# A narrative communication approach towards drought resilience for Foundation Phase children

by

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For Voda

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- Each and every beloved person who tolerated and encouraged me.
- All the precious little people I met along the way.
- THE ALMIGHTY I AM.

*I am humbled.*

# DECLARATION

I declare that the thesis *A narrative communication approach towards drought resilience for Foundation Phase children* is my own work. It has not been submitted previously for any degree or examination at any other university. All the sources I have used or quoted have been indicated and acknowledged as complete references. I furthermore cede copyright of the thesis in favour of the University of the Free State.

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# DECLARATION


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# ABSTRACT

It is possible to mitigate the adverse effects of any disaster by building resilience through, amongst other means, education. Such behaviour-altering education as part of a disaster management intervention requires a communication process that will ensure that the message sticks. The stickiness of the message is determined by various factors, including the age of the recipients.

One of the priorities for the Hyogo Framework for Action 2005-2015 is the use of knowledge, innovation and education to build a culture of safety and resilience at all levels of society, including children. Since this call to action, child-focused initiatives like *Masters of Disaster*, UNICEF's *Voices of the Youth*, *Plan International*, ESA (European Space Agency) *Earth Kids* and *Ready* have seen the light. However, the lack of thorough drought coverage in the material gives cause for concern. Also, many key factors required by an age-appropriate message for Foundation Phase children seem to be lacking. In accordance with an adapted communication model for social change, it is advised that an age-appropriate message towards drought resilience for Foundation Phase children should be simple, repetitive, narrative and imaginative, and focus on positive actions.

In order to construct a drought resilience message, the South African Foundation Phase curriculum for Life Skills was studied. All the drought-related outcomes (such as weather, water, pollution, animals, nature and soil) were selected and matched against the prescribed learning material to determine the level and depth of their application. Furthermore, technology and indigenous knowledge about drought were studied to determine which actions and information would be suitable for Foundation Phase children – corresponding to the appropriate level and depth of comprehension and skills. Thereafter, age-appropriate material towards drought resilience for Foundation Phase children was developed. The development process was guided by the message content, the textual and visual preferences and abilities of Foundation Phase children, the most suitable communication channel and cultural factors.

It was found that an age-appropriate message does indeed have the ability to stick to children's minds and can possibly alter behaviour beyond the individual child. Consequently it is an effective mitigation tool to be used as part of disaster management towards drought resilience.

# ABSTRAK

Dit is moontlik om die negatiewe nadraai van enige ramp te mitigeer deur weerbaarheid te verhoog met ondermeer onderrig. Hierdie tipe onderrig as deel van ’n rampbestuur-intervensie wat gedragsverandering tot gevolg het, moet op ’n kommunikasiemodel gebaseer word om te verseker dat die boodskap “kleef”. Die “kleefbaarheid” wat die boodskap word deur baie faktore beïnvloed, soos byvoorbeeld die ouderdom van die ontvanger.

Een van die prioriteite van die Hyogo Framework for Action 2005-2015 is die gebruik van kennis, innovasie en onderrig om ’n kultuur van veiligheid te bou, en gemeenskappe – insluitend kinders – se weerbaarheid op alle vlakke te verhoog. Sedertdien, is verskeie inisiatiewe wat op kinders fokus, ontwikkel, soos Master of Disaster, UNICEF’s Voices of the Youth, Plan International, ESA (European Space Agency) Earth Kids en Ready. Tog is die gebrek aan droogte materiaal, ’n bron tot kommer. Verder skiet baie ouderdomspesifieke faktore wat in ag geneem moet vir Grondslagfase kinders, tekort. ’n Aangepaste kommunikasiemodel vir sosiale verandering beveel aan dat ’n ouderdomspesifieke boodskap rakende droogte weerbaarheid vir Grondslagfase kinders, eenvoudig, herhalend, narratief en verbeeldingryk moet wees, en ook op positiewe aksies moet fokus.

Om ’n boodskap oor droogte weerbaarheid te skep, is die Suid-Afrikaanse Grondslagfase se Lewensoriëntering kurrikulum, bestudeer. Al die uitkomste wat tot droogte spreek (soos weer, water, besoedeling, diere, natuur en grond) is geselekteer en die vlak en diepte van die ooreenstemmende leermateriaal is bestudeer. Verder is tegnologie en inheemse kennis rondom droogte nagevors om te bepaal watter aksies relevant sal wees vir Grondslagfase kinders – in ooreenstemming met die toepaslike vlak en diepte van hulle begripsvaardighede. Daarna is ouderdomspesifieke materiaal oor droogte weerbaarheid vir Grondslagfase kinders ontwikkel. Die ontwikkelingsproses is gelei deur die inhoudelike vereistes, teks en visuele voorkeur en vaardighede van Grondslagfase kinders, die mees toepaslike kommunikasiekanaal asook kultuurfaktore.

Daar is gevind dat ’n ouderdomspesifieke boodskap wel die vermoë het om aan kinders te “kleef” en gevolglik moontlike gedragsverandering tot gevolg kan hê. Derhalwe dien dit as ’n bruikbare mitigering instrument wat gebruik kan word as deel van rampbestuur wat fokus op droogte weerbaarheid.

# KEY CONCEPTS

Graphic

Narrative

Communication

Drought

Resilience

Foundation phase

Children

Risk reduction

Disaster

Child-centred disaster risk reduction

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# Chapter 1

# ORIENTATION AND RATIONALE FOR THE STUDY

## 1.1 Introduction

A disaster occurs when a large number of people experience a hazard that affects their livelihood system in such a way that it is unlikely that they will recover from it without external aid (Wisner, Blaikie, Cannon & Davies 2004:50). However, as depicted by the disaster management cycle, it is possible to limit or minimise the impact of a hazard by means of mitigation towards preparedness (Carter 2008:197).


**Figure 1.1** The disaster cycle (adapted from Carter 2008:50)

The Disaster Preparedness Framework lists education and training as one of the mitigation interventions towards preparedness (Kent 1994:32). Wisner et al. (2004:344) agree, noting education as a requirement in their progression to safety model. Hence, it can be derived that education plays a role in disaster mitigation in that it can lessen the adverse impact of a hazard.

Of all the hazards people face, drought is believed to be the most complex but also the least understood of all natural hazards; it also affects more people than any other natural hazard (Wilhite 1999). In many cases children count among the most vulnerable – destroyed or distraught by the impact of drought and their inability to make themselves more resilient. Disaster literature highlights education as pivotal in disaster mitigation

and preparedness (Kent 1994:32, Wisner et al. 2004:344). This education, says the ISDR (2002:201), needs to start as early in the lives of people as possible. Age-appropriate information regarding drought resilience seems to be inadequate for Foundation Phase children. This may be for various reasons, including the complex and/or "dull" nature of drought – it may not be as easy to present drought information in the same exciting and/or colourful way as for example in the case of fires or floods. Hence, there is a need to close this information gap by aiming to build drought resilience. Storytelling, as an art of portraying real or fictitious events in words, images and sounds, could prove to be a valuable and age-appropriate method to fill the drought resilience information gap for Foundation Phase children. According to Ozhan, Guneser, Ongun, Demirag and Koroglu (2013) stories are told for entertainment purposes, to teach lessons and to provide life skills; therefore storytelling as an educational tool is encouraged. With storytelling, the authors argue, it is possible to communicate educational material that not only informs, but also teaches effectively – thus, changing children's way of thinking and developing more cautious behaviour concerning disaster risk.

## 1.2 Background to the study

Strategically this research aims to aid the improvement of children's resilience when faced by a possible drought hazard, and consequently lessen their vulnerability. Educating children will not only lessen their own vulnerability, but also household vulnerability. Damerell, Howe and Milner-Gulland (2013:6) found that when children receive environmental education, they pass this information on to their parents, thus influencing household behaviours. Accordingly, this research project wishes, by means of a graphic narrative, to communicate a message to Foundation Phase children with the aim of creating awareness and increasing drought resilience. A brief discussion of the significance of drought, education, communication and the message construction for this study follows.

### 1.2.1 Drought

More than ever before hazard awareness is receiving worldwide attention. Whether or not the world faces more hazards than before is a current topic of debate (Save the Children 2008:1). Scientists are scrutinising data in pursuit of answers to the why, how, what and where. All the while, disasters occur everywhere.

Disaster occurrence does not discriminate between regions and no area is exempted from its adverse effects; however, various indicators contribute to a region's vulnerability (Peek 2008:2). Especially in the Less Developed Countries (LDC), vulnerable people often suffer losses to their families, settlements and livelihoods (Wisner et al. 2004:4). The National Disaster Management Framework (NDMC 2005) names South Africa as a country that faces increasing levels of disaster risk. We are exposed to a wide range of weather hazards, particularly drought. According to data from the Centre for Research on the Epidemiology of Disaster (2011, in Ngaka 2012:1), drought in South Africa is the disaster that affects the most people and causes the biggest total economic loss, and an estimated 65% of the country receives less than 500mm rain per year. During the past 15 years, three major droughts occurred in South Africa in 1991/2, 1997/8 and 2001/2 with significant effects on food production (Austin 2008:5).

More than 30% of people in drought-stricken areas are malnourished (IFRC 2011:4). According to a report by the World Bank (2012) however, Africa has the potential not only to feed itself, but also the rest of the world. This is currently not happening for various reasons, one being inadequate drought resilience. Hence the call to prevention as a priority by UN Secretary-General Ban Ki-Moon (FAO 2013): "Nations need urgently to develop strategies for resilience – especially for the poor, who are always hit first and the worst."

The South African Disaster Management Act of 2002, and the National Disaster Risk Management Framework aim to build resilience against, among other, drought (Austin 2008). Whereas the Act provides for integrated and co-ordinated disaster risk management policies, disaster management centres and volunteers, the Framework addresses issues of consistency across the multiple interest groups (NDMC 2005:1)

Since drought is a slow-onset disaster, communities should have enough time to put preventative measures in place. However, one of the reasons why LDCs are often less resilient to any disaster, as pointed out by the ISDR (2002:41), is that people are not aware of the hazards that pose a threat to their lives and assets, making them more vulnerable. This is a possible concern, especially if it is assumed that knowledge is often passed from one generation to the next – from adults (as parents or teachers, for example) to children.

### 1.2.2 Disaster education for children

According to Wisner et al. (2004:330) education and training programmes provide knowledge concerning the nature of hazards, and people's vulnerability and capacities. Education builds capacity that can enable changes in the daily life patterns and behaviour of people, which can, in turn, increase personal and social protection. Public awareness that leads to informed action, the authors aver, is a core requirement to reduce vulnerability and develop resilient households, localities and societies.

In Rambau's study (2011:1) about educational perspectives on learner awareness of hazards and disasters, disaster education also emerged as a possible coping strategy that could enable communities to be prepared and become resilient during and after a disaster. UNESCO (2007) reported that education and awareness are the most cost-effective ways to ensure that communities are prepared and will respond well to disasters. Educated and knowledgeable children can play a central role in the development of community knowledge and skills to facilitate disaster risk reduction (ISDR 2002:201). Shaw, Shiwaku, Kobayashi and Kobayashi (2004:41) agree, noting that it is widely acknowledged that schools play an important role in awareness among students, teachers and parents. When a child is aware of hazards and realistic risks, there is also the potential for adults to be educated because children are inclined to share their knowledge at home. Slattery (2006, in Rambau 2011:5) notes that education must point the way toward deep cultural changes in order to create healing and compassionate environments.

The challenge to increase resilience in children is further encouraged by the Child-Centred Disaster Risk Reduction (2010:3), which states that children's vulnerability to disasters is expected to increase and that increasing resilience in children has become imperative. Much attention is paid to the needs of children in emergencies; however, it is usually in terms of adults looking after the interests of the children. There is a need to work with, and not for, children in order to reduce their vulnerability and build resilience. Mitchell and Tanner (2009) call for more child-focused studies since mainstream disaster management approaches and theoretical debates largely ignore the role of children as communicators of risk and facilitators of disaster risk reduction. In his thesis, Rambau (2011:108) stated that his study excluded any data collected from children regarding their knowledge of disaster risk reduction. Although his study focused on children's disaster

awareness and preparedness, no data was directly collected from children; therefore he suggested further research specifically focusing on collecting data from children.

Since the need for child involvement in disaster risk reduction was identified as a priority, many initiatives have seen the light. Wisner (2006) discusses some of these initiatives like *Masters of Disaster*, UNICEF's *Voices of the Youth*, *Plan International*, ESA (European Space Agency) *Earth Kids* and *Ready*. The scope and content of these initiatives served as a baseline for the current study from which to develop drought resilience material for Foundation Phase children. However, most of the initiatives mentioned do not have a strong drought resilience component, the focus being on immediate disasters. Although drought may not be considered as spectacular as for example a flood or earthquake, the effects are far-reaching and severe. This study therefore aims to communicate drought resilience information in an entertaining way with a view to cultivating a drought-ready culture among Foundation Phase children.

For any risk reduction initiative to be effective, Shaw et al. (2004:42) emphasise that five stages should be involved: knowing, realising, deepening, decision and action. These stages lay a heavy burden on any risk reduction effort. It requires that the process by which children receive information, process it and act on it, needs to be understood. The aim of the risk reduction initiative for this study would be to create a consciousness that would, by implication, alter behaviours.

Using the Rohrman awareness model (1998) with its three levels of risk appraisal, decision for prevention, and risk reduction, Shiwaku, Shaw, Kandel, Shrestha and Dixit (2007:580) propose an educational framework that enhances awareness and promotes action for disaster reduction, community education, family education and school education. This framework emphasises that whatever is taught, should not be for the sake of providing information only. The experience should specifically enable children to identify risks and hazards in their environment, assist them in making conscious decisions and teach them to take action to prevent the risks, and ultimately support displaying risk-reducing behaviour. These aims could be achieved through generating curiosity about hazards and disasters by using an effective communication process (Rambau 2011:50). This means that the communication process by which children are involved in risk reduction needs to be entertaining, imaginative and educational at the same time in order

to change consciousness and behaviour. Besides the need to be entertaining, imaginative and educational, the success of such a communication process is further challenged by the fact that today there are higher levels of multiculturalism as more and more people migrate to locations outside their culture zones where languages, perceptions and attitude towards disaster differ (Clerveaux, Spence & Katada 2010:202).

The current emphasis to involve children globally in disaster risk reduction, prompted many countries to launch disaster educational programmes, some even including it in their national school curriculum (Wisner 2006), although often very little time is allocated to the specified outcomes. Eisner (1994:92) warns that time allocation to different subjects may influence the value code that children read into certain fields. The time spent on learning and the time of day all have an effect on how children value whatever is being taught. Art, for example, is taught for a very short time and often in the afternoon, whereas maths gets the early morning slot, almost daily. This teaches children that maths is more important than art. Accordingly, the less time spent on disaster, the lower the value code drops.

At the time Wisner (2006) was completing his report on the role of education and knowledge in disaster risk reduction, the following United Nations member countries had confirmed hazard teaching in primary and secondary schools:

**Table 1.1** UN member countries teaching hazards in primary and secondary schools (Wisner 2006)

| **Asia and the Pacific** | **Latin America and the Caribbean** | **Africa** | **OECD** | **Central and Eastern Europe and CIS** | **Other UN members** |
|---|---|---|---|---|---|
| Bangladesh | Bolivia | Algeria | France | Czech Rep. | Monaco |
| Iran | Br. Virgin Islands | Kenya | Greece | Hungary | |
| India | Colombia | Madagascar | Japan | Lithuania | |
| Mongolia | Costa Rica | Mauritius | New Zealand | Macedonia | |
| Philippines | El Salvador | Senegal | Portugal | Romania | |
| Tonga | Montserrat | Uganda | Sweden | Russian Fed. | |
| Turkey | | | USA | | |

Abbreviations: Br. Virgin Isl.– British Virgin Islands; CIS –Commonwealth of Independent States; Czech Rep.– the Czech Republic; OECD– Organization for Economic Cooperation and Development; Russian Fed.– the Russian Federation

In the meantime, South Africa joined the quest to provide disaster education by making some amendments to the national curriculum. However, as set out in the South African national curriculum and pointed out by Rambau (2011:10), only the Grade 7 Social Science curriculum has made a little provision for teaching hazards and disasters. This implies that children go through their early schooling years from Grade 1 to Grade 6 without being thoroughly taught about hazards and disasters. In the Grade 3 Life Skills curriculum provided by the South African Department of Basic Education, mention is made of floods, fires, earthquakes, lightning and strong winds and storms – drought is not dealt with at all (Department of Basic Education 2011b). And only nine hours are allocated to the topics mentioned, without any repetition in further grades up to Grade 7.

According to Erasmus-Kritzinger (1999:2), education in its most basic form is communication. This, she explains, means that a message is coded, sent through a channel and decoded by the receiver. The success of the message can be measured by feedback from the receiver. Hence, the outcome of the message depends largely on the efficiency of any communication approach used. Accordingly, the sender must code a message in a way that is applicable to the receiver and send it through channels that are accessible and preferred. When this is achieved, it will lessen noise (barriers) that can possibly intercept the intended effect of the initial message and its purpose. Therefore, instead of trying to reform the Foundation Phase curriculum, thus casting an extra load on often already overburdened teachers, this study aims to explore a different way of getting a drought resilience message across. Would it not be possible to employ a graphic narrative communication approach that appeals to children even outside an educational environment?

### 1.2.3 Communication

The graphic narrative communication approach will be pivotal to this study. By this route, the researcher wishes to convey a drought resilience message to Foundation Phase children.

Even though academics have studied communication for many years, Miller-Day, Pezella and Chesnut (2013) reveal that only 3,7% of all published articles in leading communication journals from 1997 to 2010 focused on children. The authors point out that this is much less than the 10% estimated in previous research. There may be a variety of reasons for this situation, including consent, access, confidentiality and ethics. It may not always be easy or appropriate to do research with children. Hence, a general environment was created where children were only studied indirectly with regard to communication, if at all. More effort, is it suggested, should be directed towards building and testing communication theories in order to understand children as communicators. A good starting point for such understanding would be to identify the most suitable communication model that can possibly include children as communicators, and adapt it to their specific communication preferences.

The most basic communication model was developed by Shannon in 1948. It is still taught to communication students today, which could be viewed as testament to its enduring value (Foulger 2004a). Shannon's simple linear model consists of five parts, as elaborated by Blackburn (2007:60) as follows:

- Information source producing the message
- Transmitter encoding the message
- Channel through which the message is sent
- Receiver decoding the message
- Destination referring to the person for whom the message is intended

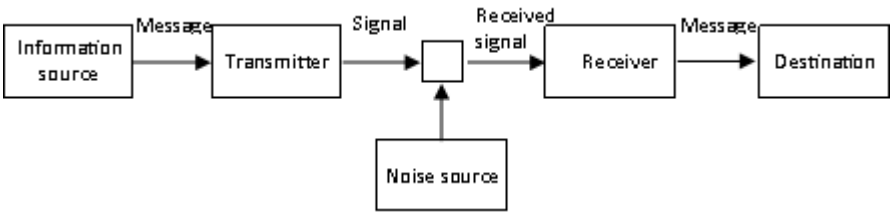



**Figure 1.2** Shannon and Weaver's model of communication (Corman, Trethewey & Goodall 2007:3)

When this model was initially developed, Shannon had the telephone or telegraph in mind. Since then, much has changed in the communication arena. This rapid development is as discussed at length by Holmes (2005), referring to the current "second media age"

that describes cyber communication and the advance in electronic and wireless communication. Littlejohn and Foss (2009) present a chronological development of communication theories from the Classical Period until 2008. The interesting development of communication studies is closely related to the social developments through time, ranging from multi-cultural theories, feminism, the rise of interpersonal communication theories, an interest in the non-verbal aspect of communication, to mass media and advanced technological theories. However, Miller (1996) states that some aspects of both written and oral communication have remained unchanged. She argues that "communication is still the social glue that holds together nations, corporations, scientific disciplines and families".

Figuerora, Kincaid, Rani and Lewis (2002) share Miller's sentiment in defending the validity of different types of communication models by arguing that no theory is right or wrong, it is only appropriate or inappropriate – depending on the environment and situation in which it is applied. A model like, for example, Shannon's five-step linear model, may be too simplistic and speculative to apply in the current study, thus rendering such approaches inappropriate. One reason is that linear models lacks what Berlo (1960, in Corman et al. 2007:4) calls fidelity – which describes the effect of the message. Linear models also assumes that the receiver will indeed receive the message and that they will understand it. Although the effect of noise (that can interfere with the message clarity) is included in most linear models, the general assumptions of such models are too generous for the purposes of the current study.

Since the rise of linear communication models, many other models have been created by various scientists to suit their specific area of communication (for example, marketing, public relations, advertising, politics) with the aim of including factors that were not applicable in typical linear models like Shannon's, such as feedback, language barriers, gatekeepers, culture, perception and different types of media. Some of these models include Schramm's (1957) face-to-face model; Berlo's (1960) Sender-Message-Channel-Receiver (SMCR) model; and Barnlund's (1970) more complex transactional model accounting for the continuous, unrepeatable, irreversible nature of communication (Littlejohn & Foss 2009). Miller (2006:3), however, warns against over simplifying communication as packaging messages and transmitting it. Such an approach denies the complex interaction of knowledge, language, habit, presumptions, values and interests

that all affect the communication process – communication should rather be thought of as an art. Accordingly, a good starting point among the available models for the current study, would be to analyse Foulger's (2004b) ecological model of the communication process. Foulger (2004b) attempted to address the gaps in other communication models by (i) assigning an active role to the receiver of the message; (ii) allowing for different interpretations of the message; (iii) recognising the different types of language use in different media; (iv) proposing that receivers learn about the media by using the media; (v) noting that the creators of the message actually invent and evolve language; and (vi) that the messages constructed can in fact be imperfect representations of the meaning actually imagined. He argues that the roles of the message creators and message consumers are both reflective and introspective in that people create messages in reaction to other people's messages, and that the interpretation of the messages is influenced by each person's own perspective.

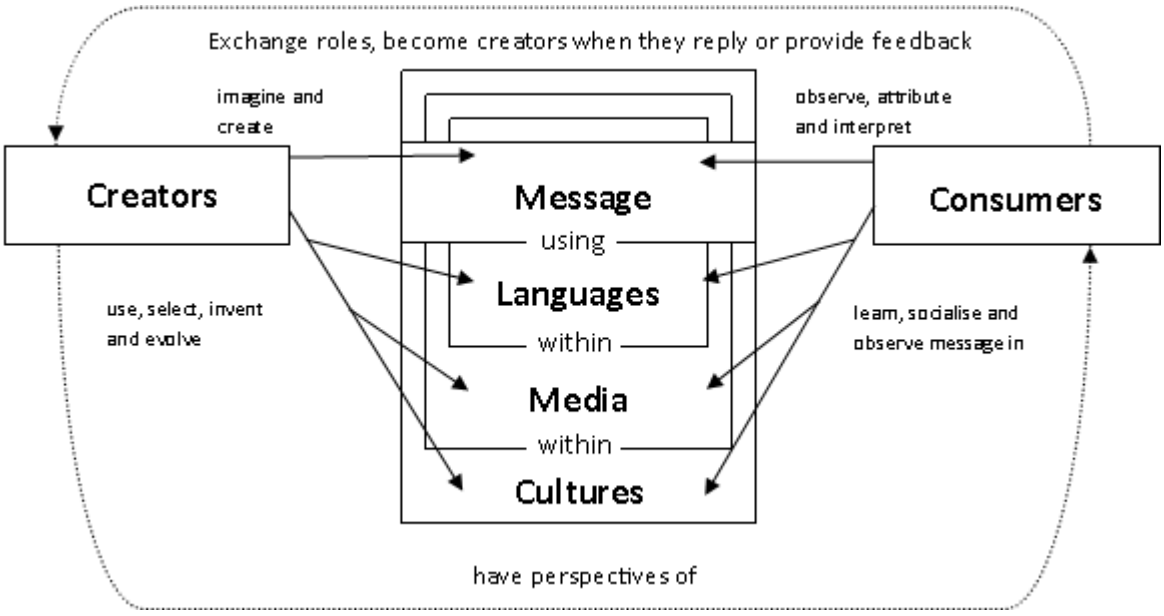



**Figure 1.3** Ecological model of the communication process (Foulger 2004b)

Simply put, the ecological model of the communication process assigns an equally important role to the sender and the receiver of any message to aid the success of the message.

An interesting project in the Kyrgyz Republic may prove that Foulger's model could indeed be a well-suited approach to communicating with children. In this project, children were involved in creating material for and about children (Kolucki, Iskanderova &

Grover 2006). Children's books were created in their native language as well as in their own cultural context to teach them basic life skills. The children (and, in some instances, their parents) were involved in creating the characters, and the material was pretested before it was completed and printed. Even though this was a small-scale project, many lessons can be learned from its success and possible areas of improvement can be pointed out.

### 1.2.4 Message construction

Fisher (1984:1) describes narrations as words and/or deeds that are of importance to those who live, create or interpret them. Therefore, he elaborates, the narrative perspective includes the real and the fictional world – real stories and stories of the imagination. Expressing these narratives (or stories) graphically can take on many forms, such as comic books, cartoon strips, children's books and photo stories, either in print or in digital media. All these are often successfully applied to communicate with children in an entertaining manner. However, most of the disaster risk reduction material currently available relies heavily on education whereby the characters "teach" and not really engage the user – despite interactive activities. Much of the content is presented as lists and "lessons" – not as imagination-gripping stories. This is understandable since much of the material was developed with the aim to be used in a classroom setting where a teacher facilitates learning.

A further gap in current risk reduction material was identified by Wisner (2006:69), who pointed out that many of the games and risk-awareness aids developed for children and youth up until now fail to explore the true nature of risk reduction. Therefore, the drought resilience message that this study intends to develop for Foundation Phase children, must be content fit. Any material aimed at learning can, however, communicate more than the apparent content.

Eisner (1994:88) highlights the fact that the materials presented affect values that are often not recognised by children or teachers. The illustrations, language and emphasis given to characters in stories all express values that influence thought patterns and behaviour. If these nonverbal cues are carefully employed, they could enhance the desired impact of the message.

Visual content, as part of non-verbal communication in storytelling, can also play a pivotal role in constructing and communicating a message aiming to increase drought resilience for Foundation Phase children. Children negotiate their out-of-school experiences with images, but despite the copiousness of visual images, traditional text is often still used to communicate with children (Gillenwater 2009:33). These out-of-school experiences are most likely moulded by the mass media. Every now and again, there appears some heroic or simply likable animation or imaginary character that creates a craze, be it Disney Princess, Star Wars, Pooh, Cars, Little Kitty, Mickey & Friends, or the like (Forbes 2012). There are many success recipes in the mass media. However, this research was unable to find a suitable example of one character/storyline dealing with disasters per se, but much can be learned from the available content.

It would seem that a drought resilience message for Foundation Phase children could be communicated effectively as a graphic narrative, provided that the children's communication preferences are employed. These preferences will be elaborated on and measured in Chapters 2 and 4 respectively.

## 1.3 Problem statement

As noted in the background discussion for this study, age-appropriate material with regard to drought hazard mitigation and reducing the risk of a possible disaster, seems to be inadequate for Foundation Phase children. Hence, there is a need to address this information gap with a view to building drought resilience.

## 1.4 Research problem, objectives and questions

### 1.4.1 The research problem

There is a lack of age-appropriate drought risk reduction material for Foundation Phase children.

### 1.4.2 Research objectives

*Primary objectives:*

To develop a narrative communication approach towards drought resilience for Foundation Phase children.

*Secondary objectives:*

1. To explore the necessary drought risk reduction information to be communicated
2. To analyse the narrative coding options of the message
3. To evaluate the different communication channels
4. To design the graphic narrative approach
5. To determine the stickiness of the message

### 1.4.3 Research questions

*Primary question*

What are the requirements for a narrative communication approach towards drought resilience for Foundation Phase children?

*Secondary questions*

1. What is the necessary drought risk reduction information?
2. What are the most appropriate visual and textual coding options?
3. What is the most appropriate communication channel?
4. How will the message be designed?
5. How sticky is the message?

## 1.5 The aims of the research

### 1.5.1 Academic aims

The main aim of this research project is to explore a narrative communication approach, presented graphically, towards drought resilience for Foundation Phase children, in order to achieve awareness, drought consciousness and disaster risk reduction.

In pursuit of the main aim, the secondary aims are:

- To research the necessary drought risk reduction information to be communicated
- To analyse the narrative coding options of the message
- To evaluate the different communication channels
- To develop the narrative approach graphically
- To interpret the decoding process and feedback from the receivers

- To note the outcome of the message

### 1.5.2 Strategic aims

Strategically, this research aims to aid the improvement of children's resilience when faced with a possible drought hazard and accordingly lessen their vulnerability as well that of their households.

## 1.6 Delimitation of the study

This study does not undertake to alter any curriculum or develop material to necessarily be used in a classroom setting; however, it should be able to supplement any existing drought risk reduction teaching. The core focus is and remains the development of a graphic narrative communication approach based on an appropriate model specifically aimed at Foundation Phase children, by which a carefully constructed message can be sent in order to encourage a consciousness that will alter behaviour and reduce the risk for children when faced with a drought hazard. Children should be naturally curious about the material so that adult intervention is not necessarily needed.

This study will also not attempt to create "new" drought risk reduction information for children, but will merely use the research currently available and adapt it into an age-appropriate format, developed in accordance with children's communication preferences.

## 1.7 Research design and methodology

The study is based on the critical realism philosophy and employs both deductive and inductive research processes. Data collection comprises a mixed method inclusive of literature studies, participant observation, and visual and textual content analysis. Primary data will convey a cross-sectional picture, and data collection and analysis techniques will be relevant to the type of data collected as elaborated on in Chapter 3. Seven DATA SETS will be produced in order to answer all the research questions:

DATA SET 1: Qualitative content analysis and literature review to determine the necessary drought resilience information to be communicated.

DATA SET 2: Quantitative content analysis to determine age-appropriate text for Foundation Phase children.

DATA SET 3: Visual content analysis and literature review to determine age-appropriate visual design for Foundation Phase children.

DATA SET 4: Quantitative secondary data analysis to determine age-appropriate communication media for Foundation Phase children.

DATA SET 5: Secondary data analysis and literature review to determine cultural appropriateness for Foundation Phase children.

DATA SET 6: Application of secondary data, literature review and qualitative and quantitative content analysis to develop and thereafter measure age-appropriate drought resilience material for Foundation Phase children.

DATA SET 7: Participant observation and questionnaire to triangulate the findings of DATA SETS 1-6 and indicate the stickiness of the message.

## 1.8 Conclusion

The issues discussed in Chapter 1 explained the basis on which this investigation will proceed – all of which will be elaborated on in subsequent chapters. Chapter 2 provides a more thorough literature review, elaborating on the theoretical framework. Chapter 3 gives a detailed explanation of the research methodology employed and the strategies followed to collect the secondary and primary data. Chapter 4 shows the data collection processes and results, as well as the outcome of the data interpretation. Chapter 5 provides a summary of the study, recommendations, implications and conclusion.

# Chapter 2

# LITERATURE REVIEW

## 2.1 Introduction

This study seeks to investigate the requirements for an effective narrative communication approach towards drought resilience for Foundation Phase children. The theory is that when A (requirements) is met, B (effective communication process) should be achieved. According to Sutton and Straw (1995:387) a theory is in effect about the connections between phenomena. Gill and Johnson (2002) cited in Saunders, Lewis and Thornhill (2009:37) agree by elaborating that "it is also evident that if we have the expectation that by doing A, B will happen, then by manipulating the occurrence of A we begin to predict and influence the occurrence of B".

Therefore, the purpose of Chapter 2 is to review how the majority of the relevant literature addresses the issues related to the requirements for an effective narrative communication approach towards drought resilience for Foundation Phase children. The aim of the literature review is not to reinvent the wheel, nor to provide a mere summery of previous research and scientific findings. Rather it seeks to highlight possibilities that might have been overlooked previously, to gain methodological insight and build on the work of previous researchers (Randolph 2009).

The chapter begins with an overview of drought, with the emphasis on the effects of a drought disaster and possible mitigation measures that may lead to resilience. Furthermore, a communication model by which to develop a narrative communication approach that is presented graphically will be researched to determine its probable effectiveness as a tool in creating a risk reduction message to enhance drought resilience in Foundation Phase children. Finally, the existing drought risk reduction material for children will be investigated. The literature review will serve as theoretical framework for the study.

## 2.2 Drought

Drought is arguably the most complex and also least understood of all natural phenomena. It is a normal part of climate and not a rare and random event (Wilhite 2005:4). The typical picture that comes to mind of cracked soil and withered vegetation is only part of this hazard that plagues mankind. The reason for this image is probably that this is the most visible effect of drought. However, drought is described as any period of water scarcity and can affect all regions on earth – both low- and high-rainfall areas – when the water availability is below the statistical requirements for an area. Such a water scarcity can present serious economic, social and environmental challenges for both developing and developed countries (Gupta, Tyagi & Sehgal 2011:1795).

Drought is also among the most costly disasters that affect large numbers of people every year (Dai, Trenberth & Quan 2004:1117). The risk associated with drought depends on the exposure of the region to the event as well as the vulnerability of the society in the region (Wilhite 2005:12). However, it gives cause for concern that drought seems to affect more and more areas. In the past, drought affected about 20% of the earth's land surface at any given time. This figure rose to about 28% at present and is predicted to be 35% by 2020 (Roger, MacDonald, Nicol & Robins 2010:246).

Most of the farming in South Africa takes place under arid and semi-arid condition with an annual rainfall of below 500m, which is predicted to decrease by 5 to 10% in the summer rainfall regions (Ngaka 2012:1). However, according to the World Meteorological Organization (2006:5) drought is not a disaster in itself. Whether or not it becomes a disaster is determined by the impact a drought has on the local people, economy and environment and their ability to cope with and recover from its effects. Wilhite (2005:5–6) states that any drought should be defined in terms of region specifics because different regions have different climatic characteristics, and different social, economic and environmental needs.

### 2.2.1 The characteristics of drought

All droughts initially originate from a lack of precipitation – although there is not always a direct correlation between precipitation amount and the specific water source shortage.

Different types of drought can be distinguished as follows (World Meteorological Organization 2006:8–9):

- Meteorological drought: commonly defined by a precipitation deficiency
- Agricultural drought: commonly defined by the lack of soil water to support crop growth
- Hydrological drought: commonly defined by the lack of surface and subsurface water supplies
- Socio-economic drought: commonly defined by a discrepancy between water supply and demand

It is very difficult to determine the beginning and end of a drought as both the beginning and the end of a drought are gradual. In 1947 Tannehill (Wilhite 2005:5) noted:

> We may truthfully say that we scarcely know a drought when we see one. We welcome the first clear day after a rainy spell. Rainless days continue for some time and we are pleased to have a long spell of fine weather. It keeps on and we are a little worried. A few days more and we are really in trouble. The first rainless day in a spell to fine weather contributes as much to the drought as the last, but no one knows how serious it will be until the last dry day is gone and the rains have come again … we are not sure about it until the crops have withered and died.

Modern technology, however, allows us various indices of drought early warning. The many early warning systems that are designed to identify climate and water supply trends should be able to generate information that can reduce the impacts of a drought – if this information reaches the stakeholders involved (World Meteorological Organization 2006:11).

Drought indices include, amongst others, the Palmer Drought Severity Index, the Drought Area Index, the Rainfall Anomaly Index, the Standardized Precipitation Index, the Palmer Hydrological Drought Severity Index, the Surface Water Supply Index, the Crop

Moisture Index, the Palmer Moisture Anomaly Index and the Soil Moisture Anomaly Index (Keyantash & Dracup 2002).

Instead of only relying on drought early warning, though, adopting a lifestyle of drought and water consciousness could prove to be the better mitigation and preparedness approach towards drought resilience. The complications of drought should also not overshadow the need to be proactive in an attempt to mitigate its various adverse effects.

### 2.2.2 The effects of drought

The adverse effect of drought reaches far and wide. It may also be different for different people and regions. However, drought has various commonly agreed upon economic, environmental and social effects, as pointed out by Wilhite (1992, in Reed 1997:101):

*Economic*

- Losses in agricultural production and income
- Loss of economic growth and development

*Environmental*

- Damage to animal, fish and plant species and habitat
- Wind and water erosion of soil
- Effects on water and air quality

*Social*

- Food shortages and decline in living conditions
- Loss of human life and health problems
- Conflict between water users and migration

### 2.2.3 The effects of drought on children

Waterson (2006:383) believes that the consequences of climate change are emerging as the greatest crisis for children and highlights the following adverse effects of drought that are especially problematic for children:

- Increased episodes of infectious disease because a lack of water leads to poor sanitation and health
- Increasing malnutrition

- Increased deaths caused by thermal stress
- Decreased physical and mental health caused by loss of homes due to migration

Save the Children (2008:5) agrees, stating that food insecurity is increased by climate change with especially drought resulting in malnutrition. Hoddinott and Kinsey (2001:429) found that the drought of 1994/5 in Zimbabwe lowered the annual growth rate of children aged 12 to 24 months by between 1.5 and 2 cm. Even four years after the drought, these children remained shorter than children of the same age who did not experience the drought. The children most affected by drought-related malnutrition came from poor households and will most likely be affected for the rest of their lives.

