CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

5.1 RESEARCH PROBLEM REVISITED

Prior to 1985, community members of the Shitlhelani village did not have much knowledge about electricity, and wood was the main of source of fuel resulting in massive deforestation of the surrounding area. Although ESKOM provided information and training relating to the use and benefits of electricity as an alternate source of energy and fuel, it is evident that the previous livelihood patterns of the Shitlhelani villagers have not changed significantly, i.e. deforestation practices continued despite the provision of electricity.

5.2 ANALYSIS OF FINDINGS

In this study, the villagers' current knowledge and understanding of electricity in relation to environmental practices were examined. By describing their experiences, the villagers' attitudes towards environmental issues and conservation were brought into the open for analysis. In most cases, they do not seem to be aware of the importance of nature conservation and the development of healthy environmental practices. The participants' level of education, their years of experience and other variables (refer to Table 3) were analysed to ascertain whether there is a relationship or correlation between these variables and their knowledge relating to electricity and environmental issues.

Table 3 Participants' Data and Research Variables

Participants	Chauke	Hobyani	Makondo	Maluleke	Manganyi	Mashaba	Mathebula
Level of education	STD 9	STD 8	TERTIARY	STD 9	TERTIARY	STD 10	STD 8
Number of rooms	3	9	7	5	10	8	3
Years in using electricity	1998 (8YRS)	1990 (16YRS)	1985 (21YRS)	1998 (12YRS)	1985 (21YRS)	1985 (21YRS)	1994 (12YRS)
Monthly Expenditure on electricity	R70	R250	R200	R150	R300	R200	R30
Type of meter box	20AMP	60AMP	60AMP	60AMP	60AMP	60AMP	20AMP

From the table, it can be seen that those participants (Makondo, Manganyi and Mashaba) who had the highest level of education, were also those who had the most exposure to electricity (21 years each) and their monthly expenditure on electricity was R200 or more. The only other participant who spent more than R200 on electricity per month was Hobyani who had 16 years of knowledge and experience with electricity. Four participants (Chauke, Hobyani, Maluleke and Mathebula) had little knowledge about electricity prior to 1985. Chauke and Mathebula who had the least experience using electricity (8 and 12 years, respectively), also spent the least on electricity. This may be due to the fact that these two participants had 20 AMP meter boxes installed which could not run stoves, and consequently, had to use wood to supplement their energy requirements.

From the study's findings, the following important observations were made:

- the more knowledge and experience participants had in using electricity, the greater the use of electricity;
- participants who spent the least on electricity and possess lower Amp meter units, are more likely to continue with deforestation practices; and
- ESKOM'S education campaigns and programmes have not had a significant impact on participants' attitudes and behaviour towards nature conservation and environmental issues.

5.3 DISCUSSION

This section relates the findings of the study to the practices of the Shitlhelani villagers with special reference to the learning theories and perspectives mentioned in the literature review.

5.3.1 Teaching and Learning Theories

Social Capital

ESKOM used an interactive social learning approach which also considered the broader social context in which learning was to take place. For example, the installation of electricity in Shitlhelani, village involved taking into consideration how and where the villagers lived, worked, and of course, used the resource of electricity. It recognised also the importance of developing social networks to promote shared community necessary to build trust and tolerance amongst the villagers and thus concentrated on developing mutually beneficial relationships between themselves, the community structure, and the community members themselves.

This strategy fits in well with social capital theory which promotes 'trust and mutual understanding and the shared values and behaviours that bind the members of human networks and communities and make cooperative action possible", (Department of Education, 2002: 31). According to many theorists, trust is the foundation of social unity and 'the expectation that arises within a community of regular, honest, and co-operative behaviour, based on commonly shared norms' (Fukuyama, 1995: 27). ESKOM used community meetings to inform villagers about the pre–electrification and post–electrification phases. At these meetings, community members from different villages gathered together and collaborative learning took place. Such interactions enabled participants to emulate skills of using appliances from others who had better experience of using them, and is recognized as being the tool to moving beyond individual learning to attain effective community learning (OECD, 2001).

Situated Learning and Community of Practice

According to situated learning *theory*, learning is inherently situated in a social context (Lave and Wenger, 1991). In workshops, ESKOM officials demonstrated how electricity works and showed the Shitlhelani villagers how to use a variety of different electrical appliances. This gave first time or inexperienced users of electricity, the opportunity to experience the benefits and uses of electricity 'hands-on'. This learning process (also known as legitimate peripheral participation) helped first time-users gain essential knowledge about electricity and practice the skills necessary to use electricity properly and safely. The approach enhances good working relations between the villagers and ESKOM officials and helps the two groups to form a 'community of practice' as they engage and acknowledge each other as mutual participants in the learning process.

Bannister and Fransella (1971) state that the mutual engagement of participants implies that people are always engaged in interactions whose meanings should be negotiated with one another. The Shitlhelani community consists of multiple identities – many members are illiterate and unemployed, while others have formal education, and some are self-employed. As these members become part of a community with a common interest and purpose (in this case, conservation of the natural environment), issues such as accountability and responsibility have to be negotiated. For prevention of deforestation and conservation of the natural environment to be successful, collective community action and collaboration is necessary. Education alone is not sufficient to bring about change; it requires the active participation and 'buy-in' from the villagers themselves. This notion is encapsulated in the spirit of *ubuntu* - a Southern African term for sharing foods, caring for each other during bereavement and being in harmony with each other (Mubangizi, 2003).

