generalizations about the wider population to which the unit belongs. My goal is to identify and understand the problems a specific group of students experienced while undertaking fieldwork in the college grounds.

The methodology which informs this particular case study is that of action research. Action research is seen to be particularly suitable and relevant to this study for the following reasons:

1. Action research is purported to provide a means for all teachers to contribute to the development and evaluation of teaching programmes, processes and resources (IGU 1992). It allows for the idea of "teacher as researcher" (Mckernan 1991), which puts forward the notion that the teacher is best placed to enquire into educational problems. Furthermore the teacher is able to take control of the research process. This removes the boundary between "those who do research and those who consume it" (Fien & Hillcoat, 1996: 38). Action research is therefore relevant and useful to the context in which the research is applied.

2. Action research "engages both teacher and student in a shared search for knowledge - as such it is an educative experience for both" (Mckernan 1991:34). Cohen and Manion (1994) see the purpose of action research in the school or classroom as equipping teachers with new skills, sharpening their analytical powers and heightening their self awareness, while injecting innovatory approaches to teaching and learning into an ongoing system which normally inhibits innovation and change. In recent years I have designed my own curriculum, but this has been within the constraints of the environment in which I teach. I believe action research is an appropriate research approach because it offers me, as a curriculum designer, opportunities to analyse and evaluate my professional practice within the constraints in which I work. Further, a primary goal of this research is to enable preset teachers to empower themselves with the knowledge, understanding, skills and values to enable them to improve their practice and overcome inhibiting factors concerning the use of fieldwork in their future teaching environments.

3. Action research is a form of self-critical enquiry. "It is crucial to stand back and reflect . . . and to describe, interpret and explain what is going on" Mckernan (1991:32). Action research thus facilitates the development of reflexive skills and enables one to analyse and evaluate the alternative approaches to teaching and learning geography that are reflected in contemporary thinking, both nationally and internationally.

4. According to Cohen and Manion (1994:186), "action research is situational - it is concerned with diagnosing a problem in a specific context and attempting to solve it in that context". The problem which this research addresses is (my fear or perception) that the preset teachers whom I teach will not be able or willing to use fieldwork as a teaching strategy because they do not have the skills, experience or confidence to design and implement fieldwork activities.

5. Action research is a manageable approach in that it consists of a step-by-step process which is constantly monitored by a variety of mechanisms such as questionnaires, diaries and interviews. This facilitates the translation of feedback into modifications, adjustments, and directional changes, so as to bring about lasting benefit to the on-going process itself rather than some future occasion (Cohen and Manion 1994).

While I have continuously monitored our attitudes and progress using various mechanisms and, as teacher facilitator, have attempted to correct certain misunderstandings, I have not consciously taken action on this information with a view to bringing about change within the project. According to Mckernan (1991:22), I have performed but a "single research cycle or loop [which] would only serve to throw up some preliminary meanings . . . further evaluation and experimentation are required to exploit the deliberative process fully." While I intended the study to be ongoing and to develop, this did not materialize. Time constraints - partly due to the upheavals at the college in 1998 and 1999 and the fact that I underestimated the enormous amount of time required to implement a study like this - prevented it from happening. The study should therefore be viewed as the first stage of an action research project.

Data collecting techniques

This section describes the ways in which data was gathered, the problems which were encountered, and how these were overcome. Data was gathered in a variety of ways and from a variety of sources, including observation, my fieldwork journal, questionnaires, student presentations and my assessments of them, an interview with the four group leaders, student journals, and their written fieldwork proposals. I decided to use a variety of data collecting techniques as a means of ensuring triangulation, thereby reducing subjectivity and increasing the credibility of the study (Cantrell, 1993; Cohen and Manion, 1994).

According to Stake (1995), observation is the most important data collecting method for an investigative study. Observations should be recorded by means of field notes, both descriptive and reflective (Cantrell, 1993). I recorded my observations in a fieldwork journal. I struggled to compose detailed descriptions of what happened during each phase of the fieldwork because of my dual role as both teacher-facilitator and observer. My journal entries were thus mostly a collection of personal reflections on what took place during the implementation of the five phases of the fieldwork study.

In addition to the observation, I administered two questionnaires and conducted an interview. The first questionnaire was administered as part of the pre-fieldwork exercise. The purpose of the questionnaire was to ascertain the students' prior fieldwork experiences and their attitudes towards fieldwork, as well as to discover why fieldwork was not being used as a teaching strategy in Mdantsane schools (see Appendix 1). The second questionnaire (see Appendix 4) and the interview (see Appendix 5) were intended to provide opportunities for the students to express their views on the first four phases of the fieldwork study they were currently undertaking. The students' perspective was vital to the overall evaluation of the project: as Parlet and Hamilton (1976:94) maintain, "discovering the views of the participants is crucial to assessing the impact of the innovation." Also, comparison of the students' responses with the observations I had made during the implementation of the fieldwork was seen as a way of counteracting the possibility of researcher bias. The interview and the questionnaire were thus additional sources of information which complemented one another in terms of corroborating data and providing respondents with opportunities to express themselves.

According to Parlet and Hamilton (1976), questionnaires can be restrictive in the sense that the questions may not necessarily allow the respondents to say what they want to, whereas interviews of the open-ended and discursive kind which I conducted allow the respondents to express their feelings and opinions more freely. On the other hand, if the respondents to a questionnaire are permitted to remain anonymous they may be encouraged to say things that they might be reluctant to say in an interview. I decided to keep the questionnaires short and focused in an attempt to avoid what Parlet and Hamilton (1976:95) refer to as the danger of "mindless accumulations of uninterpretable data," while at the same time enabling the acquisition of

sufficient data to assess the views of the group as a whole. Interviews can be time-consuming so I decided to limit my sample of interviewees to the four group leaders. Mindful of Hopkins'(1993) claim that group interviews are more productive because they are less intimidating than interviews with individuals, I decided to interview the four as a group. Unfortunately, perhaps inevitably, my experience was that certain members of the group tended to dominate the interview.

According to Cohen and Manion (1994: 271), interviews can range from formal to "less formal" and beyond. In the less formal interview, "the interviewer is free to modify the sequence of questions, change the wording, explain them or add to them." I decided to conduct a less formal interview, both because I wanted to be sure that my respondents and I understood each other fully, and because I wanted them to be able to express their feelings and opinions free of the constraints imposed by a rigid schedule of questions.

The students were required to keep journals in which they recorded the data they collected, made notes in preparation for their presentations, and planned their own fieldwork activities in the college grounds (this was required in Phase 5 of the fieldwork study). The journal keeping was intended to get the students to plan their field activities and to record data in an organized manner for later use. Keeping a journal was a new experience for the students as they were accustomed to answering the questions listed on a fieldwork worksheet, which in effect guided and controlled their data collection.

DESIGN AND IMPLEMENTATION OF THE FIELDWORK

In this section I describe how the students and I implemented the fieldwork. While I have included notice of some of our positive and negative experiences, a final analysis of the fieldwork is provided in the section which follows.

Introducing the fieldwork study to the students

The fieldwork study began in the fourth term of 1998. The idea of an extended period of college-based fieldwork was not greeted with enthusiasm by the students. Their perception was

that fieldwork was only appropriate when done in an environment contrasting with the local one. Most of the students had little experience of travel and considered fieldwork as an opportunity to escape from the local environment. They were thus disappointed by the idea of fieldwork within the confines of the college. I found myself having to use the incentive of a field trip to Cove Rock, a nearby coastal area, to persuade them to co-operate in the local fieldwork study. I also found myself resorting to the threat of assessment – "the fieldwork will be part of your examination!" - to get them to take the field study seriously.