In a study by Dean and Stain (2007) on the impact of drought on the emotional wellbeing of children in rural and remote New South Wales, it was found that drought can cause children to feel emotional distress directly, as well through the impact that a prolonged serious drought has on their parents, the community and the environment. Ronan, Crellin, Johnston, Finnis, Paton and Becker (2008:33) agree that the disaster-related stress of parents have a very prominent effect on children, and that parents are often incapable of assisting children in their distress.

The same results were found in a study by Babugura (2008) on the vulnerability of children and youth during drought disasters in Botswana. The majority of the boys and girls participating in the study indicated that they were upset to see dead livestock during periods of drought. They also expressed concerns about food security, loss of educational opportunities, being separated from family, general tension in their households and a lack of emotional support within families. It was, however, also found that their parents were not aware of these concerns because the children did not tell their parents how they felt. Most of the children seemed to know what drought is and said they gained this knowledge from schools, parents and friends; however, they appeared to lack mitigation and resilience knowledge and skills. The children felt that the best way they could cope with the drought was to learn to live with it.

Bartlett (2008) elaborated a little more on the impact of drought on children in a study about the implications of climate change for children in lower-income countries. This

study suggested that a lack of hygiene associated with declining water supplies is worsened by children's inborn curiosity – their wanting to play, explore and touch everything. They are therefore more likely to come into contact with pathogens and contract diseases. As was found by Hoddinott and Kinsey (2001:429), malnutrition caused by declining agricultural and economic activity was noted as having especially serious implications for rapidly growing children. Heat stress also is not only caused by higher temperatures, but by the loss of shading trees, the author states, with a severe impact on the very young who sweat less and have a greater surface area to body mass ratio. According to the Red Cross (2001:80) during an emergency period every person needs at least 20 litres of water per day.

Despite these challenges, Bartlett (2008:88) suggests that it is misleading to think of children simply as victims and that they have a level of resilience which should be appreciated and enhanced by encouraging active involvement in improving their surroundings. Because drought deteriorates conditions slowly, all age groups (but especially children) may experience a dulling of awareness needed for proactive response. Therefore, it is necessary to support children in being active participants in building resilience.

Although Babugura (2008:137) found that most children in his study were to some degree knowledgeable about drought, he also gathered some troubling comments from older children in Botswana concerning food during drought periods:

> I like it when there is a drought because we get free food at home (boy, 10).
>
> My mother has less stress during drought because of free food. She does not worry about where our next meal will come from (girl, 16).
>
> When there is drought, my grandmother is happy because we will get free food (girl, 11).

These comments may indicate that children's innate level of understanding drought is not a given and needs to be developed. Although the above comments should not be

generalised, it is clear that these children do not have a decent understanding of where food really comes from and the effect drought has. To them, drought equals free food. What was supposed to be a lifesaving intervention from some donor institution may in fact have disastrous future effects by robbing children from developing sustainable livelihood skills and knowledge. Gupta et al. (2011:1800) validate this possible outcome by stating that "in many situations, drought assistance or relief measures provided by governments and donor agencies exacerbate the societal vulnerability to drought and also move societies away from their traditional wisdom and pro-active risk management approach, making people more dependent on externalities". Instead, the authors suggest, resilience building strategies should be implemented that will mitigate the impact of future droughts.

With a view to developing resilience, Ronan et al. (2008:335) suggest, amongst others, education and information through various media that are primarily designed to promote self-help. Mugogovhali (2011:13) stresses that community participation in drought mitigation should be encouraged in order to improve local skills in this regard.

## 2.3 Drought mitigation

The South African Disaster Management Act of 2002 proposed the establishment of framework for disaster management, resulting in the Disaster Risk Management Framework in 2005 (Austin 2008:77). The framework comprises four key performance areas (KPA's) (NDMC 2005):

- Establishing the necessary institutional arrangements for implementing disaster risk management
- Disaster risk assessment and monitoring
- Disaster risk management planning and implementation
- Disaster response, recovery and rehabilitation

To address the KPA's, the Framework established three Enablers: (i) comprehensive information management and communication systems, (ii) education, training, public awareness and research, and (iii) funding. The drought mitigation activities elaborated on below, slots into the information requirements of Enabler one.

Wilhite (2005) discusses various drought mitigation methods, ranging from technologically advanced early warning systems to land and water management and conservation.

### 2.3.1 Drought early warning

The various drought indices (as mentioned in 2.2.1) measure moisture levels in different ways. Fernandez-Prieto, Van Oevelen, Su and Wagner (2012) highlight the importance of water cycle data to promote our understanding of climate variability and predictability.

Rainfall is measured by means of gauges, surface-based rain radars, observations of passive microwave radiance from low earth orbit (LEO) satellites and visible and infrared radiance observations of clouds from both LEO and geostationary (GEO) satellites. Cloud processes are observed by means of satellites, in-situ studies of the physical properties of clouds and the development of realistic three dimensional cloud models used to determine their effect on radiation transfer, atmospheric heating and planetary radiation. Snowfall is measured with a gauge with shields to reduce wind effects. Precipitation data can aid in evaluating the effect of El Niño, La Niña and other atmospheric changes. Water quality is measured by both in-situ and remotely sensed procedures (IGOS-P 2003:20–40).

The levels and quality of groundwater are measured in order to determine water availability in any given region. The following aspects of groundwater are measured (GTOS-ECV 2008):

- *Groundwater level*: the level of the water table – expressed as a height above a datum, such as sea level, or a depth from the surface
- *Groundwater recharge*: water that seeps into aquifers – affected by rate and duration of rainfall, the soil moisture conditions, the conditions at the land surface, the water table depth and the soil type
- *Groundwater discharge*: groundwater leaving aquifers at discharge points – the monitoring thereof provides data needed for the calculation of groundwater balance and storage

- *Wellhead level*: the elevation of a well top above sea level – a well serves as a keyhole to an aquifer as an opening in the surface
- *Water quality:* the composition of constituents dissolved or contained within the water in the functioning of natural processes and human activities.

River discharge is measured as the volume of water flowing through a cross-section of a waterway per time unit and includes runoff. Looser (2009:1) states that monitoring long-term river discharge measurements is needed, amongst others, for water management plans. The rise and fall of water levels in lakes, dams and reservoirs are also important indicators of water use and availability. According to Vuglinskiy (2009:2) the water level of lakes, dams and reservoirs is measured by means of various gauges as well as satellite imagery.

Glaciers too, can be the cause of serious natural hazards since in many areas the ice is close to melting point and very sensitive to any climate change (Zemp, Gartner-Roer, Haeberli, Hoelzle & Paul 2009:1). To determine any glacier changes, the following are measured periodically: specific mass balance, in water equivalent; front variation and area. Snow also has a high priority for global climate monitoring, says Armstrong (2009:1). *Snow cover* is the general build-up of snow on the earth's surface. *Snow cover extent* is measured in $km^2$ and is the total area covered by snow. The *depth of snow* is measured in centimetres and is the total combined depth of old and new snow. *Snow water* equivalent is measured in millimetres and refers to the water obtained from melting snow. *Snow cover duration* is expressed in days of uninterrupted snow cover.

Evapotranspiration is the combination of evaporative losses from the soil surface and transpiration from plant surfaces (UNEP 2012:37). Measuring evapotranspiration (ET) is important in order to understand the influence of the plant canopy on the water vapour content of the atmosphere as well as to estimate the rate of plant growth and the rate at which soil and plants lose water (IGWCO CoP 2013:4). It is also an important factor in the estimation of crop yield, irrigation water management, drought assessment, fire susceptibility and catchment water budgets (Fernandez-Prieto et al. 2012:545). ET is measured by means of satellite imagery, land surface temperatures and soil moisture.

Data obtained from these measures, together or in different combinations, comprise the findings of the various drought indices.

### 2.3.2 Indigenous knowledge

Besides the technological means discussed in section 2.3.1, authors like Roos, Chigeza and Van Niekerk (2010) include indigenous knowledge as a drought mitigation tool. Egeru (2012) suggests that indigenous knowledge and science should work together towards drought mitigation.

According to UNEP (2008:67) most of the indigenous knowledge drought indicators are based on environmental cues and the behaviour of animals. Speranza, Kiteme, Ambenje and Makali (2010:304) elaborate on these indicators in their study of indigenous knowledge related to drought in Kenya:

- Animals, birds and insect behaviour/signs: appearance, movement
- Local weather conditions and signs: cloud cover, temperature, winds
- Rainfall patterns and amounts
- Signs from flora: time of blossom and leave shedding
- Astrological constellations/signs: moon shape, star appearance, sun movement
- Signs from the local environment: water masses drying up, shadows change

UNEP (2008) found that, other than reading environmental signs, much indigenous knowledge with regard to drought is related to spiritual beliefs – that it was an act of God or gods to punish wrongdoing. Masinde and Bagula (2011:280) point out the following differences between indigenous knowledge and technologically based climate forecasts:

| **Indigenous knowledge** | **Climate forecast** |
|---|---|
| Environmental and spiritual indicators | Climate and weather models using measurable data |
| Communication is usually oral | Communication is usually written |
| Learned by observation and experience | Learned by lectures and readings |
| Spiritual and social explanation | Theoretical explanation |

### 2.3.3 Land and water management

Various authors, such as Roos, Chigeza and Van Niekerk (2010), Egeru (2012) and UNEP (2008), suggest that any meteorological data (indigenous and scientific) aimed at drought early warning, chiefly serves to prompt preventative action. Such action includes vegetation and water conservation and management, stockpiling food, planting drought resistant crops and managing animal grazing.

In a report commissioned by the Water Research Commission, Viljoen, Kundhlande, Baipheti, Esterhuyse, Botha, Anderson and Minkley (2012) discuss the different types of rainwater harvesting methods: in-field rainwater harvesting; road water harvesting; roof water harvesting and trench gardening. All these methods can be successfully applied for better water use and water storage. Good water management practices provide the opportunity to plant a variety of crops.

Xonocostle-Cázares, Ramírez-Ortega, Flores-Elenes and Ruiz-Medrano (2010) explain how plants can adapt to drought both naturally and by means of genetic engineering. Varieties of crops such as wheat, barley, rice, millet, soybean and common beans have been altered to be more tolerant to drought stress. Genetic engineering, however, is not the only answer to drought resilient food. Cassava is a naturally drought resistant plant, as are jugo beans, bambara groundnuts, sweet potatoes, sorghum and pumpkin (UNEP 2008:71).

To restore natural vegetation, Savory (2013) suggests the very controversial idea that overgrazing is not due to too many grazers, but to too few. He proposed his idea on how to fight desertification and reverse climate change by increasing grazers and managing the pattern of grazing during a talk (TED 2013) that had many scientists up in arms. Both McWilliams (2013) and Maughan (2013) contest this idea. However, it seems worthwhile to consider different types of sustainable land management methods. While scientists continue to debate which method would be best, it suffices to say that acquiring a natural balance is the ultimate goal.

An interesting study by Beschta and Ripple (2006) found that the reintroduction of the North American grey wolf into an area in the Yellowstone National Park from which they had been extirpated, restored the natural river flow and vegetation. A video explaining

how these large, highly interacting carnivores are linked to a river floodplain went viral, with over four million views to date (YouTube 2014). It would seem as if working with nature instead of against nature is the key.

Although Foundation Phase children may not be able to interpret complex data readings, or understand or implement all these actions and methods needed for drought impact mitigation, it does not justify their exclusion from it. Foundation Phase children are surely able to understand the importance of clouds, snow, rain, rivers, dams or soil moisture with regard to sustainable living and drought resilience. Simple conservation acts, especially concerning water, should also not be too complicated to understand and implement. In an environmental education study done by Damerell et al. (2013) children as young as 7 years old were successfully taught about wetlands – including water conservation – in the Seychelles.

The question now arises: Which drought mitigation options are age appropriate for a narrative communication approach towards drought resilience for the Foundation Phase? This will be explored as part of the data collection in Chapter 4.

## 2.4 Children as drought risk reduction agents towards building resilience

Plan International (2010:3) defines child-centred disaster risk reduction (child-centred DRR) as "an innovative approach that fosters the agency of children and youth, in groups and as individuals, to work towards making their lives safer and their communities more resilient to disasters".

Child-centred DRR addresses a range of children's rights (United Nations 1959): the right to live, the right to education, the right to health and the right to participation. In this regard, Mitchell, Haynes, Hall, Choong and Oven (2008:270) suggest that when educating children about any natural phenomenon or hazard, it is important to include information that helps them understand what they can do on their own to be prepared.

Plan International (2010) implemented the aforementioned suggestion with their programme on child-centred disaster risk reduction, and found that education increased

children's understanding of the different types of risks and hazards, basic early warning measures and mitigation requirements. Even the most elementary teaching, for example, learning to read a rain gauge or how to store food and water, showed beneficial results, thereby enabling children to protect themselves and their communities. It was also found that children are effective risk communicators. Supporting children as risk reduction agents not only hold immediate benefits, but also for the future. Enhancing children's capacity and knowledge will cultivate next generation leaders with a vision of disaster risk reduction.

Various drought education resources including *The Guardian* (2012), the Lincoln National Drought Mitigation Centre (2014), the U.S. Drought Portal (2014), PreventionWeb (2006) and the Delaware River Basin Commission (2014) agree on several mitigation skills that are appropriate for Foundation Phase children. These include reading early warning signs, understanding the water cycle and conserving water, planting water-wise vegetable gardens, preventing water pollution, participating in rain water harvesting and planting indigenous trees.

However, the large extent to which hazards like floods, fires and earthquakes seem to receive priority attention when it comes to disaster risk reduction education gives cause for concern:

- The *Masters of Disaster* programme provides material on earthquakes, fires, floods, hurricanes, lightning and tornadoes but nothing on drought (American Red Cross 2014).
- *Earth Kids* only touches on climate change, water and pollution (ESA Earth Kids 2014).
- *Ready* extensively covers fires, floods and lightning for Foundation Phase children, but barely touches on drought and refers the facilitator to other sources not aimed at Foundation Phase children (Ready 2014).
- In a risk reduction handbook for Foundation Phase children, a mere four pages are allocated to drought, only one page of which supplies drought- related information; the remainder consists of one task per grade (United Republic of Tanzania 2009).

The reason may be that drought is not as "exciting" or "vivid" as fires, floods, storms and so on; therefore it is probably more difficult to present the necessary information regarding drought to Foundation Phase children in a way that captures their attention and interest. A method of communicating a drought resilience message to Foundation Phase children in a captivating way will therefore be investigated.

The goal, however, is not to develop yet more educational communication material that requires the assistance of a teacher in a school setting, consisting of instructions and various tasks that must be completed and assessed. The aim of this study is rather to develop material that Foundation Phase children are naturally curious about in the likes of successful children's stories and/or programmes of which many are to be found in the popular media, for example *Disney Princess*, *Star Wars*, *Pooh*, *Cars*, *Hello Kitty* and *Mickey and Friends*.

In order to embark on such an endeavour, it is necessary to establish how Foundation Phase children perceive communication and what their communicative and comprehension abilities and preferences are. An appropriate communication model will be adapted to facilitate such a communication process for Foundation Phase children.

## 2.5 A model for a narrative communication approach towards drought resilience

This study aims to communicate a message to Foundation Phase children that will induce change, that is, improve drought resilience. Therefore, any communication approach must be based on a model that presents the possibility of change. Figueroa et al. (2002:2) deem it inappropriate to base communication for social change on a linear model, and suggest a cyclical model in this regard.

A cyclical communication model includes the receiver in the communication process, proposing that the sender should consider the communicative and comprehension abilities and preferences of the receiver throughout the communication process. Corman et al. (2007:7) points out that the message received is the one that really counts. This

implies that the success of any communication process depends on how closely the received message resembles the sent message.

Receivers of any message create meaning based on various factors that influence their perceptions, for example culture, language, education, personal needs and exposure to different media. The term "stickiness" will be borrowed from Galdwell (2013) to describe the outcome, namely: Will the message regarding drought resilience stick to Foundation Phase children's minds?

Foulger's (2004b) cyclical ecological model of the communication process (Figure 2.1) will be a good starting point. This model was suggested in Chapter 1. The model endeavours to illustrate the interaction between the message, language, media and culture that facilitates communication. It further acknowledges that relationship of the creator and receiver between each other, as well as with each of the four elements that facilitate communication. The reasons for its applicability to this particular study will now be elaborated on with regard to the requirements for a narrative communication approach aimed at drought resilience for Foundation Phase children. Each of the four elements: message, language, media, and culture, will be sectioned for discussion purposes.

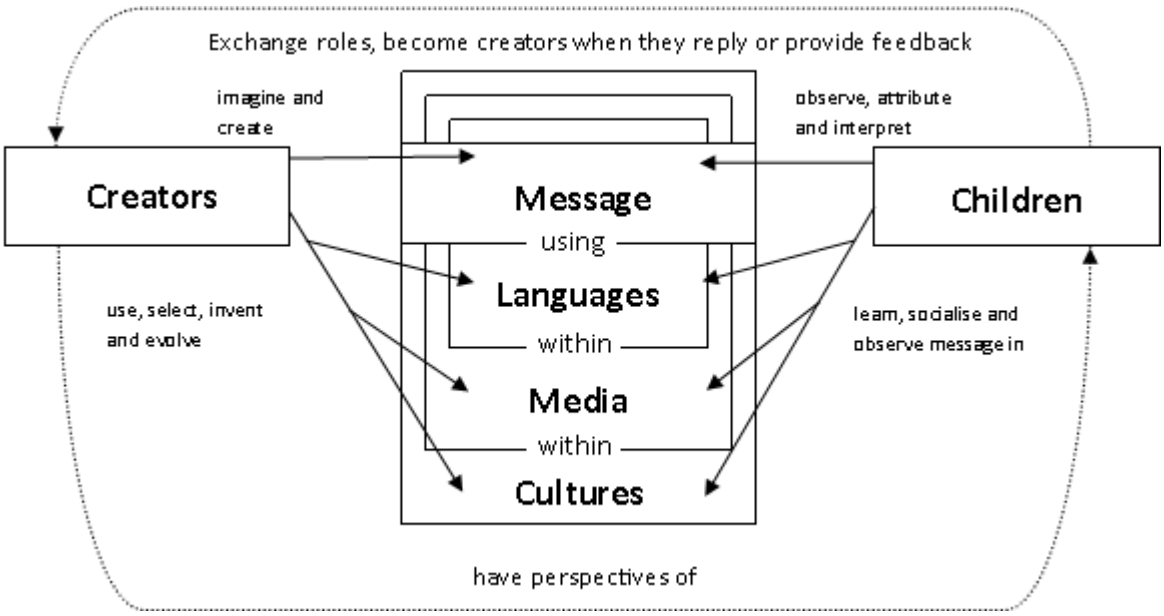



**Figure 2.1** Ecological model of the communication process (adapted from Foulger 2004b)

### 2.5.1 Message

According to Foulger's (2004b) model, message creation by the creator lies at the core of the communication process. Firstly, the sender must have a very clear idea of the message to be sent, and secondly, the sender must have a good understanding of how to create the message in the most effective way. Messages that are unique and rather point out "do's" than "don'ts" prove to be more effective for young children (UNICEF 2006:14). Kolucki et al. (2006:2) also advises that less is more and simple is best.

A message needs to be noticed to establish a connection through which the communication can be sent before it can be understood. Kirkorian, Wartella and Anderson (2008:51) found that young children do not understand messages they do not pay attention to, and that they cannot learn from content they do not understand. The authors also assert that repetition is valuable to ensure that the message sticks to the children's minds – be it by means of repeated exposure to the message or by repeating the same message in a variety of ways.

Gladwell (2013:101–118) found exactly the same in his discussion of a fascinating analysis of young children's television programmes, *Sesame Street* and *Blue's Clues.* The moment children could not make sense of what they were looking at, they looked away. As soon as the children perceived something as confusing, including too much action, puns and complicated wordplay, they lost interest. The same study also found that repetition is valuable, as well as the integration of reality and fantasy. Although psychologists advised the producers of *Sesame Street* not to fuse reality and fantasy in order to avoid misleading the children, the opposite happened: The moment that fantasy and reality were separated, the children lost interest. However, as soon as the fantasy characters and the adults engaged, interest levels would rise right up again. The same proved true for a narrative approach – children did not pay much attention to, understood or remembered information presented in a non-narrative manner.

Fisch (2000, in Kirkorian, Wartella & Anderson 2008:51) agrees by suggesting that narrative and educational content should be integrated as much as possible. Hamilton and Weiss (2005:1-11) explain this notion by reasoning that stories are at the core of all the things that make us human and that it is the oldest form of education. **They argue that**

**children are born with an innate ability to make sense of their world by means of stories and that stories are the way by which the brain stores information.**

The above suggests that the message towards drought resilience for Foundation Phase children should be simple, repetitive, narrative and imaginative and should focus on the positive actions needed in order to reduce drought risk as illustrated in Figure 2.2.

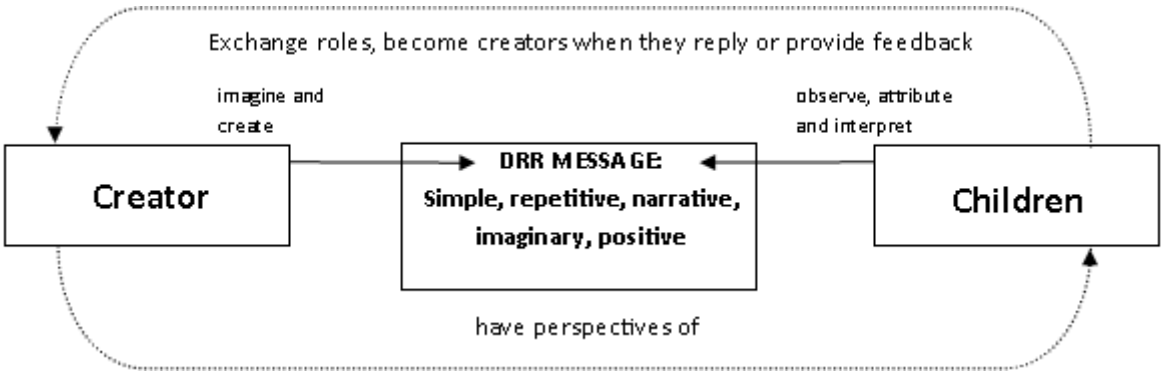



**Figure 2.2** Partial communication model towards stickiness: the message (adapted from Foulger 2004b)

### 2.5.2 Language

The message content must be converted into a language that Foundation Phase children will understand. Children face numerous challenges with regard to languages other than their mother tongue, as elaborated on at length by Jongejan, Verhoeven and Siegel (2007). Therefore, the ideal would be to convey the message in the mother tongue, especially to young children who have not yet, or only partially, acquired the skill of understanding a second language. The Foundation Phase children that this study proposed to expose to drought risk reduction messages should preferably be able to read and understand the content by themselves.

According to Pretorius and Machet (2004:45) the ability to read entails more than just being able to recognise letters and decode words; it also refers to the ability to understand whatever was written. In order to arrive at this understanding, children are required to simultaneously process, retain and retrieve information. This makes a considerable demand on their working memory – a memory system assumingly involved in the active processing of current information (Jongejan et al. 2007:837). The successful processing

by the working memory, or the way in which children make sense of language, depends on various aspects as explained below.

*Orthographic awareness.* Orthographic awareness refers to the child's ability to know in which sequence words are put together to form meaning, that is, spelling and spelling rules (Arab-Moghaddam & Sénéchal 2001:141).

*Phonological awareness.* Phonological awareness refers to the child's ability to link letters with their corresponding sound and to then combine these sounds into words (Arab-Moghaddam & Sénéchal 2001:141).

*Semantic awareness.* Semantics involves understanding what words mean as a whole, and in parts, in sentences and discourse. Skilled reading requires the effective processing and combination of orthographic, phonological and semantic formation (Nakayama, Sears & Lupker 2010:477).

*Syntactic awareness.* According Lipka and Siegel (2007:108) syntactic awareness refers to the child's ability to understand the grammatical structure of a language. All languages have rules that determine how words can be put together to form sentences. Although it can be confusing on the one hand, on the other hand it can help a child make sense of a new, difficult word – provided that the child has a good syntactic awareness.

The above is pivotal to the child's vocabulary which is dependent on prior knowledge or previous exposure to words used to code or decode meaning (Rvachew & Bernhardt 2010:35; Miller & Keenan 2009:103). Determining the language or prior knowledge of any given child may not be easy to establish without testing the knowledge. However, lists of words, phrases and sentences that Foundation Phase children should know are available from various national and international sources: Dolch Word List (2014); Fry Words (2010); Perkins (1998) and Rasinski (2003) as well as from the national curriculum (Department of Basic Education 2011a) and workbooks (Department of Basic Education 2014a and 2014b).

The best way of making an educated guess regarding the language ability of Foundation Phase children is to rely on the learning outcomes of the nationally prescribed curriculum for Foundation Phase children in South Africa.

**Table 2.1** Overview of the reading skills to be taught in the home language Grades R–3 (Department of Basic Education 2011a:26)

| **OVERVIEW OF THE READING SKILLS TO BE TAUGHT IN THE HOME LANGUAGE GRADES R–3** | | | |
|---|---|---|---|
| **Grade R** | **Grade 1** | **Grade 2** | **Grade 3** |
| **Emergent reading skills**<br>• Recognises and points out common objects in pictures<br>• Arranges a set of pictures in such a way that they form a story<br>• Interprets pictures, e.g. makes up own story and 'reads' the pictures<br>• Acts out parts of a story, song or rhyme<br>• Holds the book the right way up and turns pages correctly<br>• Pretends to read and adopts a 'reading voice'<br>• Recognises own name and names of some other children in the class<br>• Begins to 'read' high frequency words seen in the classroom and at school, e.g. door, cupboard)<br>**Shared reading as a class with teacher**<br>• 'Reads' enlarged texts such as poems, Big Books, posters | **Emergent reading skills**<br>• Develops book handling skills (holding the book and turning pages correctly)<br>• Interprets pictures to make up own story, i.e. 'reads' the pictures<br>• Reads logos, labels and other words from environmental print<br>• Recognises own name and names of peers<br>• Reads labels and captions in the classroom<br>• Develops basic concepts of print including<br>• Concept of a book<br>• Concept of words and letters<br>• Directionality: Starts reading at front, ends at back; read from left to right and top to bottom of a page<br>**Shared reading as a class with teacher**<br>• Reads Big Books or other enlarged texts | **Shared reading as a class with teacher**<br>• Reads Big Books or other enlarged texts (e.g. fiction and non-fiction books, poems and songs)<br>• Uses visual cues, i.e. pictures and the cover of a book to predict what the story is about<br>• Identifies key details in what was read<br>• Expresses whether a story was liked and is able to justify the response, e.g. 'I didn't enjoy the story because…'<br>• Answers higher order questions based on the text read, e.g. 'In your opinion…'<br>• Discusses different cultures represented in stories<br>• Interprets pictures and other print media, e.g. photographs, calendars, advertisements, newspaper and | **Shared reading as a class with teacher**<br>• Reads enlarged texts such as fiction and non-fiction big books, newspaper articles, plays, dialogues and electronic texts (computer texts)<br>• Reads book and discusses the main idea, the characters, the 'problem' in the story, the plot and the values in the text<br>• Answers a range of higher order questions based on the passage read<br>• Reads different poems on a topic<br>• Uses visual cues to talk about a graphical text, e.g. advertisements, pictures, graphs, charts and maps<br>• Finds and uses sources of information, e.g. community members, library books<br>• Uses table of contents, index and |

| | | | |
|---|---|---|---|
| • Makes links to own experience when reading with the teacher<br>• Describes characters in stories and gives opinions<br>• Predicts what will happen in a story through the pictures<br>• Answers questions based on the story read<br>• Draws pictures capturing main idea of the stories | • Uses pictures and the book cover to predict what the story is about<br>• Discusses the story, identifying the main idea and characters<br>• Sequences the events in the story<br>• Recognises cause and effect in a story, e.g. The girl got into trouble **because** she broke a window<br>• Gives an opinion on what was read<br>• Answers open-ended questions based on the passage read<br>• Interprets information from posters, pictures and simple tables, e.g. a calendar | magazine pictures, posters | page numbers to find information<br>• Uses key words and headings to find information in non-fiction texts<br>• Uses a dictionary to find new vocabulary and their meanings |

As can be derived from the above curriculum outcomes, the message this study wishes to convey would require a large portion of visual elements. The first two grades depend largely on visual content to support reading development. Madigan (2005:1) suggests that visual symbols greatly aid understanding where reading or language ability falls short, and that the use of pictures can even help children understand abstract ideas.

Although Lester (2006) points out that linguistic theorists do not consider pictures as a language because there is no formal grammar, he argues that words too are collections of symbolic images. All words originate from icons, but have evolved to such an extent that it is no longer possible to connect them with the original pictograms. This underlines Lester's (2006) notion that people understand the world by reading pictures – which is emerging once again in our image-entrenched modern culture.

The use of pictures to communicate with children not only supports understanding, but can substitute words when needed. According to Guijarro (2013:345–346) the visual component of communication (or stories) can be used to reflect that which the sender (or author) is not able to express in words. Furthermore, visual components can be used to create narrative tension and emphasise importance as well as create a connection between the characters in the story and the child reader and/or viewer – which is not always possible with words alone.

Authors Haust (1989), Guijarro (2011), Ishii (2007), Madigan (2005) and Lester (2006) all agree on the importance of visual components for communication with children. Kolucki and Lemish (2011:27) sum up child-appropriate language, characters and stories by suggesting the use of the following: simple language, descriptive and sensory words, known contexts, repetition, as well as the use of both human and non-human characters. The above suggests that the language used to communicate a message towards drought resilience for Foundation Phase children must be textually and/or visually suitable as illustrated in Figure 2.3.

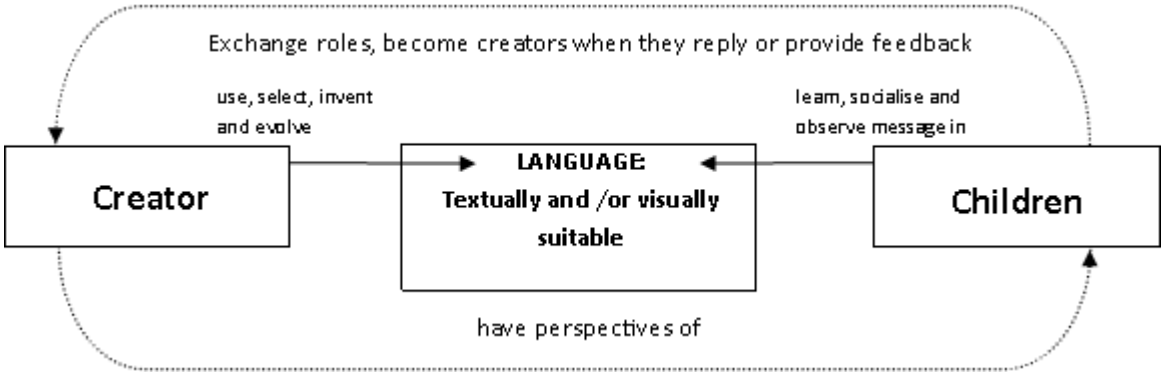



**Figure 2.3** Partial communication model towards stickiness: language (adapted from Foulger 2004b)

### 2.5.3 Media

Children have access to various different communication media including digital, auditory and print: books, magazines, radio, television, mobile phones, computers, tablets, etc. Then again, as noted by Kolucki and Lemish (2011:6), not all children in all areas have access to the different types of media – especially in rural and remote areas children often rely on more traditional media, like print and radio.

Buckingham (2005:6) points out that access to media has two dimensions. Firstly, it refers to physical access; in other words, do the children for example have access to television, radio, a library or a computer? Secondly, it refers to the ability of the children to actually use the medium, that is, whether they are able to manipulate the technology to get the message.

With traditional media, access is rarely a problem. Books, for example, can be sent to any location and opening the book is seldom a challenge. Radio and television signals are also quite readily available and the devices fairly easy to operate. Yet, with new media, Buckingham's study (2005) still found some significant inequalities – the so-called "digital divide" that is closely related to socio-economic status: the less affluent, the less access to modern digital technology.

The current trend with regard to engaging children with content is, however, multi-platform, as Thorn (2008:21) points out. Children's toys and television programmes, for example, are no longer singular items – the same content is presented across various mediums. Accordingly, a superhero character will be available to children as a toy, movie, television programme, song, storybook, smartphone application, etc. By doing this, content creators attempt to hit as many targets as possible – if a child cannot read, maybe they can play with a toy. If they do not have access to movie theatres, maybe they can get hold of a storybook or DVD.

This approach is not only useful for profit-driven endeavours. Peek (2008:4) highlights the value of age-appropriate material disseminated through various print and electronic media as a tool to educate children about disasters and engage them in preparedness activities.

The above suggests that the media used to communicate a message towards drought resilience for Foundation Phase children are required to be both physically and manipulatively accessible as illustrated in Figure 2.4.

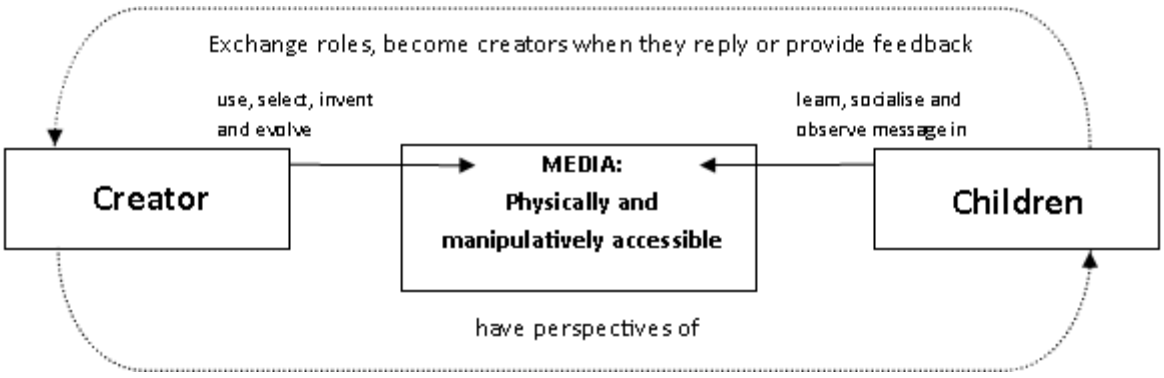



**Figure 2.4** Partial communication model towards stickiness: media (adapted from Foulger 2004b)

### 2.5.4 Culture

Language, knowledge, beliefs, values and attitudes are heavily influenced by culture (Ishii 2007:18). Cultural differences and subsequent indigenous knowledge and heritage should be taken into account when creating disaster risk reduction messages (Wisner 2006:84) because cultural differences will also impact on children's knowledge of risk and hazards (Peek 2008:18). Nonetheless, Lester (2006) asserts that pictures can to a certain extent bridge the gaps between cultures to communicate a universal message because they are a globally understood "language".

One should also pay attention to the emergence of a so-called global "children's culture" that groups children from around the world into a likeminded cluster regardless of any regional and/or cultural differences (Buckingham 2001). One of the factors that may cause this phenomenon is that although children across the world grow up in very diverse cultures, Kolucki and Lemish (2011:15) note that the developmental stages remain much the same.

A good example of this global culture is the distribution of the successful American children's television programme *Sesame Street*, to more than 150 countries around the world. All co-productions are based on the original US template, and slightly tailored to suit local conditions. The South-African version is called *Takalani Sesame*. A new HIV positive character, Kami, was introduced to address the HIV/AIDS issue. And the Big Bird US Muppet was replaced by Moishe, who is modelled on a meerkat (Tamagnan, Meredith & Kato 2015; Cole 2015). This confirms the existence of a global children's

culture, but also encourages local cultural elements. Or that local cultural elements can be enhance by including global culture elements.

Kolucki et al. (2006) reported on a very successful educational children's book project in the Kyrgyz Republic, where existing culture and new creations were effectively combined. The books were so popular that they were developed into an animation series.

The above suggests that it is necessary to include both the local and the global children's culture in creating a drought risk reduction message for Foundation Phase children as illustrated in Figure 2.5.

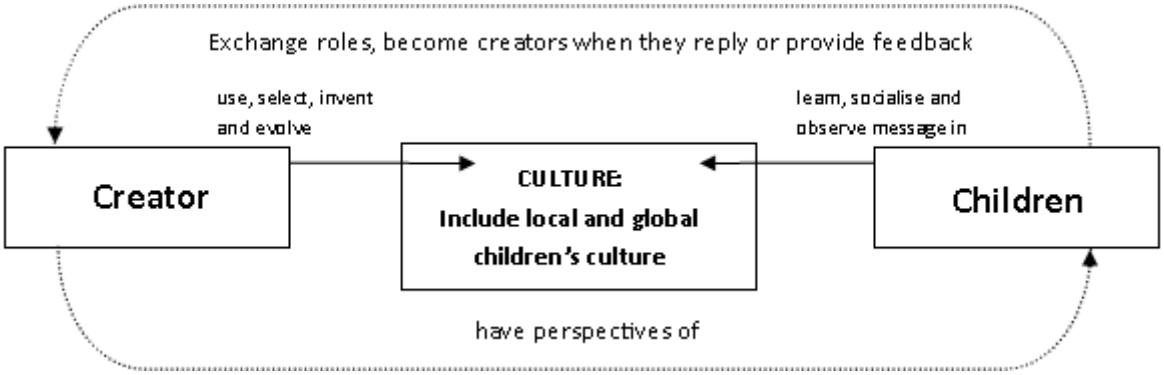



**Figure 2.5** Partial communication model towards stickiness: culture (adapted from Foulger 2004b)

When taking all of the above into account, some elaboration and adaptation of Foulger's (2004b) ecological model of the communication process are needed to best communicate a drought risk reduction message to Foundation Phase children (Fig 2.6).

