

APPENDIX D

INTERVIEW TRANSCRIPTS

11. LEARNER 11

Q: Good morning

A: Morning Sir

Q: Right , last week I gave you a questionnaire and I went through your responses and would like us to discuss some responses. On the first question you said according to your parents, community and people around you, there is a way in which lightning is formed and you gave us what lightning is. Can you repeat that please?

A: To me lightning is eish.... there are two types of lightning. The first one is from God, the natural one which only strikes to trees and everything but the other one is from people it kills....it hits people with something like personal stuff and yeah....

Q: What would be those personal issues if I were to ask you?

A: Emm...maybe somebody wronged that person and then the person goes to where people get *muti*, where they use it to do the lightning and whatever, that's what I believe.

Q: Right then at school what do your teachers say lightning is?

A: At school they talk about negative and positive charges and clouds which rub against each other, which to me sounds artificial. It's not real.

Q: So, I'm looking at, you know.... you told me about the one from community and the explanation from school from school, are they different and if they are what's their difference?

A: The different is the one from the community sounds real and the one from the school is not real to me. I only use the one from school at school and the one from the community in the community.

Q: Yeah I know I've got to come to that question that when you have to learn science at school, how does that impact on you, the fact that you've got two definitions and you feel the one from school is not real and the one from the community is real, which one do you use at school then?

A: The one I use at school is the one I learnt at school.

Q: Even though you do not believe it?

A: Yes.

Q: Why do you use it?

A: To get the marks.

Q: Don't you think maybe at school you are here to understand and to believe?

A: Some things...

Q: what do you mean?

A: some of the things are like, they are not in our daily lives, but we learn at school.

Q: Do you think that's correct, that you learn things from your daily lives, don't you think that should change and at school you must learn things about your daily lives?

A: Yeah, yeah that's correct.

Q: Right. tell me, if you were a teacher and you are teaching a class of learners, maybe learners like you who don't believe in the school's science but believe in the community and who feel they are two different things, how would you teach them so that they understand?

A: I think I would just ask them what they believe and yeah teach them in what they believe 'cause it can be sometimes confusing learning about two different things.

Q: But do you think they are two different things?

A: Yeah I think so because scientists believe that man were not created by God and people believe that a man was created by God and again scientists believe that a man it was some generation from baboons, men were made and so we can believe that there is science and things in the community.

Q: So there will always be different?

A: Yeah and they will never say men....umm.....when you speak you will never say you came from baboons, you know that you were made by God.

Q: Ok. So maybe if I were to ask you again, you know in your point of view as teachers are teaching you, maybe if I will be teaching you next year or something, how would you want me to teach you, you know so that you pass science to get the best marks, maybe for an example the concept of lightning?

A: Eish...I think emm.....the one from the community cannot be taught at school.

Q: Why not?

A: You can't write that down in your books.

Q: Why can't it be written?

A: Eish.... I don't know, maybe I'm used to the one I'm taught at school.

Q: But then what do you would happen if you were to write that in books, do you think it would help science and people to understand science?

A: No I don't think so.

Q: What do you think would happen?

A: I think people will not understand science because it is about machines and stuff like that.

Q: Is that what you think science is?

A: Yes sir.

Q: Alright do you have anything or question to ask me?

A: Why are we doing this interview?

Q: (TEACHER'S ANSWER): No this is just a science project aimed at improving how people understand science and getting your views on how we teach it are you happy how we teach you science or something.

A: Ok

Q: So does that change any of the things we talked about?

A: No.

Q: Right now that I have answered your question is there anything else you want to ask?

A: No.

Q: Ok then thank you for participating in this project and whatever we have discussed here will be written down and I will give you to read it sometime in January so that you will be able to sign it as a true reflection, right thanks.

7. KGOSIAME

Q: Good morning Kgosiamé

A: Morning Sir

Q: Ma'am, we are going to discuss your responses on this questionnaire. Right the first question you said according to your parents and the elders of your community and people around you, what is the definition of the lightning?

A: Emm... at my view point lightning is like charges, the negative charges and positive charges come together and strikes, it strikes at a long objects like poles or houses and my mother always told me that lightning is like a natural disaster and some people say lightning happens when um...when um...traditional healers come together and they talk to the ancestors and ancestors reply with their lightning.

Q: You said from your point of view lightning is emm....maybe according to your school, according to what you learnt from school what is the definition of the lightning?