Pre-field preparation

I used a questionnaire (see Appendix 1) to ascertain the students' experience of and attitudes towards fieldwork. Their responses revealed that while they had not experienced fieldwork at school, they nevertheless had a positive attitude towards fieldwork as a teaching and learning strategy. This, I believe, was due to their having had some exposure to fieldwork at the College. Yet despite their positive attitude, the students felt that they would experience problems with implementing fieldwork when they started teaching. I tried to alleviate their fears by telling them that the fieldwork on which we were about to embark was not only manageable but also appropriate for use in any school environment.

A pre-field task was done. Essentially a revision task based on some of the map work activities we had done the previous year, the purpose of this task was to orientate the students and familiarize them with the immediate environment. Using topographic maps, an orthophoto and air photographs, we studied the College grounds. We did scale calculations and drew sketches of the College by enlarging the scale. The students also viewed the College and its surrounds stereoscopically to familiarize themselves with the topography. I felt that this pre-field task was valuable, in that it introduced and prepared the students for the tasks they would be required to complete during the ensuing field study. Specifically, the latter would involve their having to draw a land use map of the College to scale, as well as using maps and photographs as secondary sources of information to complement and check on their empirical observations.

Pre-field organization

I chose four group leaders who, in turn, chose two group members. My choice of group leaders was guided by the students' previous academic records, the idea being that high achievers were

more likely to act as tutors within a group. Each group was supplied with a journal, pencils, rubbers, basic tools for measuring (for example lengths of rope and tape measures) and a home-made clinometer. In the provision of equipment, I was trying to exemplify the idea that one does not need expensive or highly sophisticated equipment to do fieldwork. Each group - named after the group leader - was given a set of instructions (see Appendix 2). I went through the instructions with each group, trying to clarify exactly what had to be done, why they were doing it, and how each group had a responsibility to other groups for the successful completion of each other's land use maps.

In the field: Implementation

The fieldwork was divided into 5 phases (see Appendix 2). This section deals with each of the five phases separately.

During Phase 1 the groups went out and performed their tasks of physically measuring different aspects of the college. I moved between the groups observing and assisting where necessary. I noticed that some of the students had no idea of how to read a tape measure or organize their data collection. I found myself constantly encouraging them to record the data in their journals. I had to show them how to organize the recordings and make them meaningful by using sketches of the features measured. What I had considered to be a simple task for tertiary students proved to be problematic. It was evident that I had made unwarranted assumptions about their level of skills development.

The tasks required in Phase 1 were seemingly new to most students. Teaching them how to measure and record their data was time-consuming and meant that the 45-minute lessons were not long enough for tasks to be completed. This situation was exacerbated by the fact that we only met 3 times a week in different venues, which meant that we had no permanent base where we could set up and leave our equipment. We had to re-group for every lesson and gather the necessary equipment before resuming the data gathering process, which resulted in time being lost. The students found it very difficult to make up this time during their free periods, as they could not manage without my support. These factors prolonged what should have been a relatively brief and simple exercise. Nevertheless, the students seemed to enjoy gathering data

and they learnt the skills involved in observing, measuring and recording the information gathered.

In Phase 2 the students returned to the classroom. At this stage they were all working towards a common goal - drawing a land use map of the College grounds and needed each other's data in order to complete their maps (see Appendix 2: Phase 2). The students collaborated, shared their data and tutored one another, often using Xhosa to clarify my explanations. The result was a rich and varied learning experience, very different from their normal classroom routine. The relaxed and co-operative atmosphere led me to believe that they were enjoying the experience. I found myself viewing the students in a different light while assessing their work informally and lending a helping hand when necessary.

Phase 2 was a valuable map-work learning experience, especially insofar as understanding and working with scale was concerned. The drawing of land use maps not only tested and enhanced graphicacy skills, but also developed the students' numeracy skills, as they multiplied, divided, calculated percentages and surface areas, measured with protractors and worked with calculators.

Phase 2 confirmed the advantage of local fieldwork. When students encountered problems with their data they were able to re-visit the site and check their data. This was a common occurrence throughout Phase 2. The students were able to move in and out of the classroom to check their observations and measurements. This enabled them to improve their observation skills, an essential skill for geographical enquiry (Catling, 1987; Thompson, 1999).

In addition to the positive outcomes outlined above, the fieldwork process exposed several worrying factors. Some of the students lacked basic numeracy skills. They were unable to measure accurately with a ruler; they had no idea how to use a protractor, and were often unable to use a calculator because they were unsure whether to multiply or divide. None of the students could work out surface areas using triangles and squares, and very few of them could recall how to construct bar and pie graphs - despite their having done this in their first year at the College. Their lack of understanding was evident when they failed to question calculations and measurements that produced unrealistic answers. They were unable to apply skills they had been taught the year before, often claiming that they had forgotten how to perform a task.

Phase 2 was a novel learning experience for both the students and myself. Normally a topic is taught, tested, marked and possibly re-taught in a short period of time. During Phase 2, I made the students' re-work their maps and graphs until they were of a standard sufficient to provide evidence that the students had achieved the intended learning outcomes of the exercise, both in terms of understanding and skills. Although this was a step in the right direction - the students being held accountable for the quality of their work - it was nevertheless time-consuming. I had under-estimated the time required, just as I had over-estimated the abilities of the students.

The students did not complete their land use maps in 1998. We had to resume the study in March 1999. This was problematic owing to disruptions at the College consequent on the announcement of its imminent closure and the re-deployment of staff. The work ethic at the College was at an all-time low, and this negativity affected the fieldwork study in that students were often absent or late for class and generally displayed an apathetic attitude towards their work. I noticed that certain students had evidently decided to be observers rather than participants in the fieldwork exercise. While it is possible to blame this situation on the larger educational environment, it also made me question the effectiveness of a co-operative learning exercise and the supposedly participatory nature of fieldwork.

In Phase 3 the student groups re-visited the sites in the College grounds that they had observed and measured in Phase 1. They were required to answer a set of questions that I had drawn up (see Appendix 2: Phase 3). The students recorded their findings in their journals, before returning to the classroom where they discussed their observations and prepared for their presentations.

I gave each group a copy of the assessment sheet I intended using (see Appendix 3) for the group presentations in Phase 4. We discussed the presentations and the nature of the assessment, and I explained how students would be involved in assessing each other.

Phase 4 consisted of the group presentations of the land use map. It involved the groups communicating their findings both graphically and orally. They were also required to analyse and discuss the findings of the enquiry performed in phase 3.

The group presentations were peer assessed using the assessment pro forma which I had drawn up and discussed with them (see Appendix 3). Three of the groups presented their land use maps and graphs in the form of a chart (i.e. a large piece of paper), while the fourth group used a transparency and the overhead projector. The land use maps and graphs were well constructed and most groups met the criteria laid down in the instructions given out in Phase 2. All four groups came to the conclusion that there was a lot of vacant land (approximately 70%) within the College grounds, and all made suggestions as to how this land could be used to benefit both the College and the local community.

One of the most pleasing aspects of Phase 4 was the manner in which the students engaged in the peer assessment exercise: they surprised me with their honest and fair assessment, and were often stricter in the awarding of marks than I was. As future teachers the presentations and peer assessment provided them with a valuable learning experience. I was impressed by the way in which the presenters tutored their peers on what their group had found, and by the way in which the other students took on the unfamiliar role of assessors. They responded well to the tasks, were attentive, observant, and apparently willing to learn from each other's mistakes.

