INDIGENOUS KNOWLEDGE INTERMEDIATE PHASE LEARNERS IN A RURAL AREA HAVE OF RAINFALL A CASE STUDY OF INTERMEDIATE PHASE LEARNERS IN RURAL KWAZULU-NATAL

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RESEARCH REPORT

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SUMMARY

The aim of this study is to find out what indigenous knowledge intermediate phase learners in a rural area have of rainfall. The case study was conducted at the Nondweni area at Nqutu. The study relates to the new Curriculum 2005 which emphasises changes in education, of which critical thinking, background knowledge and community involvement are included. The case study method was used to find out what indigenous knowledge these learners in rural areas have of rainfall.

Data was gathered through interviews, story analysis and observations. The case study found that learners' indigenous knowledge is neglected in schools. It was realised that curriculum knowledge about rainfall as is the case with many aspects of the curriculum, cannot be taught in isolation from contextual knowledge. The curriculum knowledge should be integrated with the indigenous knowledge learners' have of rainfall in the classroom situation.

Some recommendations are made for this problem. Firstly I recommend that teachers should not neglect learners' indigenous knowledge. This may imply that teachers education curriculum itself is improved and contextualised. Secondly I recommend that African researchers should become inspired and engaged in further studies about the indigenous knowledge in general, and knowledge that learners bring to school, so that this knowledge can be documented and systematised. Lastly, I recommend that Curriculum designers should incorporate indigenous knowledge in the school curriculum.

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CHAPTER 1

1. OVERVIEW OF THE PROBLEM

1.1 INTRODUCTION

Where ever you go in the world, you will find that weather, and rainfall in particular is a common topic of conversation. In Africa, rainfall is sacred and held in high respect because it yields life in crops while also connecting us with the heavens. This is particularly the case in rural communities which still maintain a holistic view of life and cosmology. Children who live in these rural communities are brought up with a set of knowledge relating to nature, social life and philosophy. Rainfall is a crucial aspect of people's existence and the manner in which the understanding of this phenomena is comprehended or taken into account in school work is critical in the overall development of learners. This study aims to investigate the indigenous knowledge about the formation of rainfall that intermediate phase learners in a rural area bring to school. This is done so that this knowledge may be documented with a view to facilitating its integration with curriculum knowledge in schools.

Although I assume that intermediate phase learners have adequate indigenous knowledge about the formation of rainfall, my problem is that teachers do not acknowledge this knowledge in schools. As a result, learners are not developing their knowledge as fully as could have been possible, and especially in geography where this area is located (see annexure B).

Indigenous knowledge is the knowledge that learners gain from the traditional context i.e. from their parents, the community and cultural practises. Indigenous knowledge is taught informaly at home through listening to stories that are told by a grandmother, e.g. the story of Nomkhubulwane, the rain daughter.

Rain-making rituals are also a source of this knowledge. By telling stories and organizing rituals, parents are transmitting their cultural knowledge to their children. Indigenous knowledge is therefore about the culture of a community. According to Odora Hoppers (2000:4) indigenous knowledge is characterized by its embeddedness in the cultural web and history of a people, including their civilization. This forms the backbone of the social, economic, scientific and technological identity of such a people.

By listening to stories and participating in rain-making rituals, children gain knowledge about the formation of rainfall without being aware that they are learning and gaining knowledge. Mosha (2000:19) emphasises this by saying that elders are keenly conscious that every moment is a learning moment, and are ready and willing to actually use every opportunity to mould the young (often without alerting the learner that learning is taking place).

Indigenous knowledge is about the philosophy of life of the African community. Therefore, teachers should be concerned about the background knowledge that learners bring to school and incorporate this knowledge into curriculum knowledge, so that it can be taught in schools. Carl (1995:247) emphasises this by saying that teachers should always evaluate whether their instruction is still in agreement with the philosophy of life of the community, as well as the goals of education. This means that they must interpret the philosophy of life of the community and school.

It is clear that indigenous people are a good source of this knowledge. African researchers should therefore use these people as a source of knowledge so that such knowledge resource may be preserved for the future generation. Teasdale (2000:13) stresses this by saying : "will the knowledge of indigenous people die as the elders die or can locally based academics facilitate a respectful incorporation of the wisdom of the elders into the future universe knowledge base?"

1.2 BACKGROUND OF STUDY

My study is based at Nondweni area where I am working. Nondweni is a rural area under Nqutu. Nqutu is in the rural areas of Kwazulu-Natal province. Most people living at Nondweni are unemployed and earn their living through subsistence agriculture. For their crops to grow well they still believe in rain-making rituals which are organised in the area. They also believe in Nomkhubulwane, the rain daughter. Cultural beliefs and practices are still very dominant here and the rate of literacy is very high.

Gultig (1995:25) states that for many years during the apartheid era teachers believed in theories of child development, i.e. fundamental pedagogics and Christian National Education, which emphasise that a child was like a blank slate, a "tabula rassa" who knew nothing. This belief has caused teachers to neglect the indigenous knowledge that inform the life of the majority of South Africans. For African children this creates two levels of negative description. Firstly, as a child, he or she is assumed to be "tabula rassa", but as an African child culturally he is assumed also to come from a primitive background from which there is no meaningful knowledge worth recognising.

Learners gain a lot of knowledge and insights about the formation of rainfall from their home environment. This knowledge is gained from stories which are told by adults and from rain-making rituals which are practised in the community. The story of Nomkhubulwane teaches learners that rain comes from the rain daughter. The rain-making ritual is another source of knowledge about rainfall. This ritual is practised in times of drought when girls are organised to request rain from the rain daughter, Nomkhubulwane. It thus becomes clear that learners enter schooling with knowledge from stories and rain-making rituals.

In the school environment learners are taught differently. According to Reynharg and Moorhouse (1995:65) rain can only be formed if warm air rises up the mountain (in the case of orographic rainfall). This warm air must first collect moisture from rivers and then rise up. After the air has risen up, it will reach condensation point and rain will be formed. (See annexure C).

Although the two types of knowledge come from different perspectives they compliment each other. This is because after the rain-making ritual is over, rain occurs and after all the processes stressed by the curriculum rain occurs.

Although the two types of knowledge compliment each other, they also have some slight differences. Home knowledge stresses that it is Nomkhubulwane who has the supernatural power for bringing rain, this creates a special relationship with rainfall itself. On the other hand, school knowledge emphasises that rain can be formed through an objective process.

Beyond the issue of difference and similarity is the issue of power relations between the two knowledge systems. The non accommodation of indigenous knowledge and the obvious preference for western cultural content and western perspectives has been a matter of concern for African academics. It is pointed out for instance, that the "knowledge" as defined within the context of globalisation is to a great degree, western-based and Americanised (Odora Hoppers 2001:2). Odora Hoppers (2001:14) stresses further that curriculum developers in Africa have attempted to disguise their cultural preference behind the mask of internationalization, the efficiency to maintain a euro-centric worldviews and conceptual categories when developing the school curriculum.

The African child is forced to uncritically learn foreign cultures and ignore his/her own culture and philosophy of life. As a result, schools produce African citizens who will not be accepted in the community and who will look down upon knowledges, cultures and rituals that are central in African knowledge systems. Gykye (1987:21) stresses the nature of the curriculum by saying that African thought have been forced into western or foreign conceptional pigeonholes in order to win some respectability. Apple (1992:4) emphasises this further by saying that the school curriculum is not neutral knowledge. What counts as legitimate knowledge is rather the result of complex power relation, struggles and compromises among identifiable classes, race, gender and religious groups.

Gultig (1995:18) agrees with Apple by stressing that education is cast in an especially active role as reproducing in the young those values, attitudes and skills best fitted to serve the interest of the dominant group.

Lastly, modernization theory also contributed to the negligence of home knowledge in schools. Teachers' beliefs on this theory caused them to see African knowledge as traditional, old fashioned and primitive.

1.3 PROBLEM STATEMENT

Curriculum in South Africa ignores indigenous knowledge from which learners' existence derives. Secondly, teachers do not acknowledge learners' knowledge in specific areas; with consequences for their creativity and overall development.

In this study, the focus is on rainfall which is a component of Geography and needs more time to be studied. At issue is the fact that by not bringing into play all prior knowledge of the children, the children (learners) are disadvantaged in terms of epistemology, and denied the opportunity to engage critically with the new content presented to them through the curriculum.

The focus on rainfall is relevant to my research question because rainfall is something that learners experience on a daily basis. Contextual, cultural and historical knowledge learners have acquired from stories and rituals is adequate to contribute to learners' understanding of new knowledge taught in schools. What is surprising is that teachers do not acknowledge this knowledge in schools and appear undisturbed by the consequences of their behaviour.

On the first day when the child enters the school, teachers undergo a process of cleansing the learners' mind with the belief that the knowledge that the learners have gained from home is not relevant at school and therefore brainwashing the learner will help so that the knowledge teachers have acquired from their years of training can be delivered on a clean mind. Why do teachers not refer to indigenous knowledge such as the stories of Nomkhubulwane and rain-making rituals? Why is this becoming a new thing which needs to be documented so that it qualifies for acknowledgement? Why girls' experience as participants in rain-making rituals neglected? In some instances, some teachers themselves were once participants in rain-making rituals which make it all the more ironical. The question however remains: What happens to all this knowledge when these children enter schooling? Goduka (2000:27) emphasises that indigenous ways of knowing are undermined.

I am going to focus to the problem that learners' home knowledge is not acknowledged in schools and that there is a need to integrate it with school knowledge. If learners might be recognised, they may present new knowledge from stories and rituals. Odora Hoppers (2000:2) emphasises this by saying that children from rural parts of Africa enter schooling in Grade one with knowledge about history, insects, plant life and social relations and have an organised sense of this body of knowledge. Goduka (2000:26) emphasises that Cartesian rationality present a view of reason that excludes and marginalises other ways of knowing and judging.

He continues to argue that it is based upon logical deduction and strict rules of evidence. Gultig (1995:22) emphasises that the African had to adopt the European's religion, master his language, acquire a knowledge of rivers and mountains, kings and queens, etc. in other words knowledge of the African became irrelevant to this acquisition of status. Odora Hoppers (2001:10) agrees with Gultig by saying that in countries such as Africa, where colonialism was accompanied by European nationalism, all the knowledge systems that people have used for generations were unilaterally declared unfit, irrelevant, primitive or even evil.

1.4 RESEARCH QUESTIONS AND AIM

My main research question is what indigenous knowledge intermediate phase learners in a rural area have of rainfall, how this knowledge relates to that in the school curriculum and what teachers could do to integrate the relevant knowledge.