A: It is emm...when emm...the ocean waterwhen you have like ocean water and then the clouds...yeah the clouds.....

Q: Relax....relax.

A: It's when yeah...like the heat goes to the ocean water and then the ocean water evaporates to the clouds and it causes evaporation and consideration. Then lightning strikes because it's full of water

Q: Ok

A: Attention 'cause it wants to release water inside the clouds, so lightning strikes to warn us that...that the rain is coming.

Q: So tell me. The definition from... that you told me different definitions now, the definition from the community, from your mother, the definition from your own view and the definition from school, all those definitions according to you do they help you to understand the... how lightning is taught at, how in the subject science, do they help you or do they disturb you?

A: No because I don't believe in superstitions and yeah I know that it's a natural disaster but, this superstitions I don't believe in but, maybe it's true. Who knows? Anything is possible.

Q: And which one would be a superstition?

A: It's like when the traditional healers get together and then talk to the ancestors and then the ancestors' reply with the lightning. That's superstitious.

Q: That's superstitious? And actually you don't believe in that?

A: I don't believe; but I do believe because anything is possible.

Q: So anything is possible but let's say you are in a situation whereby you've been taught at school and you've got to know it and you've got to write exams, which definition will you go with, which definition you will be comfortable with?

A: The one that my teachers taught me because I think...but my mother only taught me that it's just natural disasters and my teacher gave me specific reason why it happens.

Q: Emm...the specific reason is the one that you said the ocean and clouds and when the cloud is full of water, so it releases lightning and the ...

A: charges?

Q: Yeah... what about the charges

A: Um, I think there is...there are negative charges and positive charges and then when they form they make the clouds, they...they take the clouds into friction and then the lightning strikes.

Q: Alright! So you heard that from, from your teachers?

A: Yeah...

Q: So do you find it a useful definition?

A: Yeah I it useful um...because I didn't even understand what lightning means before, I thought it just happens because it's warning us that the rain is coming.

Q: So the other question says here, does the definition of the lightning from your parents or your community disturb you from understanding the definition from your teacher?

A: No. No because um... um.... My mother only taught me what um...um...it's just a natural disaster. They must be specific. They must tell me why it's a natural disaster, why does lightning happen, so that we can call it a natural disaster.

Q: So do you think lightning is a natural disaster?

A: Yeah I think so.

Q: Alright your mother said so; but do you believe it's a natural disaster?

A: Yeah, because it does kill people.

Q: so I'm learning in the process...right lets eh... I'm trying to put you in a situation now you are a teacher and you were to teach people about the lightning. How would you teach them?

A: I would tell them that lightning occurs when there is evaporation and condensation and then when the charges, the negative and positive charges gets together and the water goes into the clouds and then the clouds gets heavy because of the water and then it has to release the water and so it suppose... and it strikes the lightning then the water comes out.

Q: But then you find that in...you've got the people , the people you are talking about here who've got maybe what you we refer to as superstitions, maybe in your class your teacher gives you a chance to teach about lightning and you know the in your class there are people who are superstitious. How will you teach them, how will you approach it so that at the end they've got the same understanding as you.

A: Mm... yeah I will tell them that they mustn't always believe what people has to say because people just talk whatever they want to talk and then they don't understand what they are talking about and then you listen and then you believe them. You have to believe what's inside you, what you think it's true. You can't just like... a person flying in the sky then like... you can't. That just doesn't happen. Something like that. Because God made it. It's natural.

Q: And how would you be doing that, would you be just explaining. What would you use to be able to teach them that ...

A: Um...I would use examples like, I would ask them like... how can like traditional healers bring the lightning and then if they don't answer me I would tell them that you see they didn't even like explain to you that why traditional healers have to bring like...like lightning.

Q: I've asked all the questions that I wanted to ask you. Do you have anything to ask me connection with this interview?

A: Um.... Yes. um.. when like lightning strikes what happens to the sun. does it interfere with the... um....doest it help lightning strikes or doesn't it like, interfere

Q: Right according to my knowledge they wouldn't be related because when the lightning strikes the other cloud would be positively charged and the other will be negatively charged and obviously the will unlike charges and they will attract and then when they attract they will generate come form of electricity.

A: Oh... ya !

Q: Right eh... Kgosiamé....

A: Ya, ya... one more thing...why does lightning catch you when you are hot or running?