If any message needs to be turned into what Gladwell (2013:89) describes as an epidemic, like *Sesame Street* and *Blue's Clues*, there are three rules to observe: the law of the few, the stickiness factor and the power or context. The message should be communicated:

- by an outstanding character (of which there are few)
- in a memorable way (to make the message stick)
- with an understanding of the environment in which the message is received (within a larger culture, there are smaller subgroups that influence the larger

group; Gladwell [2013] found that influencing the smaller subgroups often alters the behaviour of the larger group).

The adapted model (as illustrated in Figure 2.9) of Foulger's (2004b) ecological model of the communication process, serves as a good guide in order to create this so-called stickiness that may cause an educational "epidemic".

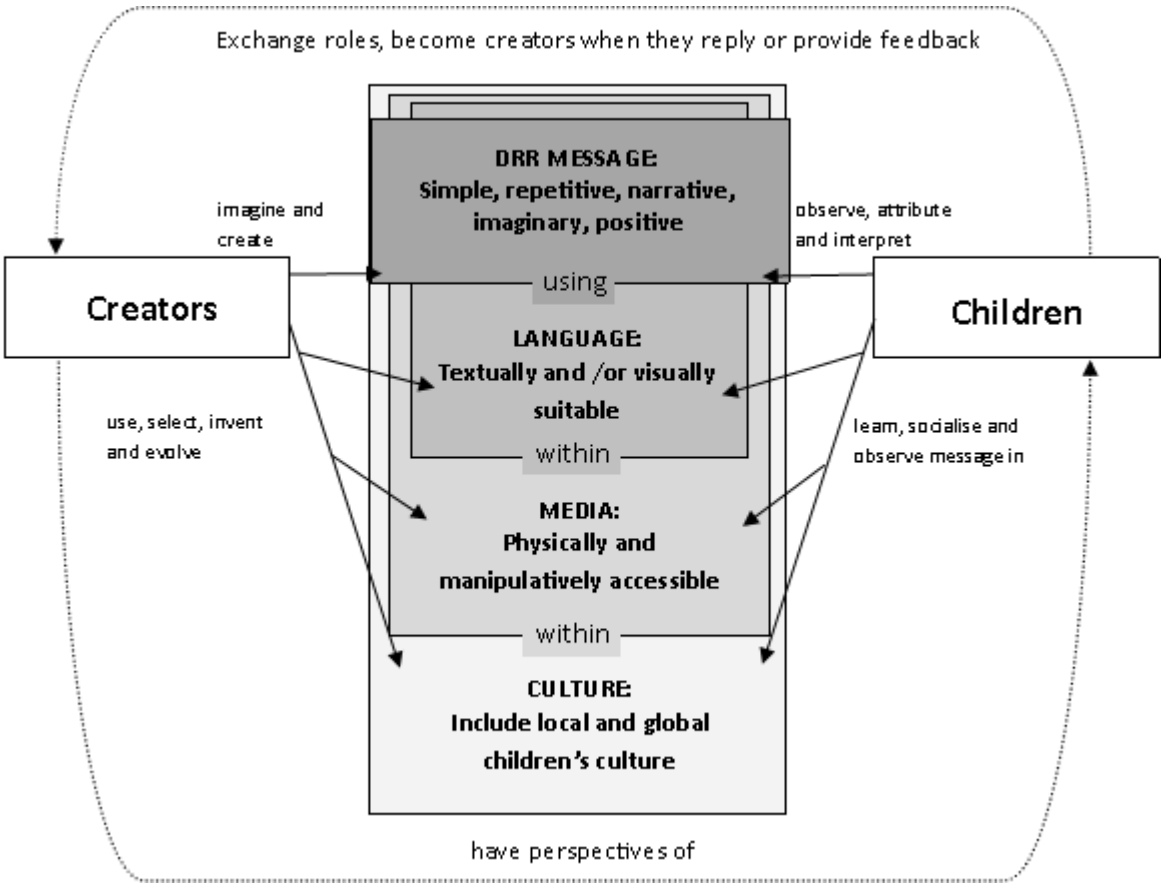



**Figure 2.6** DRR communication model for children towards stickiness (adapted from Foulger 2004b)

## 2.6 Current material on drought for Foundation Phase children

It has already been mentioned in section 2.4 that there seems to be a lack of narrative communication material with a strong visual component to inform Foundation Phase children about drought resilience. Furthermore, the existing material might not be as effective as it could be.

Besides the online resources mentioned in section 2.4, some other printed materials are also available to order or download. Two of the examples below depict the two extremes on the range from education to fantasy, and two illustrate cultural restrictedness:

- *Discovering Drought* is not suitable for Foundation Phase children and contains strong educational content and activities
- *Bringing the Rain to Kapiti Plain* has a very strong fantasy element
- *The Adventures of Aqua the Water Champion and Her Little Brother Squirt* has a very strong Western and First-World culture, while
- *Safari's Encounter with Drought* focuses on African culture.

The language used in all examples may be too difficult for Foundation Phase children to read by themselves.

### 2.6.1 *Discovering Drought*

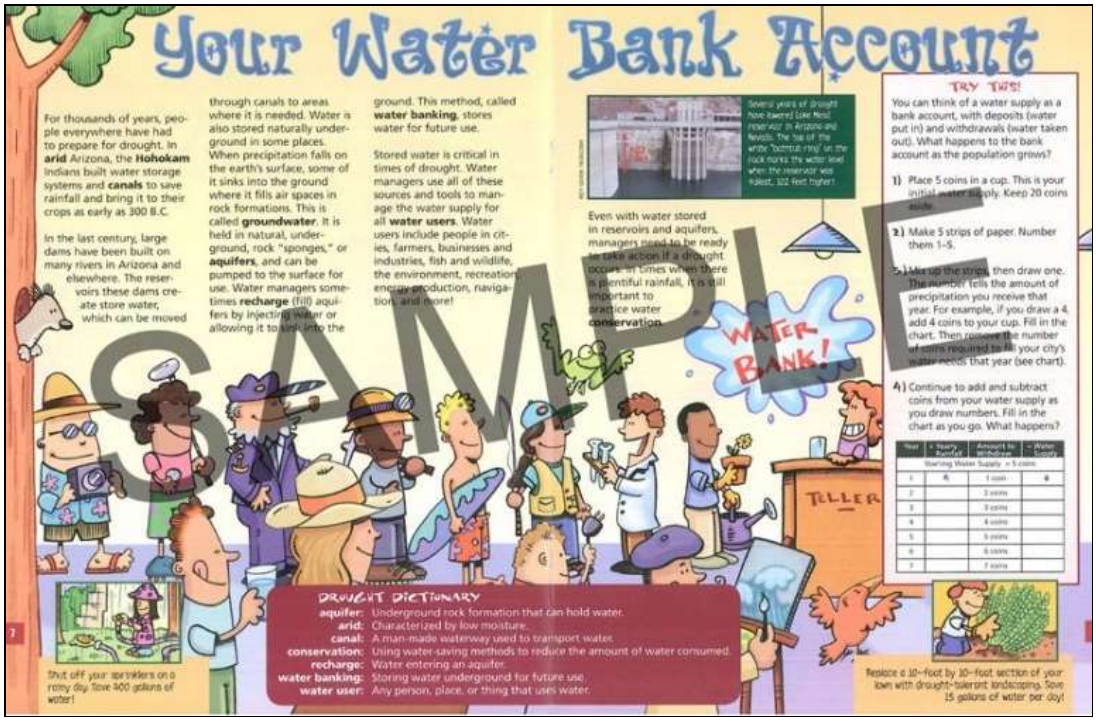



**Figure 2.7** Sample page of *Discovering Drought* (Worldwide Water Education 2014)

This publication by Worldwide Water Education was a finalist in the 2006 EdPress Distinguished Achievement Awards and is aimed at English-speaking upper elementary

and middle school (Worldwide Water Education 2014). Although the visual component is engaging, it is not aimed at Foundation Phase children.

The information provided is useful, but the content and activities are very educational and not much entertaining, although some of the depictions and creations are original and should make a lasting impression. Unfortunately, the cultural depiction is mostly Western. The material is not readily available and must be ordered. It is, however, a good example of educational material and does contain elements of entertainment value.

### 2.6.2 *Bringing the Rain to Kapiti Plain*

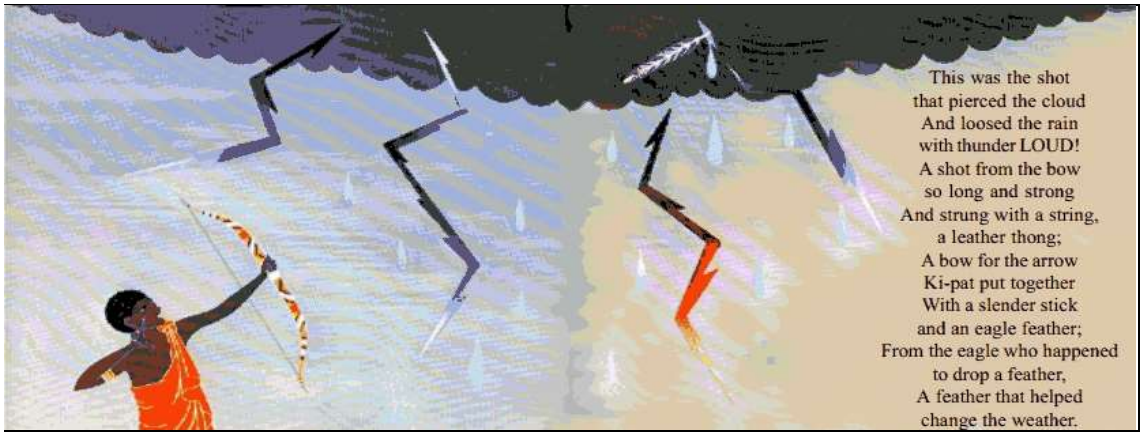




**Figure 2.8** Two pages from *Bringing the Rain to Kapiti Plain* (Aardema & Vidal 1981)

This booklet features a rhyme by Verna Aardema, illustrated by Beatriz Vidal, that tells about the effect of drought and how Kapiti solves the problem of drought by "shooting a cloud open to let the rain out" (Aardema & Vidal 1981). However entertaining this folktale may be, it serves no real purpose regarding drought resilience because of the

overexploited fantasy element. Shooting arrows into the clouds does not make it rain – this idea can create a dangerous misconception among children with regard to drought risk reduction. Fantasy, as explained earlier, can be very well utilised in communication with children, but in this case fantasy may have been over-utilised at the cost of creating real change regarding drought resilience in children.

The visual component of this story may not be as captivating as it could be and although the words used may be within the reading capabilities of Foundation Phase children with good reading skills, the rhyme format necessitates semantics that might be foreign to most Foundation Phase children. The material most probably has more cultural than risk-reduction value.

### 2.6.3 *The Adventures of Aqua the Water Champion and Her Little Brother Squirt*


**Figure 2.9** A section of *The Adventures of Aqua the Water Champion and Her Little Brother Squirt* (Grace Kids 2011)

Although the booklet does not explain drought, it is a good example of how visual elements can be put to good use. The focus is on saving water without explaining where water comes from – there is a water shortage because the reservoir level is low.

The cultural depiction is very Western with a typical family of four (mother, father, brother and sister) and most activity happens indoors, excluding natural elements. According to this story, water comes from the reservoir and out of a tap. Water saving activities are related to brushing teeth, showering and more water-wise ways to use a dishwasher – very few children in rural Africa will know what a dishwasher is.

The reward for saving water is getting ice cream and saving money on the water bill – no reference is made to the detrimental effect that the overuse of water has on the environment. To a certain extent, the language is appropriate and should fall within the reading capabilities of Foundation Phase children.

### 2.6.4 *Safari's Encounter with Drought*

**Figure 2.10** Front page of *Safari's Encounter with Drought* (Knutsen, Rencoret, Atheru, & Musambai 2006)

Of the available material, *Safari's Encounter with Drought* seems to be the most accessible. This booklet on drought is aimed at children in Africa and forms part of the United Nations International Strategy for Disaster Reduction (UN/ISDR Africa)

educational series (Knutsen, Rencoret, Atheru, & Musambai 2006). It tells the story of Safari and his classmates who go on a field trip to a national park and hear about drought. By asking questions the children learn more about drought .

For the purposes of this study, *Safari's Encounter with Drought* will be evaluated against the adapted ecological model for communication to serve the purpose of a "lessons learned from" activity in developing a drought risk reduction message towards drought resilience for Foundation Phase children in Chapter 4. Below is a section of text from the booklet:

> **"Drought is the most common disaster in Africa," continued Mrs. Fadiga, "affecting thousands of families and communities who grow their own crops and depend on them to survive. Drought does not only happen in Africa. It can happen anywhere in the world, in rich and poor countries."**

The illustration (Figure 2.10) and the paragraph above, is descriptive of the content of *Safari's Encounter with Drought*. In Chapter 4, the entire book will be evaluated against the requirements of the DRR communication model for children towards stickiness (Figure 2.6). The aim of this study is, however, not to analyse all the available material in depth. But rather to evaluate the material specifically aimed at drought, and as closely related to the South African context as possible, hence the choice of *Safari's Encounter with Drought.* Thereafter, the requirements of the DRR communication model for children towards stickiness (Figure 2.6) will guide the development of the most appropriate drought risk reduction material for Foundation Phase children.

## 2.7 Conclusion

From the literature study, it can be derived that improving drought resilience is a worthwhile activity and that children can participate in such an endeavour. Children can not only act as risk reduction agents, but also reduce their own vulnerability and lessen the adverse effects that drought can have on their general wellbeing and future prospects.

Although educational material is available, not much attention is paid to drought or the communication preferences and abilities of Foundation Phase children. It seems as if there is room for improvement in developing narrative communication material aimed at reducing the drought risk of Foundation Phase children and improving resilience. Furthermore, in its adapted format the communication model studied proves to be a valuable guide in the development of such communication material. The following chapter sets out to explain the methodology used to address all the issues raised in the literature review.

# Chapter 3

# THE RESEARCH METHODOLOGY

## 3.1 Introduction

The aim of Chapter 3 is to explain the research philosophy, approaches, strategies, methodology, time horizon and data collection and analysis that will be used to address the issues raised in Chapter 2, and, more specifically, to answer the research questions raised in Chapter 1. Accordingly, the most suitable research methodology to study the requirements for an effective narrative communication approach towards drought resilience for Foundation Phase children will be discussed. The research methodology will be elaborated on with reference to data collection methods and analysis. The purpose of this chapter is not to provide a literature review on research methodology, but rather to propose what methodology will be applied, as well as why and how.

## 3.2 The nature of the research project

The purpose of a well-constructed research methodology is to provide a structure for logical and systematic research. The methodology should, however, not guide the enquiry – instead, the research question should determine the best methodology to be applied. The research question for this study is: What are the requirements for an effective communication approach towards drought resilience for Foundation Phase children? The literature study revealed that the message content, textual and visual coding, media and culture all contribute to the stickiness of the message. The methodology must therefore be of such a nature to address the various enquiries. The trans-disciplinary scope of this study will also influence the choice of methodology.

Starkey and Madan (2001:S5) categorise trans-disciplinary as Mode 2 knowledge creation, which emphasises that research is governed by the world of practice. In contrast, Mode 1 knowledge creation has a fundamental rather than applied nature, that is, it is more concerned with academic interest.

Fukami (2007:361) gives more or less the same explanation of trans-disciplinary research, but distinguishes between approaches, suggesting that *discovery* is the scholarship of creating new knowledge (Mode 1), *application* is the scholarship of using knowledge to solve real problems (Mode 2), and *integration* is the scholarship of merging knowledge across disciplinary boundaries.

Tranfield and Starkey (Saunders et al. 2009:6) assert that trans-disciplinary research cannot be reduced to any sum of the parts contributed by different disciplines. This suggests that the combination of natural science (drought) and social science (communication and education) in this study serves a bigger purpose that does not exist separately in either discipline.

In accordance with its trans-disciplinary nature, this study aspires to reduce what Rousseau (2006:258) terms the "research-practice gap". This gap is created by the non-integration of research evidence and practice. Hence it is suggested that research should address practice-relevant problems and provide solutions that can be practically applied. Practitioners should also recognise the relevance of research and not only rely on their own experience and skills to address problems in practice.

A research-practice gap may also emerge if there is an incompleteness in the researcher's philosophy (Smith 2006:192). Therefore, it is important to adopt a philosophy that is consistent with the researcher's line of thought as well as with the enquiry of the study. One philosophy is not necessarily better than another, but some philosophies can be better suited to certain enquiries. Johnson and Clark (2006, in Saunders 2006:108) also note that it is not a question of whether or not your research should be philosophically informed, but rather how well you can reflect on your choice and explain why it was chosen over alternatives.

To ensure that the research of the current study would uphold a consistent line of thought, a single research philosophy was adopted to guide the research approaches, strategies, methodology, time horizon and data collection and analysis. The table below outlines the differences between three major research philosophies.

**Table 3.1** Comparison of three research philosophies (Saunders 2006:119 and Rambau 2011:83)

| | **Positivism** | **Critical Realism** | **Interpretivism** |
|---|---|---|---|
| **Ontology:** *the researcher's view of the nature of reality of being* | External, objective and independent of social actors | Exists independently of human thoughts and beliefs of knowledge of their existence, but is interpreted through social conditioning | Socially constructed, subjective, may change, multiply |
| **Epistemology:** *the researcher's view regarding what constitutes acceptable knowledge* | Objectivist: Only observable phenomena can provide credible data, facts. Focus on causality and law, like generalisations, reducing phenomena to simplest elements. Findings are true | Modified objectivist: Phenomena create sensations that are open to misinterpretation. Focus on explaining within a context or contexts. Findings are probably true | Subjectivist: Subjective meanings and social phenomena. Focus upon the details of the situation, a reality behind these details, subjective meanings motivating actions. Created findings |
| **Axiology:** *the researcher's view of the role of values in research* | Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance | Research is value laden; the researcher is biased by world views, cultural experiences and upbringing. These will impact on the research | Research is value bound, the researcher is part of what is being researched, cannot be separated and so will be subjective |
| **Data collection techniques most often used** | Experiments/surveys. Highly structured, large samples, measurement, quantitative, but can use qualitative methods | Methods chosen must fit the subject matter, quantitative or qualitative. Can include case studies, interviews. Triangulation interpretation of research issues | Hermeneutical/ dialectical. Small samples, in-depth investigations, qualitative. Researcher very involved with participants within the world being investigated |

In the light of the arguments discussed, this study pursued a philosophy of critical realism. Adopting a philosophy constitutes the outermost layer of the research onion of Saunders et al. (2009:108). The authors use the research onion as illustrative of the research layers that must be "peeled away" before establishing which data collection tools are best suited for the study. The research onion guides the research process by (i) establishing the research philosophy, (ii) determining the best research approach, (iii) exploring the most suited strategies, (iv) defining the research method, (v) establishing the time horizon, (vi) and lastly develop the most appropriate data collection tools and analysis.

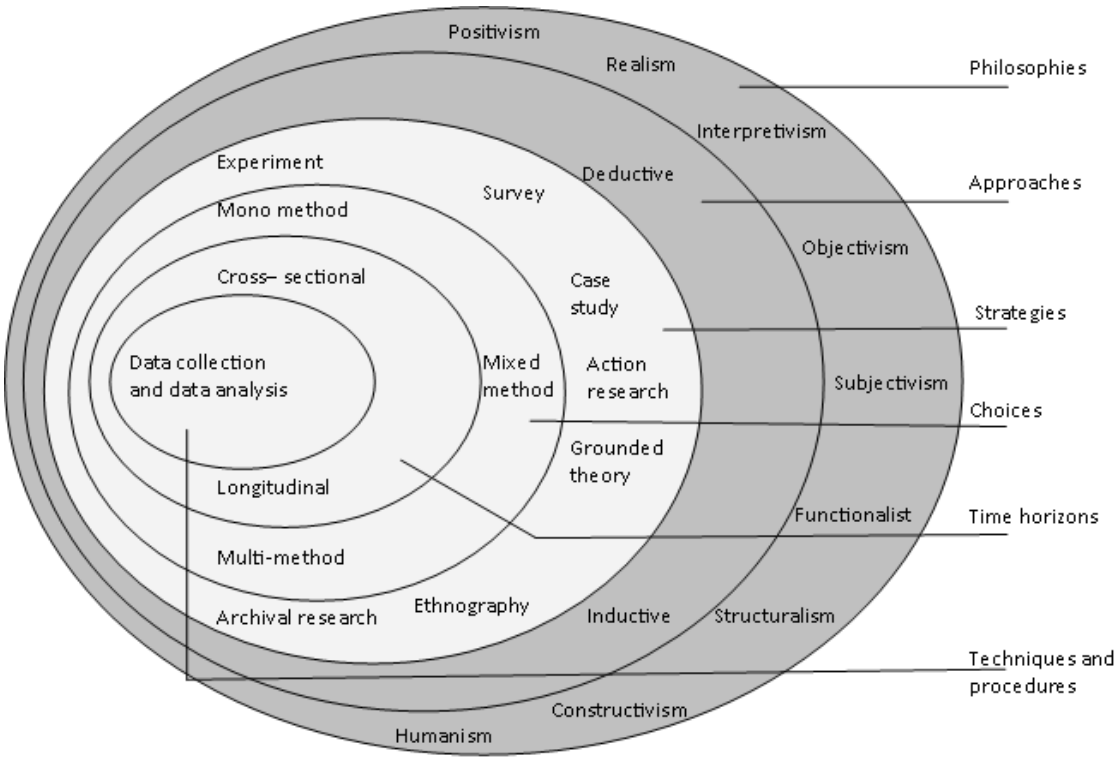



**Figure 3.1** The research onion (Saunders et al. 2009:108)

## 3.3 The critical realism philosophy

Roy Bhaskar (1978, in Smith 2006:192) developed critical realism as a resolution of theory-practice inconsistencies. Critical realism argues that a real world does indeed exist, but that humans' interpretation of that real world differs. Due to this characteristic, critical realism research is often not generalizable because the way one interprets the real world is influenced by social conditioning. The example in Chapter 2 of the children in Botswana who interpreted drought as a period of "free food" is a typical outcome of social

conditioning influencing interpretation. While drought is real, some people interpret it as a period of livelihood losses, because the loss of income is their reality; others interpret it as a period of free food, because donor help is their reality.

The goal of critical realism is to discover both observable and non-observable influences that generate a certain outcome (Krauss 2005:762). Therefore a critical realist will ask "what" instead of "how". In other words, what causes people to interpret the real world in a certain way? Or, more specifically for this study: What are the requirements for an effective narrative communication approach towards drought resilience for Foundation Phase children?

In the literature study the message content, textual and visual coding, media and culture were identified as requirements for effective messages. Thence the question arose regarding what the specific message content, text and visual, media and cultural requirements are. Considering the nature of such enquiries, the critical research approach seems to be the best philosophical foundation on which to build this study since it is realised that social conditioning will influence the perception of reality and impede predictability. The nature of a critical realism investigation, however, includes triangulation in that it is a two-stage approach where the first stage builds the theoretical frameworks, and the second stage confirms or disconfirms the framework (Sobh & Perry 2006:1026). This study therefore firstly determined what the message content, textual and visual coding, media and cultural requirements are, and then tested whether these findings were indeed true.

## 3.4 The research approach and method

This study employed both an inductive and a deductive approach. Saunders et al. (2009:128) note that combining inductive and deductive enquiry is indeed possible and even beneficial to the validity of the research. Inductive enquiry involves searching for meaning and deductive enquiry involves testing the theory (Mouton 2002:117). Both these approaches serve the explanatory nature of this study very well, since its aim is to explain what (variable) the requirements for an effective message (variable) are. Explanatory research sets out to explain the relationship between variables (Saunders et

al. 2006:140). The explanation is cross-sectional, explaining the requirements for an effective message in a moment in time, and not longitudinal, that is, over a period in time.

The inductive enquiry for this study involved studying what the message content and textual and visual coding are, as well as the media and cultural requirements for an effective narrative communication approach towards drought resilience for Foundation Phase children; and the deductive enquiry involved testing the message developed according to the findings of the inductive enquiry.

The inductive enquiry comprised both qualitative and quantitative research; the deductive enquiry also included both qualitative and quantitative research – rendering a mixed method approach to this study. The following is an explanation of the research data collection method and the analysis to be applied in answering each of the secondary research questions.

### 3.4.1 DATA SET 1: What is the necessary drought risk reduction information?

A qualitative content analysis was done of the Life Skills curriculum for Foundation Phase children in order to highlight all the outcomes that pertain to drought in any way. The South African prescribed school curriculums are very accessible and were downloaded from the website of the Department of Basic Education (Department of Basic Education 2011b). These not only indicate all outcomes to be completed per grade, but also the hours allocated to achieving the various outcomes. Life Skills covers a variety of learning, therefore it was scrutinised to extract the drought-related outcomes.

The outcomes related to drought were marked with alphabetical letters and the description of the outcomes with numbers, e.g. A1, A2, B1, etc. and A1.1, A1.2 where sub-outcomes were noted.

The exact extent to which these themes are dealt with, was easy to find. On the website of the Department of Basic Education, workbooks with the prescribed content are also available for download (Department of Basic Education 2014c, 2014d). A qualitative content analysis of prescribed learning material to reach the set outcomes was done. All the textual information provided in these workbooks was extracted and retyped in the sequence of the outcomes and marked with the corresponding outcome letter and number.

Where only visual material is provided, it was noted. Activities requiring additional information were not included because it is not possible to determine what additional material the teachers would have utilised in order to complete the outcome. It is also not assumed that the information in the workbooks is the only information used to complete the prescribed outcomes, nor is it possible to predict how many teachers actually use these workbooks. It is, however, the most obvious example of the outcome content and supposedly the minimum requirements to successfully complete the outcomes. Because there is no workbook for Grade R, the outcomes of this grade were related to the outcomes in further grades that were covered in the available workbooks.

In order to determine the most appropriate information regarding drought resilience for Foundation Phase children, the literature study in Chapter 2 was revisited. According to Patton (2001:226) a literature review answers the question of what is already known. The aim is not to create new knowledge with regard to drought resilience, but rather to determine the most appropriate knowledge for Foundation Phase children.

The themes identified and categories pertaining to drought resilience were paired with the corresponding curriculum outcomes for Foundation Phase children. This gave a clear picture of what Foundation Phase children should be able to understand and what prior knowledge they have relating to drought. It also indicated the depth at which the information was given and highlighted the probable gaps in knowledge leading to drought resilience. This data was used as a guide in determining the information that should be communicated towards achieving drought resilience for Foundation Phase children.

As a "lessons learned from" exercise, a qualitative content analysis was done with *Safari's Encounter with Drought* in order to determine how the content matches with the findings from the data analysis. Thereafter *Safari's Encounter with Drought* was rated with the grading scale derived from the adapted ecological model of communication explained in Chapter 2.

### 3.4.2 DATA SETS 2 and 3: What are the most suitable visual and textual coding options?

In order to answer this question, words and phrases that Foundation Phase children should be able to read, were determined by studying the lists and phrases prescribed (Dolch

Word List 2014, Fry Words 2010, Perkins 1998, Rasinski 2003, Department of Basic Education 2011a, Department of Basic Education 2014a and 2014b). Thereafter a quantitative content analysis of *Safari's Encounter with Drought* was done in order to determine the successful use of these words and phrases. This was once again done as a "lessons learned from" exercise. It was interesting to note that an extensive use of the words prescribed, does not necessarily ensure an effective use of the phrases prescribed. It was, however, taken into account that the prescribed phrases may not always be appropriate for the content they needed to convey. Therefore, alike phrases were also taken into account where substitute words were used.

Visual literacy and art form part of the Life Skills curriculum as prescribed for Foundation Phase children by the Department of Basic Education (2011b). Once again, the curriculum downloaded from the Department of Basic Education's website was analysed to extract all the outcomes and outcome descriptions that pertain to visual literacy.

Furthermore, appropriate literature was studied to identify the features that should be incorporated into pictures for children, with specific reference to picture books for children. Once these features were identified, clear examples were sought to serve as explanatory material. The pictures in *Safari's Encounter with Drought* were then evaluated against these guidelines as a "lessons learned" activity.

### 3.4.3 DATA SET 4: What are the most appropriate communication media?

Quantitative secondary data was studied to gain insight into the most effective application of the communication media used to communicate with Foundation Phase children. Children's picture books were identified as an ideal communication medium that is still frequently utilised by children. Both the positive and negative aspects pertaining to picture books as communication medium were highlighted. The nature of picture books was researched by studying appropriate literature, and the criteria by which a good picture book can be evaluated against were noted. Afterwards the communication media used by *Safari's Encounter with Drought* were evaluated as a "lessons learned" activity.

### 3.4.4 DATA SET 5: How must culture be addressed?

Although there is no secondary research question regarding the cultural sensitivity of a narrative communication approach towards drought resilience for Foundation Phase

children, it is a requirement of the adapted model used, and its importance was shown in the literature study in Chapter 2. Therefore, it was researched in order to gain insight into how cultural relevance is addressed in popular media for children.

From a list of the 20 bestselling licensed entertainment products, the first three were explored with respect to characters and location (Forbes 2012). The exploration is limited to the first three for data manageability and the inclusive nature of the first three: human, non-human, and animal characters and settings. The settings were identified as well as the characters' physical and personality traits. This was done from official websites dedicated to these products as well as research articles and product films. It was not a content analysis, but a literature study noting the information needed to describe characters and locations. The cultural sensitivity of *Safari's Encounter with Drought* was then evaluated as a "lessons learned" activity.

### 3.4.5 DATA SET 6: How will the message be designed?

The most commonly occurring physical and personality characteristics of the characters from the three bestselling licensed entertainment products were noted and attributed to the messenger that had to be developed. Guidelines for picture books were also noted, and then the message was created.

Text was written in accordance with the content and language guidelines studied. Explanatory material with regard to cartoon drawing was consulted, after which the seventeen A3 spreads were painted to support the text. The spreads were photographed and set in picture book format.

### 3.4.6 DATA SET 7: How sticky is the message?

Participant observation was chosen as data collection method because the researcher wished to record the children's response to the developed material. According to Jorgensen (1989:12) participant observation – where direct observation is the primary method of data gathering and can be conducted by a single researcher – can be used for almost any study regarding human existence and is appropriate to critically examine claims to knowledge. Observation allows the researcher to collect live data that can potentially be more valid than second-hand accounts (Cohen, Manion & Morrison 2007:398).

Because the material was developed in English, it was decided to test the material with children speaking English as a second language. If English Second Language children are able to read the text, it is possible to deduce that children speaking English as their first language will naturally be able to read the text. It was decided to test the material on purposive samples of typical Foundation Phase children, that is, typical case sampling. The typical case sample included multi-racial children of both genders, as well as urban and rural children. The reasons for typical case sampling were as follows, derived from Saunders et al. (2009:234):

- Data cannot be collected from the entire population.
- No statistical inferences need to be made from the sample.
- The sample does not have to be representative.
- Individual cases are not difficult to identify (namely, Foundation Phase children).
- Only a small sample is needed.

There is no need for the testing to deliver representative results. The secondary data that guided the development of the material is representative in itself. The testing is merely used as a method of triangulation and illustrative of the outcomes of the secondary data. Accordingly, findings will not be generalised but only reported as found per group/s of children.

When doing participant observation research with children as an adult researcher, Fine and Sandstrom (1988:13) note that it is not possible to be unnoticed, and therefore suggest that an appropriate role is assumed. They distinguish between the following four roles:

- **Supervisor.** Authoritarian teachers, camp leaders and instructors typically assume a supervisor role. School-age children already acquired the ability to adjust their behaviour in order not to be reprimanded by supervisors. Hence their behaviour may not be "true".

- **Leader.** A leader is different from a supervisor due to the presence of positive contact between the child and the adult. Teachers and other professionals, who often deal with children, assume leader roles. Although children may have some leeway in this relationship, they may still resort to best behaviour as to not disappoint the leader – which may be contrary to the behaviour that they actually which to display.

- **Observer.** As an observer, the adult has no authority or affectionate relationship with the child. Being an outsider is not consistent with participant observation and not relevant for the current study because there will be interaction between the researcher and the children.

- **Friend.** This is the most appropriate role for the researcher of the current study. It would require the researcher to become a friend to the subjects studied without any authoritative role and sanctioning of their behaviour.

After the observation tool was developed, ethical clearance was obtained from the relevant department at the institute of studying. Thereafter, informed consent was obtained from the children's parents or caretakers. A letter was prepared for the parents or caretakers explaining the purpose of the study and that participation was voluntary. Meetings with the typical groups of Foundation Phase children were arranged at a location, time and date suited to all parties involved. A pilot research session was conducted to allow fine-tuning of the research tool, after which scheduled research sessions commenced. The pilot group included children of each age group in the foundation phase, i.e. 5, 6, 7, and 8 years old.

On the day of each research session, the children were presented with the picture book and allowed time for paging through the book and reading it. Then the researcher read the picture book with the children, followed by questions relating to the picture-book content. The observation tool allowed for continuous note-taking and the entire process was audio-recorded. After each research session, the audio record was listened to and the research tool completed. Unintentionally, two of the respondent groups included children with learning barriers.

Sometime after the research session, a sample of parents and/or caretakers was contacted to enquire about the participating children's recollection of the picture book story. This was done in order to paint a possible picture, indicating whether or not the proposed drought resilience intervention indeed holds the potential to result in long-term behavioural changes.

**Table 3.2** Summary of the research methodology

| **Primary research question** | **Secondary research questions** | **Research method** | **Research strategy** | **Research sample** | **Data analysis** |
|---|---|---|---|---|---|
| What are the requirements of a narrative communication approach towards drought resilience among Foundation Phase children? | What is the necessary drought risk reduction information? | Qualitative | Literature and document study | Literature and curriculum | Logical and descriptive |
| | What is the most suitable textual and visual coding options? | Qualitative and quantitative | Literature, visual content and document study | Literature and curriculum | Logical, descriptive and frequency |
| | What are the most appropriate communication media? | Quantitative | Literature and secondary data | Literature | Logical and descriptive |
| | How will the message be designed? | Qualitative | Literature | Literature | Logical and descriptive |
| | How sticky will the message be? | Quantitative and qualitative | Participant observation | Typical groups of Foundation Phase children | Logical, descriptive and frequency |

## 3.5 Validity and reliability

Validity implies truthfulness and refers to the match between a hypothesis and a measure (Neuman 2000:164). According to Neuman, one can distinguish between internal validity and external validity. Internal validity refers to the design of the research and external validity refers to the ability to generalise the findings. There are several means by which

the qualitative researcher can ensure the validity of a study, for example triangulation; extensive field notes; member checks; peer reviews; audit trails; prolonged engagement; and thick description (Babbie & Mouton 2001:276-277).

Reliability refers to whether or not the measures will yield the same results on other occasions or by other researchers (Saunders et al. 2009:156). In other words, how transparent were the deductions made from the secondary and primary data gathered?

In order to ensure reliability and validity, this study employed Ogawa and Malen's (1991) method as broken down into eight steps by M.D. Gall, Borg and J.P. Gall (1996) discussed below (Randolph 2009:10).

**Step 1: Create an audit trail.** All steps to collect evidence in support of the findings were clearly documented. This was done continuously as data sets were introduced, and is discussed in Chapter 4.

**Step 2: Define the focus of the review.** What is included and excluded in the study is clearly defined. This study was demarcated in Chapter 1.

**Step 3: Search for relevant literature.** Only sources explicitly relevant to the research question and objectives are used. All sources are listed in the list of references. The resources of valuable articles were consulted to ensure that searches remain relevant.

**Step 4: Classify the documents.** Documents inclusive of data answering specific objectives were grouped together. This allows for easy comparison between different authors' findings and opinions. Such groupings are evident in in-text referencing.

**Step 5: Create summary databases.** Suitable coding schemes are used to link relevant data. Such coding schemes are evident in the relevant data discussion in Chapter 4.

**Step 6: Identify constructs and hypothesised causal linkages.** The relationships between themes found were identified. Such relationships are evident in the literature review in Chapter 2 and secondary data discussion in Chapter 4.

**Step 7: Search for contrary findings and rival interpretations.** An active search for contradictions was done. Any contradictions found are noted as such during discussion in Chapter 2 and Chapter 4.

**Stage 8: Use colleagues or informants to corroborate findings.** Critical reviews of the data were done by study leaders. Primary data (DATA SET 7) was also collected to triangulate the secondary data (DATA SETS 1-6).