More broadly however, it is about awakening the consciousness of teachers and policy makers to the existence of indigenous knowledge and to address the problem of neglect of learners' indigenous knowledge by teachers in schools and to document this knowledge.

1.5 RATIONALE

As an African researcher I have realised that for quite a long time indigenous knowledge has been excluded in the school curriculum. Indigenous knowledge has not been documented. This neglect of the learners' home knowledge creates frustration to learners but at the same time it isolates their rights as stipulated in the constitution. National Department of Education (2000:47) emphasise that a separation of theory and practice, giving rise to irrelevant programs that fail to meet the needs of learners and changing demands of the economy and society, hence contributing too high levels of unemployment.

It is hoped that this study will help African teachers to be brave enough to take the lead and acknowledge learners home knowledge and to integrate it with curriculum knowledge in the classroom situation. This study will be of benefit to the learners because the integration of the two knowledges will improve their performance while also enriching the teaching learning process in general. Documentation of knowledge will help curriculum developers to more readily consider indigenous knowledge in the curriculum. African researchers will be encouraged to undertake more studies on indigenous knowledge and to document this knowledge. This will benefit the African community likewise grandmothers and their stories do, because their knowledge will be recognised and preserved for use by future generation.

1.6 THEORETICAL FRAMEWORK

This study forms part of recent research in South Africa on indigenous knowledge development. In the context of education, indigenous knowledge is the knowledge that learners have gained before they started school. This knowledge is about culture and the philosophy of life of the community and its beliefs. According to Odora Hoppers (2001:10) indigenous knowledge is defined as that system of knowledge in philosophy, science, technology, education, astronomy, etc. that are grounded in the total cultural heritage of a nation or society and maintained by communities over centuries.

The development of an indigenous knowledge system in South Africa is important because literature has proved that learners come to school with knowledge which they have gained from practices, stories and rituals of the community. Indigenous knowledge forms the core of the culture and identity of members of the society.

Through this knowledge, parents give cultural wisdom to their children. It is part of national resource and therefore this knowledge should be acknowledged in schools. Odora Hoppers (2001:4) emphasises that South Africa should build curricula that parents in African communities can present to their children, and that education must put learners first by recognising and building on their own knowledge. Goduka (2000:28) argues that oral tradition are a means for the indigenous people to know their interpretations of the universe. Mosha (2000:18) agrees with Odora Hoppers and Goduka by saying, that it would be unreasonable and unfair to think of indigenous people as uneducated only because they have not gone through a modern or Euro-American system of education.

This study subsequently aims at documenting learners knowledge of concepts of rainfall. In addition the aim is to analyse what knowledge the school curriculum prescribes and then to propose ways in which the knowledges may be integrated.

1.7 METHOD OF STUDY

This study is a qualitative study. The reason why I am conducting a qualitative study is that I am going to collect qualitative data in a setting in the community. I will try to make sense of the meaning that people bring or attach to the phenomena of rainfall. I have chosen this approach because I will be dealing with people in their own homes and neighbourhoods where I am also a member.

Cresswell (1998:17) emphasises that a researcher has to go out of the setting of study because if participants are removed from their setting, it may lead to contrived findings that are out of context .

I will be conducting interviews with two learners from intermediate phase and one parent. I have chosen interviews because I think this method will help me to gain information from interviewees easily since they would be free to speak. This would help me to intervene so that I can get further information from them. Meulenberg Buskens (1997:1) emphasises that researchers have discovered that when you grant interviewees the freedom to speak, the information obtained becomes more relevant than when they would use a structured questionnaire.

I have chosen a target group which is easily accessible and relevant to my study since they are usually participants in the rain-making rituals. Cresswell (1998:111) emphasises that one has to find an individual to study who is accessible and willing to provide information or who sheds light on a specific phenomena being explored. The venue will be a community hall where it will be quiet and there will be a tape recorder. The tape recorder will remind me of the important issues.

1.8 SUMMARY

In this chapter the following were explained: The introduction to the study, background of the study, problem statement, research question and aim, rationale and theoretical framework. Lastly, the method of study was also explained.

CHAPTER 2

2. LITERATURE STUDY

2.1 INTRODUCTION

This chapter builds on the previous chapter where I have highlighted that learners come to school with their indigenous knowledge which is neglected in schools.

The purpose of this chapter is to further clarify the theoretical framework for this study and also to report on research done by others on the issues of this study. Therefore this chapter will attempt to clarify the indigenous knowledge intermediate learners in rural areas have of rainfall, the relationship between indigenous and curriculum knowledge and how the two knowledges can be integrated in schools.

2.2 INDIGENOUS KNOWLEDGE vs CURRICULUM KNOWLEDGE

Literature has proved that learners come to school with the indigenous knowledge they have acquired from home environment. This knowledge has its origins from the culture of a community. Odora Hoppers (2000:4) emphasise that indigenous knowledge is embedded in culture and history of a people. Goduka (2000:28) stresses that what is called education today was for the indigenous people, a journey for learning to be fully human and to be complete. He further stresses that indigenous religion is intended to place emphasis on cultural practices and spiritual values that are essential to the total well being of the individual learner and the entire society. Mosha (2000:20) emphasises that learning opportunity occurs when certain culturally accepted conditions are in place such as story-telling. This proves that learners come to school with their knowledge .

Literature defines curriculum knowledge as what is to be taught in schools and that this knowledge is dominated by the ideologies and culture of those in power. This means that curriculum knowledge is not about the culture of learners in Africa but western. Apple (1992:4) stresses this by saying that the school curriculum is not neutral knowledge but what counts as legitimate knowledge is the result of power relations, struggles and compromises among identifiable class, race, gender and religious groups. Odora Hoppers (2001:2) supports Apple by saying that knowledge is culturally western biased. She states further that African people were dominated through a contribution of brute force, through control and through divorcing the African child from his or her own experiences and environment in the context of schooling. Goduka (2000:26) stresses the nature of the curriculum by saying that when the history of education is discussed, only one educational thought and practice is legitimised, that which is steeped in European culture and tradition.

The fact that indigenous knowledge is culture based, clearly indicates that this knowledge caters for learners' needs so that learners do not loose their cultural reference and identity as African citizens. Contrary to this, curriculum knowledge does not cater for learners needs but it instils western culture. Learners' needs and experiences in schools are important and curriculum 2005 emphasises a learner centred framework, that education must put learners first by recognising and building on the knowledge they already have.

Teachers should change their attitudes and allow African students to bring their cultural experiences into the learning situation. Goduka (2000:27) agrees and emphasises indigenous sources of knowledge as important. He states that mythology, legends and superstitions are also known to be alternative models of knowledge construction.

Mosha (2000:11) concurs with other writers that emphasise the importance of learners' identity in society by saying that in their everyday lives, indigenous Africans try to strike a balance between their collective identity as members of society and their personal identity as unique individuals.

Literature has demonstrated that learners' knowledge is neglected in schools. Teachers are neglecting this knowledge because, this knowledge is not associated with reality, but only curriculum knowledge is said to be real because of its documentation. Odora Hoppers (2001:2) emphasises that teachers do not acknowledge learners knowledge by saying that teachers unknowingly suppress the authentic cosmologies of the very context within which the school is located and pursue the orderly transmission of the knowledge and information they have acquired during their years of training, unknown to them. Universities, she argues, refuse to acknowledge the knowledge present in African society. Goduka agrees with Odora Hoppers by saying that in this way indigenous ways of knowing are undermined. Mosha emphasises that euro-centric education destroys African identity. Hence this denies access to the fundamental values embedded in that identity.

Gultig (1995:18) emphasises that the aim of education is to reproduce in the young those values, attitudes and skills best fitted to serve the interests of the dominant group. Odora Hoppers (2001:5) states that often times misrecognition of reality and truths are imposed on the dominated groups by positing the ideologies of the dominant culture as the only authentic, or universal culture. Althusser (1971:75) also agrees that schools represent an essential and important social site for reproducing capitalist relation of production. In agreement with Bowles and Gintis, he argues that the school carries out two fundamental forms of reproduction, i.e. the reproduction of skills and rules of labour power, and the reproduction of the relations of production.

Literature also emphasises that curriculum knowledge was designed in such a way that it oppresses, suppresses and divorces African from their culture. Gultig (1995:18) emphasises that the curriculum was planned in such a way that those who serve it believe that they are free, when in fact they have been enslaved. Apple (1992:8) agrees with Gultig by saying that the dominant culture succeeds when it is not seen as an alien, external force on to the cultures of subordinate groups. By reaching into the cultures and reshaping them they routinize their presence. Meighan (1986:101) emphasises that the defenceless children are taught by distortion, suppressions and suggestions.

Research has also proved that curricula was designed in such a way that it separates science from learners' experiences and everyday life. Reason (1994:9) emphasises that western ways of knowing sees science and everyday life as separate and as a result this knowledge make learners to think out of their experiences. Gultig (1995:9) agrees with Reason and Apple by saying that progress in the third world has meant the discarding of traditional institutions in favour of those that exist in the west. This means that curriculum knowledge has come to make learners to think in a fragmented manner and see science as being completely different from experience. Odora Hoppers (2001:9) stresses that when you standardise the mind, you destroy the fecundity of citizenship.

Although curriculum knowledge dominates learners indigenous knowledge in schools, teachers are expected to integrate the two knowledges in the classroom situation by considering and acknowledging learners experiences and community needs. Therefore curriculum knowledge should not be taught in isolation but the two knowledges should be integrated in the classroom situation. Mosha (2000:14) argues that it is difficult to describe indigenous religion, spirituality, education and fundamental virtues as separate entities. Goduka (2000:28) supports Mosha by saying that as educators collectively search for a connecting, sustaining, healing and holistic education rooted in generations and generations of indigenous wisdom be integrated in the curriculum and pedagogy.

2.3 IMPLICATIONS FOR THIS STUDY

Literature has shed light on the research question of this study since it has proved that learners that are brought up in rural areas of Africa come to school with their indigenous knowledge. This knowledge is based on their culture and on their African identity as members of society. Literature also demonstrates that this knowledge has its source from stories, rituals etc. Literature has furthermore proved that this knowledge is not acknowledged in schools since curriculum knowledge is exclusively taught and recognised as official knowledge.

Literature also highlights that curriculum knowledge is not neutral knowledge and therefore does not cater for the needs of African learners. It further reveals that curriculum knowledge is dominated by the ideologies and interests of those dominant in power.

From literature it has become clear that the two knowledges should be integrated in the classroom situation. The result of this should be that learners should develop in their totality.

Despite the fact that the literature study has demonstrated that learners come to school with their indigenous knowledge, I nevertheless see a gap in that nothing is said concerning the indigenous knowledge learners have about rainfall. As a result of this finding I have decided to undertake this study.