Q: Emm... lightning it's emm... it's an electrical charge neh, so when you are running you either, you are having a charge you know, when you..., at the stage you are neutral isn't it... and when you start running then you have a charge, then when you have a charge you attract, just like when the clouds are attracting each other. The other one is negative and the other one is positive and when lightning strikes it is electricity and it is a negative charge, so when you run you have, you generate positive charges, so when you are positively charged you attract it because it is negatively charged. Nor unlike charges attract. Emm Kgosiamé, thank you for participating in this project. I'm going to transfer this tape and I'm...you going to be the first one to read it and see if it is a true reflection you'll have to sign it.

A: Ok thank you Sir.

Q: Ok! Thank you. Bye!

8. LEARNER 8

Q: Good morning

A: Morning Sir

Q: Here in front of me I've got a questionnaire that you completed and I would like some clarity on some of the statement tat you made here. Right the first question is: according to your parents, elders, people around you and community, what is lightning and how is it formed?

A: According to these people lightning is when ancestors are fighting or it's a sign from God when He is angry or when two witchdoctors are like fighting against each other for different reasons.

Q: Right, then the other question here was according to your teachers, what is lightning and how is it formed?

A: At school lightning is when the two clouds are rubbing against each other and they cause friction of static electricity and causes lightning.

Q: Ok. Do the two definitions that you just gave me are they different?

A: Yes they are different

Q: and how so?

A: Ok the firs definition, from my parents and grandparents, they are explaining to me in a way that it has to do with my tradition and ancestors and everything and at school it says lightning its a form of science like

Q: And the two definition they are different as you said, which one do you use at school and the one from your community does it disturb you from learning science?

A: No it doesn't disturb me 'cause it shows me that they are both different and helps me to learn in both ways how lightning is formed.

Q: So it does help you?

A: Yes.

Q: Maybe could you explain to me how does it help you?

A: Ok. Seeing that at school it's in the form of science, it teaches me how in the science world lightning is formed and the community one it shows me the traditional stuff.

Q: So you feel the traditional stuff should be traditional and the science one should be the scientific one and do they have the relationship according to you?

A: They would have a relationship 'cause they are both different so like...they can both learn from each other how they are. They could have a relationship..

Q: So....you know what I want to get at here is emm....u don't find it disturbing you but you find them different and you're saying it is helping you?

A: Yes because I'm learning what lightning is traditionally and scientifically.

Q: And it helps you howhow does it.....

A: At school lightning is like when clouds rub against each other and at home is when ancestors fight against each other or God is angry and they are both different but at same time they teach me what lightning is in different ways.

Q: So what makes the clouds rub against each other

A: Yeah maybe it's like that. When the witchdoctors are fighting they are able to make the clouds rub against each other then they cause lightning.

Q: But haven't you thought of that, what you just said when you like dealing with lightning In terms of school.....

A: No. in a way 'cause I think I know where lightning comes from and then I think of the way taught me at school and at home.

Q: So lets say emm.... Going to the last question, how should these two concepts be taught to you in such a way that they don't disturb each other and you said "I think they should be taught to me and explained and maybe in that way we can understand the actual meaning of what lightning is. What do you mean?

A: We can maybe at school and traditional stuff, put it all together and teaches in class like how lightning is in the traditional stuff and scientifically then you like explain to us, like we said what if the ancestors are making the clouds rub against each other and then they cause lightning.

Q: So who should be put it together according to you?

A: Yeah Sir us and the teachers. We have the information from home and the teachers have the information from school. We can all discuss it together and share ideas with each other.

Q: this is very interesting, so you feel you have to take part in the lesson.

A: Yes Sir, yes

Q: How would that happen, I'm just trying to imagine in the classroom, how would you do it, let's say you were a teacher, how would you explain to learners who have different beliefs.

A: I will tell the learners that we are discussing lightning and then if they have some form of ideas, how like lightning is and sit together and write it, discuss it and share ideas, in the other way we can all learn from that.

Q: You know I find it interesting like....right I'm done with the questions. Do you have anything to ask me in terms of this topic?

A: No.....

Q: Right, thank you for participating in this project, I'm going to transcribe our discussion and you'll be the first to read it and from there if you are convinced that it is a true reflection of what we've been discussing about then you'll sign it. Thank you

A: Thank you Sir

6. LEARNER 6

Q: Good morning

A: Morning Sir.

Q: Right, we are going to discuss your responses to your questionnaire that I gave you. Right, I realize that here you said that according to your parents lightning is caused by friction in the clouds but here you eh... what did you say to get heavy and they start rubbing against each other so the lightning strikes and you say some people believe that the lightning is caused by the witchcraft, ya...what are you actually saying?