However, despite the fact that the students had gone to a lot of trouble preparing visual aids, the presentations lacked originality and initiative. The land use maps and graphs were all very similar and their suggestions concerning the possible use of the vacant land were unimaginative. Similarly, while the groups answered the enquiry-based questions and identified issues in Phase 3, they struggled to make realistic suggestions as to how the issues could be addressed or resolved. Two of the most relevant issues that emerged were:

- the lack of security at the College, and
- the lack of student access to the College computers.

While all groups identified the cause of the security problem, only one group made a suggestion as to how it might be solved. None were able to formulate a plan of action or volunteered to investigate the problem further. Similarly, all the groups agreed that it was important to be computer literate for their future job prospects, but they did not identify solutions or propose a plan of action to address the situation. I was disturbed by the students' unwillingness to offer their personal opinions or views on issues. For example, Peter's group stumbled on an issue when members of the College management refused to divulge the cost of a newly erected fence

around the College. While one student speculated about the possibility of funds having been mismanaged, no one was prepared to offer an opinion or engage in debate, and no one was prepared to investigate the issue further. It would appear that despite the fact that they were investigating their own environment and identifying issues that were relevant and of concern to themselves, the students still viewed the fieldwork study as somewhat theoretical or classroom-based and removed from their everyday lives. This may account for their unwillingness to get involved in seeking solutions to the issues raised.

If, as Hart & Thomas (1986: 214) contend, "framework fieldwork can only achieve its full potential if the findings are used to come to a conclusion about the subject under study, and to decide on any action which may be necessary," then this fieldwork study did not altogether fulfil the requirements of framework fieldwork. This was perhaps because the students had not fully understood the nature and point of an enquiry-based fieldwork approach, and because they lacked the requisite skills to implement it. They were able to identify issues but did so without raising the key questions associated with enquiry, namely: **Why** is there an issue? **How** can the issue be addressed? **What** action can I take?

Phase 5 of the fieldwork involved the students writing fieldwork proposals for use in their future teaching. These were poorly done. Among their shortcomings were the following:

- The students lacked original thought. Most of their ideas were based on the questions I had set in Phase 3, and the issues that were discussed in Phase 4.
- They described problems/issues that existed at the College and suggested solutions, but failed to describe how they would implement a plan of action.

Furthermore, the students did not follow the instructions for Phase 5: they failed to identify the intended learning outcomes of their planned fieldwork activities and they were unable to describe how they intended implementing their fieldwork. Only one group had questioned other third year College students to elicit their views on how the vacant land in the College should be used. Of concern to me, as their tutor, was the students' apparent failure to see the relevance of the fieldwork study, and the fact that they had not developed the skills necessary to plan their own fieldwork activities.

While Phases 3 and 5 were disappointing in that the work of most of the students did not register the progression I had hoped for, namely, from an investigative approach to an enquiry-based approach to fieldwork (Bland *et al.*, 1996), the students did nevertheless show progress in terms of being able to identify problems and issues in their environment. This suggests that they were learning to grapple with the human-physical interactions characteristic of their local environment, and perhaps beginning to view the local environment within the holistic framework envisaged by the framework fieldwork approach.

REFLECTIONS AND EVALUATION

Some of the strengths and weaknesses of the fieldwork study were identified and discussed in the preceding section. The perspective governing the discussion was derived from my own observations and reflections. In this section, I expand on these while also reporting the students' perceptions and reflections. I focus on some of the key ideas that emerged from the students' responses to the questionnaire (see Appendix 4) and the interview (see Appendix 5) conducted with the four group leaders. I go on to suggest ways of overcoming some of the problems we encountered during the fieldwork study.

The teaching and learning environment

The fieldwork study introduced changes in the teaching and learning environment that allowed me to interact with the students and really get to know them in a way that had never happened before in my teaching routine. My new role as facilitator, co-learner and guide provided for a far more relaxed learning atmosphere. The students did not appear to be intimidated by my presence or reluctant to ask me questions, which was often the case in normal lessons. Students who had previously remained anonymous in the classroom situation could no longer hide, and I became more aware of the difficulties they were experiencing. The difficulties and problems which became apparent - especially in Phases 1 and 2 - made me reflect on why certain members of the class had seemingly developed little or no understanding of the work I had previously taught them. It made me question my teaching practice - the methods and strategies I had been using - and the way in which I had been assessing students. I was led to question the value of the sort of tests and examinations I had been setting - both of which often required no more than factual

recall of the content taught, with a heavy emphasis on short-term memory as opposed to understanding and being able to apply the knowledge and skills concerned. I had to grapple with difficult questions about what I was doing. Had the type of learning that I had emphasised been of any worth to these students, when a year later they had forgotten what had been taught? The apparent lack of basic skills and understanding demonstrated by the students made me aware of the importance of a solid foundation if one is to build and extend students' capacities.

I have learned not to make assumptions about my students' skills or conceptual understanding. The fieldwork study has revealed that many students simply do not have the skills and knowledge that one would expect from tertiary students. Importantly, the study has revealed the difficulty of ensuring progression - in terms of both concepts and skills - if the basics are not in place. I recognise that one should not take anything for granted: instead, one should establish just what one's students know and can do before implementing new approaches.

The co-operative group approach

The fieldwork study used a co-operative group work approach. This meant that the students were no longer competing with each other: instead, they were obliged to work together to achieve a common goal. This approach worked well, despite requiring a new orientation towards the set tasks. The students' attitudes to one another improved; they showed tolerance when they had to wait for information from their peers; the groups helped one another to complete the tasks, and individuals tutored their peers in an attempt to develop a shared understanding.

My attitude towards the students also changed. Their responses in the interview and (to a lesser extent) the questionnaire helped me to see them as fellow learners with views and ideas that could contribute to the teaching and learning experience. The group leaders' response to the interview surprised me. I realised that they were not simply doing the fieldwork in an unthinking manner, but had identified and reflected on problems encountered. For example, they raised the lack of individual participation and responsibility as a problem. Peter identified the cause of this problem and offered a solution. He suggested that each student be given an individual task so as to ensure participation and accountability. I realised that the students were no longer accepting my position as an 'authority in authority' in an unquestioning way: instead, they were challenging the way in which I had implemented the fieldwork study and, importantly, were

suggesting improvements. This represented a marked change from the passive acceptance I normally encountered in the classroom situation.

The students' learning experience

The successful completion of the land use maps and the graphic presentation and analysis of related data constitute evidence of the students' ability to observe, gather, record and analyse data. These activities require the utilisation of numeracy, oracy, graphicacy and literacy skills. Fieldwork offers enormous possibilities for the use and development of these skills. For example, Phases 1 and 2 of the project enabled the practical application of map-work skills in a meaningful, real-world situation.

Student responses to the questionnaire revealed the following:

Yes, in Course 1, I was not clear about scales and distances but now I am very clear.

Yes, I have gained experience of drawing a map. It will also help me to taught [sic] *learners how to draw map, and this will help them enjoy reading maps.*

Responses in the interview revealed the following:

Mzondo: It can not be easy to forget because we are doing it ourselves but if we were just talking it theoretical, it will be easy to forget . . . .

Gadu: I think skill. What Mr. Peter is talking about is skill: measure something in reality and put it down on paper.

From these comments one may infer that the students found the practical map-work activities useful and relevant.

Perhaps the most disappointing dimension of the fieldwork study was what the students learned about enquiry-based fieldwork. The study did not develop in most of them a capacity for critical thinking, problem solving or decision-making, as enquiry based fieldwork purports to do.

However, comments made by the students suggest that the study succeeded in developing their observational skills and awareness of the local environment:

Peter: The project made us become more aware of our school, our environment. There are places we haven't even gone to in our school, like we didn't know that side. If we come to school we come this way so we don t know that side so we see things we have never seen before.

Louse: Yes we are more aware of Rubusana. Next to Rubusana there is a steep area. The directions of the buildings.