From the literature study I have decided that my empirical study should have a qualitative approach. This entails that I will collect information on rainfall from the natural setting. I have also learnt that the goals of my study should include the documentation of indigenous knowledge about rainfall. Literature clearly shows that learners' indigenous knowledge is not acknowledged in schools because it has never been documented.

2.4 SUMMARY

Firstly, literature has demonstrated that learners come to school with knowledge they have gained from their home and that this knowledge has its source from stories, rituals, beliefs etc. Literature has shown that this knowledge has a cultural aspect. Literature has also demonstrated that this knowledge is not acknowledged in schools, where curriculum knowledge is taught exclusively. Secondly, it has become clear that curriculum knowledge that is taught in schools is not neutral knowledge but more Euro-centric in nature. Lastly, literature has emphasised that the two types of knowledges should be integrated in the school situation.

CHAPTER 3

3. RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this chapter was to describe the method used to collect data concerning the indigenous knowledge that learners have of rainfall. The purpose of this study was to document the knowledge intermediate phase learners in rural areas have of rainfall and to subsequently compare that with curriculum knowledge. The purpose was also to help teachers so that they could integrate this within curriculum knowledge in schools.

This study was carried out as qualitative research and dealt with establishing and documenting learners' knowledge about rainfall.

3.2 APPROACH TO THE STUDY

This study was based on a qualitative approach. The aim was to collect data in a natural setting in an attempt to make sense out of meaning that learners attach to the phenomena of rainfall. This approach helped me to gain clarity on what learners know about the formation of rainfall. Cresswell (1998:15) explains qualitative research by saying that it is an enquiry process of understanding, based on distinct methodological traditions of enquiring that explore a social human problem. He continued to say that the researcher builds on complex, holistic picture, analyses words, reports and detailed views of information, and conducts the study in a natural setting.

As a qualitative researcher I would be dealing with few cases and many variables so that the evidence I get will substantiate claims. My plan is to study individuals in their natural setting and therefore they would not be removed from their own setting because this might disturb reliability and validity of information. Cresswell (1998:17) stresses that if participants are removed from their setting it may lead to contrived findings that are out of context.

I allowed myself enough time while collecting data in order to be able to tell the story from the participants' view and not become an "expert" who passes judgement on participants. This was easy for me because I was living in the same community with the interviewees. Cresswell (1998:18) emphasises that a researcher has to select a qualitative approach because of interest in writing in a literary style. The writer brings himself or herself into the study and the personal pronoun "I" is used or engage a story.

The aim of my empirical study was describing home knowledge learners bring to school on rainfall, to analyse school knowledge and then to compare the two knowledges. This knowledge would enable me to analyse the reasons why teachers do not acknowledge learners' knowledge in schools.

I gained knowledge by interpreting cultural practices such as stories that were told by grandmothers at home, and rain-making rituals that were practised in the community in which girls were participants. This helped me to document learners' home knowledge regarding rain. I was sharing the same language with them and therefore there was no language problem. Cresswell (1998:58) emphasises the necessity of prolonged observation of the group.

3.3 PLANNING THE RESEARCH STUDY

3.3.1 TARGET GROUP FOR DATA GATHERING

The group that I targeted consists of a parent by the name of Mrs Nkosi and two learners (both girls i.e. Sibongile and Nokuthula). The group was selected by visiting them at their homes explaining the importance of their participation in this study. They were all selected because of their participation in rain-making rituals of the community. Mrs Nkosi was the organiser of a ritual and the two girls participated in the rain-making rituals. Therefore I saw them as relevant to my study. Rossman and Rollis (1998:86) emphasise this by saying that the ideal site is where there are structures of interest.

3.3.2 TECHNIQUES OF DATA GATHERING

The techniques for data gathering were interviews, story analysis, observations and document analysis. The interview approach I selected was called a "free attitude interview".

I chose this approach because it involves freedom to speak. Consequently this would enable me to get information from interviewees easily since they would have the freedom to speak. I was able to intervene by trying to get more from them. I did this with open-mind and open-heart. Smaling (1995:27) emphasise that open-heartedness may mean self-revealing, self-disclosing, frankness, honesty and credit. Meulenberg Buskens (1997:2) stresses that the interview is a verbal technique to obtain information. Where answers were not clear, I asked my interviewees to explain and give some examples. The interview approach is different from the questionnaire as a method, because it does not allow a researcher to intervene and get more information.

The reason for this is that the researcher does not communicate with people. Meulenberg Buskens (1997:1) indicates that researchers discovered that,. as they gave interviewees the freedom to speak, the information obtained became more relevant than in cases where they would use a structured questionnaire.

The interview approach was selected for this study, as it would grant the interviewees the freedom to reveal all the information they had about rainfall. They were thus able to expose their total knowledge and overall feelings regarding this.

This knowledge will help to solve the problem of the negligence of learners' knowledge at school, since teachers would have documentation to refer to. Meulenberg Buskens (1997:1) highlights the importance of the interview technique as a means of reflecting respondent's feelings. He adds that this knowledge is used to solve problems.

As mentioned before, the method used was verbal technique in order to obtain the information required. I thought it would be relevant for me as a researcher to assess the reliability and validity of the information supplied during the research process. I did this by asking questions to get clarity for certain things.

The questions posed to learners were as follows:

1. How is rain formed?

For the parent the question was:

2. According to your knowledge, what do learners know about the formation of rain?

3. I also collected a story and curriculum information and thereafter analysed the information.

4. Finally, I made independent observations, which I then analysed.

3.3.3 OBSERVATIONS

In order to triangulate the data, I made some observations.

Firstly I selected a site which I was going to observe. Then I had to determine what I was going to be observing, when and for what duration of time. Daniels (1997:34) stresses that the primary strength of observation is that data is collected in the field. On the 10th of June 2001 it was broadcast over the media that there was going to be a thanksgiving of Nomkhubulwane at Sokhulu area (SABC 2,10 June 2001) I decided to go there to learn more about Nomkhubulwane, thus for my study. I had to ask for permission from the "Induna" to attend since I was a stranger. I asked the "Induna" to introduce me as an outsider. I was passive and friendly. I took field notes and recorded the events and activities as well as my reactions. After observing, I slowly withdrew from the site and thanked the "Induna" also informing them of the data and their accessibility to the study.

3.3.4 STORY DATA

In order to check issues of reliability and validity of information, I had to analyse the story of Nomkhubulwane which was told by one interviewee. The reason why I was interested in this story was because it concerned Nomkhubulwane, the subject of study. This story was told by one learner during interview. She explained that this story had taught them about rainfall.

3.4 METHOD OF DATA ANALYSIS

After collecting data, the interview data was taped and transcribed. The story data was also transcribed and the observation data analysed.

The interview data was analysed through thematic analysis. This was done by looking for the main ideas, which would then be put into categories. Strauss and Corbin (1990:65) states that the process of grouping concepts that seem to pertain to the same phenomena is called categorizing. Categories will be named and story and observation data were analysed separately by looking at the following: who was in the story, what happened (the events), the origin of the story, observation and the moral of the story (or observation).

The method of curriculum analysis that was used entailed that documents were analysed by investigating main ideas, other concepts and the relevance of the documents. This was done by interpreting the learners' achievement and their school success.

Stake (1995) stresses that the document may be analysed as how often school success is interpreted in terms of student achievement. Stake states that documents serve as substitutes for records of activity that the researcher cannot observe directly. In addition, I also analysed a textbook for intermediate phase learners with the title "understanding our world". The authors being J H Reynharg and I M R Moorhouse (1995). I selected this textbook because it was a prescribed book and had been used for more than five years in our schools.

Finally, the method of comparative analyses was applied by looking at the similarities and differences in terms of knowledge content and knowledge origin. The textbook knowledge was compared with the data captured from the interviews, observations and story data. Strauss and Corbin (1990) emphasise that one way of analysing a document is to take the entire document and to investigate what goes on. In other words: What makes the document the same or different from previous data that has been coded?

3.5 SUMMARY

In this chapter the following aspects were explained: type of study, research approach, target group for data gathering, techniques of data gathering, process of data gathering and method of data analysis.

CHAPTER 4

4. FINDINGS FROM THE STUDY

4.1 INTRODUCTION

The purpose of this chapter is to report on the findings of the qualitative study. The emphasis of this chapter is on the discussion during interviews with learners and a parent on the indigenous knowledge learners in rural areas have of rainfall.

The emphasis is furthermore on the information that learners obtain from stories and rituals. In addition the information captured from the researcher's own observations is also highlighted. This chapter thus reports the main findings of the study on the indigenous knowledge that learners in rural areas have about rainfall.

4.2 FINDINGS FROM INTERVIEWS

4.2.1 LEARNER AND PARENT INTERVIEW

The interview data included interviews with two learners, Nokuthula and Sibongile (both girls) and an interview with a parent by the name of Mrs Nkosi. (Mrs Nkosi is not the mother of the girls). The findings were analysed and coded into themes to show the meaning in participants' experience. I have used coloured markers to separate ideas. Similar ideas were coloured with the same marker. All ideas with the same colour were then analysed and categorised under the same heading. The data was therefore analysed by means of thematic analysis.

The first theme that emerged was that rain is made by Nomkhubulwane, the rain daughter. This theme explained that Nomkhubulwane possesses the supernatural powers to create rain. Learners are aware of the belief that in the early days Nomkhubulwane was seen with the naked eye with regard to this, Sibongile said "Ma'am, Nomkhubulwane is the rain daughter, she has the power to control rain with her supernatural powers. No one knows but only herself. "Mrs Nkosi remarked, "Nowadays Nomkhubulwane is not seen by the naked eye."

The second theme that emerged was that rain is the result of a rain-making ritual which is organised in the community. During drought, a rain-making ritual is organised in the community so that people can get rain. Learners are participants in this ritual and they undergo all processes pertaining to a rain-making ritual. Sibongile said, "we go for a rain-making ritual," Mrs Nkosi said, "okay, listen. In this area, whenever there is drought, we practise a rain-making ritual where we organise girls to go to the mountain to request rain.

I have also found that they know all steps taken during a ritual. They mentioned the carrying of traditional food, wearing of traditional attire (umsenge), washing in the river, singing in the mountain, serving food, rolling stones down the mountain, turning stones up in the river. They also mention not looking back during the process. Nokuthula said, "we woke up early in the morning and wore "umsenge" leaves". Sibongile said, "we carry traditional food like "umdokwe", "umbila'" "izinkobe", "umqombothi beer".