## 3.6 Conclusion

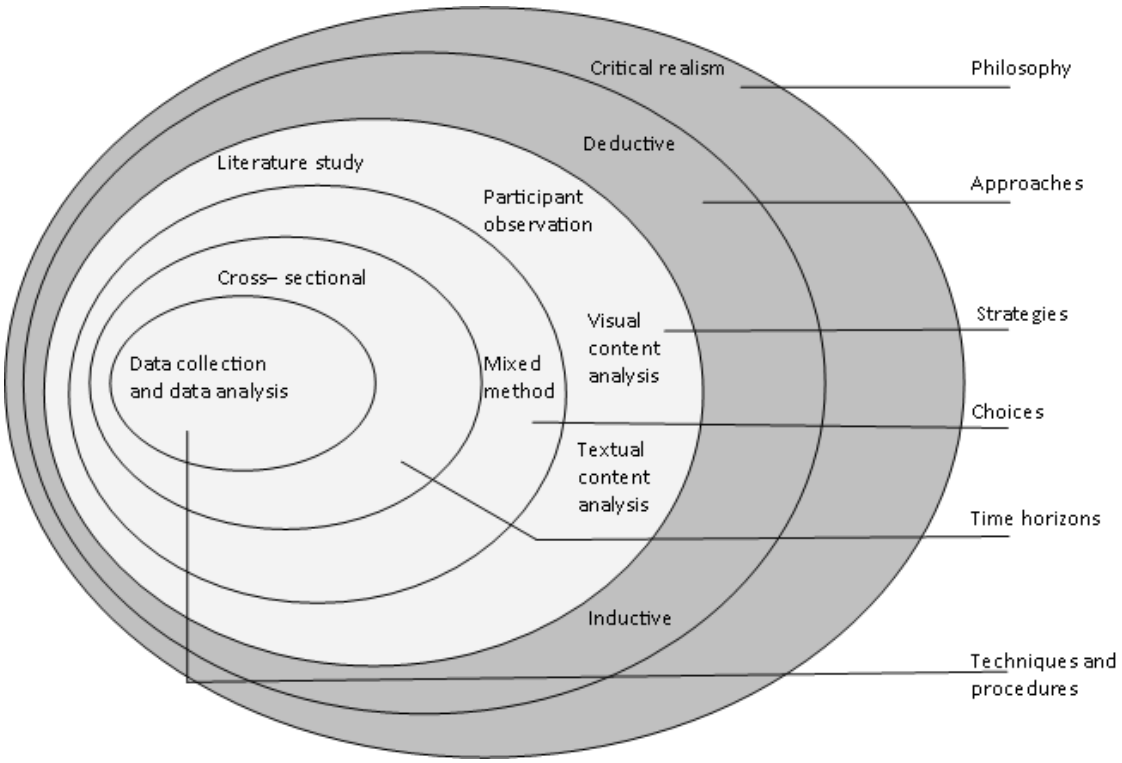



**Figure 3.2** The research onion (adapted from Saunders et al. 2009:108)

Figure 3.2 illustrates how the research onion guided the research process of this study. Depicting the research philosophy, approach, strategy, method, time horizon, and data collection and analysis techniques and procedures employed. In conclusion, this study is based on the critical realism philosophy and employs both deductive and inductive research processes. Data collection comprises a mixed method inclusive of literature studies, participant observation, and visual and textual content analysis. Primary data will

convey a cross-sectional picture, and data collection and analysis techniques will be relevant to the type of data collected.

The next chapter elaborates on the data collection and analysis in order to answer each of the secondary research question stated in Chapter 1 and discussed in Chapter 2, by following the guidelines set out in Chapter 3.

# Chapter 4

# ANALYSIS AND DISCUSSION OF THE RESULTS OF THE INVESTIGATION

## 4.1 Introduction

In Chapter 3, the seven DATA SETS were discussed in depth to determine whether they addressed the main research question posed in Chapter 1: What are the requirements for a narrative communication approach towards drought resilience for Foundation Phase children?

In Chapter 2, it was found that the following adaptation of Foulger's ecological model for the communication process would suffice to develop a risk reduction message towards drought resilience for Foundation Phase children:

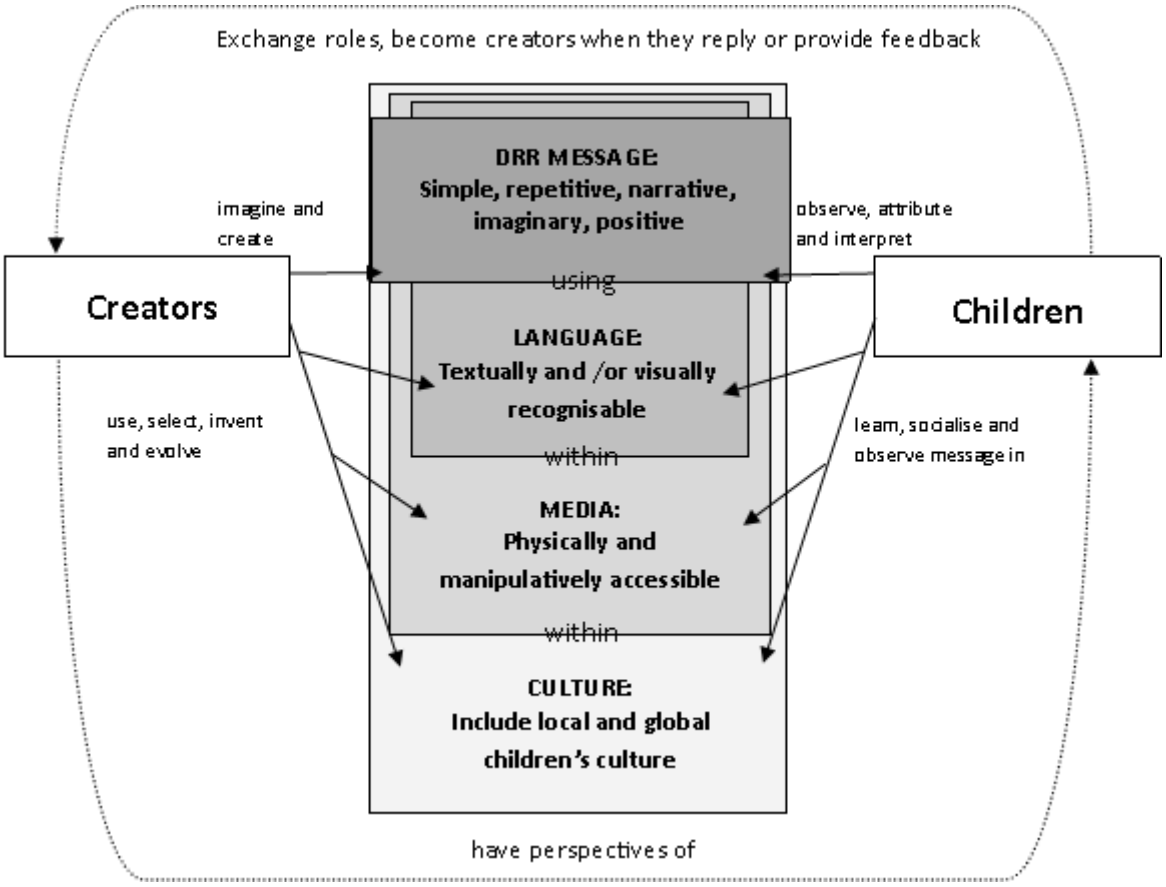



**Figure 4.1** Adapted ecological model of the communication process (Foulger 2004b)

The reasons established for the model's suitability to the current study includes that it illustrates the interaction between the message, language, media and culture that facilitates communication. It further acknowledges that relationship of the creator and receiver between each other, as well as with each of the four elements that facilitate communication. From the model, a simple rating scale can be compiled in order to review communication material for children regarding drought risk reduction:

| **Message** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Simple | ☐ | ☐ | ☐ |
| Repetitive | ☐ | ☐ | ☐ |
| Narrative | ☐ | ☐ | ☐ |
| Imaginative | ☐ | ☐ | ☐ |
| Positive | ☐ | ☐ | ☐ |
| **Language** | | | |
| Textually suitable | ☐ | ☐ | ☐ |
| Visually suitable | ☐ | ☐ | ☐ |
| **Media** | | | |
| Physically accessible | ☐ | ☐ | ☐ |
| Manipulatively accessible | ☐ | ☐ | ☐ |
| **Culture** | | | |
| Local culture | ☐ | ☐ | ☐ |
| Global children's culture | ☐ | ☐ | ☐ |

The maximum result will be 22, average 11 and 0 the lowest mark. Therefore, 0-10 will most likely not be suitable to create an educational epidemic, 11-21 may or may not, and a score of 22 will indicate the best chance to obtain the desired outcome. Below is a rubric indicating when which grade will be applicable (rubric scales derived from Chapter 2 literature study):

**Table 4.1** Rubric for evaluating communication material for Foundation Phase children

| | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| **Message** | | | |
| Simple | Complicated presentation and structure | Vague presentation and structure | Simple presentation and structure |

| | | | |
|---|---|---|---|
| Repetitive | No repetition of important information | Important information (e.g. saving water) is repeated at least once | Important information (e.g. saving water) is repeated more than once |
| Narrative | No narrative, only instructive information | Half narrative and half instructive | More than half narrative |
| Imaginative | No fantasy characters or setting | One fantasy character or setting | More than one fantasy character and setting |
| Positive | Only states what not to do | Half what not to do, half what to do | More than half what to do |
| **Language** | | | |
| Textually suitable | Above reading ability | Between 50% and 60% within reading ability | More than 70% within reading ability |
| Visually suitable | Above visual literacy skill and preference | Between 50% and 60% within visual literacy skill and preference | More than 70% within visual literacy skill and preference |
| **Media** | | | |
| Physically accessible | Technology not available | Technology sometimes available (e.g. cinema, library) | Technology always available (e.g. book, electricity, computer, internet, television, DVD player) |
| Manipulatively accessible | No ability to operate technology | Ability to operate technology with assistance | Ability to operate technology without assistance |
| **Culture** | | | |
| Locally sensitive | No link to local culture | At least one character and one setting link to local culture | More than one character and setting link to local culture |
| Globally sensitive | No link to global children's culture | At least one character and one setting link to global children's culture | More than one character and setting link to global children's culture |

The aforementioned model and consequent grading scale are proposed as a good measure of the effectiveness of a narrative communication approach to reduce drought risk for Foundation Phase children. For the purposes of this study, *Safari's Encounter with Drought* will be evaluated against the model, rating scaled and rubric to serve the purpose of a "lessons learned from" activity in developing a drought risk reduction message. Thereafter the results of the developed material will be discussed.

To ensure a logical flow of presentation, the secondary research questions will be answered in the order in which they were posed in Chapter 1:

1. What is the necessary drought risk reduction information?
2. What are the most suitable visual and textual coding options?
3. What is the most appropriate communication media?
4. How will the message be designed?
5. How sticky is the message?

## 4.2 DATA SET 1 – Analysis of data to address secondary question 1:

*What is the necessary drought risk reduction information?*

In order to determine what Foundation Phase children will understand with regard to drought risk reduction information, the national curriculum for Foundation Phase Life Skills was studied. This was be done to determine what Foundation Phase children are taught in school about drought. Below is an indication of the various outcomes per grade and the allocated hours (Department of Basic Education 2011b):

**Table 4.2** Overview of drought-related outcomes to be taught in Grades R-3 (Department of Basic Education 2011b)

| **OVERVIEW OF DROUGHT-RELATED OUTCOMES TO BE TAUGHT IN GRADES R–3 AND HOURS ALLOCATED** | | | |
|---|---|---|---|
| Grade R | Grade 1 | Grade 2 | Grade 3 |
| **Beginning Knowledge and Personal and Social Well-being**<br>**A: SUMMER 2 hrs**<br>**1** The weather in summer<br>**2** How nature is affected<br>**3** How animals are affected<br>**4** How people are affected, e.g. what we eat, wear, do; games we play<br>**B: AUTUMN 2 hrs**<br>**1** The weather in autumn | **Beginning Knowledge and Personal and Social Well-being**<br>**I: WEATHER 4 hrs**<br>**1** A daily weather chart<br>**1.1** Regular observation of weather conditions<br>**1.2** Hot, cold, windy, cloudy, sunny, misty, rainy<br>**1.3** Symbols to describe conditions on weather chart | **Beginning Knowledge and Personal and Social Well-being**<br>**M: WHAT WE NEED TO LIVE 4 hrs**<br>**1** Different types of food - for growth, energy, health<br>**2** Water - why we need water, sources of water<br>**3** Air - clean air<br>**4** Sunlight - include protection from the sun | **Beginning Knowledge and Personal and Social Well-being**<br>**S: LIFE CYCLES 6 hrs**<br>**1** What a life cycle is<br>**2** Lifecycle of a:<br>**2.1** Mammal (e.g. dog)<br>**2.2** Insect (e.g. butterfly)<br>**2.3** Amphibian (e.g. frog)<br>**2.4** Bird (e.g. chicken)<br>**T: RECYCLING 6 hrs** |

| | | | |
|---|---|---|---|
| **2** How nature is affected<br>**3** How animals are affected<br>**4** How people are affected, e.g. what we eat, wear, do; games we play<br>**C: WINTER 2 hrs**<br>**1** The weather in winter<br>**2** How nature is affected<br>**3** How animals are affected<br>**4** How people are affected, e.g. what we eat, wear, do; games we play<br>**D: SPRING 2 hrs**<br>**1** The weather in spring<br>**2** How nature is affected<br>**3** How animals are affected<br>**4** How people are affected, e.g. what we eat, wear, do; games we play<br>**E: WEATHER 2 hrs**<br>**1** What the sky looks like - include colour and clouds<br>**2** Hot days, cold days, sunny days, rainy days, windy days - include what we wear on these days<br>Note: Ensure learners never look at the sun<br>**F: WATER 2 hrs**<br>**1** Objects that float and sink | **2** The weather and us - include clothes, food, activities<br>Note: The weather chart should be updated throughout the year.<br>**J: PLANTS AND SEEDS 4 hrs**<br>**1** Why we need plants - include food, shade, shelter for animals<br>**2** What plants look like - roots, stem, leaves, flowers<br>**3** Different plants - similarities and differences<br>**4** Seeds and where they come from<br>**5** What plants need to grow<br>**6** Growing a plant from a seed - such as a bean or a lentil<br>**K: WATER 4 hrs**<br>**1** Uses of water - home and school<br>**2** Ways water is wasted<br>**3** Ways of saving water<br>**4** Safe and unsafe drinking water<br>**5** Storing clean water<br>**L: FOOD 1 hr**<br>**1** Foods we eat<br>**2** Where different foods come from: fruit; vegetables; dairy; meat<br>**3** Storing food - fresh, tinned, dried, frozen | Note: There is no need to include the water cycle at this level.<br>**N: SEASONS 6 hrs**<br>**1** The four seasons<br>**2** How seasons affect us - clothes, food, activities<br>**3** How seasons affect growing things - sowing, growing and harvesting<br>**4** How seasons affect animals - include farming e.g. sheep shearing, animal dipping; birds e.g. migration and nesting<br>**O: ANIMALS 4 hrs**<br>**1** Farm animals<br>**1.1** Types<br>**1.2** Uses - such as food and clothing<br>**2** Wild animals<br>**2.1** Types<br>**2.2** Camouflage<br>**P: ANIMALS AND CREATURES THAT LIVE IN WATER 4 hrs**<br>**1** Fresh water<br>**1.1** River - e.g. fish, crocodile<br>**1.2** Ponds and dams - e.g. frog, dragonfly<br>**2** Salt water<br>**2.1** Sea - e.g. shark, crayfish<br>**2.2** Rock pools - e.g. starfish, crab<br>**Q: ANIMAL HOMES 4 hrs**<br>**1** Animals and creatures that make their homes - such as | **1** What happens to our waste<br>**2** Re-using (things that can be used again)<br>**3** Recycling (used things that can be made into something new)<br>**4** Reducing (using less)<br>**5** What cannot be recycled<br>**6** Recycling at home and at school<br>**7** Making compost out of things that rot<br>**8** Re-using water<br>**U: POLLUTION 6 hrs**<br>**1** What pollution is<br>**2** Different types of pollution - water, land, air, noise<br>**3** Effects of pollution on people<br>**4** Effects of pollution on the environment<br>Note: Survey and clean an area - this will serve as an introduction to field work<br>**V: PRODUCTS AND PROCESSES 6 hrs**<br>**1** Plants<br>**1.1** What we get from plants<br>**1.2** Process - from sugar cane to sugar<br>**2** The earth<br>**W: ANIMALS AND CREATURES THAT HELP US 9 hrs**<br>**1** Animals that give |

| | | | |
|---|---|---|---|
| **2** Things that live in the water<br>**3** Mixing different things in water to change what it looks like<br>**4** Pouring and measuring water<br>**5** Saving water<br>**G: HEALTHY ENVIRONMENTS 2 hrs**<br>**1** The importance of a clean environment<br>**2** Ways in which people pollute the environment<br>**3** The importance of recycling<br>**H: WILD ANIMALS 2 hrs**<br>**1** What is a wild animal?<br>**2** Types of wild animals<br>**3** Where we find wild animals<br>**4** How wild animals live | | birds, some bees, ants<br>**2** Animals and creatures that find a home - such as baboons, snakes, squirrels<br>**3** Animals and creatures that carry their homes - such as snails, tortoises<br>**R: SOIL 4 hrs**<br>**1** Different soils - colours and textures<br>**2** Creatures that live in the soil - such as earthworms, moles<br>**3** Soil for the growth of plants; the value of growing vegetables | us food and/or clothes<br>**1.1** Bees<br>**1.2** Chickens<br>**1.3** Cows<br>**1.4** Sheep<br>**2** Animals that work for us<br>**2.1** Dogs - guide dogs, watchdogs, sniffer dogs<br>**2.1** Donkeys and horses<br>Note: Find and read stories about other animals, like dolphins, that have helped people |

The South African Department of Basic Education published a series of workbooks depicting the exact content to be taught as stated by the outcomes in Table 4.1 for Grades 1 to 3 (Department of Basic Education 2014c; 2014d; 2014e; 2014f; 2014g; 2014h). Although there is no workbook available for Grade R, the outcomes of Grade R are repeated in the subsequent grades. In order to be clear about the depth at which these outcomes were taught, the content per outcome is indicated below:

**GRADE 1** (Department of Basic Education 2014c, 2014d)

- **WEATHER**

**E1, E2, I1.1, I1.2, I1.3:** *A daily weather chart*: We use a weather chart to show what the weather is like. We use symbols to show the different kinds of weather. Here are some of the symbols: sunny, rainy, cloudy, partly cloudy, snow, windy (symbols are included).

**I2:** *The weather*: In some parts of our country it sometimes becomes so cold that it snows. Sometimes the weather is stormy. Winds that are very strong are called hurricanes.

- **PLANTS AND SEEDS**

**J1:** *Why we need plants*: Some plants give us food and juice. Some plants and trees give us shade. Some plants give us flowers to put in our homes. Some plants and trees give shelter to animals. We need grass for our sports fields. We use cotton to make clothes. We use reeds to make baskets and cover roofs. We use wood from trees to make furniture.

**J2:** *What plants look like*: roots, flower, trunk, seedpod, leaf, stem.

**J3:** *Different plants*: (only shown visually)

**J4:** *Seeds and where they come from*: Some plants have seeds that are hidden in the flowers or in the fruit. We can also plant these seeds to grow new plants. Seeds fall off from the plants to start new plants. Some seeds are spread by the wind or by people, insects and other animals. Some seedpods get eaten by birds and the hard parts then stay in their droppings. These seeds are dropped somewhere else and begin to grow there. If you want to grow your own plants from seeds, you can use the seeds of plants in your garden. Or you can buy seeds from a shop.

**J5** *What plants need to grow*: sunlight, water, nutrients, air.

**J6** *Growing a plant from a seed*: Cover 3 beans between 2 pieces of cotton wool. Put them in an empty saucer or bowl. Pour water over the cotton wool and make sure it is wet. Place the saucer or bowl on a windowsill or in a place where there is enough sunlight. After a few days, see how your plant is growing. Water it once a week to keep the cotton wool damp. Once your plant has roots and two leaves, you can plant it in soft soil. Water your plant regularly to keep the soil damp. After a few weeks, you will be able to pick your own beans.

- **WATER**

**K1, M2:** *Uses of water*: to put out fires, to wash ourselves, to help plants to grow, to wash clothes or dishes, to cook food.

**K2:** *Ways water is wasted*: let the tap run while brushing teeth, let taps drip, take a full bath, wash dishes under running water.

**K3:** *Ways of saving water*: water garden with bath water, close taps tightly.

**F5, K4:** *Safe and unsafe drinking water*: swimming in dirty water (unsafe), drinking water from a polluted river (unsafe), drinking boiled water (safe), drinking clean tap water (safe).

**K5:** *Storing clean water*: in clean containers. Rainwater from roof needs to be purified by boiling or using a filter. Make a filter with a plastic bottle; clean, fine sand; clean, coarse sand; clean, small stones and cotton wool.

- **FOOD**

**L1, M1:** *Foods we eat*: bread, grains and rice; vegetables, fruit; dry beans, nuts and meat; milk and yoghurt; sugar, fats and oils.

**L2:** *Where different foods come from*: Farmers grow plants and keep animals that give us food. We can cook this food. We can also mix different kinds of food together. Bread and cereal come from wheat. We get eggs from chickens. Fruit grows on trees and other plants. We get milk and meat from cows. We make yoghurt and cheese from milk. We use maize to make mealie-meal. Honey comes from bees. Sugar is made from sugarcane. We get ham and bacon from pigs. We can plant vegetables in our gardens.

**L3:** *Storing food*: Fresh food doesn't stay fresh for long. Some fruit and vegetables soon begin to go bad. Meat, fish and some dairy products also go bad quickly. Then we cannot eat them. How can we keep food fresh for longer? A safe place to keep food fresh is in the fridge. But food also goes bad if it stays in the fridge for too long. There are other ways to keep some foods fresh: frozen, canned and dried.

**GRADE 2** (Department of Basic Education 2014e, 2014f)

- **WHAT WE NEED TO LIVE**

**M1:** *Different types of food* (refer to Grade 1)

**M2:** *Water*: why we need water (refer to Grade 1). Sources of water: spring, windmill, river, dam, well.

**M3:** *Air*: The air we breathe in has oxygen. This helps our bodies to use the food we eat. We then get energy to live. When we breathe in dirty air, our bodies cannot work well.

**M4:** *Sunlight*: People need sunlight to be healthy. It helps our bodies make vitamin D. We need this to form strong bones. Too much sunlight can also be bad. We can get painful sunburn. When we are older we can get the serious illness of cancer.

- **SEASONS**

**A1, A2, A3, B1, B2, B3, C1, C2, C3, D1, D2, D3, N1:** *The four seasons*: **Summer**: The weather is sunny and warm. The days are long and the nights are short. We can stay cool by swimming or sitting in the shade. **Autumn**: The weather cools down. The leaves begin to turn golden and fall off the trees. The birds fly to warmer places. **Winter**: The weather is cold. In some places there is snow or frost. The days are short and the nights are long. Some animals sleep through the winter (they hibernate). **Spring**: The weather is warm. The plants start to grow and there are blossoms on the trees. Birds begin building nests and laying eggs.

**A4, B4, C4, D4, N2:** *How seasons affect us*: If it is sunny we must wear hats to protect ourselves from the sun. When it is warm, we must wear cool clothes. If it is cold outside we need to wear warm woollen clothes. On rainy days we need a raincoat and an umbrella.

**A2, A3, B2, B3, C2, C3, D2, D3, N3, N4:** *How seasons affect growing things*: In the spring the trees begin to bud. We see more birds and bees and flowers and new leaves. The birds make nests and lay eggs. The farmers shear the sheep. In the summer farmers pick their fruit. The baby animals are more active. In many places it rains heavily and there are thunderstorms and lightning. Grass, bushes and flowers grow more thickly and trees grow taller. In autumn, some animals store their food as they prepare for winter. The leaves of the trees start turning yellow, brown, red and orange. The grass begins to turn brown. In winter, some animals sleep through the winter. We say they hibernate. They keep warm because their coats get thicker.

**A2, A3, B2, B3, C2, C3, D2, D3, N3, N4:** *How seasons affect animals*: (see above).

- **ANIMALS**

**O1, O1.1** *Farm animals*: cows, sheep, chicken, goats, pigs, horses (male, female, baby, sound and shelter of each)

**H1, H2, H3, H4, H2, H2.1, H2.2:** *Wild animals*: Lions belong to the cat family. The lion is seen as the king of the animal kingdom. Lions hunt and kill animals such as buck and zebras. The females do most of the hunting. They often hunt in groups. Lions prefer living in open grass fields. Lions can roar very loudly. Elephants are the largest mammals on land. They are in danger because poachers hunt them for their ivory tusks. Elephants' tusks keep growing all through their lives. Elephants use their trunks to bring roots, fruit

and water to their mounts. They eat up to 200 kg of food a day and drink 190 litres of water. There are two kinds of rhinoceros (mostly called rhino) – the black rhino and the white rhino. Rhinos can't see very well, but they have a very good sense of smell. Rhinos are very large and can weigh up to 2 500 kg. Rhinos are regularly hunted for their horns by hunters and poachers. We need to protect rhinos from hunters who kill them for their horns. The mature leopard can grow to a length of 2 m. Its coat is light brown with black spots in the form of circles. The leopard can climb well and has no trouble hunting in trees. Buffalo live in herds. When there is danger, the cows and calves gather in the centre of the herd and are encircled by the bulls for protection. Some buffalo can grow to a height of 1.7 m. Some animals protect themselves by changing the way they look to blend in with their surroundings. Chameleons can change their colour to match the trees they climb. Zebra stripes make it very difficult to see a zebra in the bush. The coats or feathers of some animals are adapted in such a way that it makes them difficult to spot. We call this camouflage.

- **ANIMALS AND CREATURES THAT LIVE IN WATER**

**F2, P1:** *Fresh water* (only visual)

**F2, P1.1:** River, e.g. fish, crocodile (only visual)

**F2, P1.2:** Ponds and dams, e.g. frog, dragonfly (only visual)

**P2:** *Salt water* (only visual)

**P2.1** Sea, e.g. shark, crayfish (only visual)

**P2.2** Rock pools, e.g. starfish, crab (only visual)

- **ANIMAL HOMES**

**Q1:** *Animals and creatures that make their homes*: Bees live in beehives. They build their hives from wax. They store food in their hives. Ants build different kinds of shelter in their environment. A tiny ant can carry something that is four times heavier that itself. Ants communicate with each other. They warm each other if there is danger, and they tell each other where to find food. Birds build nests as shelters and to have a place where they can lay their eggs. The size of a nest depends on the size of the bird.

• *Animals and creatures that find a home*: (not specified).

**Q3:** *Animals and creatures that carry their homes*: The tortoise is a reptile with four scaly legs and a wrinkly neck and head. It moves around slowly with its shell house on its back. (Diagram of a snail)

- **SOIL**

**R1:** *Different soils*: People need soil to live. The land we live on is made of soil. We build our houses on soil, and we grow plants we can eat in the soil. Animals also need soil. Goats and cows eat grass and other plants that grow in the soil. Some small animals, like rabbits and mice, insects like ants as well as worms live in the ground. And most plants need soil to grow in. **Sandy soil:** If you rub some of this soil with your fingers you will feel it is hard, dry and sandy. It is easy for the wind to blow sandy soil away. If you pour water over sandy soil, the water runs through it quickly, and carries away some of the sand. Plants don't grow well in this light-coloured soil. **Clay**: Some soil feels like clay. When you wet this kind of yellowish soil it sticks together. You can make all sorts of things with wet clay, like cups and bowls and clay animals, but it is difficult to grow plants in clay soil. When it rains, clay holds the water for a long time and the plants that are growing in it get too wet. **Loam**: Loam is the best soil for seeds and plants. It does not get too wet or too dry. It has enough food to keep plants growing. Loam is like a mixture of sand and clay soils but is usually darker in colour.

**R2:** *Creatures that live in the soil*: mice, ants, earthworms, hares, moles.

**R3:** *Soil for the growth of plants*: The most important part of soil for people and animals is topsoil, which is the soil in which plants grow. The roots of the plants stop the wind and rain from taking the topsoil away. Plants die when there is too little rain, or when there is a fire. They also die if there is too much rain. If there are no plants, the topsoil washes away in the rain, or the wind blows it away. This is called erosion. People also cause soil erosion. If we do not look after the soil, it cannot feed the plants that grow in it, and they start dying. As a result, soil gets washed or blown away. Trees and plants get their food from the soil. When different kinds of trees and plants grow together, they take different kinds of food from the soil and the soil stays healthy. When a farmer grows just one kind of plant, like mealies, the same food is used by all the plants, then the soil cannot stay healthy. Farmers can keep their soil healthy by growing plants that use different kinds of food from the soil. We can keep the soil in our gardens healthy by adding compost to it. You can make your own compost (recipe provided).

**GRADE 3** (Department of Basic Education 2014g, 2014h)

- **LIFE CYCLES**

**S1:** *What a life cycle is*: A life cycle shows the different stages of development. The stages follow a specific sequence.

**S2:** *Lifecycle of a*:

**S2.1** Mammal: (visual illustration)

**S2.2** Insect: (visual illustration)

**S2.3** Amphibian: Two frogs mate in order to fertilise the eggs. The female frog lays the eggs. Tadpoles hatch from the eggs. A young tadpole has external gills and a tail fin. The tadpole grows legs. The tail begins to disappear. The mature frog has developed lungs and lost its gills.

**S2.4** Bird: (visual illustration)

- **RECYCLING**

• *What happens to our waste*: (not specified).

**G3, T2:** *Re-using*: We should reuse as many things as we can before throwing them away (and activity).

**T3, T5, T6, T7:** *Recycling*: We need to find ways of using paper, bottles and tins (and activities).

**T4:** *Reducing*: We should reduce our littering.

- **POLLUTION**

**G1, U1** *What pollution is.* Pollution happens when we make our earth dirty. When we make the earth's air, water and soil dirty, we pollute them. Pollution that we cause is bad for us, and it is bad for other animals and plants. We get ill, and things stop growing and can even die. In addition, pollution makes our environment very ugly. Wind, water, the air and the sun all help to clean up pollution, but when there is too much pollution, the earth cannot clean itself anymore.

**G2, U2, U3, U4:** *Different types of pollution*. AIR: When we pollute the air, we could poison it. We pollute the air by burning too much coal, diesel, petrol, gas and wood. The smoke from these things contains unhealthy gases, which mostly go up into the air. Air is also polluted by dust and sand from unpaved areas, as well as pollen. Trees help to remove poisonous gas from the air and put healthy oxygen into the air. If we cut down

too many trees, the poisonous gas stays in the air and less oxygen goes into the air. We need to breathe fresh air to stay healthy. Breathing polluted air gives us throat and lung diseases. There are some places in the world where people have to wear masks over their faces when they go outside because the air is too polluted to breathe. Air pollution also destroys the ozone layer, which protects life on earth from the harmful rays of the sun. Too much acid in the air, which comes from factories, can cause acid rain. This kills plants and damages buildings. **SOIL:** Soil pollution happens when there are too many dangerous chemicals in the soil. Soil pollution can be caused by the waste from factories and mines. The waste from our homes, schools, hospitals and offices is buried in the ground in landfills. Seepage form this waste pollutes soil. Soil pollutions can poison water which then poisons the food people and other animals eat. **WATER:** Water pollution poisons underground water and the water in rivers, lakes and dams. This can happen when a factory pumps its dirty waste water into a clean river. It also happens when sewage from toilets leaks into a lake. Polluted water can make people very ill and can kill fish and other animals. Plants close to the water can also die. **NOISE:** Noise pollution is caused by heavy vehicles such as trucks, the hooting of cars and taxis, factory machines, loud music, and construction equipment used on building sites and for road-building. Too much loud noise can make you lose your hearing.

**U3** *Effects of pollution on people* (see above).

**U4** *Effects of pollution on the environment* (see above)

- **PRODUCTS AND PROCESSES**

**V1** *Plants.* The earth is full of living things. There are animals, like humans, sheep and cows, and plants like mealies and willow trees, and funguses like toadstools. Plants usually have branches, leaves, stems and roots. They bear flowers, fruits and seeds. Most plants have leaves that are coloured green.

**V1.1** *What we get from plants.* Plants give us many kinds of food. All vegetables, fruits and nuts come from plants. They help to keep us healthy because they contain vitamins, minerals, protein, carbohydrates, oils and fibre. Even chocolate comes from nuts.

**V1.2** *Process – from sugar cane to sugar.* Sugar is one of the foods that we need to stay healthy. There are different kinds of sugar. We get sugar in fruit. Even milk contains sugar. Sugarcane is a tall plant that looks like bamboo. It grows in a tropical climate. Sugarcane needs a lot of sunlight and rain. It has a long, golden stem; long, narrow leaves; the divisions (called internodes) along the stem; the bunch of roots in the soil.

Sugarcane has to grow for 14 to 24 months before it is ready to be harvested. The stem contains the sugar – a sticky brown syrup – which is not at all like the sugar we use in our homes. At the mill the sugarcane is pressed and the sugar syrup squeezed out. The sugar it then cleaned and refined, ready for us to buy it.

**V2** *The earth.* Earth is the planet where we live. The earth gives us most of what we need to live. Around the earth is a layer of air. It contains oxygen, which we need to live. The thin layer of the earth on which we live and which we call the crust, has topsoil, which we can use to plant food. This first layer of land also has hard rock like mountains. From this layer we get minerals like gold, diamonds and petroleum, as well as coal. We also find the ocean on this thin layer of rock. From the oceans we get food like fish. The sea is also important because many ships carry goods and passengers on it.

- **ANIMALS AND CREATURES THAT HELP US**

**O1.2, W1** *Animals that give us food and/or clothes.* Long ago, people started using the skins of animals as clothing to protect themselves from the wind and cold. Later people discovered that they could also use wool from sheep and other animals like llamas to make clothes. These clothes were lighter and warmer than the skins. We use skins of animals to make different leather products such as handbags, purses and shoes. We also get meat from animals. But many people do not eat meat because of their religion or because they think it is wrong. Thousands of years ago, all animals were wild. Over many years animals like dogs, cats, sheep, horses and cattle became tame. Today, we have farm animals that give us many different things. From silkworms we get silk, which we can use to make the finest, softest fabrics.

**W1.1** *Bees.* Bees make honey and beeswax and help farmers to produce fruit. Bees live in communities called hives (or nests). Some of the bees go out to collect pollen and nectar from flowers. They take this back to the hive. The pollen is fed to the young bees, and the nectar is turned into honey to feed the adult bees. The bees keep the honey and pollen in a store called a honeycomb. The honeycomb is made of a wax that the bees produce from their own bodies. Bee farmers collect the extra honey which bees will not use as food. Honey is a very healthy food and we eat it on bread and with porridge. We also use beeswax to make all kinds of products such as these: candles, furniture polish, lip balm and cosmetics, crayons, soap, waterproofing for leather, polish for leather products like shoes. Bees are also very important to us, as they help many of the food

plants grown by farmers to make new seeds and grow fruits from which new plants can grow. The bees do this by spreading pollen from one plant to another while they collect pollen and nectar. About a third of the food we eat benefits from pollination by bees and other insects. But there are fewer bees now than before because of diseases and the use of pesticides. Be careful with bees. When they sting you it is very painful.

**W1.2** *Chickens.* Chickens belong to a group of animals we call poultry. Poultry are birds that have become used to humans. Poultry includes chickens, turkeys, pigeons, doves, pheasants, as well as water birds like ducks and geese. We get eggs, meat and feather from poultry.

**W1.3** *Cows.* (Activity and visuals only)

**W1.4** *Sheep.* At the end of winter, sheep don't need their thick woollen coats to keep them warm any longer. So this is the best time to give them a haircut! This is called shearing. We use the sheep's wool in many kinds of clothes that keep us warm. We can knit jerseys with wool, and we can weave wool to make soft, warm material.

**W2** *Animals that work for us*

**W2.1** *Dogs – guide dogs, watch dogs, sniffer dogs.* Police dogs help the police to find criminals. Guide dogs help blind people to find their way around. Sheepdogs make sure all the sheep stay together. Guard dogs help to protect us from criminals. Hunting dogs help hunters to find birds or animals they have shot.

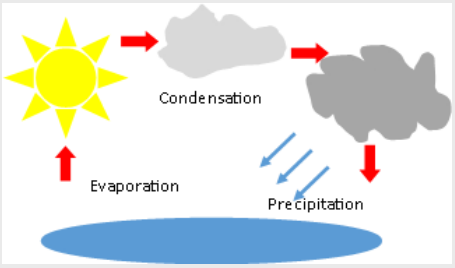
**W2.1** *Donkeys and horses.* Donkeys have helped people for about 6 000 years. They have carried us and our heavy packs on their backs, ploughed our fields and pumped our water.

(Outcomes not covered in workbooks: F1, F3, F4, Q2, T2, T8)

After the literature study in Chapter 2 regarding drought had been revisited, drought preparedness measures and knowledge were themed, categorised and matched with the corresponding Foundation Phase learning outcomes.