Inasmuch as observation skills are the foundation for geographical enquiry (Thompson, 1999; Bailey, 1987; Catling, 1987), in displaying an awareness of local issues and problems the students can be said to have developed the beginnings of enquiry-based skills. But they have not expanded on these skills sufficiently to acquire the holistic vision associated with enquiry-based learning.

Two of the goals of this research were to develop positive attitudes towards fieldwork among the students and boost their confidence in their ability to design and implement fieldwork in their own classrooms. Student responses to questions relevant to these goals revealed the following:

For me I like it because I hate memorising facts.

Yes, it gives me confidence to embark on fieldwork.

Yes, because it is not boring. Pupils are the one who are active more than the teacher. It gives pupils the chance to discover for themselves.

Yes, this will help learners to learn something real, not only fact or history from a book which sometime have no idea about.

I have enjoyed making use of the chart to prepare my fieldwork. I even enjoyed calculations, which gives me a clear vision of what you learn.

Louse: Yes, we have discovered that it is not boring, we can do similar fieldwork at our schools like this one.

Gadu: It does not need factual and memorisation of content to do such things and to help the learners to learn the theory and make it interesting.

When compared to their responses to the questionnaire administered before the study commenced, these comments reflect a significant change in the students' attitudes. Prior to the study, the students acknowledged fieldwork as a useful teaching approach but had reservations about implementing it when they themselves became teachers.

Problems and possible ways of overcoming these

Structural constraints on the project included the limitations of the timetable and the lack of a permanent teaching venue. On reflection, I believe that with more careful planning these problems could have been overcome. I tried to infuse fieldwork into the normal timetable and College programme, without consulting other members of staff. I should have been more realistic in terms of time management and arranged to have double periods of 90 minutes' duration. While I concur that fieldwork should be incorporated into the normal teaching timetable (Adonis, 1993), my experience suggests that this is not always possible. I would rather support Bailey's (1987) recommendation that the school timetable be modified to provide for protracted periods for fieldwork. I recommend that teacher education institutions move away from a rigid timetable consisting only of 45-minute periods, to one which allows for longer contact sessions to facilitate hands-on, activity-based learning. I have requested a weekly 3-hour practical session for geography, which is in line with what I experienced as an undergraduate student.

I have learned that fieldwork requires an enormous amount of planning on the part of the tutor. Equipment to be used in the field, however unsophisticated, needs to be on hand, and students need to have a base where they can work in groups. I should have tried to secure a permanent base before starting the study. This would have alleviated the logistical difficulties we encountered with having equipment at the ready. I did eventually manage to get a permanent

classroom for use during the study, and, as the following extract from my fieldwork diary reveals, this was an improvement:

It has made a big difference having a secure room to leave materials. Students have a key to come and go, as they like. None of the materials I bought i.e. calculator, pencils, pens, ruler, maps etc. have disappeared so the trust I have placed in the students has paid off.

Attitudes to education

Time constraints were compounded by disruptions at the College due to the re-structuring and the re-deployment process. By the beginning of 1999, morale at the Collage had reached an all-time low. The result was a poor work ethic, characterised by high levels of absenteeism and late-coming and a general *laissez faire* attitude to education. The negative environment was contagious: the frequent absence of students undermined the groups' ability to perform their tasks. There was generally no urgency to get to class, which further wasted what little time we had. Students made scant effort to work on the activities in their own time and therefore failed to take responsibility for the completion of the work. When the fieldwork study began in 1998, the students worked well in their groups; this changed during 1999, with some students assuming the role of mere spectators and depended on others to complete the work. They were reluctant to think or take any initiative, and gave up far too easily in the hope that someone would help them. The comment made by Peter during the interview with the group leaders illustrates this problem:

Peter: Like some of the group doesn't even know how to do that, like they wait for the leader to do the job, to do the work himself and show them how it is done and when you ask them again how did you do this? They do not know how it is done, only thing they want is to get it done.

The problems described above often made me despair. This is illustrated in the following reflection recorded in my fieldwork journal after a particularly bad period at the end of the first semester in 1999:

It is extremely difficult to get students to show initiative, to take responsibility for completing work satisfactorily. If I don't hound them the whole time they sit back and wait . . . . A most depressing last 2 weeks to the term, students are happy to memorise and write tests but they are

reluctant to think and really engage with the fieldwork. One would think they would relish the opportunity to escape from the chalk, talk, test syndrome, but I have been disappointed to find that they are reluctant to change, open new windows and try something different.

The co-operative group approach used in the fieldwork study should have provided an opportunity to address some of the problems associated with passive students. However, my attempt to implement co-operative group work was flawed, perhaps because my understanding of the approach was imperfect. For instance, while I assigned a specific task to each of the four groups, I neglected to assign tasks to individual members of the group - a step which, according to Wilmot and Euvrard (1998), can be crucial in co-operative learning. This meant that some students could assume the role of spectator, as described above. I have learned that while there must be a common goal for co-operative group work to succeed, individual accountability is equally important. Besides preventing them from developing the social skills associated with co-operative learning, the passivity of certain students caused resentment amongst other members of the class, especially the group leaders. This is evident in the following student comments:

Aspect like group work in which group members rely on the leader to do the work.

My feelings on group work are negative because others do not put much effort as we do in my group.

Group work is good but have disadvantage because sometimes peers rely on one person to work or make research.

Louse: Yes, it is good to use to be grouped but there are those who don't do their duty, others are passive. They take the group leader as the one who knows it.

Mzondo: Others do not want to participated they want you to do all the work.
Other members rely on the leaders . . . .

Peter: It had problems within the group. Like some in the group doesn't even know how to do that, like they wait for the leader to do the job, to do the work himself and show them how it is done.

These comments reveal that the co-operative group work aspect of the study was not entirely successful, in part at least because my organisation and management of the group work was problematic. I should have taught the principles and social skills of co-operative learning before embarking on the fieldwork study. I should also have rotated the leadership role in the groups, thereby giving each student a chance to lead, to show initiative and take responsibility.

The appropriateness of the fieldwork approach

Considering the difficulties experienced, I believe that I was over-ambitious and expected far too much from the students. As this group of students had already had prior fieldwork experience, I assumed that the study would enable progression. I also assumed that the students would cope with and complete Phases 1 and 2 without much difficulty, thus leaving sufficient time for Phases 3, 4 and 5 (the enquiry-based fieldwork). This did not happen: instead, the students spent most of the time on Phases 1 and 2, and preparing for their presentations (Phase 4). While the students were introduced to enquiry-based fieldwork (Phase 3), we did not have sufficient time to get to grips with this approach in the way that I had hoped. I did not provide sufficient guidance or scaffolding, a term which Pearce (1987) glosses as signposting along the way to enquiry. Had there been time to explore, discuss and implement the students' ideas as the second stage of an action research cycle, I believe far more would have been learned.

CONCLUSION

This report has described, analysed and evaluated a fieldwork study done with a class of Senior Primary students at Dr W.B. Rubusana College of Education, Mdatsane.

Fieldwork is recognised as worthwhile by national and international geography and environmental educators alike. Contemporary thinking suggests that there is no right or wrong approach to fieldwork, although enquiry- and issues-based fieldwork, with an emphasis on both

the human and biophysical dimensions of the environment, is frequently advocated. Further, many educators stress the importance of fieldwork in the local environment.