The third theme that emerged was that a field is cultivated as a token of thanks to Nomkhubulwane. In times of drought women cultivate this field for Nomkhubulwane so that she can bring rain. This field is also a sign of thanking her for giving rain. Mrs Nkosi said "Definitely, more than anything she had a cultivated field". She contunued saying that the field is cultivated for Nonkhubulwane to thank her for giving rain.

4.2.2 CATEGORIES OF THEMES FROM LEARNER AND PARENT INTERVIEW DATE

CODE	LEARNER	PARENT	DESCRIPTION OF CATEGORY
A	It comes from Nomkhubulwane	There was a rain daughter called Nomkhubulwane	Rain is made by Nomkhubulwane, the rain daughter.
B	We go for a rain-making ritual	Whenever there is drought, we practice a rain-making ritual.	Rain is the result of a rain-making ritual.
C		She had a cultivated field.	A field is cultivated as a token of thanks to Nomkhubulwane.

4.3 FINDINGS FROM STORY DATA

From the story told by the learners, a flow of events was described. Once again Nomkhubulwane, the rain daughter, identified as the main character. She is said to have powers to bring rain and to be very beautiful.

Different events took place within the story. The first event was that Nomkhubulwane was seen by girls only, and that she was able to talk to girls only. She used to tell girls that they should tell their parents whether the year was going to be good or bad. The aim was to make them aware and to let them take care during times of cultivation and harvesting.

The second event was that the rain daughter used to move in a cloud of mist. Nomkhubulwane is said to fly inside the clouds. The rainbow colours which occur after a thunderstorm indicate peace and beauty of Nomkhubulwane. She is said to be pure and clean.

The third event was that of cultivation of Nomkhubulwane's field. Women used to brew the "umqombothi beer". They cultivate the field and thereafter left the beer for Nomkhubulwane to look after it. After some time, the beer would be finished by her and her friends (the sun, wind and the moon).

The fourth event was that during drought, women wore "amabheshu" (male traditional attire) upside down and went to the mountain to sing songs. After that, the women would pour the beer down and go to the river to wash themselves.

The story above originates from the cultural beliefs and practices of the community concerning drought. This particular community under study, still believes in rain-making rituals and in the existence of Nomkhubulwane as a solution for drought. They still practice cultural rites like cultivation of Nomkhubulwane's field so that Nomkhubulwane may, in return, bring rain for their production. Nomkhubulwane is therefore also associated with their ancestors.

From this story the young learn that Nomkhubulwane's existence is a reality. Learners also learn that she has the power to create rain, regardless of what the conditions may be. They also learn that Nomkhubulwane is not part of the past. They learn that she is even today still believed to bring rain through rituals. Lastly, learners also learn that cultural practises are very important and they are real. Rain-making rituals are thus regarded as powerful.

4.3.1 CATEGORIES OF THEMES FROM STORY DATA

CODE	STORY	DESCRIPTION OF CATEGORY
A	People called her uNomkhubulwane or the rain daughter	Nomkhubulwane, the rain daughter has powers to bring rain.
B	During times of drought, women will go to the mountain wearing "amabheshu"	Rain-making ritual is the source of rain.
C	The way they respect her, they always cultivate the field for her.	Cultivation of Nomkhubulwane's field is a sign of respect.

4.4 FINDINGS FROM OBSERVATION

I observed different events. It was on the 10th of June 2001 when I learnt from the media that there was going to be a thanksgiving day for Nomkhubulwane at Sokhulu rural area. This area is situated in the Northern part of Kwazulu-Natal. People around this place were all invited to attend. It was announced that the function was to be held on the 27th of June 2001. The venue was to be on the mountain, where Nomkhubulwane's field is believed to be. People were requested to bring traditional food and to wear their traditional attire to the celebration.

I became interested to hear about Nomkhubulwane, since she formed part of my study. I had to trace the direction to the particular place. When I arrived there, I had to ask permission from the "induna" headman of the place to attend the meeting. I had to explain the purpose of my visit to such a meeting.

There were different events which I observed. The first event was that all food that was carried was put together inside Nomkhubulwane's field. This includes traditional food such as "umqombothi beer" mealies etc. Everybody was singing Nomkhubulwane's song.

The induna started by explaining the purpose of a meeting. He told everyone that it was all about Nomkhubulwane's thanksgiving. He also welcomed the new residents of the place and explained to them that it was custom to thank Nomkhubulwane for the rain and food she had offered during the year, He also explained the importance of a rain-making ritual and the cultivation of Nomkhubulwane's field. He further explained that this field could not be eaten from by residents, but only passers by.

The second event was that everybody stood up around the field. Only the "induna" stood inside the field while Nomkhubulwane's song was sung.

The third event was that while everybody was singing around the field, the "induna" started to mix the different kinds of food.

The fourth event was that food was served to all those who were in the meeting. The last event was the pouring down of the remainders of food in the field. The "induna" announced that women had to come for the cultivation of Nomkhubulwane's field the following day.

What I observed originate from cultural practises concerning drought that still remain dominant in the community. I have found that Nomkhubulwane is dominant and that people still rely on her powers. Out of this observation the following lesson emerged: I learnt that Nomkhubulwane exists for the people from this community.

4.4.1 CATEGORIES OF THEMES FROM OBSERVATION

CODE	OBSERVATION	DESCRIPTION OF CATEGORY
A	The "induna" explained the supernatural powers of the rain daughter, Nomkhubulwane.	Nomkhubulwane, is the rain daughter.
B	They always organise a rain-making ritual.	Rain-making ritual result into rainfall.
C	He explained that they also organise the cultivation of Nomkhubulwane's field.	Cultivation of Nomkhubulwane's field is a sign of thanksgiving.

4.5 INTEGRATION OF FINDING ON HOME KNOWLEDGE

From all the data, it can be summarized that learners' knowledge of rain includes different elements. This knowledge is gained from home and not from school.

In the first place, I have discovered that *learners have knowledge about the origin of rainfall.* Learners know that rain comes from Nomkhubulwane, the rain daughter. They understand that Nomkhubulwane can bring rain because she has supernatural powers.

In the second place, I have found that *learners know that rain is requested from Nomkhubulwane through a rain-making ritual which is organised in the community.* Learners understand that during periods of drought, girls are organised into partaking in a rain-making ritual. The parent told me that the children had extensive knowledge about the origin of rainfall. This ritual was believed to be very important as it convinced them that at the end of the ritual, the rain would come.

In the third place, I have found that *learners have knowledge about Nomkhubulwane's field.* Learners understood that this field is cultivated for Nomkhubulwane, to eat from. This field is cultivated by women wearing men's traditional attire in an upside down way. The field is cultivated at the top of the mountain. My observation supports the idea that this field is eaten from by people who are not residents of the place. This is done to avoid misfortune. Residents do not eat from this field because they know very well that it belongs to the rain daughter. My observation furthermore supports to the idea that there is a belief that Nomkhubulwane needs to be thanked through a thanksgiving ceremony. Therefore this field serves as a sign of thanks to the rain daughter.

I lastly also discovered, that when learners talk about rain and rainfall, their knowledge is strongly influenced by traditional stories and rituals. The story of Nomkhubulwane, as well as the rain-making ritual, have influenced learners to know more about the origin of rainfall. From this I have also discovered that learners use concepts such as rain daughter, traditional food, "umsenge" leaves etc. when they discuss rain formation. The knowledge learners have is in addition, also tied to the religious beliefs and customs within the community. Practising a rain-making ritual is integrally part of the customs in the community. This includes the belief in the supernatural powers of the ancestral figure Nomkhubulwane, to bring rain.

4.6 FINDINGS FROM ANALYSIS OF CURRICULUM KNOWLEDGE

From the textbook knowledge it is clear that, before rain can be formed, there has to be a high moisture content that has to rise and reach condensation point. After condensation has been reached, water droplets are formed. The curriculum differentiates between three types of rainfall, namely relief rain, convectional rain and frontal rainfall.

According to the textbook, relief rain occurs when the air blows against the mountain and rises until condensation occurs. After condensation, drops of water are then formed and rain occurs. The textbook also explains that convectional rain is formed when vertical currents of warm air rises and cloud formation occurs. After the clouds have been formed, rain occurs. The textbooks further explains that, frontal rain occur when warm air joins with cold air. It is emphasised that warm air will rise up while cold air will descend. When warm air rises it will cool down condensation will takes place and rain occurs.

4.7 COMPARISON BETWEEN HOME AND SCHOOL KNOWLEDGE

From my findings it has become clear that learners are faced with two kinds of knowledges.

Home knowledge is the knowledge that learners receive from their homes and from the community. This knowledge concerns the culture, norms and values of a society. It can therefore be said that this knowledge is informal in nature. Its aim is to develop the learner in totality so that he/she could have the ability to fit into the society. Goduka (2000:29) emphasises that home knowledge practices embrace the totality of human life.

Home knowledge has its source from stories and rituals that take place in the community. Therefore, it is connected with cultural practices. Home knowledge involves beliefs of the community. The reason for this is that people believe what stories say and what rituals say, to be real. They subsequently perform it as demanded. This knowledge involves children's experiences, as children believe it to be a real situation. To them this knowledge is essential and means life.

On the other hand *curriculum knowledge* refers to the knowledge that learners obtain from a school situation. This knowledge is formal and very scientific in nature. It therefore consists of scientific concepts. This knowledge does not involve learners' experiences and their culture, but rather involves knowledge that has been proven and documented in literature. Textbooks are important sources of this knowledge. For this reason this knowledge is general and international and does not differ with communities like home knowledge. The aim of this knowledge is to develop the intellect because the learner is equipped with scientific concepts. Apple (1992:6) argue that textbooks dominate what learners learn and that teachers rely on textbooks to organise lessons and structure their subject matter.

It can be said that curriculum knowledge does not cater for the culture, norms and values of learners and their experiences but originates from ideas of those in power. The dominant class is the one who determines what is to be taught in schools, that is regarded as quality and official. Therefore this knowledge does not cater for the learners' needs. Aspin (1994:37) argues that this quality is confronted by questions such as "quality of what" "quality for whom" and "the pursuit of quality in whose interest?" In this regard Beyer and Apple (1988:342) agrees with Aspin by asking: "whose knowledge it is, who selected it, and why it is organised and taught in this particular way and in this group?"

Despite the apparent difference of origin and characteristic of the two kinds of knowledges, they have to be fully integrated in schools in order that learners, may develop in totality.

Home knowledge should be acknowledged because it lays the foundation for a better understanding of curriculum knowledge. Aspin (1994:119) emphasises that learners are entitled to be granted access to all the great and good things that have been thought, said and done in ascent of human kind. These are the things that form the starting points for all future endeavours, particularly those that will stand individuals in good stead when they come to face the exigencies of daily life.