A: its Ok I believe, my parents told me that um..um.. like it is cause by , there is moreso people in the community believe that it is caused by two people witchcraft each other. like maybe they are fighting each other over something.

Q: Alright. Then at school they say that it would be the same definition as your parents gave you so, at number three the question said is the definition of lightning from your parents or from your community different from that of school?

A: No. from my parents it's not different but from the community it is different.

Q: Ok... and I guess you believe in the definition that your parents gave you, which...

A: is similar to the teacher's definition

Q: and then there is this definition from your community. Doesn't it affect you maybe when you have to learn science at school, don't you some how feel that it affect you.

A: No it doesn't 'cause people talk and it doesn't in any kind of a way

Q: So you believe in what those people are saying is not actually scientific?

A: No, it's just the superstitious

Q: So what is the definition of the lightning according to your school? How do you define it?

A; It's like when it's too hot and then winter comes and It's too cold actually and then the clouds gets heavy of the rain drops and then it becomes more of the positive charges than negative charges and then they starts to rub and then the lightning strikes.

Q: Ok. Then there was another question here how should this concepts be taught , alright do you believe this concept that the community is talking about and everything, do you believe that this concept should taught at school?

A: No I don't believe.

Q: You don't believe it should be taught at school?

A: Mm...

Q: But as you are saying people are talking.

A: People are talking but, you know people are talking from to their minds. They don't actually know that for a fact that two people are distracting each other and stuff like that.

Q: So how do...if you were a teacher and you've got ...in class you've got learners who believe what people are saying how do you teach them and make sure that they don't believe in that but they believe in the conventional definition?

A: I'll try like...I'll tell them that if they believe in that witchcraft is the a real thing I'll tell them that it's not and I will even show them the books that it is not caused by two people and I'll teach them in that other way.

Q: People said it is caused when God is angry or something and how would you correct them if you were a teacher or if the teacher tells you that Ayandah how would you them or which method would you use.

A: Like when they say God is angry?

Q: Mm!

A: I don't know that 'cause I never heard people say that.

Q: But they say it in your class

A: They say that?

Q: Mm.

A: I'll tell them that it is not true 'cause people say when it's raining God is crying and if they say God is angry when the lightning strikes I ...I don't know.

Q: But would you agree with that or would you still....

A: No I don't agree with that.

Q: Would you still say lightning is caused?

A: by friction in the clouds

Q: And do you have any question to ask me?

A: How is lightning caused?

Q: I told you. The lightning is caused by the, the... there is a conventional definition that some clouds would be positively charged then they'll attract each other and the voltage will be formed. You know I would definitely agree with you.

A: It was a very short interview. You know what I am going to have someone to transcribe this and I will allow you to look at it.

A: Ok.

Q:So that you will be able to sign it to show that it is a true reflection of what you said.

5. LEARNER 5

Q : Ah.... I am going to interview you and my questions are going to be based on how you responded on the questionnaire and I would like some clarity on some of the things , like on the questions like on the first question here I asked you the definition of the lightning according to your community. Emm.... Would you over and above what you said here explain again what you think your community or the world around you defines the lightning

A: Ok.... there are sometimes like, in the night I like watching the documentary...it's fun watching documentaries so most of them are about Africa and rough seas that go around and this ..this beliefs and all that , so one of the most fascinating one's was when there was this guy his is actually the chief of the village and he makes lightning when there isin the village or something he kind of like goes on the top of the mountain for about...I don't know, three or four days for a long time and when he gets there his got a cane that he got from his father and the father from his father and so on then he strikes it on the mountain and then he starts dancing and all this things. It's really amazing. After then the rain starts pouring down and he goes down start dancing and the village was really like astonished 'cause it is amazing.

Q; So he...he uses his cane?

A: Yes, his cane.

Q: And lightning strikes?

A: Exactly

Q: And the rain Queen?

A: The rain Queen, when he sees those chance they say that it's got something to do with him asking the rain Queen to being like raining day by Zulu and all that. I guess it must be something from long time ago or the... some history that they didn't mention.

Q: Right. Eh.... the second question was according to your teachers or your educators what is your question and the lightning and here as you said lightning is formed by two clouds when they are rubbing against each other and rapidly forming and creating friction and there is a spark which is called lightning.

A: Yes

Q: Can you explain that?