In this report, I have described and justified my approach to fieldwork, explained the various phases of implementation, and identified and discussed the strengths and weaknesses of the study. I believe that I have learned a great deal from the process; perhaps most importantly, it has served to open up my own teaching practice. Prior to the study I rarely, if ever, stopped to reflect on either the theory underpinning my practice or my actual practice. Through the various methods of data collection and analysis introduced in the course of this study, I have sought to become more rigorous in my teaching and have undoubtedly developed my capacity as a critically reflexive practitioner. I have shown how I have become more aware of what I am teaching, why I teach as I do and how I teach. Furthermore, the study has afforded me valuable insights concerning the students I teach. I am more aware of the difficulties they encounter when working in groups and when required to utilise basic fieldwork skills such as observing, recording and measuring. These insights will enable me to plan more effectively in the future.

While I acknowledge that the fieldwork study did not achieve the success I had hoped it would, especially in terms of empowering the students to implement enquiry-based fieldwork, it did reveal that certain students had acquired the desire and (at least some) ability to use locally based fieldwork as a teaching medium. It would therefore appear that the fieldwork study has to a degree achieved its primary goals, which were:

- The professional development of myself as a critically reflective and reflexive practitioner, with a view to my becoming a more effective teacher and curriculum designer;
- The development of my students' understanding and skills so as to give them the confidence to implement fieldwork in their own teaching.

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APPENDIX 1

STUDENT QUESTIONNAIRE AND

SUMMARY OF STUDENT RESPONSES TO SELECTED QUESTIONS FROM THE QUESTIONNAIRE

Student questionnaire - field work as a teaching strategy?

Information concerning this questionnaire:
Your name is not required.
There are no right or wrong answers to this questionnaire.
The purpose is to simply gauge your attitudes, experience and understanding of field work.
Please answer all the questions as honestly as possible.
All your answers will be treated confidentially.
Certain answers require you to circle the most appropriate answer
ie yes no or a b c d

1. Which high school did you attend? Give the name of the school and its location (Mdantsane, Potsdam ....)

.....

2. Which of the following examples would you describe as an example of field work.
   a. Taking a survey of your fellow students attitudes towards litter in the college grounds with a view to implementing changes.
   b. Working out the relative humidity after reading the temperatures of the wet and dry bulb thermometer in the Dr. W.B. Rubusana weather recording station.
   c. Going on an excursion to Nahoon Reef to study the coastal geomorphology and the wave action.
   d. Finding out where true north is by using a watch.
   e. Visiting Horseshoe valley to relate map work to reality.

Please make a circle around the correct answer/s, eg $\widehat{\frac{x}{y}}$

3. Did you ever embark on an educational field excursion during your school years?
   Yes No

4. If your answer was yes describe your experience?

_____

_____

_____

_____

5. Did your teachers use the local environment as a teaching aid? For example; a hot dry wind could be related to berg wind conditions; the use of your local urban area to relate to urban geography ; rain, cloud and cold could be related to cold fronts ..... and many more.
   Circle the most appropriate answer:

   a. Often b. Seldom C. Never

6. From your own experience as a school pupil and your observations during teaching practice do you think field work is used as a teaching method in local schools (Mdantsane and surroundings).
Circle the most appropriate answer
a. Often. b. Seldom c. Never

8. Assuming field work is seldom undertaken. What are the reasons for teachers neglecting this aspect of teaching? Circle the reasons you consider most appropriate.
   a. Teachers are not confident enough to embark on field work (they do not know or understand the local environment and cannot relate the theory to reality).
   b. Shortage of resources - money/combi (transport).
   c. Field work is a waste of time and cannot be related to the syllabus.
   d. Pupils do not enjoy field work.
   e. There is not enough time - one can't fit field work into the existing timetable.

9. Do you think field work is a useful teaching method?
   Yes No

   If your answer is yes mention 3 of the most important reasons why you consider field work a useful teaching medium.

_____

_____

_____

_____

_____

_____

11. What factors may prevent you from using field work as a teaching strategy when you become a teacher?

_____

_____

_____

_____

12. Have you enjoyed the small amounts of field work you have been subject to while you have been a student at this college? yes no
If no give a reason for your answer in the space below:

SUMMARY OF 12 STUDENTS RESPONSES TO SELECTED QUESTIONS FROM THE QUESTIONNAIRE

QUESTION NUMBERS: 3, 5 & 6

Fieldwork experience	Student Response (No's)				
	Yes	No	Often	Seldom	Never
Did you experience fieldwork at ashool?	2	10			
Did teachers use the local environment as a teaching medium?			1	4	7
Is Fieldwork used as a teaching method in Mdantsane schools?				2	10

QUESTION NUMBERS: 8 & 11

Reasons for not using fieldwork.	Number of times the problem was mentioned by students
Lack of confidence/skill.	9
Lack of resources.	8
Time/timetable constraints.	5
Negative attitudes of other staff members, i.e. the principal.	3
Fieldwork is a waste of time.	1

QUESTION NUMBERS 9 & 12

Student attitudes to fieldwork.	Student Response (No's)	
	Yes	No
Do you think fieldwork is a useful teaching method?	11	1
Have you enjoyed your fieldwork experienced at the college?	12	

APPENDIX 2

STUDENT INSTRUCTIONS
PHASES 1 - 5

PETERS GROUP
Record everything you do in your field work journal as this will be assessed and form part of your year mark in third year.
Read through all the instructions before you start because phases 1 and 3 will compliment one another.

Phase 1
You must measure the outer perimeter of the college grounds. Make a rough sketch of the grounds in your fieldwork journal and record all the measurements. Take note of the position of gates, pathways or anything of interest on the perimeter fence.
Once you have measured the reality of the college perimeter, you must decide how you are going map this area so it will fit onto your piece of paper which is approximately 90cm by 60cm? Decide on a scale. This is an important task as the other groups are going to use your scale to complete their maps. You will have to share your results with the other groups when you compile your land use maps and teach them how you performed your tasks.
You will also be required to represent the land use data graphically in the form of a pie graph and a histogram. You will be able to obtain the necessary data from the other groups.

Phase 2 will involve all 4 groups sharing their results and producing land use maps and graphs. Each group must produce their own map and graphs and draw their own conclusions concerning land use.
The finished Land use maps will be expected to follow the accepted format, ie, heading, scale, key, True North, contours ..... . But groups are free to use their initiative when they construct their maps and will be rewarded for originality, accuracy and clarity.
The land use graphs, ie, pie graph and histogram, must be large enough to use during your presentation.
Ask other member of staff to help you - maths teacher, someone with computer knowledge to draw the graphs on the computer.
(Think about using the OHP or a chart)
(Refer to phase 4 and your assessment pro forma).

Phase 3
Analysis of college (boundary) in terms of site, situation, shape, appeal ...
In this section you are encouraged to investigate, interpret and justify your findings and make suggestions on possible improvements.
The following questions are **only a guide** as to your analysis:
Take note of the position of gates, driveways and pathways with the idea of trying to explain why they are situated where they are.
Account for the shape of the college boundary? Why is it not square?
Why does the college have a fence around it? How much did it cost to erect this fence? Is the fence effective?
Why do you think the college is located in this particular position? Think of this in terms of site and situation.
Attitudes and values - is the visual impression of the college pleasing? How does littering reflect attitudes and values? Is the college environment safe? What do you think the other students think about the college? How can you gauge this without actually questioning them?
Are there any other matters you wish to investigate and discuss with your peers?

Phase 4 Presentation
You will have to present your completed land use maps and graphs to your peers during a report back session. You will also be expected to share the results of your analysis and engage your peers in dialogue concerning the issues you investigated.

You will be assessed on your presentation by me and the other groups. Refer to the assessment pro forma to guide you as to the relevant criteria concerning your assessment.

Phase 5. Student groups must develop their own field work strategies concerning Dr.W.B. Rubusana college.
Devise a field work strategy to investigate any aspect concerning the college 'environment'.