4.8 DISCUSSION AND INTERPRETATION OF FINDINGS IN TERMS OF LITERATURE

From my findings I discovered that learners come to school with a home knowledge which they have gained from home. I discovered that learners understand that rain is created by Nomkhubulwane, the rain daughter, through a rain-making ritual, which is usually organised by the community. I also discovered that learners understand that Nomkhubulwane has a field which is usually cultivated by women of the area and that it is believed that this field can only be eaten from by passers by and not by people who know that the field belongs to the rain daughter.

I found that this particular knowledge is not taught in schools. As a rule, only textbook knowledge is taught with regard to rainfall. Concepts such as *condensation* and *cloud formation* are emphasised in the textbook.

I have also found that learners' home knowledge has its source from stories, rituals, etc. I discovered that stories are not told for entertainment only, but that they are regarded as sources of knowledge by the storytellers. In addition these sources are believed to be reliable, as they equip learners with knowledge. Goduka (2000:30) emphasises the fact that indigenous religion has no written literature, sacred scriptures on creedal forms. He continue to say that indigenous oral traditions are vehicles for transmitting knowledge to the young generation and that they should not merely be regarded as pleasing for the eye.

I discovered furthermore that stories that are told by grandmothers have a reality in them. For example, the story of "Nomkhubulwane" can be regarded as practically true, because girls do in fact (even to the present day) partake in organised events to go to the mountain to request rain from the rain daughter. This is followed by a rainfall. From these stories learners are taught crucial knowledge concerning the way in which rain is formed. Odora Hoppers (1993:10) stresses that myths describe natural phenomena or history, and explains that both are informative and crucial for imparting moral values to the young.

Mosha agrees with Odora by saying that it does not really matter whether the imparting of knowledge is given at home around the fireplace, during an initiation rite, or in a modern school classroom. He continues by saying that societies, whether ancient or modern, prepare their world through a specific system of education.

I have found the home knowledge that learners have of rain, to be neglected in schools. I have found that official knowledge is taught in isolation and that this confuses learners because they end up being faced with two kinds of knowledges: At home they are taught about "Nomkhubulwane" as the source of rain, whereas, "Nomkhubulwane" remains unmentioned in schools where they learn that a scientific processes is the source of rain.

From the above; I have to conclude that it is important that teachers should integrate both home knowledge and curriculum knowledge in the classroom situation. Teachers should consider the prior knowledge learners have of rain before they introduce any new knowledge. Mulaudzi and Ngobeli (2001:5) emphasises that prior knowledge will help learners to think about new knowledge. Thinking is influenced by the society and requires prior knowledge.

It can therefore be stated that the stories surrounding Nomkhubulwane and the rain-making rituals should be incorporated within curriculum knowledge. Mosha (2000:165) emphasises this by saying that our students and society in general will be much better off if whatever is learnt is viewed in the wider and transcending context of the larger story of our lives. He continues to say that story-telling and listening to stories in class will connect each student's life stories to whatever is learnt and ultimately to one human and cosmic story.

The final conclusion is that curriculum knowledge should not be taught in isolation because this knowledge does not cater for learners' needs and their experiences. It rather involves other peoples' needs and experiences. Apple (1992:5) emphasises that while textbooks are certainly important, it is not the society that has created such text but rather specific groups of people. Apple further argues that textbooks contain some group's perspectives and does not allow for other perspectives.

Seepe (1998:58) also indicates that through transforming our institutions we should accept that (with foreign values or cultures) the struggle for our cultural survival through the civilized world is tightly linked to the culture of the people. He continues by emphasising that all nations of the world assimilate or are educated within a cultural context. South African Blacks are no exceptions to this fundamental principle. Cloete (1997:6) agrees with Seepe by saying that elsewhere in Africa, however, universities have insisted that their role cannot be merely to propagate what has come to them from other people and cultures, but that they have a special responsibility to contribute uniquely African dimensions to the international discourse in their discipline, based on African experience and creatively, and to apply them to address the concerns of their own country.

4.9 SUMMARY

In summation, I found that learners do in fact have adequate knowledge about the formation of rainfall. Learners come to school with the understanding that rain comes from "Nomkhubulwane". Stories and rain-making rituals are found to be playing the most prominent role in providing this information.

I discovered that home knowledge is neglected in schools where only textbook knowledge is said to be official and therefore acknowledged by teachers. I have also found that the reason for the negligence of indigenous knowledge lies in the fact that it has never been documented or proved. From this, the goal of this study is to attempt to document learners' indigenous knowledge on how rain is formed.

From the above finding it can be recommended that teachers should consider learner's home knowledge and integrate it with the curriculum knowledge in schools. It should be borne in mind that curriculum knowledge should not be taught in isolation.

CHAPTER 5

5. RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

In this chapter recommendations with regard to my findings of the study were made. The main purpose of this case study was to find out what indigenous knowledge intermediate phase learners in a rural area have of rainfall.

This case study has been a success because I was able to find out the indigenous knowledge learners have about rainfall. I also hope that this study will help teachers to find out where they went wrong in teaching this section and integrate the two knowledge in schools. Documentation of learner knowledge will also help curriculum designers to consider indigenous knowledge as the real knowledge and then integrate it in the curriculum.

5.2 SUMMARY OF FINDINGS

In summary, my findings of the study have indicated that intermediate phase learners come with their indigenous knowledge about rainfall at school.

According to my findings I have discovered that rain comes from Nomkhubulwane, the rain daughter and that this knowledge is obtained from stories that are told by grandmothers and also from rain-making rituals that are organised in the community and in which these learners are participants.

I have also discovered that learners' indigenous knowledge about rainfall is neglected in schools. Teachers do not acknowledge this knowledge in schools but they teach the curriculum knowledge presented to them without linking with learners' background knowledge. Curriculum knowledge has been discovered to be not neutral but western based and Euro-centric and does not cater for learners needs. Learners experiences are marginalised and therefore learners performance is becoming poor in this section. Goduka (2000:27) emphasises that indigenous ways of knowing are undermined.

Lastly, I have discovered that teachers should acknowledge learners knowledge in schools. They must integrate it with curriculum knowledge so that learners come with their experiences about how rain is formed. I have also discovered that indigenous knowledge is neglected because it has never been documented. The problem of negligence of learners' knowledge has made me to suggest the following recommendation.

5.3 RECOMMENDATIONS

My recommendation will be directed to teachers, curriculum developers, parents and also other researchers.

For teachers I recommend that they must acknowledge learners knowledge by integrating it with curriculum knowledge. Teachers must consider learners' experiences in the classroom situation before introducing curriculum knowledge. An example here is the integration of the knowledge of Nomkhubulwane. Fullan (1992:131) emphasises that change is necessary because high proportions of students are alienated and performing poorly or below par or dropping out. Dakin (1993:96) agrees with Fullan by saying that schools are facing a cultural change.

For curriculum developers I recommend that they must acknowledge learners' home knowledge by incorporating it in the curriculum. Curriculum developers must consider all cultures when drawing the curriculum e.g rain-making rituals should be considered with all its activities. National Department of Education (1997:1) stresses that the curriculum will begin to integrate education and training, incorporating a view of learning which rejects a rigid division between academic and applied knowledge, theory and practice, and knowledge and skills. He continues stressing that a new curriculum aimed at an integration of knowledge, learning relevant and connected to real life situations. Millar (1984:299) also stresses that the task of teachers was not to transmit information to passive learners but to assist them to engage in a wide range of tasks involving higher-order thinking, both individually and co-operatively.

I also recommend that parents should be involved in education of their children by coming to schools and to demonstrate their knowledge. They could for example organise rain-making rituals.

Lastly, I recommend that African researches should make studies on indigenous knowledge learners bring from home to school so that this knowledge can be documented. Researches should involve the community as a source of this knowledge (e.g. grandmothers for stories and organising rituals etc.). Goduka (2000:27) emphasise that indigenous scholars are challenged to engage themselves in extensive research and writing to legitimise indigenous epistemology in the library, classroom and wherever other types of knowledge are in extent.

5.4 CONCLUSION

My findings have confirmed that learners come to school with their knowledge about the formation of rain. They have also confirmed that this knowledge is neglected in schools and teachers do not integrate this knowledge with the curriculum knowledge, instead they just teach the curriculum knowledge. This has an impact on learner's performance, and as a result learners are not performing well.

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ANNEXURE A

TRANSCRIPT OF INTERVIEWS

A1 INTERVIEW WITH LEARNERS

A2 INTERVIEW WITH PARENT

A3 STORY

A4 OBSERVATION

LEARNER INTERVIEW

Ntsibeng : Good morning everyone.

Nokuthula & Sibongile: Good morning, ma'am.

Ntsibeng : I am Mrs Ndlovu and I am doing masters degree at Vista University. I am doing research on home knowledge Intermediate phase learners have of rainfall in rural areas. So as Grade eight students I want to know what knowledge do you have about the origin of rain. Your contribution will benefit you and others because this may lead into curriculum change. May I also request you to allow me to use a tape recorder. This will help me to recall everything you have said. All you will say will be treated confidentially. Do you allow me to use a tape recorder ?

Nokuthula & Sibongile : Yes ma'am.

Ntsibeng : My question is: Tell me according to your knowledge where does the rain come from ?
(Silence for 3 minutes)

Nokuthula : It comes from heaven.

Sibongile : It comes from *Nomkhubulwane.*

Ntsibeng : Who is *Nomkhubulwane* ?

Nokuthula : She is the rain-daughter.

Sibongile : She is beautiful.

Ntsibeng : Have you ever seen her ?

Ntokuthula : We have never seen her, but my grandmother told me that in the olden days she was always seen by girls.

Ntsibeng : Nokuthula, you have said rain comes from heaven. Can you tell me more ?

Nokuthula : Yes, ma'am, Nomkhubulwane lives in heaven.

Ntsibeng : How does she know that she must bring rain ?

Sibongile : We used to go for a rain-making ritual.

Ntsibeng : What is that, and how is it done ?

Nokuthula : It is organized by my granny. Both of us we used to go there.

Ntsibeng : How does she organize it ?

Sibongile : Girls of our age are organized to go to the mountain early in the morning before breakfast where a rain-making ritual is going to be performed.

Ntsibeng : How are they organized ?

Nokuthula : We woke up early in the morning and we wore "umsenge" leaves.

Ntsibeng : What do you mean by "umsenge" leaves ?

Sibongile : Oh ! Ma'am "umsenge" is a tree that is not allowed to enter home premises.