A: Well so far since primary they've been telling us the same thing over and over. It's all about friction and the spark is the lightning that you see the lightning up there shining when the two clouds are rubbing against each other

Q: Right that definition maybe compared to what you saw in the documentary em...do you find the different to what you have learnt from school.

A: Yes because if you see from the guy striking a cane on the mountain and now they telling us about this clouds rubbing against each other it's...there is not even one little thing that is compatible with the two.

Q: Right. Eh.. the other question was: does the definition lightning from your teacher disturb you from understanding the definition that you got from which ever source ? eh.. That is when you learn the two definitions....when you know the two definitions and now you a different definition, you saw something that causes lightning and at school you are told that there is something that causes lightning. Eh.... how does that affect you at school in terms of learning about lightning in your science.

A: Eh, I get confused 'cause when they tell you at school about this two clouds remember what you saw yesterday so, if you ask the teachers they will tell that those are just stories and it just kind of hurt me 'cause there are other teachers who do believe in those stories, so if you compare those with African philosophy and this science you know you think that maybe these people don't really care about this African things because I don't know what to believe anymore

Q: So which one do you believe in actually?

A: Honestly I wasn't brought up that kind of a girl who beliefs in the African things you know but, when I got my grandmother I enjoy all those things and we do this ritual things 'cause i'm a Zulu girl and I do wear those amabheshu and dance and all that but, when I come to school I have to face reality and you kind of put all those things that I learnt from my grandmother aside so, do believe that there are science you know and eh....

Q: Like when you have to put them aside emm... do you think that affects negatively maybe it disturbs you when you have to put them aside and do you feel maybe at school they don't they don't recognise those things?

A: Yes I feel like that totally because you might find some children, they do know a lot about those things...the African things but, when they come to school they kind like have to put those aside as well and then you go home you do like when you go home have to face some of the things your grandmother taught you and that you like get confused because eish the teachers at school also they make it hard. When they explain everything and then you try to correct them but you think that maybe you are wrong 'cause the children will laugh at you 'cause you actually believe on those things

Q: Right. Eh now that you said something about the teachers let me ask you, how should the teachers to teach you, maybe a way that you think you should be taught so that you are able to be comfortable and you are not disturbed, how should they teach you?

A: They should kind of research like some other people's believe in these this African sciences. They should do that in class, they can explain how these things are done also if they can't I mean like it's fun just knowing these things and actually like confirming it that it really does happen cause we don't know or if it's real or you know this imaginary things and the program was a fake or wasn't even real. So they should kind of find a way to combine these two; so in another side they should teach us about this science you know the real one, the one about the two clouds and all that and the one of the African emm...the other side so that we can maybe know the differences we can find a way to combine them in a way.

Q: And eh...would you have any...eh...when they have done research and you are in class how do you think you should do it , do you think maybe they should or give you time to say what you know andhow do you think they should do it?

A: Yaa... it would be better if they do that. Like they ask us questions, what do you really believe and then you kind of explain or you tell them what you heard and then they find a way to explain that better because you get confused thinking how can a man just strike a cane and suddenly there is lightning so maybe if they research it and come write it on the board and you ask questions and then she tries to answer which or he answer if he or she can't answer it's fine 'cause you can't force a person to know something just out of knowing. You can't so of they can find a way to like on the board you ask questions or they ask questions and then you answer maybe you will know better of the two.

Q: Just umm...would you have something or ask anything to ask me?

A: Well why do most of the teachers if you really do ask them like what do you think about this African philosophy and then think, they say to you it's well it's really not true. I don't think, I don't believe in those things so how you think it will affect us? Don't you think some of the teachers should research it and put their believes aside for a while and kind of put other peoples's knowledge or kind of like if I go and ask a teacher now; then that teacher tells me something different so if I ask a teacher why don't you think this man this Chief or this man who was striking this cane, don't you think it's real and if they say no why do you think they don't believe in it?

Q: Maybe if I leave it aside do you think I do believe that the issue here is that teachers should really research and should know both sides?

A: Yes I think they should know more of both sides of sciences because that way you will know how to communicate with the teacher and agree or disagree within and not making it such a big issue. but we'll kind of we will know how to drive a conversation thinking, talking about this African philosophies then it will be a greater conversation or a better relationship between the two.