**Table 4.3** Drought preparedness and related outcomes

| **Theme** | **Categories: Drought preparedness knowledge requirements** | **Related outcomes** |
|---|---|---|
| Drought | **What is drought?** A period of water scarcity – where the available water is less than what is needed over a longer period than a dry spell, with adverse effects (Gupta, Tyagi & Sehgal 2011:1795). | Not covered |

| | | |
|---|---|---|
| | **Effect of drought on animals.** Damage to all living species and their habitat (Reed 1997:101). | Not covered |
| | **Effect of drought on plants.** Damage to all plant species (Reed 1997:101). | Not covered |
| | **Effect of drought on the environment.** Affects water and air quality, land degradation (Reed 1997:101). | Not covered |
| | **Effect of drought on people.** Food shortages and decline in living conditions. Loss of human life and health problems (Reed 1997: 101). Emotional distress (Dean & Stain 2007). | Not covered |
| | **Effect of drought on the economy.** Loss of economic growth and development (Reed 1997:101). | Not covered in Life Skills. However, money is covered in Mathematics. |
| Drought early warning | **The water cycle.** Sunlight warms the ocean that cools mainly by evaporation from the surface. You can almost think of it as the ocean "sweating" to keep cool. The water that evaporates from the ocean condenses as water droplets in clouds. When the clouds become big enough, the droplets merge and fall as precipitation – mostly as rain, but it can also be snow or ice (Stewart 2013).   | Not covered |
| | **Rainfall.** All types of droughts initially originate from a lack of precipitation (World Meteorological Organization 2006). | I1.2 |
| | **Clouds.** The absence of clouds indicates that no rain will fall (Speranza et al. 2010). | I1.2 |
| | **Groundwater.** Groundwater is an important source of water to be used during drought – these sources must be well managed and not polluted. Aquifers protect water from contamination but anthropogenic pollution is a concern (Calow, MacDonald, Nicol & Robins 2010). | Not covered |

| | | |
|---|---|---|
| | **Rivers.** River levels can indicate drought – if a river level drops, there is less water available (Looser 2009). | M2, P1.1, P1.2 |
| | **Dams.** Dam levels can indicate drought – if a dam level drops, there is less water available (Vuglinskiy 2009). | M2 |
| | **Weather.** Local weather conditions and signs: cloud cover, temperature, winds, rainfall patterns and amounts (Speranza et al. 2010). | A1, B1, C1, D1, E1, E2, I1.1, I1.2, I1.3, |
| | **Animals.** Birds, animals and insect behaviour/signs: appearances, movement (Speranza et al. 2010). | A3, B3, C3, D3, N3 |
| | **Environment.** Signs from flora: time of blossom and leave shedding. Water masses drying up, shadows change (Speranza et al. 2010). | A2, B2, C2, D2, N4 |
| Water | **Conservation.** Use less water. Plant indigenous. Recycle water. Collect rainwater. (*The Guardian* 2012; National Drought Mitigation Centre 2014; Delaware River Basin Commission 2014) | K3 |
| | **Storage.** Reservoirs, containers that can seal to prevent contamination (National Drought Mitigation Centre 2014). | K5 |
| | **Pollution.** Do not litter. Chemicals and sewage pollute water (Delaware River Basin Commission 2014). | F5, G2, K4, U1, U2 |
| Food | **Growing food.** Plant vegetable gardens with infield rainwater harvesting system (Viljoen et al. 2012). Plant drought-resistant food: cassava, jugo beans, Bambara groundnuts, sweet potatoes, sorghum and pumpkin (UNEP 2008:71). | J1, J2, J3, J4, J5, J6, L2, M1 |
| | **Livestock.** Source of food to prevent malnutrition (Hoddinott & Kinsey 2001). Must be managed well. | L2, O1.1, O1.2, W1.3, W1.4 |
| | **Poultry.** Same as above. | L2, S2.2, W1.2 |
| | **Storage.** Stockpiling – hygiene important. | L3 |
| Environment | **Soil conservation.** Do not pollute (National Drought Mitigation Center 2014.) Prevent erosion. | R1, R2, R3, U2 |
| | **Indigenous plants.** Important for natural balance (Beschta & Ripple 2006). | U4 |
| | **Indigenous animals.** Important for natural balance (Beschta & Ripple 2006). | H1, H2, H3, H4, O2.1 |
| | **Recycling.** Helps to use less water and prevents adverse effect of climate variability (Personal communication: Kobus van der Walt 3 March 2014). | G2, T1, T2, T3, T4, T5, T6, T7, T8 |

The data analysed above gives a good indication of the necessary messages content towards drought resilience for Foundation Phase children. It is not only clear what prior knowledge Foundation Phase children should have, but also at what depth the information is and can be presented. The gaps in knowledge towards drought resilience are also indicated. Following, the message content of *Safari's Encounter with Drought* will be rated against the findings of the data and the rating scale developed from the adapted ecological model of the communication process.

### 4.2.1 Evaluation of the *Safari's Encounter with Drought* message

Below is a table indicating how the content of *Safari's Encounter with Drought* corresponds to the themes and categories identified as necessary for a message towards drought resilience for Foundation Phase children.

**Table 4.4** Drought preparedness and related text in *Safari's Encounter with Drought*

| **Theme** | **Drought preparedness knowledge requirements** | ***Safari's Encounter with Drought* text** |
|---|---|---|
| Drought | What is drought? | Water and life cannot be separated. When there is little or no water for a long period of time, it is hard to survive. This is called a drought.<br><br>Weather (meteorological) drought is when there is very little or no rainfall.<br>Water (hydrological) drought is when rivers and lakes dry out.<br>Farming (agricultural) drought is when plants dry out due to lack of water.<br><br>A drought is a slow event. |
| | Effect of drought on animals | … in the last year many animals had died while others had migrated since the onset of the current drought. |
| | Effect of drought on plants | The leaves on the trees were not as green, and there were fewer plants. |

| | | |
|---|---|---|
| | | Safari saw that while there were some farms in the area, their crops were brown and had dried up.<br><br>Agriculture needs water. When there is no water, the plants die. |
| | Effect of drought on the environment | The land was much drier, with no signs of any waterholes or rivers. |
| | Effect of drought on people | The women and children were carrying big containers of water on their heads, and looked very tired. They seemed to have been walking for a long time.<br><br>… why the villagers had to travel so far to fetch some water.<br><br>… affecting thousands of families and communities who grow their own crops and depend on them to survive.<br><br>… and households lose their food supply. In the worst case, people will starve. |
| | Effect of drought on the economy | The farmer loses his income … |
| Drought early warning | The water cycle | Not covered |
| | Rainfall | If the drought is a weather drought – that is, when there is little or no rainfall … |
| | Clouds | Not covered |
| | Groundwater | Not covered |
| | Rivers | If the drought is a water drought and rivers and lakes have dried out. |
| | Dams | Not covered |
| | Weather | Every year some places receive more rain and some places less. |
| | Animals | Not covered |
| | Environment | Not covered |
| Water | Conservation | …it is important to think about how we are using water, and if we can use less or even reuse the water for plants and animals. Sometimes we need to change our habits to make better use of the water and make sure we do not waste it. |

| | | |
|---|---|---|
| | Storage | … communities prepare themselves by collecting water when it rains and saving it for use when it is needed most. |
| | Pollution | Not covered |
| Food | Growing food | … the cassava plant as one type of plant which can survive droughts. Cassava needs little water and is food for both people and animals. Other useful plants include arrowroot and yam. These are some traditional crops that communities can use to prepare for drought. |
| | Livestock | Not covered |
| | Poultry | Not covered |
| | Storage | Not covered |
| Environment | Soil conservation | … it is important that we make sure to use certain types of plants and trees that can survive droughts and can hold on to the water in the soil. If there are no plants or trees, the bare soil dries out very quickly. |
| | Indigenous plants | Not covered |
| | Indigenous animals | … there were many kinds like zebra, giraffe, impala, elephant, warthog and buffaloes. |
| | Recycling | Not covered |

| **Message** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Simple | ☐ | ✓ | ☐ |
| Repetitive | ✓ | ☐ | ☐ |
| Narrative | ☐ | ✓ | ☐ |
| Imaginative | ✓ | ☐ | ☐ |
| Positive | ☐ | ✓ | ☐ |

**Message**

**Simple:** Covers all themes, but only 13 of the 25 needed knowledge requirements. The message is rather complex in explaining the different types of drought and does not give clear actions to be taken, for example, "it is important to think about how we are using water, and if we can use less or even reuse the water for plants and animals". It does not state how water can be used less or reused and no explanation is given of how water should be stored.

**Repetitive:** No information is repeated.

**Narrative:** The narrative is very forced and uses Safari's class fieldtrip to a local national park as background. The text pivots around the trip and the classroom. Of the 1 323 words used, only 548 form part of storytelling – less than half. The remainder are instructive and informative only.

**Imaginative:** No fantasy element.

**Positive:** It suggests better care for the environment and use of water, without clear indication as to what to do, however. There is less than half positive action reinforcement.

Therefore, *Safari's Encounter with Drought* only partially meets the message requirements of a narrative communication approach towards drought resilience for Foundation Phase children.

## 4.3 DATA SET 2 & 3: Analysis of data to address secondary question 2:

*What are the most suitable visual and textual coding options?*

### 4.3.1 DATA SET 2: Textual coding

A list of words, phrases and sentences that Foundation Phase children should know was compiled from sources, namely Dolch Word list (2014); Fry Words (2010); Perkins (1998) and Rasinski (2003) as well as from the national curriculum (Department of Basic Education 2011a) and workbooks (Department of Basic Education 2014a and 2014b). These include words, phrases and sentences up to Grade 3 English First Language; therefore, they also include the most difficult words that can be used and that may in some cases not be understood by lower levels or English Second Language children.

**Table 4.5** Word list for English Home Language Grades R–3 (Dolch Word List 2014, Fry Words 2010, Perkins 1998, Rasinski 2003, Department of Basic Education 2011a, Department of Basic Education 2014a and 2014b)

| | | | | | | |
|---|---|---|---|---|---|---|
| **a** | carry | follow | last | pain | shelf | thought |
| about | cat | food | late | pair | shell | three |
| above | catch | fool | later | poster | shine | through |
| add | chair | for | laugh | pot | ship | thumb |
| afraid | change | form | learn | power | shirt | thunder |
| after | chased | found | leave | pray | shock | time |
| again | children | four | left | present | shoe | tiny |
| air | chopper | fox | leg | paper | shoes | to |
| airport | circle | free | leopard | park | shook | today |
| all | city | friend | let | part | short | together |
| allowed | classrooms | fright | letter | pay | shorts | tomorrow |
| almost | clean | frog | library | pen | should | too |

| along | clever | from | lid | pencil | shout | took |
|---|---|---|---|---|---|---|
| already | close | fruit | life | penguin | shy | top |
| also | clothes | full | light | people | sick | torn |
| always | coal | fun | like | phone | side | tough |
| am | cold | funny | line | pick | simple | traditional |
| an | come | garage | lion | picture | sing | train |
| an | coming | garden | list | place | singing | travel |
| d | concert | gate | listen | planning | sit | trees |
| angry | cool | gave | little | plants | six | trough |
| animal | cough | gentle | live | play | sleep | try |
| animals | could | get | living | playground | slice | tube |
| another | country | giant | long | please | slow | turn |
| answer | cousin | giraffe | look | point | small | two |
| any | cow | girl | loud | pool | smell | tyre |
| apricot | cradle | give | lunch | popcorn | smoke | ugly |
| are | crunch | glass | magic | pretty | sneeze | umbrella |
| around | cry | glue | make | proud | sniff | under |
| as | cut | go | man | pull | snow | untidy |
| ask | cute | goat | many | push | so | until |
| asked | daisy | goes | market | pushed | soccer | up |
| at | dance | going | mask | put | socks | upon |
| ate | dancing | good | match | quiet | soft | us |
| autumn | date | got | may | racing | soil | use |
| away | day | grass | me | rack | some | very |
| baby | dead | great | mean | rain | something | visit |
| back | did | green | meat | ran | sometimes | waited |
| bake | different | ground | meet | rang | song | walk |
| baking | dirty | group | melt | rat | soon | want |
| ball | dish | grow | men | ray | sound | warm |
| banana | do | had | mess | reach | sour | was |
| bay | does | hair | middle | read | special | wash |
| be | dog | hand | might | ready | spell | watch |
| beach | dolphin | happy | mind | really | spoon | water |
| beautiful | don’t | hare | mine | recipe | spring | way |
| because | done | has | miss | red | sprinkle | we |
| bee | donkey | hat | monkey | remember | start | weather |
| been | door | have | moon | rest | state | week |
| before | down | he | more | rhino | stay | weep |
| beginning | draw | head | most | ride | steep | weight |
| being | dress | hear | mother | right | stew | well |
| below | drink | heavy | mountains | river | still | went |
| belt | drive | help | mouse | road | stole | were |
| bend | drum | her | mouth | rock | stop | wish |
| best | dry | here | move | role | stops | with |
| better | duck | high | much | room | story | without |
| between | each | him | must | rot | stove | wonder |
| big | ear | his | my | round | street | wet |
| bike | earth | hiss | myself | rug | study | what |
| bird | eat | hit | name | ruler | such | wheel |
| birthday | egg | hold | naughty | run | summer | wheelbarrow |
| bitter | eight | holidays | near | running | sun | wheelchair |
| black | elephant | home | neat | rush | sunny | when |
| blanket | end | horse | need | rushed | sweet | where |
| blind | engine | hose | never | sad | swim | which |
| blue | enjoy | hot | new | safe | switch | while |
| book | enough | house | next | said | table | white |
| boots | even | how | night | salt | tablespoon | who |
| both | every | hungry | no | salty | tail | whose |
| bottle | everyone | hurt | noise | same | take | why |
| box | example | I | nose | sandwich | talk | wide |
| boy | excited | idea | not | sang | tall | will |
| bridge | eyes | if | now | saved | tasty | wind |
| bright | face | imagine | number | saw | teacher | winner |
| bring | fall | important | oats | say | team | winning |
| brown | family | in | of | scene | teddy | wins |
| bunch | far | into | off | school | tell | winter |
| burning | farm | is | often | science | ten | wonderful |

| | | | | | | |
|---|---|---|---|---|---|---|
| bus | fast | it | oil | scissors | than | word |
| busy | father | it's | old | scream | thank | work |
| but | favourite | jersey | on | sea | that | world |
| buy | feet | jump | once | seal | the | would |
| by | felt | jumping | one | second | their | write |
| cable | fence | just | only | see | them | wrong |
| cake | fetch | keep | open | seemed | then | year |
| calendar | few | key | or | sent | there | yellow |
| calf | fig | kick | other | sentence | these | yes |
| call | find | kind | our | set | they | yesterday |
| came | firemen | kneel | out | seven | thick | yolk |
| can | first | knob | outside | shake | thin | you |
| candles | fish | knock | over | shall | thing | young |
| car | five | know | own | shark | think | your |
| care | fix | lady | pack | she | this | yourself |
| careful | flower | land | packets | shed | tooth | zebra |
| caring | fly | large | page | sheep | those | zoo |

**Table 4.6** Phrase and sentence list for English Home Language Grades R–3 (Dolch Word List 2014, Fry Words 2010, Perkins 1998, Rasinski 2003, Department of Basic Education 2011a, Department of Basic Education 2014a and 2014b)

| | | | |
|---|---|---|---|
| A different land | I ate all my lunch | May I go first? | The ball is round |
| A few children | I can read | More people | The big city |
| A few good men | I can run fast. | More than the other | The bird will fly to the nest |
| A good idea | I can't find my pencil. | Most of the animals | |
| A good man | I cut my finger | Mother means it | The car is black |
| A good thought | I cut myself. | Mother says to now | The dark night |
| A group of friends | I didn't see any whales | Move over | The first day of school |
| A little boy | I don't feel well | My cousins came for a visit | The first word |
| A long life | I had a great time | My family | The following day |
| A long time | I had a lot of fun | My feet hurt | The grass is green |
| A long way to go | I have one cookie for snack | My friend and I play | The light in your eyes |
| A number of people | I have ten fingers | My friends are here | The long list |
| A second later | I have three pencils | My grandma will make a cake | The men asked for help |
| A small house | I hear the sea | My home is large | The other people |
| A very important person | I hear the waves | My last name | The peaceful Indians |
| Above the clouds | I hurt myself | My little sister is cute | The people |
| Add it up | I just got home | My mom gave me food | The rabbit is in the hole |
| After the game | I know how to sing | My new place | The sky is blue |
| All day long | I know why | My own father | The soup is warm |
| All or some | I learned about animals | My shoes are old | The sun is yellow |
| Almost enough | I like being on the team | My shoes are too small | The tall mountains |
| Almost four miles | I like every book on the shelf | Near the car | The young face |
| Along the way | I like him | Near the sea | The young girl |
| Always be kind | I like school because it is fun | Next time | Then we will go |
| An angry cat | I looked at the dog | Next to me | There are four deer in the field |
| An important idea | I made my bed | No way | There are six kids on the swings |
| Another great sound | I miss you | Not now | There are two kids on the bus |
| Another old picture | I need help | Now and then | There was an old man |
| Answer the phone | I only read two pages | Now is the time | They went here |
| Any old time | I ran up the hill | Number two | They were having a good time |
| Around the clock | I saw a brown bear | On my side | They will go to school |
| As big as the first | I saw an elephant at the zoo | Once upon a time | Think before you act |
| At your house | I saw your dog in the street | One more time | This gift is for you |
| Back off | I sit here | One or two | This is a good day |
| Because we should | I study in school | Only a little | This is my cat |
| Below the water | I think it is your turn | Our best things | This must be it |
| Between the lines | I think so | Out of the water | Those other people |
| Big and small | | Over the river | Three years ago |
| Both children | | Part of the time | Through the line |
| But not for me | | Plant the trees | |
| But not me | | Plants and flowers | |
| By the water | | | |
| Can I have some? | | | |

| | | | |
|---|---|---|---|
| Can you come over to my house? | I took a nap, but I am still tired | Play it again. | Too soon |
| Can you see? | I took the car | Please let her use your pen | Try your best |
| Carry the bags to the car | I watched him play | Please sit down | Turn off the light |
| Change your clothes | I will be kind | Please try to be quiet | Turn the page |
| Clean up your mess | I will bring my book home | Point it out | Two of us |
| Close the door | I will do my chores | Put it there | Under the earth |
| Come and get it | I will eat lunch and then go play | Put those books on the desk | Until the end |
| Could you go? | I will help you | Read every story | Up in the air |
| Did you ask the teacher? | I will jump over the puddle | Read my letters | Walk around the school |
| Did you like it? | I will jump rope with you | Read the book | Wash your hands before you eat |
| Did you see it? | I will look in my desk | Read the paper | Watch the game |
| Did you see my hag? | I will put the book on the shelf | Read the sentence | Watch the river |
| Did you tell your dad? | I will take my picture home | Read us a story | We are in first grade |
| Did you watch the move again? | I will throw away my lunch | Read your book after school | We both went for a walk |
| Did you write in your book? | I will walk to your house | Read your book | We came home |
| Do it often | I will wash the dishes | Right now | We found it here |
| Do these books belong to you? | I wish I could play outside | Run for miles | We got together |
| Do you feel better? | I wish it was time to go home | Same time tomorrow | We had their dog |
| Don’t do that | I work too much | School will start soon | We have school today |
| Don’t open the door | I’ve never been to the sea | See the water | We left it here |
| Each of us | If we were older | Set it up | We like it |
| Even the animals | In my head | She did her homework | We like to write |
| Finish your work | In the beginning | She does a good job | We need more |
| For example | In the country | She is my friend | We saw the food |
| For some of your people | Into the water | She is not in school today | We started the fire |
| Form two lines | Is it really true? | She read the book | We walked four miles |
| From here to there | It began to grow | She said to go | We want to go |
| From my room | It has been raining for two days | She went down the slide | We were here |
| Get on the bus | It is time to stop | Show and tell | What are these? |
| Get to the point | It may fall down | Show us around | What did they say? |
| Give it away | It never happened | Sing your song | What did you eat for breakfast? |
| Give it back | It seemed too good | Sit by your friend | What will they do? |
| Give them to me | It turned out well | Sit down | What would you like to eat? |
| Give Tommy his paper | It was cold last night | So far so good | When are we leaving? |
| Go down | It’s a small world | So there you are | When did they go? |
| Go find her | It’s about time | Something good | When will we go? |
| Good and plenty | It’s been a long time | Spell your name | When would you go? |
| Good things | It’s hard to open | State your case | Where are you going? |
| Hand it over | It’s my life | Stay a while | Where are you? |
| Have you seen it? | It’s no use | Stop talking at once | Where does it end? |
| He ate his snack | It’s only me | Stop the music | Where in the world. |
| He called me | It’s still here | Study and learn | Where is my pencil? |
| He has it | It’s time to eat | Such a big house | Which one is yours? |
| He is fast | It’s your place | Such a mess | Which way? |
| He said I was funny | Just the same | Take a little | White clouds |
| He started to cry | Keep it up | Talk to my father | Who will make it? |
| He will draw a picture | Kind of nice | Tell the truth | Why did you leave? |
| Help me out | Leave it to me | Thank you for helping me | Will it last? |
| Home sweet home | Leave the door open | That ball belongs to them | Will you be good? |
| How did they get it? | Let me carry it | That belongs to her | Will you come over? |
| How did you do that? | Let’s go for a walk | That belongs to me | Will you play tag with me? |
| How long are they? | Let’s play together | That dog is big | With his mom |
| How many pets to you have? | Let’s sing a song | That is a big truck | Without a care |
| How many words? | Light the fire | That is the right answer | Write it down |
| I always raise my hand | Live and play | That was a funny joke | Write one sentence |
| I am a good student | Look for some people | That was the best time I ever had | Write your name |
| I am done with my work | Look up | That’s very good | You and I |
| I am quiet as a mouse | | The air is warm | You did a good job! |
| I am six years old | | The apple is red | You may go play |
| I am very tired | | The baby will sleep in the cot | You might be right |
| I ate a snack | | | You must be right |

### 4.3.2 Evaluation of *Safari's Encounter with Drought* textual coding

| **Language** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Textually suitable | ☐ | ✓ | ☐ |

**Language**

**Textually suitable:** Of the 1 323 words in the text, 194 unique words are from the list in Table 4.3. Some of these unique words are repeated, bringing the total words from the list used to 687. Of the remainder, 30 really difficult words are used, and the rest may be understood in context, or because they are derivatives from the word list.

The 30 difficult words are: announced, impatient, awaited, excitement, vegetation, continued, gazing, direction, heading, containers, noticed, containers, journey, amazed, villagers, distractions, including, warden, migrated, attentively, recalled, previously, landslides, compound, institute, meteorological, hydrological, destructive, responded, mentioned.

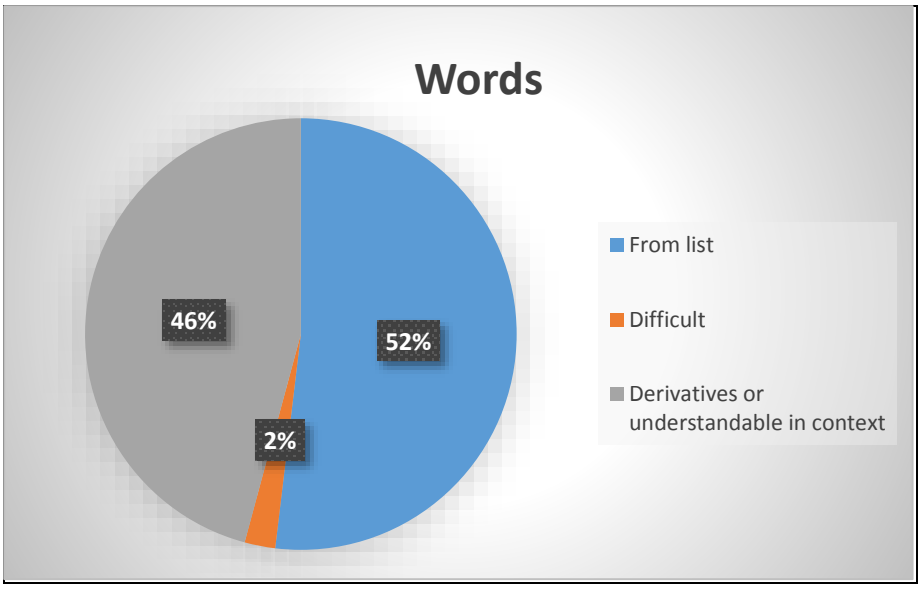



**Figure 4.2** *Safari's Encounter with Drought* word recognisability

Only three of the possible 400 phrases listed in Table 4.4 were used. A further 23 phrases are linked to phrases in the list but with substitute words, for example: "the other children", instead of "the other people".

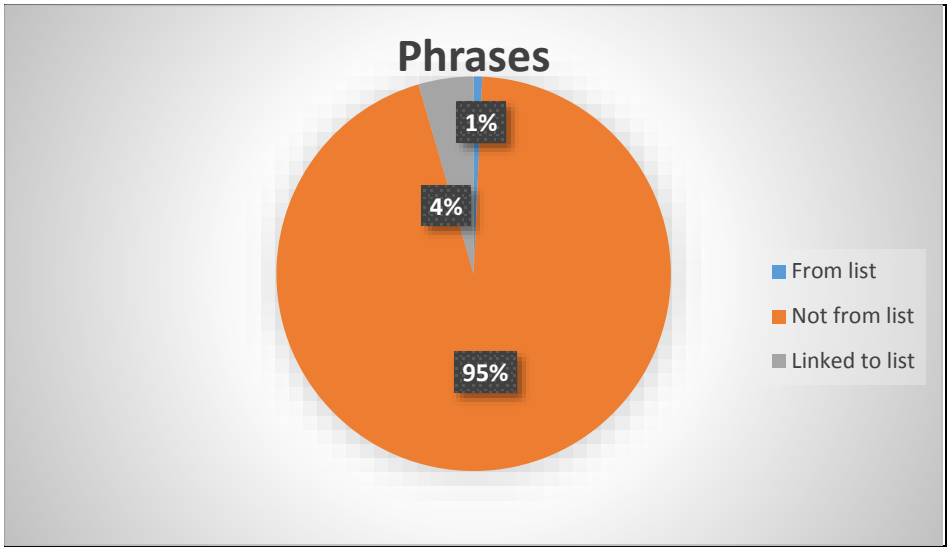



**Figure 4.3** *Safari's Encounter with Drought* phrase recognisability

These include the words and phrases from the list, as well as the words and phrases linked to the lists of derivatives from the lists. It is important to not only focus on the words used, but also in the way they are used. Children not only need to understand the words, but also the sentences in which they are used. An example of a complex sentence used in the text analysed is: "*The night before the trip, Safari kept tossing and turning in his bed, impatient for what awaited him and his classmates the following day*." There is even a sentence that is 41 words long. Compared to the phrases Foundation Phase children should be able to read, it is not suitable. Accordingly, the total readability is 51.5%. Therefore, *Safari's Encounter with Drought* only partially meets the textual requirements for a narrative communication approach towards drought resilience for Foundation Phase children.

Below is a good example of using the prescribed words and phrases in a story. This is just a general story but serves as a guideline as to how the prescribed words and phrases can be utilised in constructing a narrative message towards drought resilience for Foundation Phase children. All the Dolch Sight Words are colour-coded to show where and how they are used. Note that not all the words that Foundation Phase children should be able to read, are marked – only the Dolch Sight Words. Nevertheless, it is still a very good example of how "readable" text for Foundation Phase children can be applied in a narrative.

**The Best Thing In The World** (Perkins 1998)

Once upon a time, there were four brothers who lived in a far away land. Their father was an old king. One day he said, "I will not live long now. Today you must start out into the world. In a year, bring back the best thing you have found. The one who can pick the best thing shall be the new king." The first brother said, "I will look in every city or town. I will buy the best thing I can for my father." The next two brothers said, "We will both go on fast ships over the sea. We will find something better." The last brother said, "I am going to ask the people here in our own land to tell me the best thing." The other three brothers began to laugh. "Then you will never be king!" they said.

The last brother started off. When he had gone about six miles, he met a man. "What do you carry in those big bags? " he asked. "The best thing in the world, " said the man. "These are full of the good nuts which fall from my five nut trees." "I don't think that would work," said the brother to himself, "I must try again." The brother went on another seven miles. He found a small brown bird. It had been hurt, so he put it in his coat where it could keep warm. As he went on, he saw a little girl crying. He ran to meet her. "Why are you crying?" he asked. "I want to get some water from the well," she said. "We use so much. We drink cold water. We wash the clothes clean with hot water. But I do not know how to pull it up. Please show me." The brother said, "Hold this bird and I will help you. It does not fly around anymore because it got its wing cut." "Thank you. What a pretty bird!" she said. "I wish you would give it to me. If you will let me keep it, I will always be very kind to it. I will take care of it myself. I will make it grow well again." "Yes, you may have it," said the brother. So he gave her the bird and went on.

At night, he went to sleep under a round yellow haystack. When it was light again he walked on. Every day he would walk eight or ten miles. He asked the people about the best thing in the world. Some said it was best to sing. Some said it was best to run and jump and play. Some said the green grass was best. Some liked the red and blue and white flowers best. One man said the best thing was to ride a black horse. He always stopped to help people who needed it. Soon he made many friends. All the people began to like him. They would say, "See there goes the king's son. He would be just the right kind of king for us." Every door was open to him. The people would call to him to stop. They would ask him to come and eat with them. After he ate, he would sit down and read to the children. After he read, he showed them how to draw and write. Months went by. He still had no beautiful thing to take to his father. Just before the year was done, he went home again.

The time came when the king called his sons together. "What did you bring?" He asked them all. The other brothers had many beautiful things. "And what did you bring?" said the king to the last brother. "This is too funny!" said the other brothers. "He has nothing!" But the king was kind to the last brother. "What did you bring me?" the king asked again. "I bring only the friendship of your people," said the last brother. "That is the best thing!" cried his father. "You shall be the new king."

Key: Pre-Primer Primer First Grade Second Grade Third Grade

### 4.3.3 DATA SET 3: Visual coding

Visual literacy and creative arts form part of the South African national curriculum for Life Skills for Grades R–3 (Department of Basic Education 2011b). All the visual-related outcomes were selected with the corresponding knowledge and practical requirements as noted in the table below. This gives insight into the visual skills Foundation Phase children should have.

**Table 4.7** Overview of visual literacy to be taught in Grades R–3 (Department of Basic Education 2011b)

| **OVERVIEW OF VISUAL LITERACY OUTCOMES TAUGHT IN GRADES R–3** | | | |
|---|---|---|---|
| Grade R | Grade 1 | Grade 2 | Grade 3 |
| **Beginning Knowledge and Personal and Social Well-being**<br>**SHAPES AND COLOURS AROUND US**<br>• Look at and name different shapes<br>• The shapes that make up different objects<br>• Look at and name the different colours<br>• Shades of colours e.g. light, dark<br>**Creative Arts**<br>**CREATE IN 2D**<br>• Painting: use pre-mixed tempera paint or coloured inks or dyes in primary and secondary colours<br>• Design principles: informal use of contrast (big/small, long/short) in drawing and painting | **Beginning Knowledge and Personal and Social Well-being**<br>**PICTURE MAPS**<br>• Finding places and things on a picture map<br>• Finding the way from one place to another (use words such as: along, over, under, up, down)<br>• Finding where on a picture map events in a story happened<br>**Creative Arts**<br>**CREATE IN 2D**<br>• Paint own portrait adding features - eyes, ears, nose and mouth; discuss features on the head, shape, colour and line<br>• Finger painting or brush painting: discuss mixing of primary colours to achieve secondary | **Creative Arts**<br>**Visual literacy**<br>**CREATE IN 2D**<br>• Paint pictures of self with others in action (running, jumping, dancing, etc.) and discuss primary and secondary colours, cool and warm colours, shape and line<br>• Make paintings or drawings of birds, fish, insects, reptiles, etc.; use oil pastels in warm colours and wash over in inks of cool colours; discuss colour, shape, texture, pattern and emphasis; look at and discuss famous artworks of natural world<br>• Make paintings of fantasy plants and flowers; discuss primary and secondary colours, | **Creative Arts**<br>**Visual literacy**<br>**CREATE IN 2D**<br>• Introduce overlapping: behind, in front of<br>**VISUAL LITERACY**<br>• Art elements: identify and name all art elements<br>• Use artworks and visual stimuli to relate to own work<br>• Use of art elements and design principles in description and discussion; introduce balance<br>• Use artworks and visual stimuli to relate to own work<br>• Description of own artwork: use art vocabulary consciously<br>• Increase awareness of pattern and printmaking in Africa, e.g. Ndebele painting, beadwork, |

| | | | |
|---|---|---|---|
| • Work in different sizes to increase awareness of detail<br>• Interpreting body parts in drawing and painting<br>• Informal rendering of the body in action: hopping, running, sleeping and other<br>• Intentional use of drawn pattern; awareness of pattern in own world<br>• Use colour to create pattern<br>**VISUAL LITERACY**<br>• Naming shape in own work<br>• Looking at and talking about book illustrations: naming shape and colour in book illustrations, identifying contrasts big/small, long/short in book illustrations<br>• Looking at and talking about colour and shape in pictures and photographs<br>• Responding to questions to show awareness of colour and shape<br>• More specific naming of colour and shape (light and dark colour, simple geometric shapes) and contrasts through answering questions | colours<br>• Make paintings and drawings of real or imaginary creatures; encourage awareness of line and shape, and added detail; describe own pictures<br>• Make paintings and drawings of self, using various modes of transport; encourage awareness of line and shape, colour, and contrast (e.g. big/small, long/short)<br>**CREATE IN 3D**<br>• Make models of imaginative creatures using clay, play dough or recyclable materials; emphasize appropriate use of materials and spatial awareness.<br>• Make models of self in action in own environment using clay/play dough; encourage personal expression, appropriate use of materials and spatial awareness | emphasis, and concepts like behind, in front of, underneath, etc. | decorative ceramics: looking, talking, listening about patterns<br>• Art elements: identify and name all art elements<br>• Design principles: name and use contrast, proportion, emphasis and balance<br>• Questions to deepen and extend observation of elements and design principles |

Visual literacy refers to the ability to interpret and understand a picture or illustration, in other words, the ability to decode a picture or illustration (Mlis 2007:2). In order to ensure

that children can decode the visual text, it must be coded in a way aligned to their skills and preferences. No specific guidelines concerning the requirements of visual coding of a narrative in the likes of Dolch Sight Words were found. However, various authors (Haust 1989, Guijarro 2011, Ishii 2007, Madigan 2005 & Lester 2006) highlighted the importance of visual content and indicated some factors to be taken into account.

Nicholas (2007:1) observed the phenomenon that children would always want to see pictures of any text that is read to them aloud. These pictures should be a pictorial explanation of the story, characters, setting and mood. Still pictures display features of colour, texture, line, shape and spatial relationship. Different colours evoke different emotions whereas texture indicates whether the drawn object is smooth, rough, soft, etc. Lines are used to lead the eye to whatever is important in the illustration and can also suggest movement, direction, energy or mood. Shapes are used to indicate the nature of the object, namely natural, mechanic, large, small, etc. It can be geometric, abstract, realistic, representational and contributing to the volume or three-dimensional quality. Spatial relationship refers to the use of objects in relation to one another (Giorgis, Johnson, Bonomo, Colbert, Conner, Kauffman & Kulesza 1999).

Carstens (2004:471) discusses Pettersson's BLIX picture readability index that accentuates the importance of colour, shape, unambiguousness and dominance when viewers interpret what they see. Lin and Thomas (2002:281) are in agreement but elaborate by adding some viewer evaluation categories in their pursuit of understanding children's preferences for popular graphic art: colour, subject matter, expression, form, history, association, romancing, function and unelaborated (expressions of approval or disapproval).

Fang (1996) is of the opinion that illustrations in picture books for children should establish the setting, define and develop characters, extend or develop the plot or provide a different viewpoint. He also points out that illustrations should contribute to the overall textual coherence and reinforce the text. Various authors are of the opinion that children prefer bright colours, familiar objects and realistic rather than abstract illustrations (Savva & Trimis 2005; Brookshire, Scharff & Moses 2010). Combining the outcomes in Table 4.5 and the guidelines gained from reviewing relevant literature, the following

specifications were developed to evaluate the visual recognisability of pictures and illustrations used in a narrative for Foundation Phase children.