Ntsibeng	:	What happens after wearing "umsenge" leaves ?
Nokuthula	:	We carry food with us to the mountain.
Ntsibeng	:	What kind of food do you carry to the mountain ?
Sibongile	:	We used to carry traditional food like "umdokwe", "ummbila", "izinkobe", "umqombothi" beer, etc.
Ntsibeng	:	What else Nokuthula ? (Silence for 2 seconds and smile)
Sibongile	:	Oh ! I remember we also carry vegetables like "izindumba".
Ntsibeng	:	Okay, what do you do when you reach the mountain ?
Nokuthula	:	No, before ascending the mountain there is a river at the foot of the mountain where we wash our bodies.
Ntsibeng	:	Why do you wash yourselves in the river ? (Silence for 2 seconds)
Sibongile	:	I don't know but the old lady (organizer) used to tell us that we should wash ourselves so that we become clean.
Ntsibeng	:	What do you say Nokuthula, why do you have to wash yourselves in the river ?
Nokuthula	:	I don't know the reason, but we always wash ourselves before ascending the mountain.
Ntsibeng	:	What happens after washing ?
Nokuthula	:	We all ascend the mountain.
Ntsibeng	:	What do you do on the mountain ?
Sibongile	:	After ascending the mountain we all sing songs requesting for rain from the rain daughter (Nomkhubulwane).
Ntsibeng	:	Which songs do you usually sing, can you sing them for me ?
Nokuthula	:	One says: Sicela imvula nkosazane yezulu Sicela imvula kwabaphansi x 2 We clap our hands and we dance. (Both of them rise, dance and clap their hands.)
Ntsibeng	:	Is that the only song ?
Sibongile	:	(Laughing) No, there are so many. One says : Woza wemvula uzosithela we Ngawo amaconsi abandayo mo Siyakuthanda uma sidlala Ucabhayiyane, co, co, cabhayiyane Co, co, cabhayiyane.
Ntsibeng	:	What happens after singing ?
Sibongile	:	Food is served.

Ntsibeng : After eating what do you do ?
Sibongile : The remainders are poured on the mountain.
Ntsibeng : Why is food poured down ?
Nokuthula you have been quiet for a long time.
Nokuthula : Food is poured because we must not go back with it.
Ntsibeng : Why can't you go home with remainders ?
Nokuthula : The remainders are left for the ancestors, to thank them.
Ntsibeng : Thanking them for what ?
Sibongile : Ma'am, we thank the ancestors because we know that they will forward our request to *Nomkhubulwane* since they have power to communicate with her.
Ntsibeng : What do you mean by saying they have the power to communicate with her ? Do the ancestors know her ?
Nokuthula : Yes, in the olden days Nomkhubulwane was seen with naked eyes. So we believe that they know her better than us.
Ntsibeng : What happens after pouring food down ?
Sibongile : We all roll stones down the river.
Ntsibeng : What for ?
Nokuthula : I don't know the reason but we used to do like that.
Ntsibeng : Sibongile, what can you say ?
Sibongile : We have taken it as a routine; we don't know the reason.
Ntsibeng : Okay, what next ?
Sibongile : We all move down to the river without looking back until we reach the river.
Ntsibeng : Why don't you look back ?
Nokuthula & Sibongile : We don't know the reason but we always do like that
Ntsibeng : What do you do when reaching the river ?
Nokuthula : We all turn stones up in the river and throw water up shouting, "Sicela imvula."
Ntsibeng : Why are stones turned up ?
Sibongile : This is a sign that there should be change in weather, that is why we change stones' direction and throw up the water.
Ntsibeng : What else ?
Nokuthula : After that we all go home without looking back until we reach our homes.
Ntsibeng : Why don't you look back ?
Sibongile : I'm not sure; we are told not to look back so that we cannot see the ancestors.
Ntsibeng : When do you expect rain after a ritual ?
Nokuthula : Sometimes in falls before we reach home.

Sibongile : Sometimes after one or two hours, but it's a sure case that it will rain.

Ntsibeng : How long does it rain ?

Nokuthula : Usually 3 to 5 days.

Ntsibeng : Where actually does *Nomkhubulwane* take rainfall as you have said she never fails to bring rainfall ?

Sibongile : Ma'am, *Nomkhubulwane* is the rain-daughter; she has the power to control rain with her supernatural powers. No one knows but only herself.

Ntsibeng : Okay, do you have any story that you can tell me, a story that teaches you about where rainfall comes from ?

Nokuthula : Yes, ma'am, I have a story.

Ntsibeng : What is that story, can you tell me ?

Nokuthula : It is the story about *Nomkhubulwane*, the rain daughter.
[The story of *Nomkhubulwane*, the rain daughter (see annexure A)]

Ntsibeng : Thanks for your story.
Do you have a story Sibongile ?

Sibongile : No, ma'am. I also know the same story.

Ntsibeng : Thank you very much for your contribution.
I think I have gained a lot from you.

Sibongile & Nokuthula : Thank you ma'am, bye-bye.

Ntsibeng : Bye-bye.

PARENT INTERVIEW

Ntsibeng	:	Good morning Mrs Nkosi
Mrs Nkosi	:	Good morning lady.
Ntsibeng	:	I am Mrs Ndlovu, a part-time student at Vista University, studying Masters Degree. My topic is about the home knowledge Intermediate phase learners have of rainfall in rural areas. Your contribution will be highly appreciated, because in schools we have a problem that Intermediate phase learners are not performing well in the section about rainfall. Therefore I want to know what they gain from home about the origin of rainfall, except what is taught in school. I would also like to get your permission to use a tape recorder so that I can record everything you have said. The purpose of using a tape recorder is to remember well what you said. Everything will be treated as confidential.
Mrs Nkosi	:	Don't you want to publish me in newspapers and then I am arrested ?
Ntsibeng	:	No, feel free, I am going to use it for my records and not for other purposes.
Mrs Nkosi	:	What are you going to do with your records ?
Ntsibeng	:	I am going to make curriculum planners to be aware of this knowledge so that your knowledge is taught in schools so that it does not fade away. If this knowledge can be taught in schools, this may mean that even the future generation will gain this knowledge because it will be preserved in books like other types of knowledge. I am trying to bring honour to the home knowledge so that this knowledge is recognized.
Mrs Nkosi	:	Is it ? These news are good because most of our African knowledge is not known to our children, and this lets our culture down of which I think even the ancestors do not approve of it.
Ntsibeng	:	Okay granny, my question is: What do Intermediate phase learners know about the origin of rainfall ? I want to know the home knowledge they have about the formation of rain, i.e. the knowledge you taught them at home about this.
Mrs Nkosi	:	That is very easy. Our children have more knowledge about rainfall, especially girls, but even boys know everything.
Ntsibeng	:	What is that, that they know ? Tell me more.
Mrs Nkosi	:	Okay, listen. In this area whenever there is drought we used to practise a rain-making ritual whereby girls of 11 to 15 years are participants.

Ntsibeng : What is a rain-making ritual ?

Mrs Nkosi : This is a cultural practice whereby we organize girls to go to the mountain to request rain.

Ntsibeng : Why do you organize girls and not boys ?

Mrs Nkosi : Have you ever heard of u*Nomkhubulwane*, the rain daughter ?

Ntsibeng : No, what is that ?

Mrs Nkosi : Oh ! I see maybe that is why children associate *Nomkhubulwane* with home and not school. Right, I will tell you. This knowledge I was taught by my father who was an "inyanga yezulu". Before he died he left everything to me, therefore I am qualified in this job. Whenever there is drought people will travel long distances to me crying for rain.

Ntsibeng : Okay, granny, tell me why especially girls are organized.

Mrs Nkosi : In the olden days there was a rain daughter called *uNomkhubulwane*. She was beautiful and very shy. She was not seen by adults but by young girls, i.e. uninitiated girls. She liked children and could only talk to them only. That is why only girls are organized to go to the mountain to request rain from her.

Ntsibeng : Why does *Nomkhubulwane* talk only to girls ?

Mrs Nkosi : *Nomkhubulwane* was beautiful, clean and full of purity. So she preferred young girls because they are still beautiful, clean and pure just like herself, but nowadays *Nomkhubulwane* is not seen by naked eyes, but we always request rain from her with the hope that our ancestors will forward our request to the rain daughter.

Ntsibeng : What happens after organizing girls ?

Mrs Nkosi : Young girls are organized wearing "umsenge" leaves ?

Ntsibeng : Why do they wear "umsenge" leaves ?

Mrs Nkosi : "Umsenge" is a tree that is connected with thunder and lightning. This tree is not allowed to be brought home because there is a belief that it will attract thunder and lightning. Therefore by wearing "umsenge" leaves that means they are attracting rain. Then they take traditional food to the mountain.

Ntsibeng : What do you mean by traditional food ?

Mrs Nkosi : These are the things like "umqombothi" beer, "amadumbe", "izinkobe", etc.

Ntsibeng : Okay, carry on.

Mrs Nkosi : We move to the mountain but before we reach the mountain there is a river at the foot of the mountain where girls have to wash their bodies.

Ntsibeng : Why do they have to wash their bodies ? Tell me more about that.

Mrs Nkosi : They wash their bodies because they are going to talk to the rain daughter. Remember, I have said she was clean, beautiful and pure. So they are expected to be clean before they reach the mountain.

Ntsibeng : Okay, continue.

Mrs Nkosi : After washing all the dirt, we ascend the mountain. When we reach the mountain girls will start singing rain songs.

Ntsibeng : Do you always accompany them during a ritual ?

Mrs Nkosi : Yes, my duty is to organize them and to give them instructions throughout the ritual.

Ntsibeng : Why do they sing songs ?

Mrs Nkosi : The aim is to pass the message to *Nomkhubulwane* about rain.

Ntsibeng : What songs do they sing ? Can you give an example ?

Mrs Nkosi : There are so many songs, but one says:
Sicela imvula Nomkhubulwane.
Sicela imvula nkosazana yezulu.
Sicela imvula kwbaphansi.
They clap their hands and dance.

Ntsibeng : How many songs do they usually sing ?

Mrs Nkosi : As many as they can. They may be five or more. It depends on time.

Ntsibeng : What happens after singing ?

Mrs Nkosi : Food is served and the remainders are poured on the mountain.

Ntsibeng : Why is food poured down ?

Mrs Nkosi : This food is left for ancestors to come and eat it. This is a sign for thanking them because they will communicate with the rain daughter to bring rain. But in the olden days this food was left for the rain daughter to come and feed.

Ntsibeng : What happens after feeding ?

Mrs Nkosi : Girls will roll stones down the river.

Ntsibeng : Why do they do that ?

Mrs Nkosi : This is an indication that there must be a change in weather conditions.

Ntsibeng : And then ?