During phase 4 you investigated certain aspects of the college and during the presentations you listened to and discussed the ideas presented by your peers.

Are there any aspects concerning the college "environment" that need further investigation?
What aspect would you like to investigate?
What aspects are relevant and/or have important educational possibilities?

You are encouraged to ask other members of staff to help you with ideas : the history teacher, or staff member who have been involved with community projects. Remember that the function of our college is likely to change in the near future. Keep this in mind when you make your proposals.

Use your Geographical or Historical experience to come up with ideas. Remember fieldwork is not confined to geography but should be looked at as a cross curricular activity.

Although you are encouraged to discuss this as a class, each of the 4 groups must come up with their own proposal.

Prepare a one to two page document in your field work journal that spells out your specific and critical outcomes (Refer to our specific and critical outcomes when we embarked on the current field work exercise). Describes how you will implement your fieldwork inquiry and make suggestion as to what action you intend to take.
Use the field work we have just embarked on as an example of how you may plan your investigation but feel free to devise your own strategies.

We will discuss your field work proposals next year and try to implement some of them.

LOUSE GROUP

Record everything you do in your field work journal as this will be assessed and form part of your year mark in third year.

Read through all the instructions before you start because phases one and three will compliment one another.

Phase 1

You must measure the various buildings in the Rubusana grounds. Record the measurements of the buildings, work out surface areas and produce rough sketches in your fieldwork journal to show the size and situation of the buildings in relation to the whole. You will have to share your results with the other groups when you produce the land use maps. You will also be required to represent the shared land use data graphically in the form of a pie graph and a histogram.

Phase 2 will involve all 4 groups sharing their results and producing land use maps and graphs. Each group must produce their own map and graphs and draw their own conclusions concerning land use.

The finished land use map should follow the accepted format, ie, heading, scale, key, True North, contours ..... . But groups are expected to use their initiative when they construct their maps and will be rewarded for originality clarity and accuracy.

The land use graphs, ie, pie graph and histogram, must be large enough to use during your presentation.

Use other members of staff - maths teacher for pie diagrams, someone with computer knowledge to draw the graphs on the computer.

(Think about using the OHP or charts during your presentation).

(Refer to phase 4 and your assessment pro forma for more detail).

Phase 3

Analysis of buildings in terms of situation, function, appeal .....

In this section you are encouraged to investigate, interpret and justify your findings and make suggestions on possible improvements.

The following questions are **only a guide** as to what aspects you should try to investigate:

Are the buildings located in the middle of the premises?

Why are the buildings located where they are?

Do you think it was easy to build these structures on this particular site? (Look at the slope of the land and try to work out the gradient using the clinometer and the orthophoto).

Microclimate - which direction do the buildings face? How does this affect the classroom climate?

Briefly describe the function of the buildings and make a decision as to whether they are utilised properly. Make suggestions as to how the existing structures may be better used.

Attitudes and values - as you moved through the college premises performing your tasks what is your general impression of the college? Is it a pleasing environment? What do your fellow students think of their college? How would you gauge their attitudes without physically asking them?

Are there any other aspects you wish to investigate?

Feel free to consult other staff members or someone like Reverend Matabese who was involved in planning of the college buildings.

Phase 4 Presentation
You will have to present your completed land use maps and graphs to your peers during a report back session. You will also be expected to share the results of your analysis and engage your peers in dialogue concerning the issues you investigated.

You will be assessed on your presentation by me and the other groups. Refer to the assessment pro forma to guide you as to the relevant criteria concerning your assessment.

Phase 5. Student groups must develop their own field work strategies concerning Dr.W.B. Rubusana college.
Devise a field work strategy to investigate any aspect concerning the college 'environment'.

During phase 4 you investigated certain aspects of the college and during the presentations you listened to and discussed the ideas presented by your peers.

Are there any aspects concerning the college "environment" that need further investigation?
What aspect would you like to investigate?
What aspects are relevant and/or have important educational possibilities?

You are encouraged to ask other members of staff to help you with ideas : the history teacher, or staff member who have been involved with community projects. Remember that the function of our college is likely to change in the near future. Keep this in mind when you make your proposals.

Use your Geographical or Historical experience to come up with ideas. Remember fieldwork is not confined to geography but should be looked at as a cross curricular activity.

Although you are encouraged to discuss this as a class, each of the 4 groups must come up with their own proposal.

Prepare a one to two page document in your field work journal that spells out your specific and critical outcomes (Refer to our specific and critical outcomes when we embarked on the current field work exercise). Describes how you will implement your fieldwork inquiry and make suggestion as to what action you intend to take.
Use the field work we have just embarked on as an example of how you may plan your investigation but feel free to devise your own strategies.

We will discuss your field work proposals next year and try to implement some of them.

WONTITI GROUP

Record everything you do in your field work journal as this will be assessed and form part of your year mark in third year.
Read through all the instructions before you start because phases 1 and 3 will compliment one another.

Phase 1

You must measure and record the sizes of all the different sporting functions by means of simple sketches in your field work journal. Work out the surface areas that each sport occupies. Sketch the position of the different sports fields in relation to the whole premises and record this in your journal.
You must share this information with the other groups when you compile your land use maps. You will also be required to represent the shared land use data graphically in the form of a pie graph and a histogram.

Phase 2 involves all 4 groups sharing their results and producing land use maps and graphs. Each group must produce their own map and graphs and draw own conclusions concerning land use.
The finished land use maps will be expected to follow the accepted format, ie, heading, scale, key, True North, contours ..... . But groups are expected to use their initiative when they construct their maps and will be rewarded for originality, accuracy and clarity.
The land use graphs, ie, pie graph and histogram, must be large enough to use during your presentation.
Use other members of staff - ask Mr. Thomas how to produce a pie diagram or ask Mr. Dlanga to show you how to produce these graphs on the computer.
(Think about using the OHP or a chart).
(Refer to phase 4 and your assessment pro forma).

Phase 3

Analysis of sporting facilities in terms of position, use, adequacy .....
In this phase your are encouraged to investigate, interpret and justify your findings and make suggestions on improvements.
The following questions are **only a guide** as to your analysis:
Are the various sports fields located in a good position?
Why are they located where they are? What did the planners have to take into account before building the sports fields?
Are the sports fields adequately used by the Rubusana community?
Who makes use of the sporting facilities?
Are the sporting areas and their surroundings free of litter? Is the grass cut
and the surfaces maintained? Would you say the overall impression of the college is pleasing?
What improvements can you suggest concerning upgrading or the addition of other sporting facilities.
Are there any other problems you wish to investigate and discuss with your peers ?
Feel free to consult staff, students or community and to conduct a survey to get ideas and to verify theories.

Phase 4 Presentation
You will have to present your completed land use maps and graphs to your peers during a report back session. You will also be expected to share the results of your analysis and engage your peers in dialogue concerning the issues you investigated.

You will be assessed on your presentation by me and the other groups. Refer to the assessment pro forma to guide you as to the relevant criteria concerning your assessment.

Phase 5. Student groups must develop their own field work strategies concerning Dr.W.B. Rubusana college.
Devise a field work strategy to investigate any aspect concerning the college 'environment'.

During phase 4 you investigated certain aspects of the college and during the presentations you listened to and discussed the ideas presented by your peers.

Are there any aspects concerning the college "environment" that need further investigation?
What aspect would you like to investigate?
What aspects are relevant and/or have important educational possibilities?

You are encouraged to ask other members of staff to help you with ideas : the history teacher, or staff member who have been involved with community projects. Remember that the function of our college is likely to change in the near future. Keep this in mind when you make your proposals.

Use your Geographical or Historical experience to come up with ideas. Remember fieldwork is not confined to geography but should be looked at as a cross curricular activity.