**Table 4.8** Visual features for Foundation Phase children

| **FEATURE** | **EXPLANATION** | **EXAMPLES** (Rocheleau 2012) |
|---|---|---|
| **Colour** | Bright colours |  |
| **Line** | Clear lines that highlight importance, direction, movement, energy and mood. |  |
| **Shape** | Realistic and representational |  |
| **Texture** | Indicates texture of object, e.g. smooth, rough, soft |  |

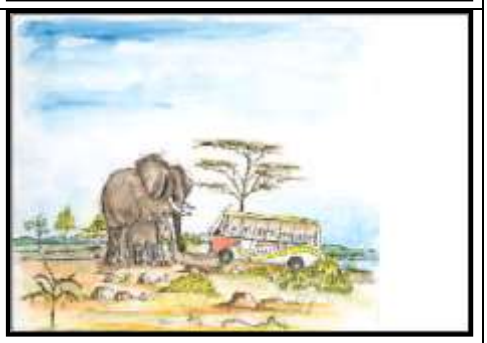
| | | |
|---|---|---|
| **Subject matter** | Subject matter is clear, e.g. cat, tree, house. |  |
| **Character** | Reflects nature of characters and develop further understanding of characters |  |
| **Setting** | Indicates setting clearly, e.g. inside, outside, night, day. |  |
| **Spatial relationship** | Spatial relationship between objects is clear, e.g. bigger, smaller, far, near. |  |
| **History** | Reference to culture |  |

| | | |
|---|---|---|
| **Association** | Reference to possible previous experience |  |
| **Romancing** | Encourages imagination |  |
| **Plot** | Develops the plot further than what the text does. |  |
| **Text** | Coherent with the text |  |

### 4.3.4 Evaluation of *Safari's Encounter with Drought* visual coding

When evaluating the visual content of material, every picture used should be evaluated against the features identified. Every illustration was taken into account in evaluating *Safari's Encounter with Drought*, but for each feature, only the most appropriate illustration is given as example below.

**Table 4.9** Evaluating the visual features of *Safari's Encounter with Drought*

| FEATURE | EXPLANATION | EXAMPLE |
|---|---|---|
| **Colour** ✘ | No use of bright colours |  |
| **Line** ✘ | No indication of importance, direction, movement, energy and mood. |  |
| **Shape** ✘ | Not realistic |  |
| **Texture** ✘ | No indication of texture |  |
| **Subject matter** ✓ | Subject matter is clear. |  |

| | | |
|---|---|---|
| **Character** ✘ | Does not reflect nature of character or develop further understanding of character – it is not even clear who Safari is. |  |
| **Setting** ✓ | Inside and outside is indicated |  |
| **Spatial relationship** ✓ | Spatial relationship between objects is clear, e.g. bigger, smaller, far, near. |  |
| **History** ✓ | Reference to culture |  |
| **Association** ✓ | Reference to possible previous experience | Refer to illustration in classroom, bedroom, playground. |
| **Romancing** ✘ | Does not encourage imagination | No fantasy element that might encourage imagination |
| **Plot** ✘ | Does not develop the plot further than what the text does. | There is no definite plot in the narrative, and it is not further developed by illustrations – illustrations only depict what is said in text. |
| **Text** ✓ | Coherent with the text | Illustrations depict what is said in text. |

| **Language** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Visually suitable | ✓ | ☐ | ☐ |

**Language**

*Visually suitable*: Of the 13 features required for visual recognisability by Foundation Phase children, only 6 are met. Therefore the story meets less than 50% of the visual skills and preferences requirements for a narrative communication approach towards drought resilience for Foundation Phase children.

Incorporating all the features of the visual component of a narrative for Foundation Phase children may seem impossible. However, the example below satisfies all the criteria:

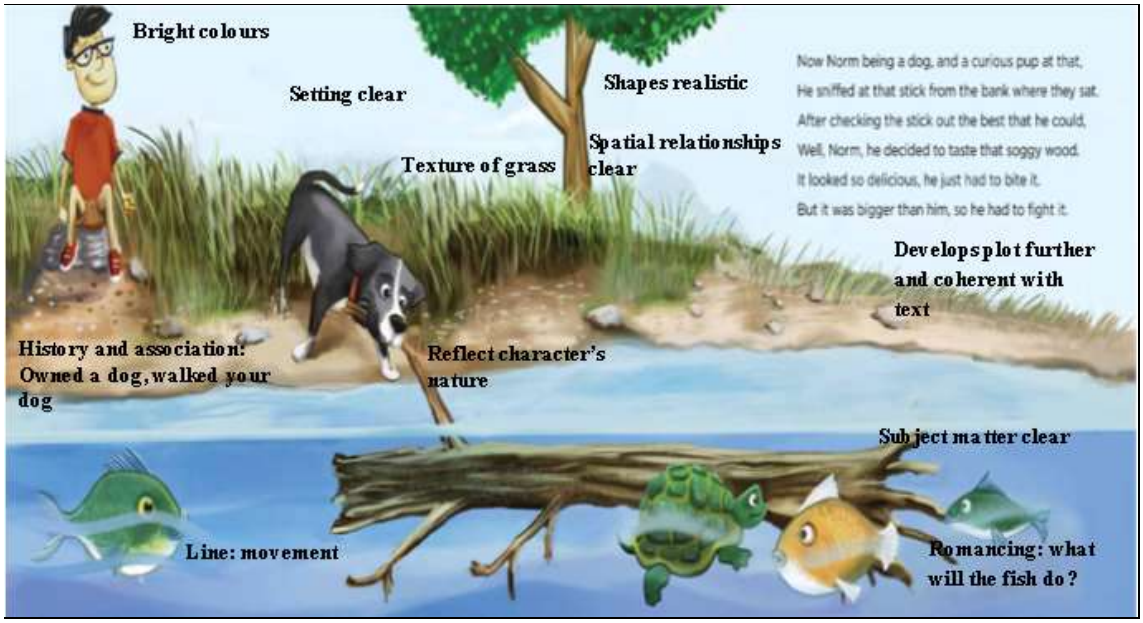



**Figure 4.4** Sample page from *Stormin' Norman: The Soggy Doggy* (Allen 2011).

## 4.4 DATA SET 4: Analysis of data to address secondary question 3:

*What is the most appropriate communication channel?*

From the literature study in Chapter 2, it was deduced that the media used must be both physically and manipulatively accessible. That means that Foundation Phase children must be able to "get hold" of the media and also be able to "operate" the media. According to *Publishers Weekly* (2014) children's picture books still sell well, with not so much

fluctuation between yearly figures. This means either that children still read or that their parents read children's picture books. Despite the digital age, though, children's picture books seem to have some kind of stronghold. This project, however, is not market driven, and these findings merely suggest that a picture book is a communication medium still widely accessed by children.

The current trend, nevertheless, is that children media multitask (Foehr 2006). Therefore, the ideal would be that the message towards drought resilience for Foundation Phase children should potentially be moulded into different media as needed. Print media, like picture books, in combination with other media, like television, deliver significant learning gains over for example television viewing alone (Thorn 2008:8). However, the aim of this study is to utilise the most physically and manipulatively accessible medium for children in drought-prone areas, which are often remote and rural. Hence, a picture book serves the purpose.

With picture books, physical access is possible even in the most remote areas. Once the book is there, it is there – be it by post, courier or library access. Electricity is not necessary because it can be read in daylight. For manipulative accessibility, the child needs to be able to open the book and understand the text and pictures. There are no instructions or technological skills required as for example for using a computer. According to the Association for Library Service to Children (2014), the following criteria are considered by the Caldecott Medal award for children's picture books:

- Excellence of execution in the artistic technique employed
- Excellence of pictorial interpretation to the story, theme or concept
- Appropriateness of the style of illustration to the story, theme or concept
- Delineation of plot, theme, characters, setting, mood or information through the pictures
- Excellence of presentation in recognition of a child audience

In a picture book, the content must be of such a nature that neither the text nor the visual component is completely effective without the other. It encompasses at least three stories

– the textual story, the visual story and the one resulting from the combination of text and visuals (Jalongo 2004:11).

During the actual reading event, the synergy between the text and pictures reveals an entity that is bigger than the sum of its parts – it is more than words, it is more than pictures, it is a unique response to each element translating into a complete experience. The interaction between text and pictures can vary between complementary – where each supports the other – and contradiction – where it seems as if the text and pictures tell different stories. Whether text or pictures must be used depends on the message the creator wishes to convey (Wolfenbarger & Sipe 2007:273). This nature of a picture book serves a message for Foundation Phase children very well, as was indicated by the need for a very strong visual component to elaborate on and enhance or develop the textual message (refer to Chapter 2).

Jalongo (2004:11) also suggests that picture books could help a young child to become acquainted with different settings and cultures other than their own, which also serves the purpose of a drought resilience message well. However, picture books are not always guaranteed to be well received by children. The following conceptual categories may cause resistance to a picture book (Wolfenbarger & Sipe 2007:278):

- *Intertextual resistance*: When the version of the story in the picture book differs from the version of the story that is known to the child.
- *Preferential or categorical resistance*: The child may dislike the book due to some personal construct, for example a boy may think "the book is for girls".
- *Reality testing*. The world of the story may conflict with the child's understanding of reality.
- *Engaged or kinetic resistance*. The child may experience some events or characters in the story too painful to consider.
- *Exclusionary resistance*. The child may not be able to consider him- or herself in the story.
- *Literary critical resistance*. The child has some idea of what a good story is, and the present story does not meet the criteria.

This resistance does not necessarily indicate dislike; rather, it may serve as a possible learning curve by which children can learn about events, characters, settings and situations they are not familiar with.

One of the biggest drawbacks of picture books for children as a communication medium is the wastage occurring during the manufacturing process. According to ID2 Communications (2014) approximately 342 litres of water is used to produce one kilogram of paper, which is not exactly appropriate for a message aimed at drought resilience and saving water. Unfortunately, water wastage is not the only concern in the printing industry; solid waste and air emissions are also a source of concern. According to Prospec (2014) printing operations produce volatile organic compound emissions and larger plants can also be the source of $NO_x$ and $CO_2$ emissions.

The Environmental Council of the Swedish Printing Industries (2008) suggests various ways in which the wastage of printing companies can be reduced. These methods will not be elaborated on in this study because it will deviate too much from the intended purpose, namely determining what the requirements of a narrative communication approach towards drought resilience for Foundation Phase children are. However, since environmental consciousness is at the core of the study, methods will be put in place to ensure that the most eco-friendly processes are followed. These will include:

- Encouraging readers to share books
- Making an e-book available for children who have access to electronic devices
- Speak with publishers in order to make use of the most environmentally friendly printing company
- Use recycled material as far as possible

### 4.4.1 Evaluation of *Safari's Encounter with Drought* choice of media

| **Media** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Physically accessible | ☐ | ☐ | ✓ |
| Manipulatively accessible | ☐ | ✓ | ☐ |

**Media**

*Physically accessible*: Books are accessible almost everywhere.

*Manipulatively accessible*: Although the children will have the skills to open and page through the book, not all of them will be able to read the text due to its complexity as indicated in section 4.3.2.

## 4.5 DATA SET 5: Cultural analysis

Although there is no secondary research question addressing the cultural sensitivity of a narrative communication approach towards drought resilience for Foundation Phase children, it is a requirement of the adapted model used. Its importance was highlighted in the literature study of Chapter 2.

Keifer (2010:81-87) elaborates on the rise of multicultural literature for children and the importance of including diversity and a range of representations of culture in children's literature. This would also include the avoidance of stereotyping, language consideration and the perspective of the book. In Chapter 2, and also during the discussion of visual literacy, the importance of local culture was emphasised. This means that there need to be some element that the child can associate with – be it a custom, setting or character. Furthermore, a new culture should be introduced which, as pointed out before, can be very effectively done by means of visual illustration.

Children's culture is fluid and changes with time. Klein (1998) discusses this notion by indicating how children's worlds change from being an asset to a family to a prized possession. Mintz (2014:4) aptly states that "the history of children's culture is an ongoing story of reinvention and remaking". Since the 1970s, various authors (Silvers 1975, Kidd 2002, Johanson 2010) have discussed how children's culture change from generation to generation. Mintz's (2014) view is that today's children's culture is best explained in a response to their specific social and cultural environment. However, because technology and commercialism cross the boundaries of children's local environment, global trends should be taken into account. Marsh and Millard (2000:21) note that children's culture is mostly created for them by adults. It would include music, sport, books, television, films, toys, games, clothing, accessories and even food and drinks. However, children are not passive consumers – sometimes they accept and at other times reject the products created for them. Exploring existing trends will best advise the current state of children's culture.

According to Cassim (2010:183) it is reasonable to assume that most children in South Africa are exposed to media, especially television – even though hard data is absent. The author asserts that 83% of the adult population is reached by television, whereas very little information about young South African children and their media habits are available. The most relevant statistics quoted by the author is that South-African children between 7 and 15 years old spend approximately 2.5 hours watching television each day. Therefore, it is probable that South African children are exposed to broadcasts of the top licensed entertainment products. Also, referring back to the successful adaptation of the US children's television programme, *Sesame Street*, to the South African version, *Takalani Sesame* as discussed under 2.5.4, it is believed that the "success template" of the best-selling licensed entertainment products can also be moulded into a local context by adding local cultural elements – either visually or textually.

Forbes (2012) published a list of the top 20 best-selling licensed entertainment products:

1. *Disney Princess* (Disney)
2. *Star Wars* (Lucas film)
3. *Pooh* (Disney)
4. *Cars* (Disney)
5. *Little Kitty* (Sanrio)
6. *Mickey & Friends* (Sanrio)
7. *WWE* (WWE)
8. *Toy Story* (Disney)
9. *Peanuts* (Iconix, Peanuts Worldwide)
10. *Sesame Street* (Sesame Workshop)
11. *Disney Fairies* (Disney)
12. *Thomas the Tank Engine* (Hit Entertainment)
13. *Garfield* (Paws Inc.)
14. *Dora the Explorer* (Nickelodeon)
15. *SpongeBob* (Nickelodeon)
16. *Spiderman* (Marvel/Disney)
17. *Ben 10* (Cartoon Network)
18. *Angry Birds* (Rovio)

19. *Batman* (DC/Warner)
20. *Barbie* (Mattel)

It is clear from the list that children's current culture carries a strong fantasy element. For the purpose of this study, only the first three on the list, namely *Disney Princess*, *Star Wars* and *Pooh*, will be elaborated on. Both *Disney Princess* and *Star Wars* contain multiple cultural depictions, emphasising the importance of including various cultures in order to create a message of optimum inclusion for Foundation Phase children.

*Disney Princess* is a collection of princesses who feature in Disney animation films. Although they do share some traits, each princess also has her own distinctive culture and characteristics. The settings differ between the various films and range from fantasy to realistic locations (Disney 2014).

**Table 4.10** Description of Disney Princesses (Disney 2014; England, Descartes & Collier-Meek 2011; Lacroix 2004, Disney Wikia 2014, *Aladdin* 1992; *Beauty and the Beast* 1991; *Brave* 2012; *Cinderella* 1950; *Disney Princess Enchanted Tales: Follow your Dreams* 2007; *Mulan* 1998; *Pocahontas* 1995; *Snow White and the Seven Dwarfs* 1937; *Tangled* 2010; *The Little Mermaid* 1989; *The Princess and the Frog* 2009)

| **Princess** | **Film and location** | **Culture depiction and characteristics** |
|---|---|---|
| Snow White | *Snow White and the Seven Dwarfs*<br>Locations: The queen's castle; cottage of the seven dwarfs; dwarfs' mine; forest; wishing well | Caucasian – short black hair, brown eyes, 14 years old. German. Rescues dwarfs in a traditionally feminine way – cooking, cleaning and acting as surrogate mother. Delicate features. Fearful, nurturing, affectionate, graceful, gentle, good, kind, naïve, joyful, sweet, resilient, optimistic, cheerful, innocent, shy, loveable, motherly, optimistic, slightly strict, sarcastic, playful. |
| Cinderella | *Cinderella*<br>Locations: King's castle; Cinderella's chateau; France; village | Caucasian, blond with blue eyes, between 16 and 20 years of age. French. Does domestic work. Submissive, passive, does not complain, always sings and smiles pleasantly while working. Delicate features, graceful. Sweet, hard-working, intelligent, |

| | | |
|---|---|---|
| | | diligent, good-hearted, strong-willed, independent, hopeful, determined, optimistic, skilful, tactful, caring, compassionate, stern when necessary. Can talk to animals. |
| Aurora | *Sleeping Beauty*<br>Locations: Moors; King Stefan's castle; England; forbidden mountain; Aurora's cottage; forest | Caucasian, golden hair, violet eyes, 16 years old. English. Affectionate, fearful, nurturing, tentative, passive, graceful, romantic, kind, friendly, responsible, obedient, sweet, polite, poised, selfless, shy, intelligent, generous. |
| Ariel | *The Little Mermaid*<br>Locations: Underwater city Atlantica; royal castle; beach; ocean | Caucasian/mermaid, red hair and blue eyes, 16 years old in first film, delicate features. Danish. Becomes a mother to Melody. Active as a mermaid, less active as a person. Wants to explore, independent, assertive, strong-willed, confident, curious, kind, adventurous, bright, spirited, idealistic, rebellious, intrigued, headstrong, mischievous, romantic, impulsive, brave, over-protective, perky, sweet, lovable, fun-loving. |
| Belle | *Beauty and the Beast*<br>Locations: Beast's castle; tavern; library; France; village; Belle's cottage; the black forest. | Caucasian, brown hair and eyes, between 18 and 19 years of age. French. Not active. Delicate frame, slender. Brave, nurturing, feminine, assertive, independent, fearful, intellectual – reads books, kind, sweet, courageous, polite, caring, wise, cunning, stubborn, spirited, compassionate, humble, understanding, independent, eccentric, passionate, witty, graceful, slightly conceited initially. |
| Jasmine | *Aladdin*<br>Locations: Agrabah; Cave of Wonders; China; Morbia; Odiferous; Isle of Galifem; Sultan's palace; Vanishing Isle. | Middle Eastern with Caucasian features, 16 years old. Iraqi. Dark hair, almond-shaped eyes, darker skin, exotic. Active, athletic, adventurous, free-spirited, intelligent, sweet, brave, caring, intuitive, outgoing, daring, headstrong, stubborn, rebellious, kind-hearted, a bit short-tempered. |

| | | |
|---|---|---|
| Pocahontas | *Pocahontas*<br>Locations: North America; ocean; village | Native American, dark hair and eyes, 18 years old. Tsenacommacah. Athletic, active, physically strong, intellectual, unemotionally stoic, assertive, affectionate, voluptuous, strong-willed, independent, loyal, noble, calm, caring, resourceful, wise, brave, bold, patient, humble, curious, outgoing, adventurous, peaceful, outspoken, strong-willed, independent, free-spirited, open-minded, tactful, determined, wilful, headstrong. Close relationship with nature. Uses wind and air as special power – very fast. |
| Mulan | *Mulan*<br>Locations: China; imperial city; family home; snowy mountains; forest; emperor's palace; Asia | Asian, black hair, brown eyes, 16 years old. Chinese. Strong, assertive, athletic, intellectual, physically strong, sensitive, submissive, tentative, troublesome, brave, independent, clumsy, outdoorsy, courageous, outspoken, clever, resourceful, witty, adventurous, tomboyish, creative, self-reliant, tenacious, unique, spirited, astute, sneaky, self-conscious, protective, alert, awkward, procrastinating, pensive, selfless, opinionated, impulsive, absent-minded, ambitious, dogmatic, modest. |
| Tiana | *The Princess and the Frog*<br>Locations: Maldonia; Tiana's palace; emporium; bayou of New Orleans; Duke's café; Mama Odie's tree; New Orleans; forest swamp | African-American, black hair, brown eyes, 19 years old. Career-oriented, good cook and waitress, domestic, affectionate, assertive, athletic, talented, intelligent, hardworking, sassy, honourable, loving, talented, modest, passionate, opinionated, stern, persistent. Can talk to animals. Turned into a frog and becomes human again. |
| Rapunzel | *Tangled*<br>Locations: Corona; Corona Castle; Rapunzel's tower; forest. | Caucasian, blonde hair, blue eyes, 18 years old. German. Strong-willed, has magical hair and healing abilities. Assertive, athletic, adventurous, curious, kind, playful, naïve, charismatic, feisty, defiant, kind, sweet, shy, romantic, energetic, confident, |

| | | |
|---|---|---|
| | | courageous, innocent, rightful, funny, child-like, creative, clever, determined. |
| Merida | *Brave*<br>Locations: DunBroch; DunBroch Castle; Scotland. | Caucasian, red hair, blue eyes, 16 years old. Scottish. Headstrong, free-spirited, defiant, wilful, adventurous, rebellious, tough, strong-willed, short-tempered sometimes, quick-witted, determined, unruly initially, tomboyish, outgoing, athletic, bold, brave, stubborn, rebellious, energetic, curious, kind, loyal, compassionate. |

From the table it is clear that *Disney Princess* comprises a variety of cultural features, ranging from countries to typical characteristics. The range of the product ensures that both local and global cultures are included as well as the introduction of new cultures and a strong fantasy element. Many of the films were derived from books.

*Star Wars* is as diverse in terms of characters and locations; there are literally hundreds of characters and tens of locations (*Star Wars* 2014). It is neither possible nor sensible for the current study to analyse all of the characters and locations or planets featured. It is possible to assume that the most popular characters account for a large part of the success of this licensed entertainment product. There is no data available for the most popular location, but locations include various fictional planets as well as spaceships.

**Table 4.11** Description of *Star Wars* characters (Empire 2014; *The Telegraph* 2014; *Star Wars* 2014, Disney Wikia 2014; *Star Wars Episode 1* 1999)

| **Character** | **Description** |
|---|---|
| Han Solo | Caucasian male. Human. Surly, wisecracking, dismissive, pilot, handsome, cocky, selfish, brave, cynical, loyal. An outlaw smuggler with a heart of gold. Can speak and understand alien languages. |
| Darth Vader | Male. Human. Covered in sinister black armour. Mechanical lungs. Dark enforcer, evil, villain, charismatic, serious, fearsome, aggressive, ruthless, intolerant of failure, dark, mysterious, murderous, afraid of loss. Eventually unmasked as redeemable cherubic nice guy. Can sense danger and perceive possible futures. |

| | |
|---|---|
| Bob Fett | Male. Human. Bounty hunter. Self-serving anti-hero. Faceless enforcer. All business, laconic and deadly, serious, fearsome, aggressive, ruthless. Superhuman warfare ability. |
| R2D2 | Astromech droid (robot). Resourceful, brave, skilled, courageous, cool-headed, loyal, faithful, friendly, helpful. Does not talk – makes noises. Irrepressibly cute. |
| Chewbacca | Male. Non-human. Huge, ape-like. An immense, fur-covered hero of great strength and loyalty. Gentle giant, compassionate, tough, benevolent, mighty, caring, protective. Super strong. |
| Princess Leia | Caucasian female. Human. Committed to peace, freedom and democracy. Gutsy, ravishing, brave, bold, enduring, headstrong, wise, loving, stubborn at times. |
| Yoda | Male. Non-human. Wise, powerful, lived 900 years, meditates, warrior, fast, agile, mischievous, sense of humour, determined, strict, caring, funny, silly, mischievous, grandfatherly. Telekinetic skills, uses the force. |

*Pooh* differs from both *Disney Princess* and *Star Wars* in that there is a relatively small cast of characters throughout the television series, storybooks and films related to this licensed entertainment product. Also, the only location is Hundred Acre Wood – the area where all the characters live; it is a natural setting (Just-Pooh 2014).

**Table 4.12** Description of *Winnie-the-Pooh* characters (Just-Pooh 2014; Lavasurfer 2014, Disney Wikia 2014; *Pooh's Heffalump Movie* 2005; *Pooh's Grand Adventures: The Search for Christopher Robin* 1997)

| **Character** | **Description** |
|---|---|
| Winnie-the-Pooh | Small golden bear. Not very smart but very loveable. Loves honey, thinking up poems and song. Playing with friends. The world's most loved bear. Innocent, fun, caring, brave, happy, gentle, friendly, lovable, simple-minded, childlike, oblivious, a worrier at times. Lives in a hollow walnut tree. |
| Eeyore | Blue-grey donkey. Gloomy, loses his tail often. Intelligent, quiet, keeps to himself and always depressed, dismal, sarcastic, cynical, depressed, pessimistic, slow, pouty, sorrowful, goodhearted. Dependent on friends, loves his friends. Lives in Eeyore's Gloomy Place. |

| | |
|---|---|
| Tigger | Resembles a tiger. Electrifying and exuberant. Bouncy and full of fun. Lives with Kanga and Roo. Fussy eater. Fun-loving, energetic, gullible, wacky, loyal, brave, goodhearted, sensitive, happy, cheerful, clumsy, friendly, lovable, curious, mischievous, quick, spirited, playful, silly, a show-off, childish sometimes, careless. |
| Piglet | Very small pig. Loves bright colours and to blow dandelions, sweet, innocent, cowardly, coy. Lives in Ashdown Forest in Hundred Acre Wood. Best friends with Winnie-the-Pooh. |
| Rabbit | A rabbit. Clever, pushy, decisive, organised, leads group events, frustrated, grumpy, bossy, short-tempered, antagonistic, kind-hearted, friendly, funny wise, nice, caring. Does not like to be interrupted. Lives in Hundred Acre Wood South. Loves gardening, good at spelling. Easily disoriented in unfamiliar surroundings. |
| Kanga and Roo | A mother and son pair of kangaroos. Lives in Hundred Acre Wood North. Kanga is a typical mother, also the only adult specified. She is motherly, protective, understanding, beautiful, sweet, caring. Roo is a young boy who thinks he can do anything. He is playful, curious, imaginative, brave, handsome. |
| Owl | Large owl. He is the wisest of all. Speaks eloquently, kind, absentminded, nostalgic, intelligent, talkative, proud. Lives in Hundred Acre Wood East. Like to tell stories, can be a bore. |
| Christopher Robin | Young Caucasian boy. Master of the Hundred Acre Wood. Helps his friends out of tricky situations – mostly Pooh. Imaginative, playful, cute, friendly, adventurous. Can talk to animals |

As in the case of *Star Wars*, the only human in *Pooh* is Caucasian. The other characters are fantasy and depict different types of personalities rather than different races. Hence, there could be rather an individual identification than a group identification. *Pooh* was originally a book.

All three licensed entertainment products discussed are multi-method, incorporating various toys, games and other products.

### 4.5.1 Evaluation of *Safari's Encounter with Drought* cultural sensitivity

| **Culture** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Local culture | ☐ | ☐ | ✓ |
| Global children's culture | ✓ | ☐ | ☐ |

*Locally sensitive*: African setting – aimed at African children. All characters are African. *Globally sensitive*: No global follow-through to connect the children with a global children's culture or any other culture. No other characters besides African, no other setting besides the local school and national park.

Below is the complete evaluation of *Safari's Encounter with Drought:*

| **Message** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Simple | ☐ | ✓ | ☐ |
| Repetitive | ✓ | ☐ | ☐ |
| Narrative | ☐ | ✓ | ☐ |
| Imaginative | ✓ | ☐ | ☐ |
| Positive | ☐ | ✓ | ☐ |
| **Language** | | | |
| Textually suitable | ☐ | ✓ | ☐ |
| Visually suitable | ✓ | ☐ | ☐ |
| **Media** | | | |
| Physically accessible | ☐ | ☐ | ✓ |
| Manipulatively accessible | ☐ | ✓ | ☐ |
| **Culture** | | | |
| Local culture | ☐ | ☐ | ✓ |
| Global children's culture | ✓ | ☐ | ☐ |
| TOTAL SCORE: **9** | | | |

(0–10 not likely to stick, 11–21 may or may not stick, 22 best chance to stick)

According to the grading scale *Safari's Encounter with Drought* does not contain all the elements required for the "stickiness" of a message towards drought resilience for Foundation Phase children.

## 4.6 DATA SET 6: Analysis of data to address secondary question 4: *How will the message be designed?*

Designing the message lies at the heart of this study. Guidelines for the message content, language, pictures and medium have been well established. The challenge is to incorporate all of these guidelines in designing the message. Now is also the time to return to the messenger.

### 4.6.1 The creation of the messenger

Although the author of this study will in effect be the creator of the message, the messenger must be visually available to the children; hence, a main character must be created to convey the message by means of a picture book. Gladwell (2013) explains the characteristics needed by messengers in order to make the message stick; he refers to these personalities as Connectors, Mavens and Salesmen:

- A Connector is someone who can bring people together – like a link between many people.
- A Maven is someone who collects knowledge and distributes it – they are respected for what they know and their opinion is highly regarded.
- A Salesman is someone with an innate ability to persuade others. If this message for Foundation Phase children is to "stick", all of these characteristics should be incorporated into the messenger.

With reference to section 4.5, the data will be used to identify the best physical and personality characteristics of the character to be developed. This forms part of the process of developing a connector, maven and salesman. All characters described in section 4.5 are part of the top three licensed entertainment products listed by Forbes (2012). Accordingly, it can be assumed that these characters have the "connection" ability, knowledge and persuasive power.

Of the 27 characters, 14 are human: 1 Middle Eastern, 1 Native American, 1 Asian, 2 humans in robot-like armour (race not distinguishable) and 9 Caucasian. 4 are male and 10 female.

Of the 11 non-human characters there are: 1 robot, 1 alien, 1 apelike, 1 bear, 1 pig, 1 donkey, 1 tiger, 2 kangaroos, 1 rabbit and 1 owl. 10 are male and 1 is female.

Two characters are human/creature combos: 1 mermaid/human; 1 African-American/frog. Both are female.

In total, there are 13 female characters and 14 male characters. The difference is not enough to conclude that any specific gender is given preference.

There are three more human characters than non-human characters. However, the non-human characters are humanised in terms of their conduct. It could be said that a human-like character might be preferred.

Of the human characters, 9 of the 14 are Caucasian. Shutts, Kinzler, Katz, Tredoux and Spelke (2011) conducted five studies pertaining to race preference in a South African context among young multi-racial children (aged 3 – 13). They found that these children did not favour people of their own race, preference was more over guided by perceived social status. Nevertheless, it would be preferred that the character of this study be depicted in an all-inclusive way with regard to race.

Of the 27 characters, 11 are identified as teenagers, 2 as children, 7 as adults, with the ages of the remaining 7 not indicated. It would seem as if age is not a distinguishing factor due to the range of ages (and lack of age indication).

In view of the data collected the character (messenger) will be female, 10 years old and of no specific race. Female was chosen in the light of the “mother earth” concept. The character will convey a message of earthy processes and therefore female was chosen. However, in an attempt not to exclude male readers, feminine traits of the character will not be in the forefront. An age of 10 years makes her old enough already to have some knowledge that Foundation Phase children will not have. In order to make her of no

specific race, a nonhuman skin colour will be chosen. Blue seems most appropriate, as it is a bright colour and also represents water.

Among the 27 characters noted, there are 202 different personality traits. Those occurring most frequently are brave (12), kind (10), sweet (9), intelligent (9), caring (9) and independent (7).

Less frequent but nonetheless noteworthy are wise (6), loyal (6), headstrong (6), friendly (6), curious (6), athletic (6), assertive (6), adventurous (6), strong-willed (5), playful (5), determined (5), stubborn (4), spirited (4), rebellious (4), mischievous (4), lovable (4), innocent (4), graceful (4), courageous (4), compassionate (4) and affectionate (4).

Of all the characters mentioned, 17 have some superhuman ability or other, either mystical, a once-off occurrence, trained or by means of extraordinary skills of technology. All the *Pooh* animal characters can actually also be included as having a superpower because they can talk and interact with humans.

**Physical characteristics of messenger:** female, 10 years old, blue

**Name of messenger**: Voda (means water in various languages)

**Primary personality traits:** brave, kind, sweet, intelligent, caring, independent.

**Secondary personality traits:** wise, loyal, headstrong, friendly, curious, athletic, assertive, adventurous, strong-willed, playful, determined, stubborn, spirited, rebellious, mischievous, lovable, innocent, graceful, courageous, compassionate, affectionate.

**Special power:** Can talk to and interact with animals and elements of nature. Can ride on the wind and swims very well.

Below is an illustrative depiction of how the character, Voda, and her primary characteristics were developed:


**Figure 4.5** Illustration of character development

### 4.6.2 The creation of the material

The character, Voda, will be the messenger in the picture book. According to Rex (2014) a picture book is either 32 or 40 pages long – it has to be in multiples of eight, but preferably not less than 32 or more than 40. Ochiltree (2014) states that 32 pages are preferred. However, both more or less agree on the creation of the book and outline the following steps:

- Write the text of less than 1 000 words, keeping page turns in mind.
- Create a dummy book consisting of 32 of 40 pages, including the covers, end paper pages and copyright pages.
- Distribute the text across the writable pages.
- Make rough drawings on each page to indicate the visual support for each section of text.
- Refine the thumbnails on the dummy book into loose sketches, and then into finished sketches for each page.
- Sort the pages and insert the text accordingly.

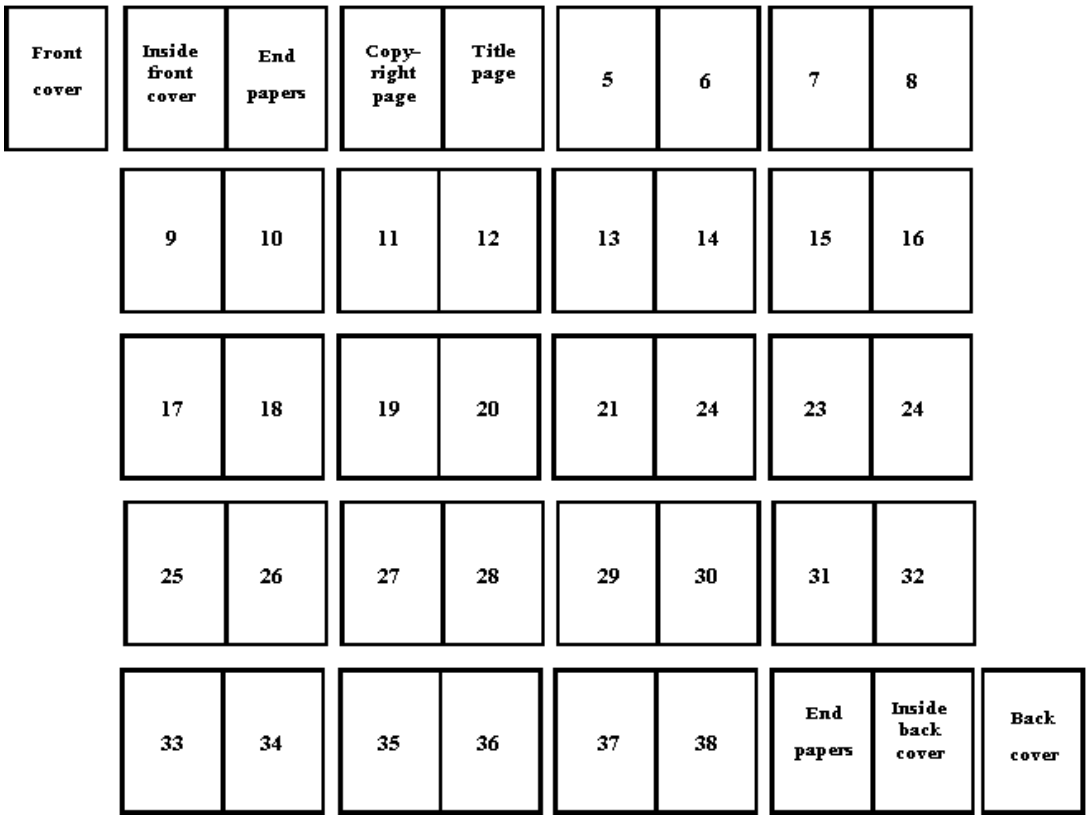



**Figure 4.6** Example of a 40-page picture-book dummy

After the picture-book dummy was made and the character developed, the picture book was produced. This process included the following steps:

- Drawing rough sketches of the pictures
- Leaving spaces for the text
- Painting the pictures with suitable colours
- Photographing the painted picture to convert it into digital format
- Inserting the text over the painted picture
- Printing all the pages
- Binding in book form

This is certainly not the process followed in the book-printing industry, but since the researcher was the sole creator and publisher of the material to be tested, it was found to be the easiest and most cost-effective way.

### **4.6.3** Evaluation of the developed material

After the development of the material, it was evaluated against the requirement for the message content, the written and visual language, the media, and the culture requirement as established by the study.