Mrs Nkosi : We all descend the mountain without looking back.

Ntsibeng : Why don't you look back ?

Mrs Nkosi : No, ma'am, we must not look back because we believe that looking back may disturb the ancestors while feeding, and our ancestors are not seen by naked eyes although we know that they are there. We therefore reach the river where girls will turn stones up on the bed of the river and throw water up in the sky.

Ntsibeng	:	Why do they turn stones up in the river ? Tell me more.
Mrs Nkosi	:	This also indicates that we want a change in the river. There must be rain so that the river may become full.
Ntsibeng	:	Okay, what about throwing water in the sky ?
Mrs Nkosi	:	Throwing water is a sign of teasing rain so that it comes.
Ntsibeng	:	And then ?
Mrs Nkosi	:	After that we all move home and we do not look back.
Ntsibeng	:	Why don't you look back again ?
Mrs Nkosi	:	It's a rule that we don't look back so that we do not disturb the ancestors. Looking back may lead to failure to get rain because this may annoy ancestors together with *Nomkhubulwane*.
Ntsibeng	:	When does the rain come after that process ?
Mrs Nkosi	:	At times it starts before we reach home or after two to three hours.
Ntsibeng	:	Oh Its unbelievable. Is *Nomkhubulwane* always reliable to bring rain after a ritual ?
Mrs Nkosi	:	Definitely, more than anything she had a cultivated field. I can prove this by demonstrating this ritual in your school, may be teachers can gain a lot.
Ntsibeng	:	Thanks for your offer. What is the field for ?
Mrs Nkosi	:	The field is cultivated for *Nomkhubulwane* to thank her for giving rain and to feed on that field.
Ntsibeng	:	Is there anything that you would like to share with me ?
Mrs Nkosi	:	Nothing ma'am except that I will come for demonstration in times of drought.
Ntsibeng	:	Thank you for your contribution. I think I have gained a lot. Bye-bye.
Mrs Nkosi	:	Bye-bye madam

THE STORY OF NOMKHUBULWANE (THE RAIN-DAUGHTER)

It is said long ago God had a daughter called Nomkhubulwane. It is said her origin was not clear because God was not married. He named this daughter Nomkhubulwane. People called her uNomkhubulwane or the Daughter of rain. Some people say uNomkhubulwane was first seen during the time when God created man. It is said the rain daughter was very beautiful. She was not seen by adults. She was only seen by young girls. She used to talk to them that they tell their parents if the year was going to be a good year with production and rain or if there was going to be drought. Therefore people should be aware and take care during cultivation and harvesting.

It is said the daughter had a beautiful face; but one side looks like a beautiful "impala" and another side was like a beautiful forest with a river; field and reed (umhlanga) and grass. This was amazing and unusual. Her face looks like a female. She was very shy in such a way that she never looks a person in the face. It is said even if she looks at a small girl she looks down or at times she hides her face with her hand. Her voice was very low. She respects some of the words while talking. She was heard saying *"Bakhapheyanasambana. Ziphi izimeshe namuhla ? Pheya, nizayuse kahle, zingamayi umngcaza wabenzo abadaya. Minani nanti iyambazi yamabeye. Mayani niphangise khona ngizothumeya ye ekhaya komayo benu."*

When the daughter has to leave, she used to move in a cloud of mist. Inside the clouds she looks like flying. This usually happens during spring. She comes with moisture of mist. She used this mist to water the beauty and peace.
They further say after a thunderstorm there are usually rainbow colours which indicate the end of a thunderstorm. This rainbow means peace. It also means that the storm has gone. People believe that beauty of colours in the rainbow is the beauty of Nomkhubulwane which shows beauty and peace. It is said the beauty of colours reminds of her purity and cleanliness. Nomkhubulwane does not change. It is said her virginity does not change for all the years. Her shape indicates beauty of virginity and it shows mothers' love. Although she is a daughter but she protects all the females. She teaches new ways of respect, cooking, traditional dressing, cultivation and other female duties.

It is said the way people respect her; they always cultivate the field for her during spring and this field was not taken care by anyone because it is believed that she is very active and she will do it for herself using her strategic methods. Women only brew the beer and then leave it in the veld. They believe that she will strain the beer (umqombothi) for herself and drink it with her friends, i.e. the sun, the wind and the moon. After some weeks the beer will be finished after being drunk in the veld.

During drought, women will go to the mountain where Nomkhubulwane's field was, they usually go there wearing "amabheshu" (male traditional attire) upside down. They sing on the mountain making noise. It is said they usually pour the beer down and then they go to the river and wash themselves a little bit.

It is said it usually rains before women reach their homes or just only soft showers of rain. At times flooding occurs. This will mark the end of drought.

OBSERVATION

On the 10th of June 2001 I heard over the media that there was to be thanks giving day for Nomkhubulwane at Sokhulu rural area. People around this area were all invited to attend the celebration. I became interested to hear about Nomkhubulwane since it is part of my study. I had to trace direction to that place.

When I arrived to the place, I had to ask permission from the "Induna" (headsman) of the place to attend that meeting. I have to explain the purpose of my visit to such a meeting.

The Induna started by requesting people to put food together. While Nomkhubulwanes' song was sung everybody was standing around the field and only the "Induna" stood inside the field, mixing all food. He also welcomed new residents of the place, and then announced the purpose of the meeting. He explains that the aim was celebrating Nomkhubulwane's thanks giving day and then to prepare for a rain-making ritual. Everybody was carrying traditional food in their baskets and umqombothi beer was also provided. The Induna explained the supernatural powers of Nomkhubulwane, the rain daughter and explained that she has given them production and rain and therefore it is important that they thank her.

The Induna explained to the new residents that before cultivation time they always organize a rain-making ritual, whereby girls are organized to participate in a ritual. He explained that they also organise the cultivation of Nomkhubulwane's field and that this is done by women. He explained that everybody is expected to come with seeds and women jointly cultivate this field. Umqombothi beer is also made on that day.

He continued explaining that when the field is ripen the residents were warned not to eat that field because they know that it belongs to the rain daughter. He said, the field is eaten by passersby, people who do not know Nomkhubulwane and that the field belongs to her. Passersby were free to eat the field and they will not experience misfortunes. For the residents misfortunes are common.

He explains that the aim of cultivation is that Nomkhubulwane will bring rain because she also had a field. After that women were requested to come for the cultivation of the field the following day. Rain songs were sung and traditional food was served. I did not eat because I was running out of time. I had to thank the Induna for giving me the opportunity to observe and then I slowly withdrawn and left because the items which were to follow were not part of my study.

ANNEXURE B

EXAMINER'S REPORT

NOVEMBER 2000

ANNEXURE B

UBJECT : GEOGRAPHY

RADE : HIGHER

APER : 2

STANDARD OF ANSWERS

Answer quality indicated large numbers of candidates were inadequately prepared to attempt Higher grade – lacked context, knowledge and skills. Concepts were not understood or confused e.g. weathering and erosion. Most responses were relevant. List facts instead of giving explanations. Don't read critically. Some candidates displayed maturity by giving in-depth answers but many displayed a lack of critical thinking e.g. Question 1.1.7, Question 1.1.5, Question 1.1.8 and Question 2.2. Valley climates in Northern Hemisphere.

2. ABILITY TO FOLLOW INSTRUCTIONS

Some candidates did not follow instructions. Language problem was evident. Some responses were concise, others were long winded. Some candidates wrote "too much" or "too little" for the allocated marks – examination techniques must be covered.

3. DIFFICULTIES RELATING TO THE INTERPRETATION OF SECTIONS/QUESTIONS

Terminology / concepts were confused especially, with 2nd Language candidates e.g. discharge, deforestation, sustainable, trend, relationship, desertification were not well understood. Question 1.2 misconception of "primary consumer" "community". Question 1.4 "Tor" and "Core Stone". Question 1.1.1 continental high and thermal low. Misinterpretation of describe, and explain. Difficulty in using key words. Insight misread for recall. Candidates cannot apply the theoretical knowledge they have learnt.

4. DIFFICULTIES IN RESPECT OF INTERPRETATION/UNDERSTANDING OF SYLLABUS

Rock formation – processes involved. Characteristics of slopes. Heat islands – coastal low, interior low, thermal low. Tropical and mid latitude cyclone characteristics and interpretation of the weather that they bring. Synoptic map reading, analysis, interpretation skills are lacking. Drainage basins/ density, streams confused concepts. Interpretation of source material is problematic.

PRINCIPLE ERRORS WHICH MAY HAVE LED TO POOR ACHIEVEMENT, THE CORRECT METHOD/APPROACH MUST BE OUTLINED.

Examination techniques not covered by most regions. Climatology and geomorphology concepts and terminology problematic. Outdated text books. Difference of terminology e.g. "core" rocks" "tors" horizon D and R kept recurring. Question 2.15 and Question 1.17 gave readings of weather station for both – could not predict weather conditions of the cold front was between Durban and Port Elizabeth and that 2 types of weather conditions would prevail viz. warm sector and cold sector weathers.

STRENGTHS/WEAKNESSES

Ecosystems were poorly answered. Urban climate (Question 1.3.3) open ended questions disadvantaged some candidates. Question 1.4.4 could not account for the shape of the tor. Question 2.2.3.2 effects on river discharge and soil formation poorly answered. Comprehension of Northern hemisphere warm and cold slopes. Poor grasp of concepts and interpretation of source material impacted negatively on responses. Interpretation of graphs were problematic. There was little evidence of pre-planned answers/responses.

RECURRING TRENDS THAT MAY HAVE RESULTED IN POOR PERFORMANCE

State, explain, determine should be clarified. Impact on the economy of South Africa requires attention. Private candidates seem to have little understanding of many parts of the syllabus.

PRESENTATION OF WORK

Numbering of answers were problematic. Most candidates sequenced questions according to chronological order but selections were inadequate according to requirements. Poor handwriting and the use of shorthand created problems for markers. Candidates need to leave spaces between answers and rule off after each question.

LANGUAGE / EXPRESSION/GRAMMAR

A few candidates did not have the language skills to express themselves and therefore could not get their messages across and therefore performed badly. Words like "determine" proved problematic.

SUGGESTIONS TO HELP IMPROVE PERFORMANCE

Aspects of slope must be taught theoretically as well as practicals. Application examples – slope types and related agriculture, valley climates and temperature inversion sections must be taught together and not in isolation. Diagram interpretation must be covered. Field work guides should be developed for Grade 11 and 12 to apply knowledge. Climatology needs attention.