Although you are encouraged to discuss this as a class, each of the 4 groups must come up with their own proposal.

Prepare a one to two page document in your field work journal that spells out your specific and critical outcomes (Refer to our specific and critical outcomes when we embarked on the current field work exercise). Describes how you will implement your fieldwork inquiry and make suggestion as to what action you intend to take.
Use the field work we have just embarked on as an example of how you may plan your investigation but feel free to devise your own strategies.

We will discuss your field work proposals next year and try to implement some of them.

GADU GROUP

You must record everything you do in your field work journal as this will be assessed and form part of your year mark in third year.
Read through all the instructions before you start because phases 1 and 3 will compliment one another.

Phase 1

You must measure the areas used for parking. Record the measurements and represent them on a sketch that relates the position and size of the parking area to the whole premises.

You must also ascertain how much vacant land there is on the premises. Measure this land (approximately) and work out surface areas (do not bother about small pieces of unused land). Record your measurements on a sketch that shows the position and size of the vacant land in relation to the whole.
You will have to share this information with the other groups when you compile your land use maps. You will also be required to represent the shared land use data graphically in the form of a pie graph and a histogram.

Phase 2 involves all 4 groups sharing their results and producing land use maps and graphs. Each group must produce their own land use map and graphs and draw their own conclusions concerning the land use.
The finished land use maps will be expected to follow the accepted format, ie, heading, scale, key, True North, contours ..... . But groups are expected to use their initiative when they construct their maps and will be rewarded for originality, accuracy and clarity.
The land use graphs, ie pie graph and histogram, must be large enough to use during your presentation.
Use other members of staff to help you: ie maths teacher for pie diagrams or someone with computer knowledge to draw the graphs on the computer.
(Think about using the OHP or a chart).
(Refer to phase 4 and your assessment pro forma).

Phase 3

Make a brief **analysis** of the vacant land and parking areas in relation to the college as a whole.
In this section you are encouraged to investigate, interpret and justify your findings and make suggestions on possible improvements.
The following questions are **only a guide** towards your analysis:
What is the state of the land in terms of litter, trees, grass, slope etc.
Is the land used for any other non-formal purpose? Who is making use of this land?
What function do you think this land is suitable for?
What ideas do you have concerning the development of this land?
How could the small pieces of land, ie, between buildings, be utilised? What is your impression of Rubusana in terms of its aesthetic appeal? Is it pleasing to you or an outside observer?
Are there any other factors you wish to investigate and bring to the attention of the group.
You are encouraged to contact other people concerning land use, ie, Miss Qaga.

Phase 4

You will have to present your land use maps and graphs to your peers at a report back session. Where you will discuss the analysis of the unused land and engage your peers in dialogue concerning the issues you investigated.

Your presentation will be **assessed** by me and your peers. Refer to your assessment pro forma to guide you as to the nature of the assessment.

Phase 5. Student groups must develop their own field work strategies concerning Dr.W.B. Rubusana college.
Devise a field work strategy to investigate any aspect concerning the college 'environment'.

During phase 4 you investigated certain aspects of the college and during the presentations you listened to and discussed the ideas presented by your peers.

Are there any aspects concerning the college "environment" that need further investigation?
What aspect would you like to investigate?
What aspects are relevant and/or have important educational possibilities?

You are encouraged to ask other members of staff to help you with ideas : the history teacher, or staff member who have been involved with community projects. Remember that the function of our college is likely to change in the near future. Keep this in mind when you make your proposals.

Use your Geographical or Historical experience to come up with ideas. Remember fieldwork is not confined to geography but should be looked at as a cross curricular activity.

Although you are encouraged to discuss this as a class, each of the 4 groups must come up with their own proposal.

Prepare a one to two page document in your field work journal that spells out your specific and critical outcomes (Refer to our specific and critical outcomes when we embarked on the current field work exercise). Describes how you will implement your fieldwork inquiry and make suggestion as to what action you intend to take.
Use the field work we have just embarked on as an example of how you may plan your investigation but feel free to devise your own strategies.

We will discuss your field work proposals next year and try to implement some of them.

APPENDIX 3

ASSESSMENT PRO FORMA

Assessment pro forma

Names of presenters: ....

The land use map will be scrutinised before the presentation. (the first 2 categories)

Is the land use map accurate and presented in an acceptable manner, ie Title, scale, key, True North, Declination etc?	/10
Is the map attractive and easy to read and understand?	/10
Were the graphs clear and easy to read and understand during the presentation?	/10
Did the presenters draw conclusions from their maps and graphs and use them to enhance their presentation?	/10
Was the presentation interesting/stimulating ?	/10
Did the presenters present their ideas in a logical manner so that learning and understanding took place?	/10
Was the analysis of the college thorough? Were the ideas original and did they justify their views and proposals?	/20
Did the presenters engage you in the presentation? Did they encourage your comments and contributions?	/10
General impression	/10
Total	/<u>100</u>

Please use this space to write some general comments on the presentation and the nature of the assessment. How could the presentation be improved upon and how could the assessment criteria be enhanced?

_____

_____

_____

_____

_____

_____

APPENDIX 4

ASSESSMENT OF STUDENT ATTITUDES (QUESTIONNAIRE)

Assessment of student attitudes -

1. What aspects of this field work experience have you enjoyed?

2. What aspects did you not like? Suggest some changes you would like to make?

3. Has the field work made certain aspects of your theory, ie, map work, more relevant and easier to understand?

4. Has this been a learning experience? If yes, give an example.

5. What are your feelings on group work and peer assessment?

6. Would you be able to implement a similar field work activity with your pupils when you become a teacher?

7. Has this exercise given you more confidence to embark on field work when you become a teacher?

8. Do you think teachers in schools should be encouraged to use field work as a teaching medium? Yes No

   Give reasons for your answer?

9. Remember with OBE, it is not so much the learning of content that is so important but the achievement of learning outcomes.
   Do you think field work is a suitable medium to achieve learning outcomes with your learners - Yes No
   Give a reason for your answer.

10. What are your feelings towards group presentations?

11. What attitudes and values have your fellow students communicated to you during their presentations concerning the college? Have similar attitudes and values been expressed by the different groups?

APPENDIX 5

INTERVIEW WITH GROUP LEADERS

Interview with Group leaders
Questions are shown in Italics

Has this fieldwork experience been educational?

Gadu; yes in terms of education it has, as teachers we gain – how to draw maps and difference in height, those of the map

Anything else?

Mzondo; how to make a scale
Louse; share ideas about improvements of college something like the needs of the college to improve.

Was it a positive experience ? Did you enjoy it or was it a bind?

Peter; we enjoy it because it was practical
Louse; it was not easy – we used to be outside the classroom and going around the Rubusana field
Mzondo; it can be not easy to forget because we were doing it ourselves but if we were just talking it theoretical, it will be easy to forget. We were doing it, because then it was enjoyable
Peter; it created curiosity amongst ourselves like we are not used to things like this, like measurings,

What aspects taught you the most? Where did you achieve understanding?

Gadu; I think skill What Mr Peter said was talking about is a skill – measure something in reality and put it down on paper.
Mzondo; drawing, by seeing that in that map can draw it ourselves and make self discovery
Louse also using orthophoto maps – we orientate ourselves
Gadu interest in other jobs – jobs like surveying. Multidiciplinary at least help me.

Did this exercise give you enough confidence to conduct your own fieldwork when you become teachers? When you go out into the schools next year are you going to use this type of exercise? Are you going to use the local environment?

Louse; yes we have discovered that it is not boring, we can do similar fieldwork at our schools like this one.
Gadu; it does not need factual and memorization of content to do such things and to help the learners to learn the theory and make it interesting.