**Table 4.13** Drought preparedness and related text in the developed material

| **Theme** | **Drought preparedness knowledge requirements** | **Developed material** |
|---|---|---|
| Drought | What is drought? | “How can the rain be gone?” Voda frowned.<br>“It always comes.”<br>“Ask the wind,” the little yellow flower said.<br>“It’s his job to bring the clouds!”<br><br>It hadn’t rained in a long time.<br><br>There was very little water |

| | | |
|---|---|---|
| | Effect of drought on animals | "Taps will kill us one day! They just keep running. Is it so hard to close a tap, I ask you?" the duck snorted. |
| | Effect of drought on plants | The little yellow flower sighed. "We're thirsty. The soil is very dry. My roots cannot reach the water down below…"<br><br>The grass was dry and leaves were falling off the trees. |
| | Effect of drought on the environment | Voda looked down and saw that everything was very dull and brown. |
| | Effect of drought on people | There was very little water left and food was getting less. She had hardly enough flour for bread every day and nothing to sell at the market. How would they survive without water, food and money? |
| | Effect of drought on the economy | But the valley was dry and they needed rain. If the crops didn't grow, nobody would have anything to eat or sell. |
| Drought early warning | The water cycle | "Clouds are filled with water drops," the wind explained. "The sun picks the drops up from the sea and puts them in the clouds. When the clouds get full, I bring them to the land to empty themselves. That is how it rains." |
| | Rainfall | But the valley was dry and they needed rain. |
| | Clouds | "Ask the wind," the little yellow flower said. "It's his job to bring the clouds!" |
| | Groundwater | "The soil is very dry. My roots cannot reach the water down below." |
| | Rivers | The next river he saw was dry. |
| | Dams | After a while he saw a dam from the sky. |
| | Weather | Voda knew this was not right. It was summer and plants were supposed to be green and growing. |
| | Animals | … the fish coughed and turned around. "I'm going downstream to see if it's better there." A tear rolled down Voda's cheek. |
| | Environment | Voda looked down and saw that everything was very dull and brown.<br><br>The grass was dry and leaves were falling off the trees. |

| | | |
|---|---|---|
| Water | Conservation | He used the water for his vegetable garden and for him and his animals to drink. He never wasted a drop. When he bathed and washed his clothes, he used very little soap …<br>… that way he could reuse the water for his crops. |
| | Storage | The old man showed Voda how he collected water in large containers when it rained. Voda gathered all her friends and told them to put buckets out to collect water. |
| | Pollution | "Look at all the litter in the stream… You will get sick." At that moment, Voda saw a fish below the surface looking very ill.<br>"He is right," the fish said. "The water is bad… People wash their clothes here, the soap makes us very sick." |
| Food | Growing food | It is good to plant pumpkin and sweet potatoes – they don't need much water. |
| | Livestock | He used the water for his vegetable garden and for him and his animals to drink. |
| | Poultry | "I call it my waterhole!" the duck said. "It's the best water around – but I'm sure the people will find it soon. Next they will put a pipe in and connect it to the taps in their homes. Taps will kill us one day! They just keep running. Is it so hard to close a tap, I ask you?" the duck snorted. |
| | Storage | When it rains and there is a lot of food, he saves it for times when water and food are scarce. |
| Environment | Soil conservation | He never dumps any rubbish in the water or on the soil. |
| | Indigenous plants | They were heading for the wildflower patch. |
| | Indigenous animals | "People dump a lot of stuff in the sea too." She showed Voda all the rubbish floating around. "Please ask them to stop?" the dolphin asked. |
| | Recycling | He sorts all his waste together for recycling. |

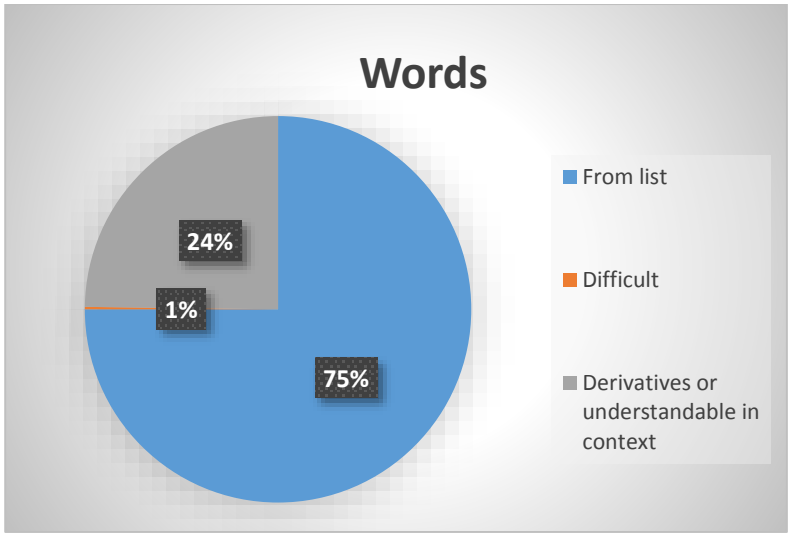



**Figure 4.7** Developed material word recognisability

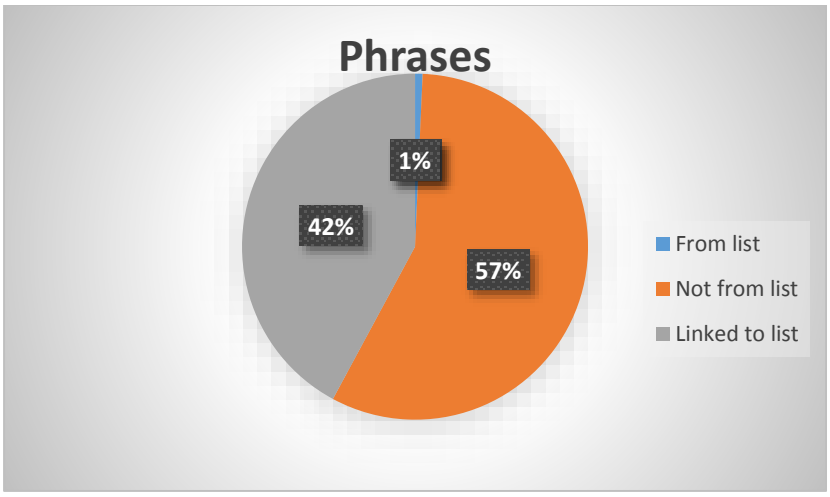
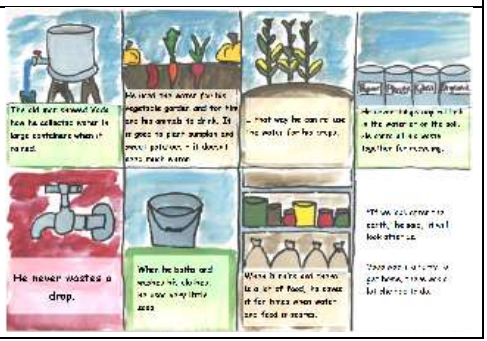
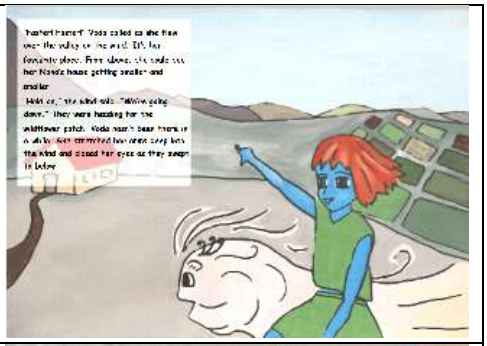
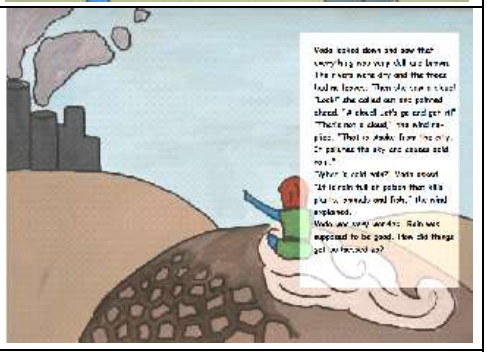
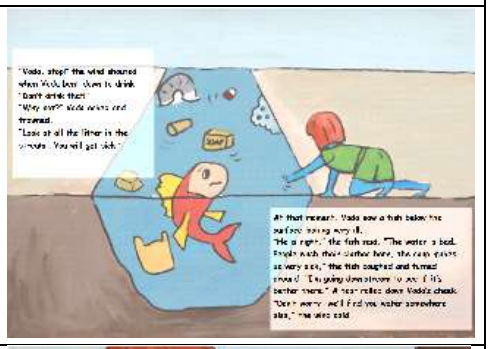
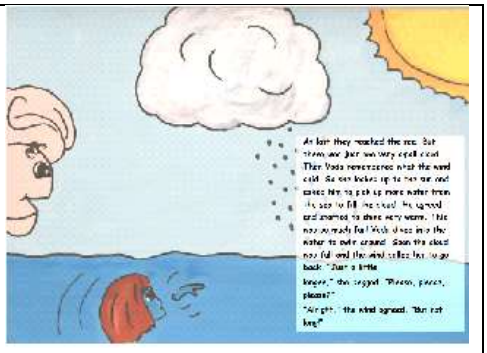
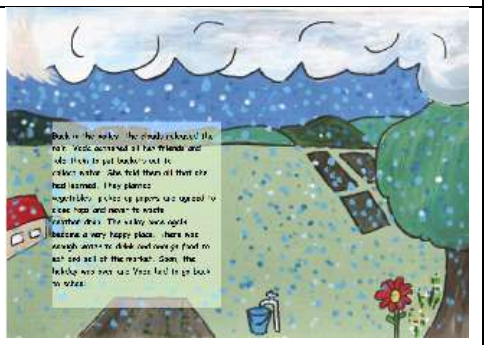
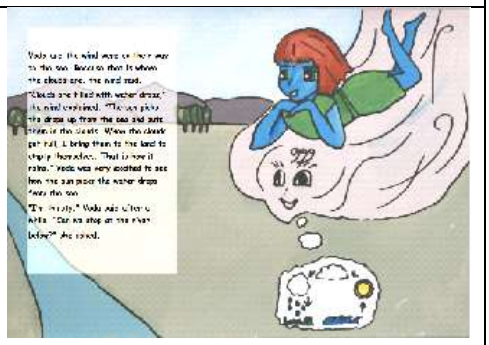


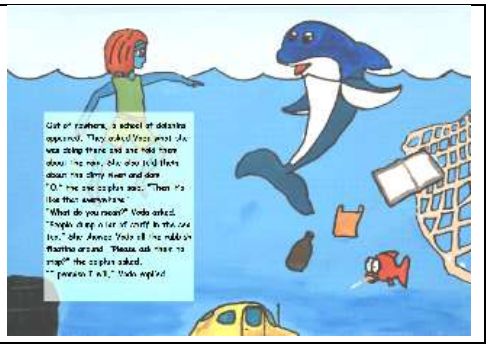

**Figure 4.8** Developed material phrase recognisability

**Table 4.14** Evaluating the visual features of the developed material

| FEATURE | EXPLANATION | EXAMPLES |
|---|---|---|
| **Colour** ✓ | Bright colours |  |

| | | |
|---|---|---|
| **Line**<br>✓ | Clear lines that highlight importance, direction, movement, energy and mood. |  |
| **Shape**<br>✓ | Realistic and representational |  |
| **Texture**<br>✓ | Indicates texture of object, e.g. smooth, rough, soft |  |
| **Subject matter**<br>✓ | Subject matter is clear, e.g. fish, bag, river. |  |
| **Character**<br>✓ | Reflects nature of characters and develops further understanding of characters |  |

| | | |
|---|---|---|
| **Setting**<br>✓ | Indicates setting clearly, e.g. inside, outside, night, day. |  |
| **Spatial relationship**<br>✓ | Spatial relationship between objects is clear, e.g. bigger, smaller, far, near. |  |
| **History**<br>✓ | Reference to culture |  |
| **Association**<br>✓ | Reference to possible previous experience, e.g. rain. |  |
| **Romancing**<br>✓ | Encourages imagination |  |

| | | |
|---|---|---|
| **Plot**<br>✓ | Develops the plot further than what the text does. |  |
| **Text**<br>✓ | Coherent with the text |  |

Complete evaluation of developed material:

| **Message** | **NO** (0) | **Somewhat** (1) | **YES** (2) |
|---|---|---|---|
| Simple | ☐ | ☐ | ✓ |
| Repetitive | ☐ | ☐ | ✓ |
| Narrative | ☐ | ☐ | ✓ |
| Imaginative | ☐ | ☐ | ✓ |
| Positive | ☐ | ☐ | ✓ |
| **Language** | | | |
| Textually suitable | ☐ | ☐ | ✓ |
| Visually suitable | ☐ | ☐ | ✓ |
| **Media** | | | |
| Physically accessible | ☐ | ☐ | ✓ |
| Manipulatively accessible | ☐ | ☐ | ✓ |
| **Culture** | | | |
| Local culture | ☐ | ☐ | ✓ |
| Global children's culture | ☐ | ☐ | ✓ |

TOTAL SCORE: **22**

(0–10 not likely to stick, 11–21 may or may not stick, 22 best chance to stick).

**Message**

*Simple*: Covers all themes, and all 25 needed knowledge requirements. The message is simple.

*Repetitive*: Important information with regard to the adverse effects of water pollution and the importance of water saving is repeated.

*Narrative*: Text is highly narrative. Only 127 of the 1 576 words are instructive.

*Imaginative*: Large fantasy element. Voda is blue, talks to plants and the wind, and can ride the wind.

*Positive*: Suggests better care of the environment and use of water, with clear indications of how to do it.

**Language**

*Textually suitable*: Of the 1 576 words in the text 240 unique words are from the list in Table 4.3. Some of these unique words are repeated, bringing the total words from the list used to 1 184. Of the remainder, 3 really difficult words are used, while the rest may be understood in context or because they are derivatives from the word list. The 3 difficult words are: downstream, wastewater, containers. Only 8 phrases of the possible 400 listed in Table 4.4 were used. However, a further 116 phrases are linked to phrases in the list but with substitute words. No long or difficult sentences were used – the longest sentence is 20 words. In total the readability is 71.5% as required by the rating scale for most suitable.

*Visually suitable*: All 13 features required for visual recognisability by Foundation Phase children are met.

**Media**

*Physically accessible*: Books are accessible almost everywhere.

*Manipulatively accessible*: Children will have the skills to open and page through the book, as well as read it with little – if any – aid.

**Culture**

*Locally sensitive*: Depicts family with the grandmother – most children in any location will have a grandmother.

*Globally sensitive*: Character was developed along the trends of global children's culture. It also includes an inside setting and various outside settings, as is the case in the licensed entertainment products.

## 4.7 DATA SET 7: Analysis of data to address secondary question 5:

*How sticky is the message?*

Prior to the fieldwork, a pilot test was conducted to test the measurement and data collection instrument as well as the developed material in part.

### 4.7.1 Pilot test: observation 1 and 2

The pilot tests (observation 1 and observation 2) were conducted on 22 and 25 August 2014 at each child's home. The pilot group of children consisted of 5 Foundation Phase children, aged between 5 and 8. Three were English Second Language (ESL) speakers and two were English First Language (EFL) speakers. Although it was decided only to use ESL children during the testing, including EFL children during the pilot test would give a clearer picture of text readability. The participant observation sessions were audio-recorded and transcribed. Notes were also made on the research tool during the observation.

**Table 4.15** Summary of observation 1 and 2

| Requirement | Outcome | Comment with example |
|---|---|---|
| Message | ✓ | Respondents understood the message – measured against content-related questions:<br><br>*"Plants get dry when the soil is dry."*<br><br>*"Voda and wind went to the sea to fetch water. For the flowers. The soil was dry."*<br><br>*"The best part is when the rain comes."*<br><br>*"Close taps. Put litter in bin. Collect water in buckets."* |
| Text | ✘ | Respondents were not able to read the text:<br><br>*"I'm still learning to read English."*<br><br>*"I know some of the words."* |

| | | |
|---|---|---|
| | | *"The book is long."* |
| Visual | ✓ | Respondents were able to pick their favourite picture and did not point out a picture they did not like. Pictures liked included:<br>*Spread 3-4: Voda and sad flower*<br>*Spread 9-10: Voda and Wind greeting Nana*<br>*Spread 17-18: Duck warning Voda and Wind about dirty dam* |
| Medium | ✓ | Respondents were able to open the book with the right side up and page through it. |
| Culture | ✓ | Respondents were able to relate with Voda and agreed to help her to save water. One respondent asked why Voda was blue and nobody else – but it did not make the respondent like Voda less. |
| Stickiness | ✓ | Respondents were able to recall content and engaged in a discussion about the message without needing to refer to the source. |

All respondents were able to recall the story, but not all of the detail. Even though they were able to recall the content after having the story read to them, none of them was able to read the entire story unassisted. Therefore, it was decided to reduce the text and use even fewer complicated words and sentences.

It was suggested that the textual suitability should be 80% and higher and not 70% or higher. Furthermore, during the actual triangulation testing, only ESL speaking children would be included as respondents – if they were able to manage the textual content, so would EFL speaking children. Also, both rural and urban Foundation Phase children would be included in the sample. Preference would be given to African-culture children to determine whether the local/global cultural mix was successfully implemented.

Besides the text, the format and visual content were not problematic, although a clear picture could only be given after the formal fieldwork data had been interpreted. The tool proved to be usable and sufficient. After the text was adapted, the picture booked looked as illustrated in the 17 spreads of figure 4.9

Please note the following with regard to the picture book that follows:

- Even though it is a 40-page picture book, the text and visuals only make up 34 pages. The remaining 6 pages are allocated for the inside front and back cover, the end pages, the copyright page and the title page, which are not shown in this thesis.
- The printing quality and readability of the example shown in this thesis was compromised by resizing – all spreads below are in reality A3 and more than 5 MB.

**SPREAD 1-2**

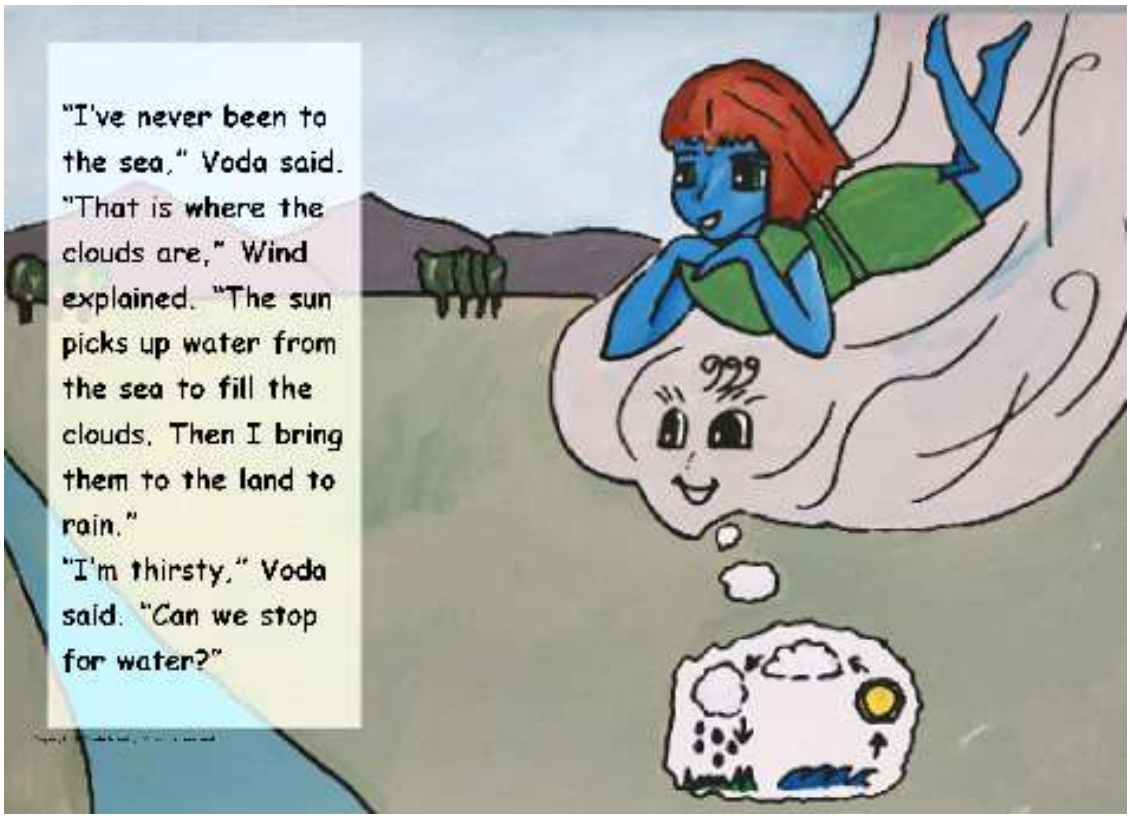
**SPREAD 3-4**


**SPREAD 5-6**

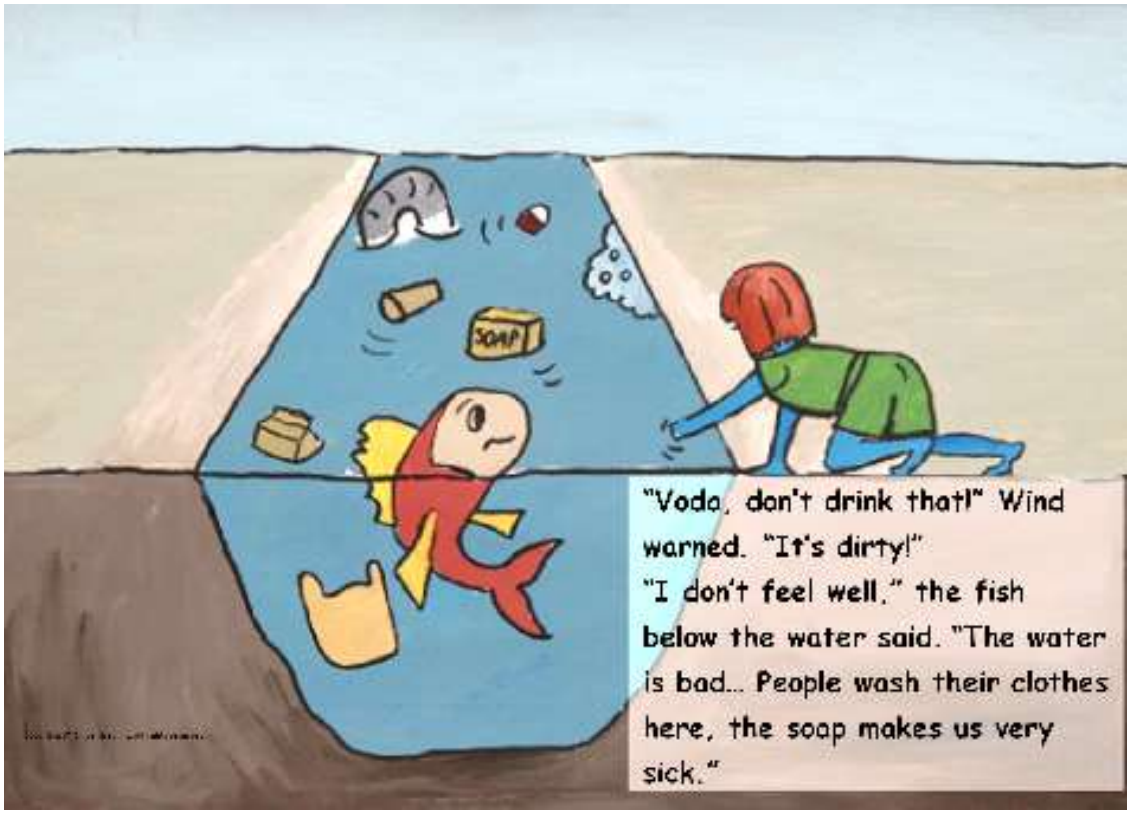
**SPREAD 7-8**


**SPREAD 9-10**

**SPREAD 11-12**

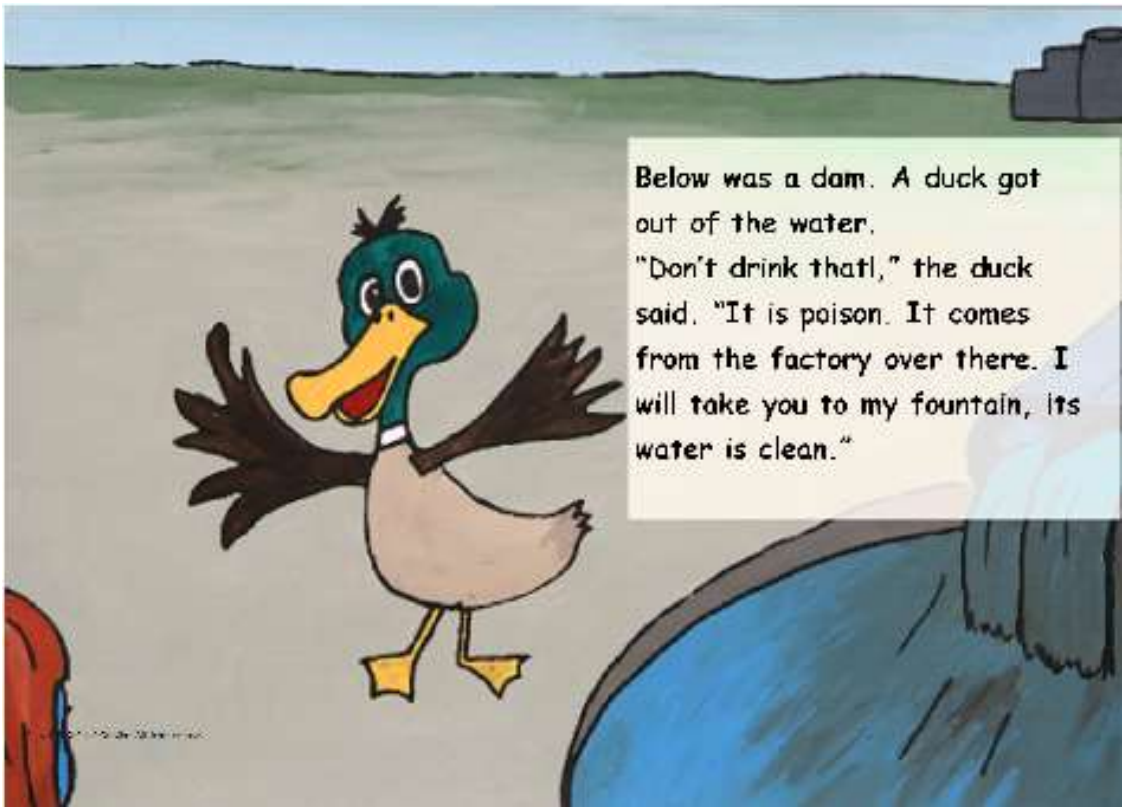



**SPREAD 13-14**

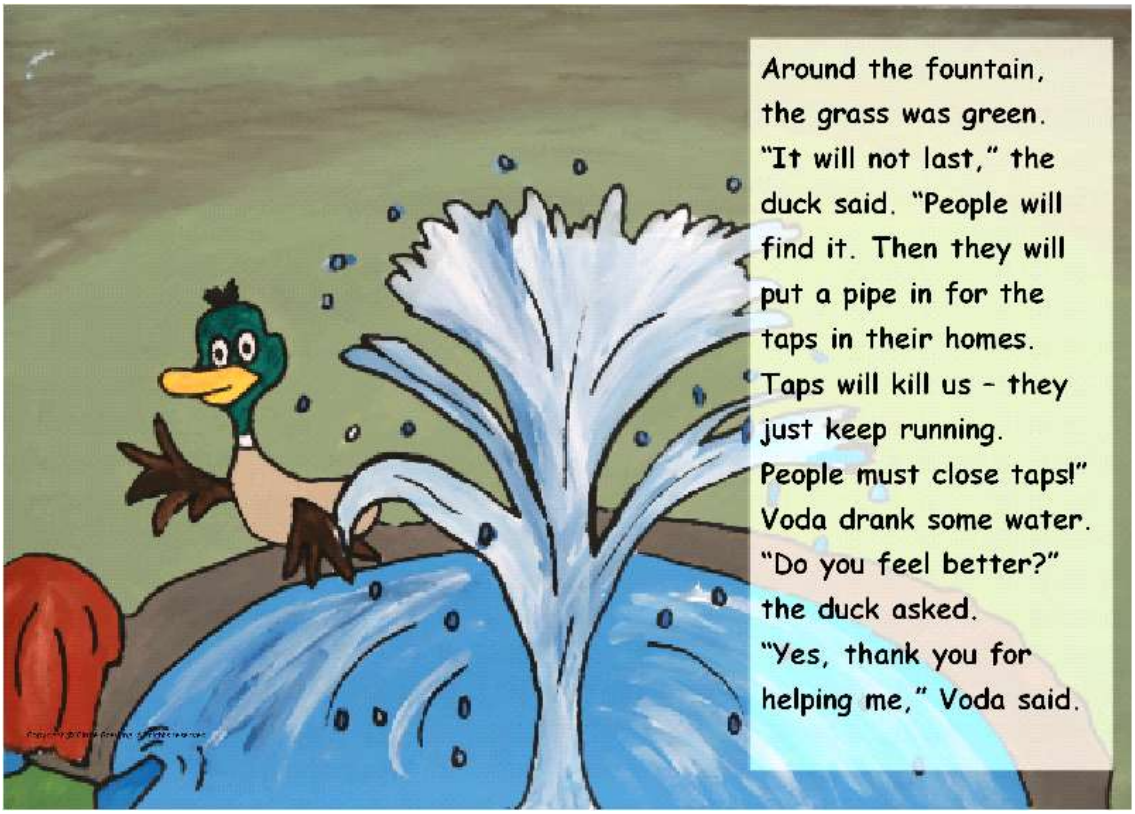


**SPREAD 15-16**


**SPREAD 17-18**

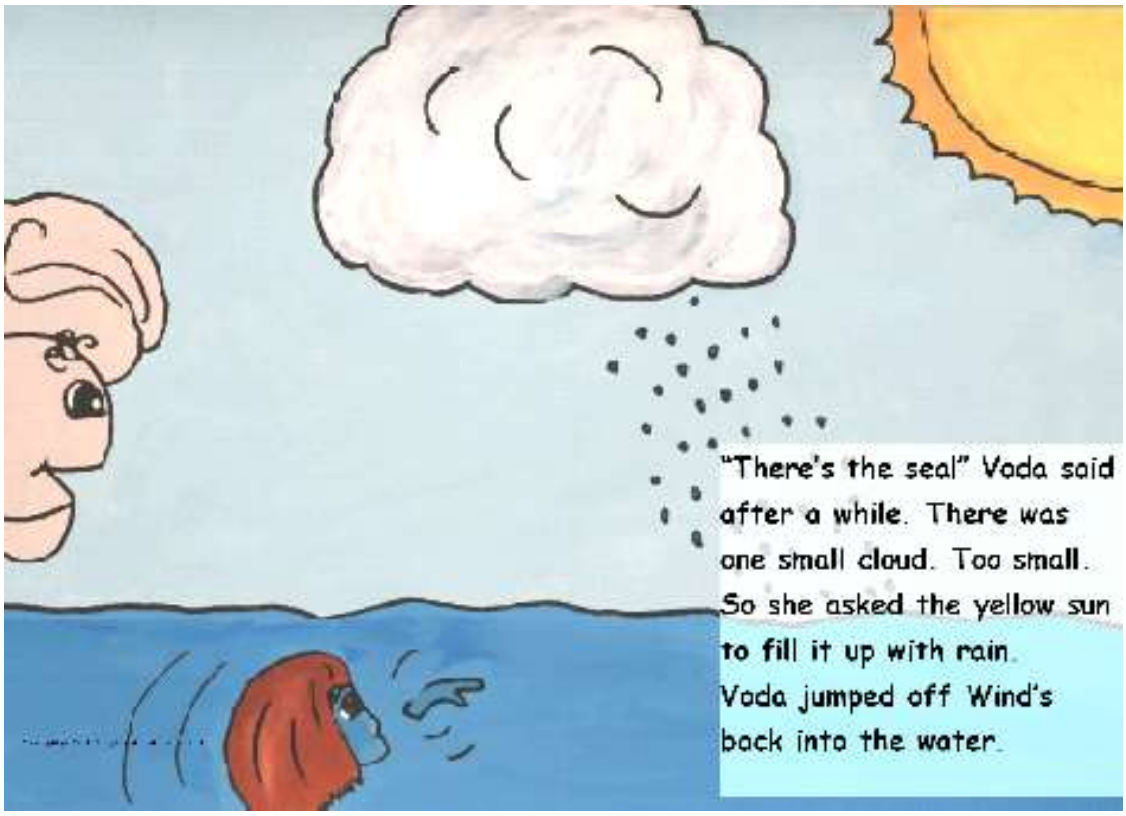


**SPREAD 19-20**

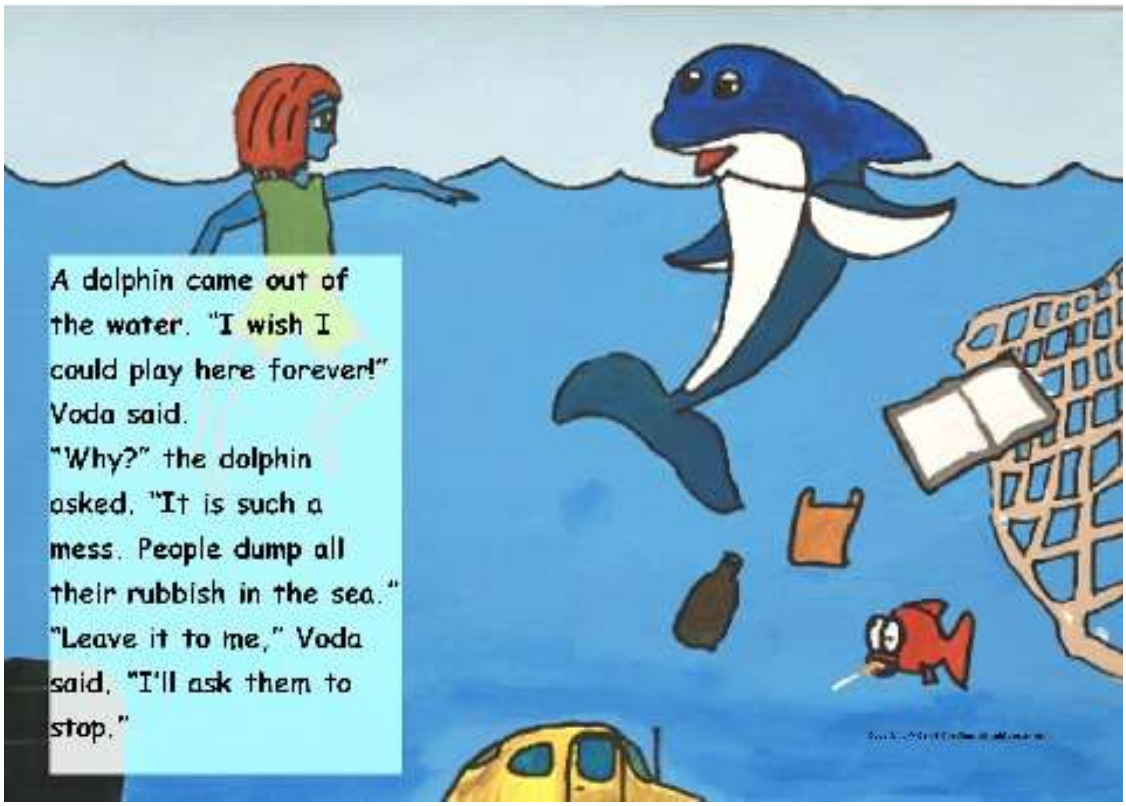



**SPREAD 21-22**

**SPREAD 23-24**



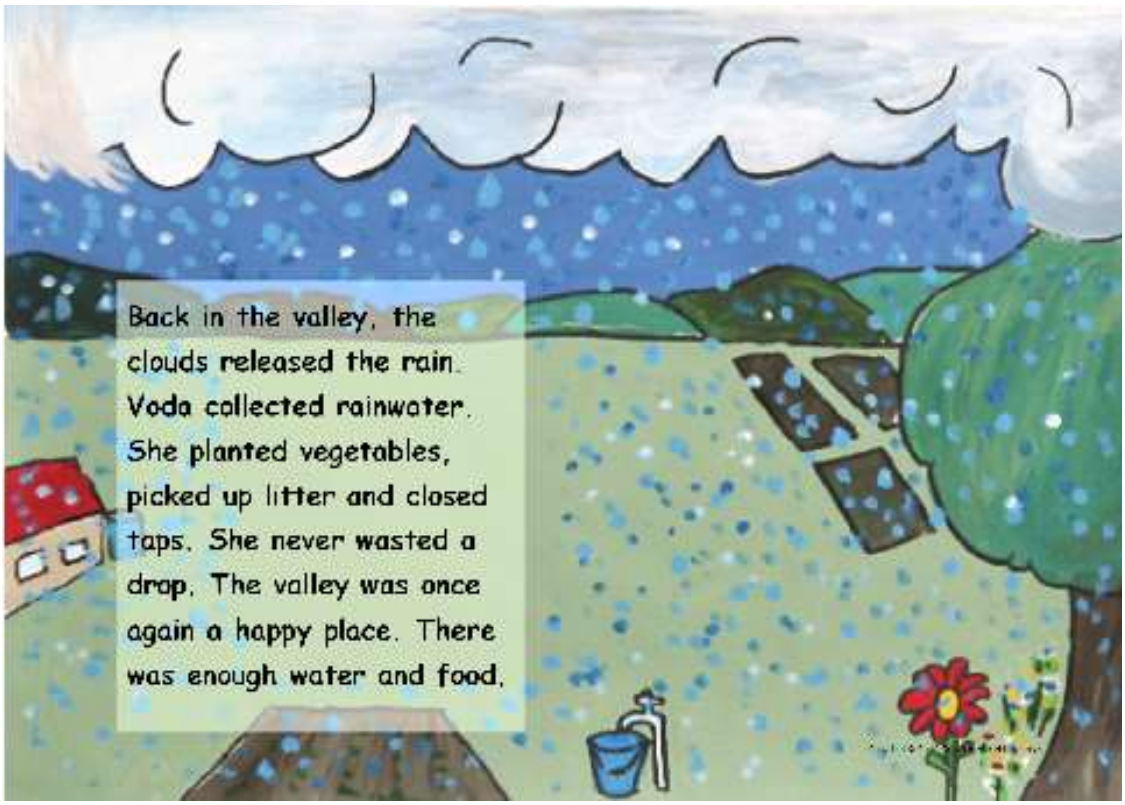

**SPREAD 25-26**



**SPREAD 27-28**


**SPREAD 29-30**

**SPREAD 31-32**




**SPREAD 33-34**

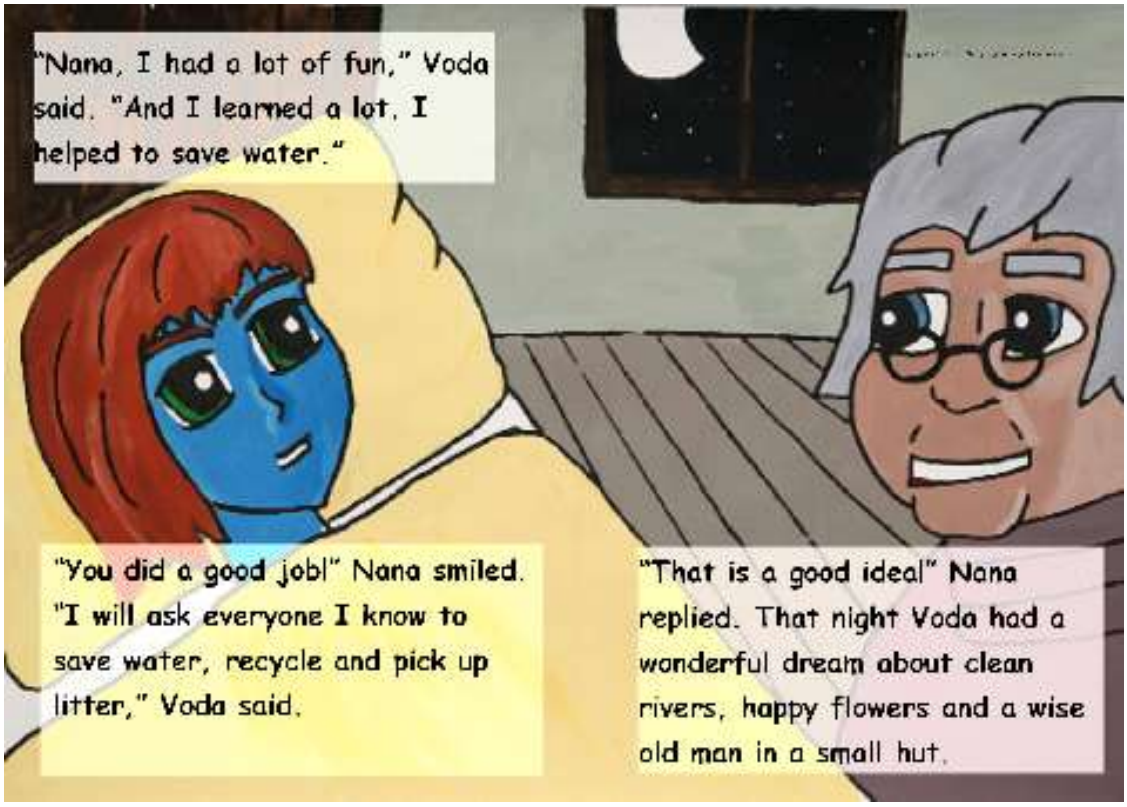



**Figure 4.9** *Voda* picture book

**Table 4.16** Adapted drought preparedness and related text in the developed material

| **Theme** | **Drought preparedness knowledge requirements** | **Developed material** |
|---|---|---|
| Drought | What is drought? | "The soil is dry and the rain is gone."<br>"Where did it go?" Voda wanted to know.<br>"Ask the wind," the flower said. "He must bring the rain."<br><br>"Where is the rain?" Voda asked.<br>"In the clouds," Wind said.<br>"Let's go get the clouds," Voda said. "I will help you." |
| | Effect of drought on animals | "Without rain, plants and animals die," Nana said.<br><br>"Taps will kill us – they just keep running. People must close taps!" |
| | Effect of drought on plants | "Without rain, plants and animals die," Nana said. |
| | Effect of drought on the environment | Earth was dull and brown. The rivers were dry and the trees had no leaves. |
| | Effect of drought on people | "We will have no money or food." |
| | Effect of drought on the economy | "We will have no money or food." |
| Drought early warning | The water cycle | "That is where the clouds are," Wind explained. "The sun picks up water from the sea to fill the clouds. Then I bring them to the land to rain." |
| | Rainfall | "The soil is dry and the rain is gone." |
| | Clouds | There was one small cloud. Too small. So she asked the yellow sun to fill it up with rain. |
| | Groundwater | The soil was very dry. |
| | Rivers | Earth was dull and brown. The rivers were dry and the trees had no leaves. |
| | Dams | Below was a dam. A duck got out of the water.<br>"Don't drink that!" the duck said. "It is poison. It comes from the factory over there. I will take you to my fountain. Its water is clean." |