Q: Ok aa...in response to your question; I would say you know it's, I would agree with you that educators to...to research they need to put their personal beliefs aside and they've got to be neutral about issues and to.... to, you know to do a lot of research on such issues and to be able to listen to you and to allow you to express your feelings but then obviously the greater answer would be in the study 'cause we are now doing the study and the greater answer would be in the study. So let me thank you for taking part in this project and this project would be , this tape would be transferred and you'll be given a chance to read it so that you allow you know ,you are able to say this is a true reflection of what we discussed then from there that would happen probably in January. Thank you.

A: Thank you Sir.

4. LEARNER 4

Q: Good morning

A: Morning Sir

Q: Right, we are going to have a little discussion here. The discussion is based on your questionnaire. As here you wrote that... something about a bird. Tell me about the bird?

A: Um Sir, they say it has something to do with the sangomas, the stockers maybe like they want to kill someone sir ; they send lightning in a form of a bird, if it does not strike or misses you it will leave eggs under the ground. So Sir when it comes t that back again it will strike again in order for it not to come back you must dig up the eggs and throw them awayand they say.....

Q: So then we have here, you say according to your teachers they say the two clouds rub against each other , the positive and negative charges rub together then they form lightning. That's the definition from your school; do you have anything to add there?

A: No Sir.

Q: So do you find this definition of lightning from school and the one from your community different?

A: Yeah. The people from the community tells you about something from what happened like in the Africans. It's tradition Sir: like from ancestors Sir: the Ndebeles sir when they come from the mountains(initiation school) their chief strikes the cone on the ground and lightning strikes to show that that they are back. Aand the teachers tell us about European something...

Q: So then at school..... Then you've got this definition from the community and from school, which one should you say it's European and which one it' African and how do cope with that when you are at school?

A: Sir I understand both of them.

Q: So do you think both of them exist, they exist side by side or do you think one of them does not really exist?

A: Umm.... I believe the one of the African. It is better.

Q: You don't believe the other one ..

A: yes the European one?

Q: Emm....when you write examinations and everything, when you are taught at school, then how do you cope?

A: Sir I just.... they give us notes and study through them.

Q: So in exams which one do you write then, when you are asked at school to write?

A: The European one Sir, the one that says about clouds.

Q: Why not the African one?

A: Because they'll mark me wrong, maybe they don't know that one.

Q: So you just do it for the sake of getting marks and tell me, now that you are writing, you believe in the African one and you don't believe in the European one neh, how do think we should teach you at school as teachers so that you are able to cater for both?

A: They should teach us both African and European so that we can understand meanings not to know about the European one only. For us we want to know what the elder people say.

Q: So but how should teachers do, do you have suggestion of how should teachers do it?

A: They should teach us the African so that we know what happened, how does it happen you know....

Q. which one does your teacher teach or believe

A: she doesn't want to talk about African, when ever I talk about African she suppresses me and when ever I ask questions sometimes she doesn't answer them. I think people who write textbooks must research.

Q: So do you think the textbook don't have the African?

A: No, they don't. it's only the European one 'cause it talks about the negative and positive charges they don't mention the African way like we know it sir.

Q: So do you think maybe you could do better in science if you have your teachers teaching you both ways?

A: yes! sir.

Q: I think we are done here and maybe I should just mention to you that I'm going to write down everything and give you to read it, if it is a true reflection then you'll have to sign it as a true reflection. Thank you for participating in this project.

3. LEARNER 3

Q: Good morning

A: Morning Sir

Q: Right, I'm going to ask you some questions and always referring that to the questionnaire and how you answered this questionnaire. Right, in the questions, the first question you said according to your parents or your community what is lightning and how is formed and here you said after the rain God is promising that is ...you're saying here the rainbow is a sign that God is making promises ok? Emm like... you say here your community tells you that God is angry or maybe there is some sangoma (witchdoctor) who is trying to bewitch someone, so which one is your actual one here?

A: Well I have to choose the one with my parents 'cause the sangoma one no.... I don't think it's right. So I'm choosing the first one 'cause I believe it and I should also believe what my parents say.

Q: What is the first one, what does it say?

A: It says lightning is like emm...produce when....when rain is coming, thunder, storm or something

Q: So why do you mention the sangoma's and yeah..... why did you mention it?

A: Sir because you want the parents and the community's answer, so I decided that I should write the two of them.

Q: And I see here you said according to your teachers lightning is caused when two clouds rub against each other and from static energy and something like that. Emm... here you said something like that Is from the scientists that the clouds rub against each other and maybe they are right, maybe God knows the real definition, what did you mean?