Collaborative Learning

Kilpatrick et al., (2003) state that in a community of practice there is a shift in focus and emphasis from individual learning to learning collaboratively. Group learning about electricity amongst Shitlhelani community members promoted the sharing of experiences. According to Pea (1993: 48), "knowledge is commonly socially constructed, through collaborative efforts toward shared objectives or by dialogues and challenges brought about by difference in persons' perspectives". Informal group discussions about the use of electricity made it possible for two groups of villagers to share their experiences – those who received electricity in 1985 and those who had electricity installed in 1994. Collaborative learning created an opportunity for dialogue and sharing learning experiences. For example, Hobyani described two incidents she saw on TV involving children who were electrocuted after touching live electric

cables. These horrific experiences were deeply rooted in her memory and relating these stories firsthand to other community members helped consolidate the dangers of electricity far more than a pamphlet ever would. In this way, the Shitlhelani villagers became 'literate' and knowledgeable about the use and dangers of electricity; likewise, using personal testimonies and videos showing the destruction of forests will expose the community to the consequences of destroying the natural environment, and helps raise an awareness of broader, more complex environmental issues such as global warming, climatic weather changes, etc

Participating in the effective use of electricity as a combat against environmental destruction is both a kind of action and a form of belonging. Such involvement shapes not only what Shitlhelani villagers do, but also who they are and how they interpret their actions. What people do with the knowledge they have acquired is of prime importance. In the case of the Shitlhelani community, it would mean changing the villagers' attitudes and perspectives about the environment. Schrage (1990) maintains that for people to collaborate requires a high level of cognitive involvement and preparedness to create a shared understanding. In an age of rapid technological advancement, and in the absence of collaboration, individuals cannot understand the complexities of modern problems without exchanging views and accepting the experiences of others.

5.3.2 Environmental Practices and Attitudes

The Problem Identified

The study showed that detrimental environmental practices and deforestation still continued despite the installation of electricity in Shitlhelani village. Poverty, high employment rates, and escalating electricity prices were cited as the main reasons for continuing deforestation practices.

> *Poverty is one of the reasons why people still go out to the bush to chop wood in order to cook. Another reason is that many people are unemployed and if one does not work you will not have money to buy electricity. Unfortunately I do not have powers to convince them but if I had powers I would put in place a system that if a person goes to the bush to either chop down trees or setting veldt fires that person should be arrested. We depend on trees for our better living. I would try to educate people that trees protect us, they serve as wind breakers. We should sit down as a community teaching each other about the importance of electricity and avoid the chopping down of trees and setting veldt fires.*
>
> Makondo

One participant, Makondo, recognised the importance of conservation and expressed his helplessness in initiating change:

> *Unfortunately I do not have powers to convince them but if I had powers I would put in place a system that if a person goes to the bush to either chop down trees or setting veldt fires that person should be arrested. We depend on trees for our better living. I would try to educate people that trees protect us, they serve as wind breakers. We should sit down as a community teaching each other about the importance of electricity and avoid the chopping down of trees and setting veldt fires*.

Action Taken by the Shitlhelani Community

Shitlhelani community initiated an Environment Awareness Campaign to address its local deforestation problem. The campaign involved all the community structures, including SANCO and The Royal Council and people from all 'walks of life'. Although the Environment Awareness Campaign met mainly to discuss environmental issues, it gave members the opportunity to share their concerns about other more pressing challenges such as the high employment rate and poverty. These priorities need to be resolved before addressing the use of electricity as an alternative source of energy. Poor, unemployed villagers do not have the means to pay for electricity or buy

electrical appliances; thus using wood as a source of fuel is the only resource available to them.

Although these villagers acknowledged that preserving natural vegetation is important because it provides food, shelter and protection for both humans and animals, they stated that they have no choice but to gather wood to heat their homes and cook their food. Villagers also rely on other inconvenient fuels such as paraffin, gas or candles. Wood is an inefficient fuel source and causes increased respiratory illnesses. Paraffin use results in health hazards such as pulmonary pneumonia and carbon monoxide poisoning, burns and deaths from accidental fires; and loss of property resulting from fires (NER, 2002). These shared concerns among the members of the Shitlhelani community characterise a community of practice in which individuals with common expertise attempting to resolve a situation that poses danger to their future (Kilpatrick, et al, 2003).