SUBJECT : GEOGRAPHY

GRADE : STANDARD

PAPER : 1 & 2

1. STANDARD OF ANSWERS

There was evidence that the majority of the candidates were prepared for this examination. Questions were well answered and generally showed understanding. Some were not prepared to a degree to warrant a pass. They included information not relevant to the question. There was also an inability with some to analyse few questions. Some were not able to work with source material.

2. ABILITY TO FOLLOW INSTRUCTIONS

Many of the questions required fairly short answers. Candidates listed factors and generally stuck to what was requested. Candidates did not always follow instructions e.g. Questions called for "letters" but names were given (Question 1.2.3).

3. DIFFICULTIES IN RESPECT OF INTERPRETATION OF SECTIONS/QUESTIONS

The vocabulary used seems to have been acceptable to most of the candidates. However, problems were experienced with diagrams in question 3. The use of a Northern hemisphere valley to examine "aspect" confused a large number of candidates. Some candidates still struggle with the choice of the correct questions or the number of questions answered. There is still evidence that in a few instances candidates were taught incorrectly.

4. DIFFICULTIES IN RESPECT OF INTERPRETATION/UNDERSTANDING OF SYLLABUS

There were a number of candidates who gave the impression that they had never been exposed to data response questions Question 1 and Question 2. The synoptic chart and valley climate appeared to be foreign tools. In some instances even basic concepts such as HP and LP cells are not understood. Candidates thought that the "heat island' (question 1) referred to "A" on the map which was further mis-interpreted to be a real island.

5. STRENGTHS/WEAKNESSES

Climatology appears to have presented a very real problem to some candidates. Synoptic charts are not well understood which means that interpretation of what is presented on the map cannot be discussed, described or analysed. Many cannot visualise weather phenomena such as pressure cells, (isobars), weather station information and so on.

Ecosystems with the overlap into Biology – was well answered.

Spatial concepts are vague. Their understanding of "vegetation imbalance "and "Unemployment Projection was poor.

7. RECURRING TRENDS THAT MAY HAVE RESULTED IN POOR PERFORMANCE

The section on South Africa was once again disappointing. Educators may be curtailed by time and as a result rush this section of the syllabus. Question 7 was especially poorly done.

8. PRESENTATION OF WORK

The lay out of answers has improved. The numbering of answers were generally correct and easy to follow. Some candidates still use the margin for writing and make marking difficult. Handwriting generally legible and diagrams (the few that were attempted) were labelled and neat.

9. LANGUAGE/EXPRESSION/GRAMMAR

The second language pupils are at a distinct disadvantage. Pronunciation leads to concepts being confused, e.g. "crust" and "crest".

10. SUGGESTIONS TO HELP IMPROVE PERFORMANCE

Section A, especially climatology, needs to be worked on. Work sheets focussing on data response materials is essential, if candidates are going to come to grips with this type of question.

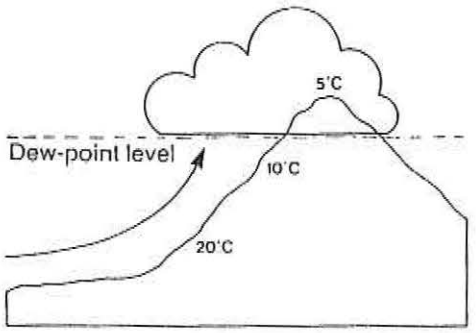
ANNEXURE C

EXTRACT FROM TEXT

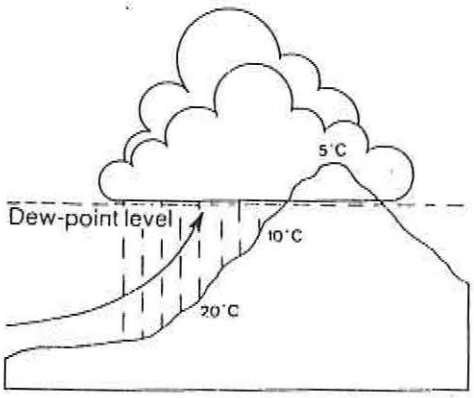
Types of rainfall

How is relief rain caused?

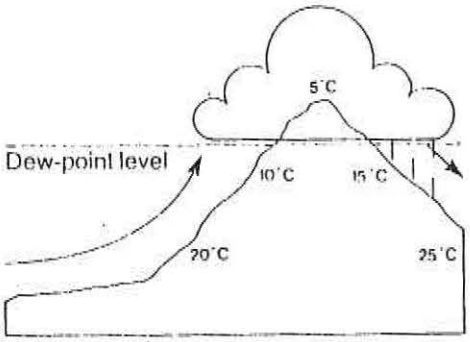
What happens when warm, moist air from the sea blows over a high mountain? As the moisture-laden air blows up against the mountain, the temperature drops. This drop in temperature will occur until the temperature reaches dew point. The rising of the air against the mountain slope will eventually lead to water molecules forming around impurities such as dust so that clouds will form.



A further rising of the air will lead to larger water drops forming which will eventually fall to the earth as rain. This type of rain is known as relief rain.



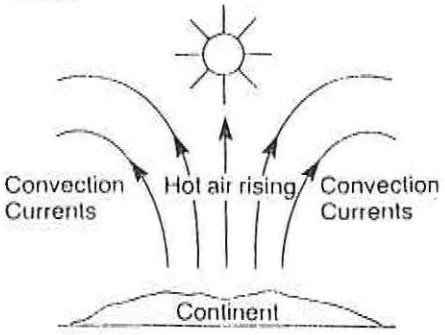
The process will continue until the rising air has reached the crest (top) of the mountain. As soon as the air, which becomes colder and denser as a result of the cooling process, moves down the opposite slope of the mountain, the remaining clouds will disappear and the air will become drier and hotter.



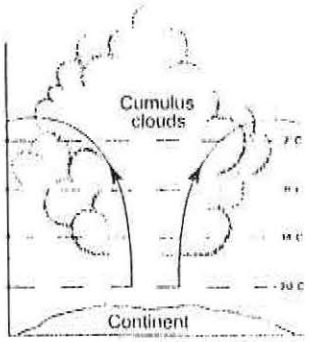
By the time that the air has reached the foot of the mountain, it is hot and extremely dry. Where in South Africa is this type of rainfall common?

How is convectional rain caused?

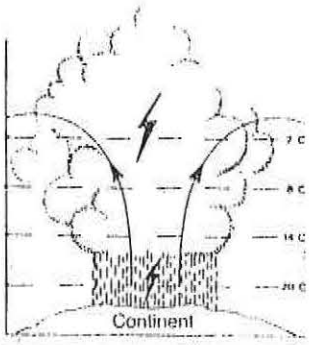
We know that hot air in the tropical climatic belts and over the large land masses rises during the hot days. Vertical currents that form as a result of the intensive heating of the land surface, and the air above it, are called convection currents.



If the air contains a high percentage of moisture, it will soon form cumulus clouds, similar to cottonwool, as it rises. If the air rises even more, heavy thunderstorms could occur.



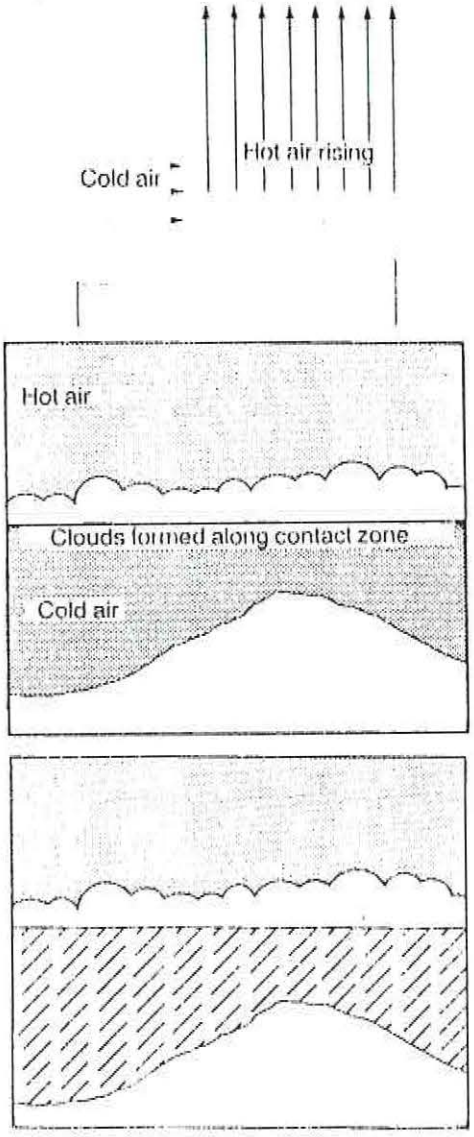
Thunder and lightning accompany these thunderstorms. Static electricity causes the lightning. The rapid vertical movement of the air as it rises and the friction between the rising air and the surrounding air causes the static electricity.



Favourable conditions for convectional rain are calm conditions in the morning, with moist air collecting over the warm region. This type of rain does not usually fall for longer than one and a half hours. The stormy weather soon clears and bright sunshine follows.

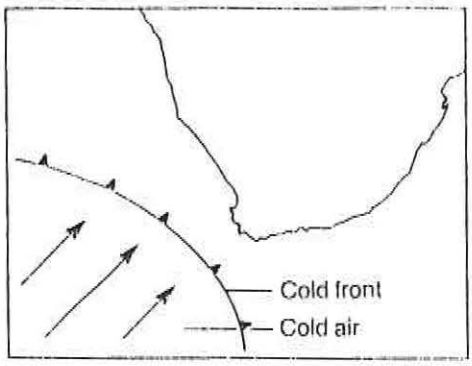
What is frontal rain?

We know that hot air is less dense than cold air. If cold air moves into an area where there is more warm air than cold air, the cold air will easily wedge in under the hot air. If the hot air contains a high percentage of water vapour, the rising hot air can easily cause rain.



Cold polar air blows in intervals over Southern Africa from Antarctica. As this air, which blows from a south-westerly

direction, moves in over the area, it forces the warm air upwards so that condensation takes place at a particular height. Clouds gather in a long curved zone along the contact zone, between the warm and cold air. This contact zone is known as a front.



Depending on the moisture content of the warm air, the cold air might force the warm air high enough upwards to allow good rains to fall. This type of rain is known as frontal rain.

Can you imagine what a person experiences if a front moves over the area where he is present? He would first feel the heat of the air and notice that there were only a few or no clouds in the sky. The temperature would suddenly drop when the cold front moved into the region and forced the warm air to rise. A cold wind would start blowing from a south-westerly direction. After a short while, a long bank of clouds would gather in the sky, after which it would suddenly start raining. After the rain, sparsely scattered clouds would remain in the sky, while a cold wind would continue to blow. After a day or two, the temperature would slowly begin to rise.