| | | |
|---|---|---|
| | Weather | The air was warm. |
| | Animals | “I don’t feel well,” the fish below the water said. “The water is bad…” |
| | Environment | Earth was dull and brown. The rivers were dry and the trees had no leaves. |
| Water | Conservation | Close taps<br>Use bathwater to water crops<br>Recycle<br>Look after earth! |
| | Storage | Collect rainwater<br>Store food |
| | Pollution | “The water is bad… People wash their clothes here, the soap makes us very sick.”<br><br>“Don’t drink that!” the duck said. “It is poison. It comes from the factory over there.”<br><br>“It is such a mess. People dump all their rubbish in the sea.”<br>“Leave it to me,” Voda said. “I’ll ask them to stop.”<br><br>Do not litter |
| Food | Growing food | Plant pumpkin and sweet potatoes |
| | Livestock | Collect rainwater for him and animals to drink<br><br>Use bathwater to water crops and grazing |
| | Poultry | Around the fountain, the grass was green. “It will not last,” the duck said. “People will find it. Then they will put a pipe in for the taps in their homes. Taps will kill us – they just keep running. People must close taps!” |
| | Storage | Store food |
| Environment | Soil conservation | picked up litter |
| | Indigenous plants | Plant pumpkin and sweet potatoes |
| | Indigenous animals | “I don’t feel well,” the fish below the water said. “The water is bad… People wash their clothes here, the soap makes us very sick.” |
| | Recycling | Recycle |

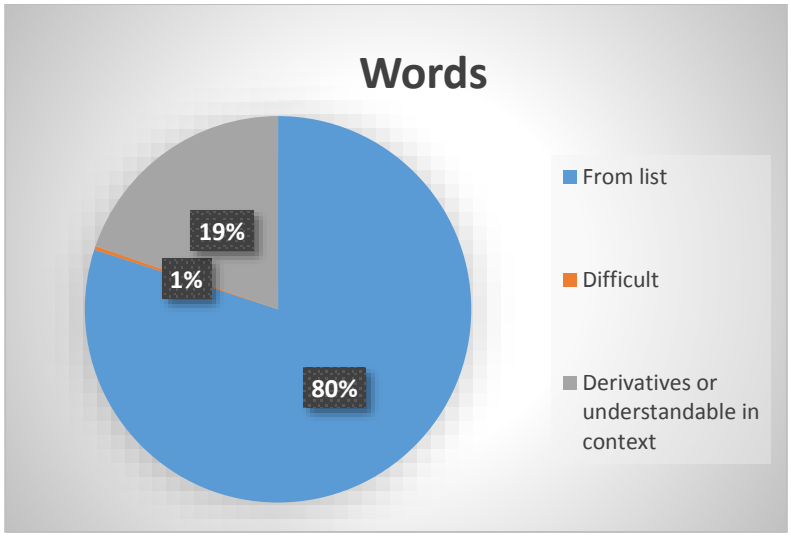



**Figure 4.10** Adapted developed material word recognisability

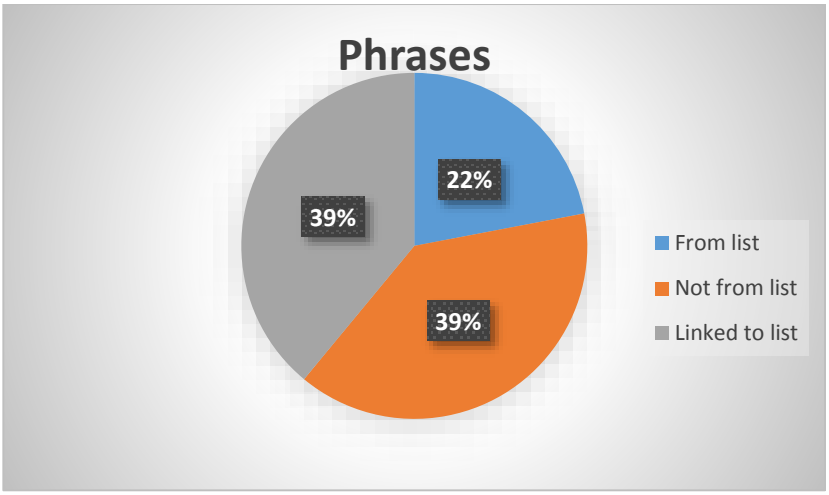



**Figure 4.11** Adapted developed material phrase recognisability

Of the 669 words in the text, 170 unique words are from the list in Table 4.3. Some of these unique words are repeated, bringing the total words from the list used to 535. Of the remainder, 2 really difficult words are used, and the rest may be understood in context or because they are derivatives from the word list. The 2 difficult words or concepts are: grazing and acid rain. Only 19 phrases of the possible 400 listed in Table 4.4 were used. However, a further 49 phrases are linked to phrases in the list but with substitute words. No long or difficult sentences were used – the longest sentence was 20 words. In total the adapted readability is pushed up to 80.4% as required by the new suggested rating scale for most suitable.

### 4.7.2 Observations 3, 4 and 5

After the shortcomings identified during the pilot study were rectified, three more observations were conducted during February 2015 to determine the outcome of the changes made. Altogether, observations 3, 4 and 5 involved 29 Foundation Phase children, all of whom were English Second Language speakers. The participant observation sessions were audio-recorded and transcribed. Notes were also made on the research tool during the observation.

**Table 4.17** Summary of observations 3, 4 and 5

| Requirement | Outcome | Comment with example |
|---|---|---|
| Message | ✓ | Respondents understood the message – measured against content-related questions:<br><br>*"They went to the sea to get clouds. Took the clouds to Voda's home because they had no food. There is only food when it rains."*<br><br>*"We must clean the sea. Don't put rubbish in the sea. Close taps. We can plant sweet potatoes and pumpkin."*<br><br>*"Animals and plants die without water. Soap makes the fish sick. We must not litter."* |
| Text | ✓ | All respondents were able to read the text unassisted. After they demonstrated the ability to read the text, the story was read together as a group activity. |
| Visual | ✓ | Respondents were able to pick their favourite picture and pointed out that there was not one picture they did not like. Favourites were:<br><br>*Spread 17-08: Duck warning Voda and Wind about dirty dam*<br>*Spread 29-30: How to save water*<br>*"All the pictures of Voda."* |
| Medium | ✓ | Respondents were able to open the book with the right side up and page through it. |
| Culture | ✓ | Respondents were able to relate with Voda and remembered her name. They also said that they liked her and would help her to save water. |
| Stickiness | ✓ | Respondents were able to recall content and engage in a discussion about the message without needing to refer to the source. |

It was interesting to note, although it was not intended, that 10 of the Foundation Phase children in the sample had some kind of barrier to learning. One of the 10 lay on the autism spectrum, but still participated with interest and was able to "stay in the story" for the entire duration of reading. Therefore, the researcher is confident to say that the communication requirements for Foundation Phase children as illustrated by DATA SETS 1 to 6, were indeed confirmed by DATA SET 7. Also, the need for textual adaptation illustrates the value of the requirements determined. The researcher mistakenly pitched textual suitability as sufficient at 70%, which was not the case. At least 80% textual suitability is required for message stickiness.

### 4.7.3 Follow-up questionnaire

After completion of the participant observation, the parents and/or caretakers of the participating children were contacted to answer the following questions:

- Do the children remember the story? Yes or No.
- What was the story about?
- What must you do to help Voda? (referring to drought risk reduction behaviour)

**Table 4.18** Summary of follow-up questionnaire

| Observation | Date of observation | Date of follow-up | Do the children remember the story? | What was the story about? |
|---|---|---|---|---|
| 1 | 25/08/2014 | 10/04/2015 | Yes | *We must not waste water.*<br>*It was in English.* |
| 4 | 05/02/2015 | 20/04/2015 | Yes | *About Voda.*<br>*We must save water.* |
| 5 | 05/02/2015 | 20/04/2015 | Yes | *About Voda.*<br>*Saving water.* |

The following comments were made, indicating that drought risk reduction behaviour did indeed stick:

- My mother must not use so much water to bath [Told to the mother]
- We must put up a water tank at home [Told to the father]
- We must plant sweet potatoes

- We must pick up litter

The outcome of the follow-up questionnaire is indicative of what Damerell et al. (2013) found in their study: that children do indeed talk about what they learn at home and/or to adults. The authors furthermore proved with their research that children who are informed about environmental issues have the ability to alter household behaviours. The results of this study's follow-up questionnaire confirms that children do indeed share their knowledge and are able to point out good and bad behaviour concerning drought resilience.

## 4.8 Conclusion

DATA SETS 1 to 6 comprised the information needed to develop a drought resilience message aimed at Foundation Phase children. A variety of sources was used to ensure the validity and reliability of the findings. DATA SET 7 was used as triangulation to determine the validity of the findings derived from DATA SETS 1 to 6. During the pilot study conducted as a preliminary exercise for DATA SET 7, the textual suitability was highlighted. According to the findings of DATA SET 2, the developed message had a 70% readability for Foundation Phase children. This proved insufficient. After alterations to the developed message, an 80% readability was achieved, which proved to be sufficient. All respondents of observation 3, 4 and 5 were able to read the text with an 80% readability. The textual changes made to the developed message ensured that all the requirements of a drought resilience message aimed at Foundation Phase children were met. DATA SET 7 confirmed that meeting these requirements do ensure a drought resilience message for Foundation Phase children that sticks – both immediately after exposure, and more than seven months after exposure. According to Gladwell (2013:89), a message that sticks can cause an epidemic. Therefore, it can be asserted that the drought risk reduction message developed by this study may indeed result in behavioural changes and consequently increase drought resilience.

The next chapter elaborates on the findings of the data collection and analysis presented in Chapter 4, as well as an in-depth discussion of the findings.

# Chapter 5

# FINDINGS, COMMENTS AND RECOMMENDATIONS

## 5.1 Introduction

Chapter 5 will provide a concise summary of the study. Furthermore, interesting points will be highlighted and shortcomings noted. Also, possible further research will be suggested and a general overview of the researcher's experience concerning the methodology and outcomes will be given.

## 5.2 Reflecting on the methodology

The title of the study, *A narrative communication approach towards drought resilience for Foundation Phase children*, involves three broad study fields: disaster management, communication and education. None of these were new or foreign to the researcher, who holds qualifications in all three fields with extensive experience in communication science and education, and a fervent interest in disaster management since commencing disaster management studies a couple of years ago. Interestingly, communication and education are key aspects in successful disaster management. However, together the three study fields deliver outcomes larger than the sum of their parts. This is true to the nature of trans-disciplinary research as discussed by Tranfield and Starkey (1998 in Saunders et al. 2009:6) in section 3.2.

In trans-disciplinary research, the results or contribution cannot be reduced to any sum of the parts contributed by the different disciplines independently. In essence, this suggests that the combination of communication, education and disaster management serves a bigger purpose that does not exist separately in any of the three disciplines.

The critical realism philosophy, discussed in section 3.3, on which this research was based, seems to have been appropriate. As Krauss (2005:762) notes, the goal of critical realism is to discover both observable and non-observable influences that generate a certain outcome. Some of the requirements for communication with Foundation Phase

children discovered in this study were observable, like reading ability, and some were non-observable, like culture. But all requirements together, answered the "what" of this study: What are the requirements for a narrative communication approach towards drought resilience for Foundation Phase children? Asking "what" instead of "how", was also noted as true to the nature of critical realism nature in Chapter 3.

Also supported by critical realism is the triangulation applied in the study. As suggested by Sobh and Perry (2006:1026) in section 3.3, this is a two-stage approach where the first stage builds a theoretical framework, and the second stage confirms or disconfirms the framework. DATA SETS 1 to 6 of this study built the theoretical framework, and DATA SET 7 confirmed it.

It was interesting to note how the initial less generous application of the outcome from DATA SET 2 (textual suitability) resulted in disconfirmation by the pilot study. Textual suitability was not applied strictly enough to the narrative communication approach; therefore the Foundation Phase children were not able to read the story unassisted – not even the EFL speaking children who participated in the pilot study. After adapting the text to better suit the textual requirement as identified by DATA SET 2, ESL speaking Foundation Phase children were able to read the text unassisted – even those with learning barriers.

The above research experience may indicate that there is a possible weighting embedded in the requirements for a narrative communication approach for Foundation Phase children – this could be a further research opportunity. Is each of the communication requirements for Foundation Phase children equally important?

In conclusion, employing both an inductive and a deductive approach in this study was indeed beneficial to the validity of the research as suggested by Saunders et al. (2006:128) in section 3.4, whereby the inductive enquiry involved searching for meaning and the deductive enquiry involved testing the theory (Mouton 2002:117).

## 5.3 Considering drought resilience

The need for child-centred disaster risk reduction cannot be overemphasised. This was elaborated on at length in section 1.2.2 and again in sections 2.2.3 and 2.4. Key to disaster risk reduction is building resilience, hence Plan International's (2010:3) child-centred disaster risk reduction definition: *An innovative approach that fosters the agency of children and youth, in groups and as individuals, to work towards making their lives safer and their communities more resilient to disasters*. This was exactly what this study attempted to do – where the narrative communication approach was innovative. However, "innovative" in itself does not necessarily guarantee achieving resilience. Therefore Shiwaku et al. (2007:580) proposed applying the Rohrman awareness model (1998) in section 1.2.2 with its three levels – risk appraisal, decision for prevention and risk-reduction – to an educational framework. Such a framework should not merely provide information, but rather enhance awareness and promote action for disaster reduction.

Although risk reduction material for children is available, Wisner (2006:69) identified a gap in these materials in section 1.2.4 in that many of the risk-awareness aids developed for children and youth fail to explore the true nature of risk reduction.

In order to include the true nature of drought risk reduction with the aim of building resilience, vital drought mitigation information should be included in the message. In section 2.4 *The Guardian* (2012), the Lincoln National Drought Mitigation Centre (2014), the US Drought Portal (2014), PreventionWeb (2006) and the Delaware River Basin Commission (2014) agreed on several mitigation skills that are appropriate for Foundation Phase children. These include: reading early warning signs, understanding the water cycle and conserving water, planting water-wise vegetable gardens, preventing water pollution, participating in rainwater harvesting and planting indigenous trees. All of these drought mitigation principles were included in the material developed by this study, except planting indigenous trees. Therefore, the researcher argues that the narrative communication approach towards drought resilience developed for Foundation Phase children in this study, does indeed explore the true nature of drought risk reduction.

A unique feature of the material developed by this study is that it merges scientific knowledge with indigenous knowledge. In section 2.3.2 the UNEP (2008:67) noted that

most of the indigenous knowledge drought indicators are based on environmental cues and the behaviour of animals. Various environmental cues were included in the material: dry flower, dull plants, sick fish, migrating animals, etc. In combination with scientific indicators, like rainfall, soil moisture, river levels, cloud cover, it is believed that a good drought mitigation foundation was laid and that drought resilience is indeed probable.

## 5.4 Assessing the message

In section 2.5.1, using a narrative approach was found to be useful in communication with children. Fisch (2000, in Kirkorian, Wartella & Anderson 2008:51) suggests that narrative and educational content should be integrated as much as possible. Hamilton and Weiss (2005:1-11) agree by reasoning that stories are at the core of all the things that make us human and that they are the oldest form or education. **They argue that children are born with an innate ability to make sense of their world by means of stories and that stories are the way in which the brain stores information.** Therefore, this study embarked on storytelling to communicate a drought resilience message. However, storytelling without a fantasy element may not have been as effective.

Gladwell (2013:101-118) highlights the importance of integrating reality and fantasy. Children are much more receptive to messages where fantasy and reality are fused than when fantasy and reality are separated. However, telling a story containing fantasy elements still requires a blueprint, or model, to ensure the inclusion of other age-appropriate elements required for successfully communicating with Foundation Phase children.

The success of the narrative communication approach in this study largely depended on the use of a good communication model. Foulger's (2004) ecological model of the communication process was adapted for this purpose. As noted in section 1.2.3, Foulger's model was chosen for a variety of reasons:

(i) It assigns an active role to the receiver of the message. Due to this characteristic of the model, it was possible to include the Foundation Phase children in the communication process – the participant observation fieldwork not only served the purpose of triangulation, but also completed the suggested communication process. The Foundation

Phase children in the sample had the opportunity to relay their understanding of the message. A sample of participants was also given the opportunity to give feedback concerning the message up to seven months after the message was initially communicated. This was done in order to further measure the success and stickiness of the message.

(ii) It allows for different interpretations of the message. Again, the triangulation exercise allowed for the expression of different interpretations of the message. However, it was found that most Foundation Phase children interpreted the message the same – indicating that the message was clear and unbiased with not much room for misinterpretation.

(iii) It recognises the different types of language use in different media. Conveying a picture-book message to Foundation Phase children required a definite language. Firstly, words and phrases familiar to Foundation Phase children must be used. "Reading" language and "speaking" language differ. Therefore, Foundation Phase children may understand more complex talking, but less complex writing. Furthermore, as explained in section 2.6.4, picture books limit the number of words used to stay true to the nature of picture books, in other words, there are more pictures than text.

(iv) It proposes that receivers learn about the media by using the media. Each time a child is exposed to read a picture book, they become more familiar with the medium.

(v) It notes that the creators of the message actually invent and evolve language. Although the creator of the message developed in this study used words and phrases as determined by DATA SET 2, it was arranged in an innovative way – to increase drought resilience for Foundation Phase children.

(vi) It acknowledges that the messages constructed can in fact be imperfect representations of the meaning actually imagined. In order to prevent this, the deductive triangulation process was implemented to produce DATA SET 7, which confirmed that the intended message was well represented.

However, arriving at the intended message was not without incident. As discussed in section 4.7, Foundation Phase children were not able to read the initial text unassisted.

Even though familiar words were used, the suggested phrases were not utilised to the extent that they should have been. After the necessary changes were made, Foundation Phase children were able to read the story unassisted. This highlights the importance of converting the message into a language that Foundation Phase children will be able to understand. In section 2.5.1 Gladwell (2013:101-118) also emphasises that children need to understand the message for it to have any potential effect when he discusses the analysis of young children's television programmes *Sesame Street* and *Blue's Clues.* Hence, there is no uncertainty pertaining to the importance of textual understanding when communicating with children.

Although Jongejan, Verhoeven and Siegel (2007) warn about the challenges children face with languages other than their mother tongue in section 2.5.2, it was decided to test the adapted text with English Second Language speaking Foundation Phase children only as it can be assumed that English First Language speaking Foundation Phase children will naturally be able to read it. It was found that the adapted text fell within the readability skills of ESL speaking Foundation Phase children.

However, text is not the only consideration in communicating with children. Eisner (1994: 88) highlights the fact that the materials presented affect values that are often not recognised by children or teachers. The illustrations, language and emphasis given to characters in stories all express values that influence thought patterns and behaviour.

In section 2.5.2 the use of pictures to communicate with children was discussed – pictures aid understanding and fill gaps where the text fails to portray the situation fully. Guijarro (2013:345–346) explains that pictures can be used to reflect whatever is difficult to express in words. The pictures in the material developed in this study were used to create narrative tension, emphasise importance and create a connection between the characters in the story and the child reader.

A further requirement that demanded a substantial amount of time was creating a character that can communicate the drought resilience message for Foundation Phase children. In section 4.6.1 Gladwell (2013) explains the characteristics needed by messengers in order to make the message stick; he refers to these personalities as Connectors, Mavens and Salesmen.

A Connector is someone who can bring people together, a Maven is someone who collects knowledge and distributes it, and a Salesman is someone with an innate ability to persuade others. All these traits were incorporated into the character of the picture book used to communicate a drought resilience message to Foundation Phase children. Voda – the character created – was able to bring groups of children together to listen to her story. All the children agreed that they would help her to save water immediately after being exposed to the message. Up to seven months after the initial exposure to the message, a sample test indicated that the children still remembered Voda, as well as the story.

## 5.5 Conclusion

The findings of the study show that there is a lack of age-appropriate drought risk reduction material for Foundation Phase children. The study was built on a theory that there are certain requirements in order to communicate an age-appropriate drought resilience message successfully to Foundation Phase children. The theory is that when A (requirements) is met, B (effective communication process) should be achieved. In section 2.1 Sutton and Straw (1995:387) note that a theory is in effect about the connections between phenomena. Gill and Johnson (2002) cited in Saunders, Lewis and Thornhill (2009:37), agree by arguing that "it is also evident that if we have the expectation that by doing A, B will happen, then by manipulating the occurrence of A we begin to predict and influence the occurrence of B".

Accordingly, the researcher believes that if the requirements of communicating with Foundation Phase children are correctly manipulated, the stickiness of a drought resilience message will be guaranteed. In order to determine these requirements, key components of a cyclical communication model had to be studied and adapted to be suitable for a Foundation Phase target audience.

Firstly, it was necessary to determine age-appropriate message content for Foundation Phase children. Much of the drought risk reduction information available is presented as complex data sets or at a level that exceeds the comprehension ability of a Foundation Phase child. Accordingly, the most crucial information was moulded to suit the demands

of Foundation Phase children – aligned with the national curriculum content for Foundation Phase children. In doing so, the first secondary research question was answered: *What is the necessary drought risk reduction information to be communicated?*

After the message content was determined, it had to be coded into an age- appropriate format. This was done by analysing the preferred coding options for Foundation Phase children. It soon became apparent that words alone would not suffice – the larger part of a Foundation Phase child's understanding depends on visual stimuli. However, it was also found that inappropriate language application resulted in misunderstanding. Therefore, the textual and the visual coding needed to be used in unison and as per age-appropriate requirements. The national curriculum and popular media guidelines in this regard were analysed, thus answering the next secondary research question: *What are the most appropriate textual and visual coding options?*

Once the message is coded, it must be sent via the most suitable communication channel. This study found that a picture book is the most age-appropriate and also the preferred communication channel for Foundation Phase children. Besides the fact that the secondary data evaluation pointed towards picture books, these books are also a communication channel or medium that Foundation Phase children can easily obtain and manipulate. These findings answered the third secondary research question: *What is the most appropriate communication channel?*

On the basis of the foregoing results, it was possible to develop an age-appropriate message towards drought resilience for Foundation Phase children. This approach included studying the local and global cultural needs as well as the characteristics of an age-appropriate messenger. Thereafter the technical requirements of picture book were noted in order to produce the final message. This answers the fourth secondary research question: *How will the message be designed?*

The final secondary research question: *How sticky is the message?* was answered by means of participant observation that also served as triangulation. It was found that the message did indeed stick, that is, Foundation Phase children paid attention to the message, understood it and remembered it well enough to engage in a discussion about it. It was also found that the children remembered Voda and the story up to seven months after the

initial exposure. There was also an indication that they were able to distinguish between good and bad behaviour concerning drought resilience.

The researcher is satisfied that this research fulfilled its initial purpose in studying a narrative communication approach towards drought resilience for Foundation Phase children. The study also succeeded in answering the secondary research questions in determining the message, textual and visual, the communication channel and the message design requirements, as well as determining the cross-sectional stickiness of the message. Accordingly, it can be said that the age-appropriate message developed by this study does indeed fulfil a mitigation role towards drought resilience in the disaster management cycle – it educates towards preparedness.

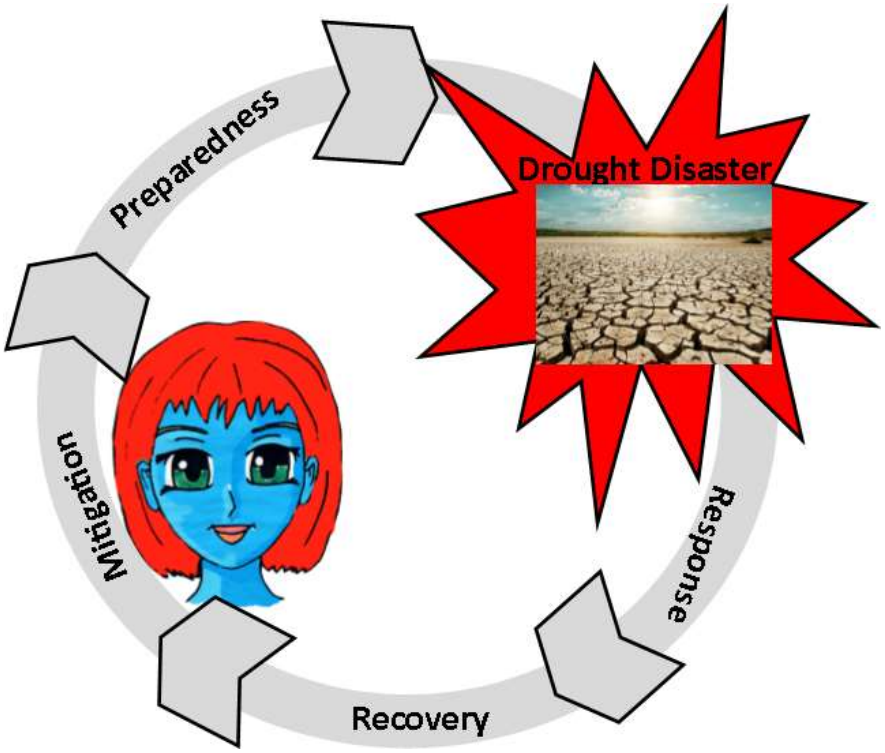



**Figure 5.1** Positioning the findings of this study within the disaster management cycle

The limitations of the study included the ever-changing global children's cultural landscape. However, the model allows room for adaptation in recognising both the local and the global children's culture in message development. Furthermore, triangulation was not done on a representative sample for reasons discussed in Chapter 3. Interesting, though, is that the limitation, namely global children's culture, also serves as justification for a non-representative sample in that the global children's culture groups children from

around the world in a like-mindedness. However, even though great care was taken to adhere to scientific objectivity in preparing the material, constructing the data collection tool, and during analysis, potential research bias is a possibility. Due to a cost implication and a time constraint, the research – who is by no means an artist – illustrated the material. The text of the material was also written by the researcher, however, the initial textual flaw was corrected, indicating the researcher's awareness that her own creations may not always be the best option. Rather, the study proves that the model serves as a good guideline to create age appropriate drought risk reduction material, but it is suggested that such material be created by a team of experts in publishing.

Furthermore, this study points to opportunities for further research. As mentioned before, the weight of the communication requirements can be measured. Also, the long-term effect of the message can be studied as well as the application of the narrative communication approach towards other disasters, such as fires and floods. It would be interesting to determine whether or not the application of this narrative communication approach fosters long-term behavioural changes and deep cultural changes in order to create healing and compassionate environments.

In conclusion, this study succeeded in determining and applying the age-appropriate requirements for a narrative communication approach towards drought resilience for Foundation Phase children in creating a message that sticks.

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# APPENDICES

# Appendix A: Ethics clearance

**Faculty of Natural and Agricultural Sciences**

24-Oct-2014

Dear Miss Cinde Greyling

**Ethics Clearance:** A narrative communication approach towards drought resilience for foundation phase children

**Study Leader/Supervisor:** Terblanche, Lydie

**Principal Investigator:** Miss Cinde Greyling

**Department:** DiMTEC (Bloemfontein Campus)

This letter confirms that a research proposal with tracking number: **UFS-HSD2014/0308** and title: **'A narrative communication approach towards drought resilience for foundation phase children'** was given ethics clearance by the Ethical Committee.

Please ensure that the Ethical Committee is notified should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Please also ensure that a brief report is submitted to the Ethical Committee on completion of the research. The purpose of this report is to indicate whether or not the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the Ethical Committee should be aware of.

**Note:**
1. This clearance is valid from the date on this letter to the time of completion of data collection.
2. Progress reports should be submitted annually unless otherwise specified.

Yours Sincerely

Prof. Neil Heideman
Chairperson: Ethical Committee
Faculty of Natural and Agricultural Sciences

# Appendix B: Informed consent


**Researcher:**
**C Greyling**

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Date: xxxxxxx

## INFORMED CONSENT

Dear Parent/Carer

I would like to invite your child to take part in this research project:

*A NARRATIVE COMMUNICATION APPROACH TOWARDS DROUGHT RESILIENCE FOR FOUNDATION PHASE CHILDREN*

This study is aimed at increasing children's knowledge about drought resilience in the most suitable way.

I would like your child to participate because he/she falls within the Foundation Phase age group. His/her input would allow me to determine whether or not the material is suitable for Foundation Phase children.

Your child is at no risk in taking part in this study. The location, date and time of the research will be determined by your preference and you are most welcome to attend. Your

child will be given a picture book on drought in which drought information is presented textually and visually. I will observe to what extent your child can read the text and understand the pictures. The entire process will take about 45 minutes and will include some verbal questions about the picture-book content. Please note that an audio recording will be made of the research session to limit researcher misinterpretation and data recording mistakes. The audio recording will never be given to any third party, nor the data recorded by hard copy. It will remain the sole responsibility of the researcher to interpret the data, and only final findings will be made public. The picture book remains the property of the researcher and will be collected after the research session.

Participation is entirely anonymous. Only your child's gender, age and race will be noted and no information recorded will be linked to your child's identity.

I am sure your child will benefit from this study as he/she will gain some information about drought.

While I greatly appreciate your child's participation in this important study and the valuable contribution he/she can make, his/her participation is entirely voluntary and he/she is under no obligation to take part in this study. If you do choose to allow your child to take part, and an issue arises which makes you uncomfortable, you may at any time stop your child's participation with no further repercussions.

If you experience any discomfort or unhappiness with the way the research is being conducted, please feel free to contact me directly to discuss it, and also note that you are free to contact my study supervisor (indicated above).

Yours sincerely

_____

C Greyling

---

Please fill in and return this page. Keep the letter above for future reference

---

Study: *A NARRATIVE COMMUNICATION APPROACH TOWARDS DROUGHT RESILIENCE FOR FOUNDATION PHASE CHILDREN*

Researcher: *C Greyling*

---

Your name and surname: _____

Children's age: _____

Your contact number: _____

- I hereby give free and informed consent that children may participate in the abovementioned research study.
- I understand what the study is about, why the children are participating and what the risks and benefits are.
- I give the researcher permission to make use of the data gathered from the children's participation, subject to the stipulations she has indicated in the above letter.

Signature: _____ Date: _____

# Appendix C: Participant observation tool

**Observation checklist:**

| | | | | |
|---|---|---|---|---|
| Location: | | | | |
| Contact person: | | | | |
| Contact details: | | | | |
| Date: | | Time: | | |
| GROUP COMPOSITION | | | | |
| English First Language | | English Second Language | | |
| Age range: | | | | |
| Race composition: | | | | |
| | | | | |
| | | | | |
| Duration of observation: | | Observation no: | | |

**Procedure**

1. Start audio recording
2. Welcome children
3. Present each child with a copy of the developed material
4. Allow time for self-reading
5. Read story aloud to all children
6. Ask the questions
7. Thank the children for the participation and say goodbye

**Description of each procedure**

**2. Welcoming information**

Hello children! I'm going to give each of you a picture book. You can page through it and read it.

**3. Distribution of material**

Ensure that each child has a copy of the book

**4. Allow time for self-reading and complete the checklist**

| Action | Yes | Somewhat | No |
|---|---|---|---|
| Display immediate interest | | | |
| Stay interested | | | |

**Observation:**_____

_____

_____

_____

_____

| Action | Yes | Somewhat | No |
|---|---|---|---|
| Hold book right side up | | | |
| Page through book | | | |

**Observation:**_____

| Action | Yes | Somewhat | No |
|---|---|---|---|
| Able to read book | | | |
| Observe pictures with interest | | | |

**Observation:**_____

**5. Would you like for us to read the story together? Or could you read it by yourselves?** (Either read the story with the children, or continue to no. 5, depending on what the children answered. Note their response below.)

**Observation:**_____

**6. Questions** (Make notes if possible, but the larger part of this section will depend on the audio recording that must be analysed and noted within one hour after the observation in the spaces allocated to each question.)

*(Reference to research question 3 and 4: What is the most appropriate communication media? How must the message be designed?)*

Did you like the book?_____

*(Reference to addressing children's culture and the messenger)*

What is the name of the child in the story?_____

Do you like her?_____

Why or why not?_____

What did she do?_____

Why did she do it?_____

*(Reference to research question 2: What are the most suitable textual and visual coding options?)*

What was your favourite part?_____

What part did you not like?_____

Which picture did you like best?_____

Which picture did you not like?_____

*(Reference to research question 5: How sticky is the message?)*

Why does a drought happen?_____

What can you do to make drought better?_____

Would you like to help Voda?_____

What can you go and do at home today to help her make the world a better place?

**Any additional observations/comments not noted in observation tool:**