5.3.3 Shitlhelani Village as a Learning Community

The gathering together of community members as a learning group may have been a 'spin-off' from ESKOM's education campaign and training programmes. Shitlhelani community members used this opportunity to deliberate on the consequences of deforestation. Some participants mentioned that they had witnessed domestic animals like cattle, goats and sheep dying because of the scarcity of food, and homes destroyed by strong winds. This prompted them to explore new concepts and link their newly acquired knowledge with their own life experiences, e.g. members who had lived in the area for a long time commented on changes in weather patterns, and began to associate these with environmental changes. Although participants were not sure whether deforestation was a factor to changing the earth's climatic conditions, the possibility caused the Shitlhelani community to reconsider their actions. Tu and Corry (2002; Introduction section: 1) define the learning community as

> *A common place where people learn through group activity to define problems, affecting them, to decide upon a solution, to act to achieve the solution. As they progress, they gain new knowledge and skills.*

Being a part of a learning community creates a space for engaging with new ideas and experiences (Moore and Brooks, 1996). This study confirms Hopper's statement (2002) that communities develop when they begin with what they have by encompassing their knowledge, skills, and competencies that they have gained through their own indigenous methods of knowledge acquisition. Shitlhelani villagers, as members of a learning community, shared an interest in a variety of outcomes ranging from high level of unemployment, poverty, a need to protect the natural vegetation, first time users of electricity to the educational and health development of their children. When villagers are informed about the health problems (eye defects, lung diseases, etc) related to environmental degradation, they were interested to learn more about it, how it affects them and how it will affect future generations. This learning strategy is supported by Dewey (in Darkenwald and Merriam, 1982) and Mezirow (1991) who state that transformations in learning will occur if there were transformations of meaning perspectives. Senge (1999) adds that system thinking facilitates the development of capability of seeing how concepts are linked together, and by developing a reflective attitude; members of the Shitlhelani village will became empowered mentally, physically and emotionally.

While SANCO exists to serve the community, these committees focus on primarily on eradicating poverty and crime and do not have the time or resources to pay much attention to the better use of electricity in order to protect the natural environment. According to the participants, the SANCO committees are 'non functional' and ineffective. Manganyi reported that 'there was a committee some years back that was negotiating with ESKOM to install

electricity in their village but now it is no longer working as it was in 1985'. The role of SANCO in the community, its responsibility and accountability needs to be reviewed and revised to ensure better and more effective management.

5.4 RECOMMENDATIONS

ESKOM, as the provider of electricity, focused primarily on selling its product - electricity- in order to gain maximum profit. Consequently, educating potential clients (also referred to as learners) about environmental issues including the consequences of deforestation, air pollution, global warming, etc. is incidental to teaching them about the uses and benefits of electricity. However, education is not just about acquiring new knowledge and skills - it's also about helping learners through a process of change. ESKOM ought to acknowledge that it has a social responsibility towards the Shitlhelani community, and that its involvement in the life of the villagers will have an enormous effect.

According to Dewey (in Darkenwald and Merriam, 1982: 56), educators build a foundation for further learning by providing a setting that is conducive to learning. In so doing, the educator also becomes a learner, for the relationship between educator and learner is reciprocal. Both should plan and learn from each other. The educator is neither totally directive nor totally passive. While seeing learning as based in personal experiences of the learner, educators also share with learners insights that had come from their own experiences. Educators must adopt a holistic approach that recognises values and emulates the community's beliefs and ideals. In the case of ESKOM, teaching villagers about the advantages of using electricity should include discussions about environmental issues and problems relating to destructive deforestation practices. Villagers will then have a basis for furthering their own learning about the environment as they became more

self-directed learners. Making learning relevant and meaningful to the Shitlhelani people will help them realise their fundamental interdependence with one another and the world.

It is suggested that

- ESKOM continues with its electricity educational programs using workshops, videos, and group discussions. However it ought to include an environmental awareness programme where members of the community are taught about the dangers of deforestation and other detrimental environmental practices.

- ESKOM should promote itself not only as the producer and seller of electricity but as an entity that promote the conservation of the environment. For example, it should encourage and even sponsor the planting trees in rural villages especially since ESKOM has an environment department within its organisation

- ESKOM ought to distance itself from statements like the one uttered by Mayisha, one of its officials:

> *Telling people not to chop down trees is not our main objective, it is the responsibility of the nature conservers but our task is to sell electricity. I can say that chopping down trees is not good because they are food for animals; they provide shadows and also serve as wind breakers. But ESKOM's focus is on selling our product and how to protect peoples' life.*

- ESKOM should explore on other cheap and environmentally friendly sources of energy such as water, solar, and wind, and invest in developmental community projects that will help villagers to become independent and self sustainable.

5.5 CONCLUSION

This study examined the acquisition of knowledge and the environmental practices of Shitlhelani community members in relation to the installation, uses and benefits of electricity. The reported experiences of the participants highlight the importance of interactive community learning, active participation and shared learning experiences. These approaches promote the development of problem-solving skills as participants exchange views and critically reflect on their actions. The members of the Shitlhelani village sought to improve their environmental and livelihood practices as they engaged in experiential and self–directed learning. Although ESKOM officials argued that environmental education was not their domain, ESKOM as an organisation has a social obligation to inform people of the possible health and environmental hazards associated with the use of electricity in order to promote a more positive attitude towards conserving the environment. Although deforestation is the presenting problem, the Shitlhelani community faces even more pressing issues - poverty and high rates of unemployment. To prepare the members of the community to participate in the solution of these problems; educational programmes should provide them with opportunities that develop the necessary attitudes, understanding, knowledge, and skills to collectively change their environmental practices.