Do you agree with the following statement; "Fieldwork is an essential teaching medium especially with the advent of Outcomes Based education and curriculum 2005?"

Peter; yes it is done in front of them they will be able to do it themselves.
Louse; yes they do their own research.

Did it encourage you to use your own initiative? Did it encourage you to think and use your own ideas?

Peter; yes it encourages us to think and to come out with our own ideas. Like the drawing that we have done, you just guided us and we did a lot on our own, it did engage us.
Louse; it was learner centred.

What do you understand by the local environment?

Peter; Local environment is the environment that is around us, the one we know, like Mdantsane. I can say more about Mdantsane, the things, than someone who does not stay here.

Do you think the local environment is an important teaching aid or medium, especially for geography?

Louse; yes because even the learner if you are teaching them you are using their daily experience.
Gadu; more interested in learning – population explosion – they aware of the coming crisis. Very important in community, they will like to bring in solutions to problems that are relevant to them.

Do you think you will have problems when you become teachers using the local environment?

Peter; no we won't have any problems as we are exposed to problems in life.
Louse; we have used the environment in our teaching and learning.

Do you like the idea of groupwork?

Peter; yes I like it bus sometimes it creates problems.
Louse; yes it is good to use to be grouped but there are those who don't do their duty, others are passive.
Mzondo; other do not want to participated they want you to do all the work
Louse; they take the group leader as the one who knows it.
Louse if you come with an idea they simply say it is good and agree, they don't contribute

I actually chose the groups in a way as I chose you 4 as group leaders because I thought you possibly had more knowledge and you could help the weaker ones. That was my idea. Would you have been happier choosing your own groups?

Mzondo; yes can be happier.
Louse; my one is the one I would choose , our group had no problems.

Why did you not have problems?

Louse; we all worked and participated. We all had time to work together as we could stay behind after school.

The problems you mentioned with group work - non-participation of certain members – how can we overcome these problems.

Peter; we can overcome this problem by giving each individual some task to do.

Within groups, some specific task?

Peter; yes.
Gadu; when organizing groups it must be them themselves who have chosen their topic.

Yes, a very good idea – if we had had time, I hoped you could propose to do something of your choice. In phase 5 I hope you will come up with your own ideas.

This Fieldwork was also a form of co-operative learning. I will tell you briefly what co-operative learning is; there were 4 groups, each group went out and looked at a different aspect and then you came back and shared your knowledge i.e. you co-operated and shared what you found. Was this a success or was it problematic?

Louse; I can say it was useful because we shared ideas. Like I went to Mr Peters group and asked for the outside of the college and if I had a problem I asked him to come and help me.
Peter; it had problems within the group. Like some in the group doesn't even know how to do that, like they wait for the leader to do the job to do the work himself and show them how it is done and when they ask them again how did you do this? They do not know how it is done, only thing thy want is to get it done. So that is a problem.
Peter; with group work we had the experience, like Louse has said, like for the boundary it was me, for the fields it was Wontoti, for the buildings it was louse …

Do you think it was better than working by yourself? - to be in a group and to co-operate? Was it a better way of working than as an individual?

Gadu; ya, I think better because you don't feel strenuous, I mean group members can help you complete the project. In that way it can help you a bit and to have it finished in time.

The normal classroom situation when you do tests and assignments involves a sort of competition between people, do you think it is better to co-operate than to compete? By better I mean do you learn more by co-operating?

Gadu; yes co-operation is good because competition is I think where you use competition to someone you have told something lets say for example doing a lesson and you expect those learners to have high marks and master the subject. Whereas there are people who have knowledge of which you have said but their marks are low, but that does not mean that they do not understand who, maybe the way the question was asked or writing – but as co-operation will give them a chance, they will know what is needed.

As group leaders do you think you taught the other members, did they learn from you?

Louse; I can say some but there are those other who are shy.
Gadu; You cannot be sure whether they have learnt or not because of their reservations.

As a small class you probably know each other well. What do you think of group work as a way of getting to know each other and communicating?

Peter; we know each other very well but there is a jealousy amongst ourselves – so that what makes it difficult.

Why is there jealousy? You are still .....

Mzondo; we are used to that ...
Peter; especially the ladies it is better to group the ladies alone.
Mzondo; no
Louse; I agree with Peter, group them, if they working together as ladies they can work better.
Mzondo; I don't agree. There will still be problems. They will think because if you are a leader you know better than them. Then they will think I know better than them.
Peter; it is better if we work together as gentlemen. Like if we want to stay together at school and do a certain task the ladies are always complaining about time, they have got someone to touch.
Gadu; yes a big problem really. They want to get to town, meet husbands so it is difficult.
Louse; I think Peter came with the best idea. Like each and every individual of a group must have a certain task to perform.

That is what I should have done. In fact if I had followed the co-operative strategy properly each person has their own task. One thing from my point of view, is that I got to know you a lot better that I have students in the past.

Gadu; in this exercise a teacher gets to know his students.

What is your view on group assessment?

Gadu; Yes it is very good to assess each other especially as we are teachers in training. We learn from assessing each other and gain skills.

Mzondo; if we are assessing we can see where we must change, maybe method we have used.
Louse; where we are assessing each other each and every individual must have assessment forms.
Peter; to assess each other is good because each one who is going to stand before us does not want to let his fellow students down and therefore tries.

Is it a fair way of assessing i.e. fairer that just the teacher?

Peter; Yes it is more fair

Presentation, the actual presentation, did you learn from each other, developing new ideas?

Peter; we did, like the mistake that I had done; I corrected them from the presentation by Gadu.

During this exercise did you come across issues you would like to investigate?

Peter; we did come across issues, like the cost of the fence.

Has this exercise made you more aware of your immediate environment, i.e the Rubusana environment?

Louse; yes we are more aware of the Rubusana. Next to Rubusana there is a steep area. The direction of the buildings ...
Mzondo; also the gradient.
Peter; the project has made us to become more aware of our school, of our environment. There are places we haven't even gone to in our school, like we didn't know that side if we come to school we come this way so we don't know that side so we seen things we have never seen before.

Do you think these ideas, group work, assessing each other, co-operative leaning do you think they are useful, will you use them as teachers?

Gadu; ya, very much useful because I believe to taught someone something early stage, develop his new skill, maybe you can bring capability at an early stage rather than wait until after STD 10, only then start to do something like this. To assess is something that teaches most skills that we need.

What was the biggest problem?

Gadu; time – time to work, to get together, couldn't stay after school
Mzondo; other members rely on the leaders – only work with you. I agree that time is a problem.

Since you have been with me, we have done a bit of local fieldwork, true north, the weather station and other fieldwork like our visit to the airport weather station, Horseshoe valley, Cove rock and Matiza.
How do you rate these 2 types of fieldwork – those going out and looking at the natural environment or the locally school based fieldwork. Which one was more educational ? Which one did you learn more from?

Peter; the one going out – we did not, .. never been there, did not know what was going on there and even horseshoe, it looks flat, although we drove past we never knew what was going on there
Gadu; fossils and things were educational, because even in other places we can know what we see in other places.

Which one did you enjoy the most?

Louse; Cove Rock, we gained a lot about even History and it was something new.
Gadu; I think it is very good, its extraordinary, there we can see the wonders of nature.
Louse; I thought I new East London but since I have been there I realised that I don't know – discovered some places.

PHOTOGRAPH 1

PHOTOGRAPH 2

PHOTOGRAPH 3

PHOTOGRAPH 4

PHOTOGRAPH 5

PHOTOGRAPH 6

PHOTOGRAPH 7

PHOTOGRAPH 8

PHOTOGRAPH 9

PHOTOGRAPH 10