A: Sir here in the world we know God made products, maybe the scientists decided that they could this definition and use it for lightning. But God knows the real answer ..and maybe the scientists are wrong.

Q: So your parents and school's definitions different?

A: Yes they are different Sir.

Q: What's their difference?

A: Sir the different is that the teachers tells you about static energy and the clouds rubbing against each other and my parents are telling me that when rainbow comes and then the thunder then God is making a promise that it won't rain again or something.

Q: Ok. So the next question I remember was that does the definition of lightning disturb you from understanding the definition from your parents?

A: No Sir. It just gives me inspiration to my own definition in my own words.

Q: But learning from school how is your inspiration helping you? Right here you said something about the definition according to your parents and according to your teachers neh.... the two definitions do they make it easier for you to understand science at school, that is the concept of lightning at school or do they make it difficult when you have different definitions?

A: According to my understanding they make it feel easier and understandable, they can maybe also put them together by using also the parents one and the scientists one and making one definition that we can really understand. but both of them I understand, I know the difference between them.

Q: Yeah, what you just said takes back to question number f, which says how should those.... these concepts be taught so that they don't disturb each other. How should the teacher teach you so that you don't have a problem with the two different definitions?

A: They must know like...explain the static one 'cause I understand more the parents one more than the static one but I also understand but not clearly than what my parents told me..

Q: Yeah and what do you ...maybe you've got to tell me here , if you were a teacher and you've got students to teach, now that you know the two , how would you teach them so that they understand?

A: I would teach them what they taught me at school that of the static one 'cause maybe it's what they use in schools.

Q: So do you believe what is been taught you at school is the right one?

A: Yeah.

Q: And the other one?

A: It is not wrong but it helps the static one to sound more better.

Q: So maybe I just want to ask you further on the issue of what teachers should do, you know at some stage let me....yeah...so again just explain how would you want this to be taught to you so that you'll be able to understand?

A: I would like the teachers to teach me by the static one 'cause it's what they teach in schools and universities. It is what they teach, I'll prefer the static one.

Q: And how...how should they teach you?

A: In normal way that they teach us.

Q: How....what's the normal way?

A: Maybe when they tell us that it's when clouds are full of water and rub against each other you know, they form static energy and then lightning strikes.

Q: Would you participate in that lesson or would you want to tell them what you know, would you want just to listen to the teacher?

A: Yeah I would tell them what I know and understand.

Q: And do your teacher give you a chance to say what you know?

A:

No.....
.....

Q:

A: If they want to know what I understand they should see me in the exams when they mark, then they will know that this child understand this way or that way.

Q: Dineo I thank you for participating in this project and this thing is going to be transcribed and you will be able to read it and see if it is a true reflection of what we discussed. Thank you.

2. LEARNER 2

Q: hallo

A: *Yebo* (hi Sir)

Right ma'am. I have your questionnaire here and you said lightning is for....heat forms lightning isn't? How is it formed?

A: Yes. Umm Sir .my mind tells so. You find that you see the sun, today it's sunny emm then it develops wind then you find it's raining now then all of a sudden you see lightning. To my side it seems lightning is caused by heat Sir.

Q: So is any one telling you so or it's your belief... your observation?

A: It's my beliefs.

Q: The further more you say there are people who say the witchdoctors use lightning to fight each other. What were you saying actually?

A: Ehh..sir! Sometimes you find in stories witchdoctors fighting by lightning to see who is stronger than the other.

Q: So is it possible according to you that people can do that?

A: Ayi Sir...I don't think so.

Q: But giving that understanding and what do they say basically at schoolwhat do they say causes lightning?

A: nobody told me about lightning.

Q: Not even in class?

A: Yes Sir I don't remember.

Q: But you did the chapter on electrostatics isn't and where they told you about the positive and negative charges that the other cloud... that's the definition of conventional lightning , if I may remind you that the other clouds is negatively charged and the other is positively charged and when they attract each other banging against each other then electrical voltage develops, which is lightning.

A: Yeah I've heard!!

Q: and you did not do that at anytime or not?

A: Yeah Mrs XXXX also told us about that. But ahh.... Lightning sir...

Q: So giving your definition that you just said you observation which and what I just said emm...does it make sense? Do we have any similarities there?

A: No Sir.

Q: And giving the definition of lightning and what you know as lightning and what you've heard that witchdoctors are fighting and when you have all those like, do you think it will be possible for you to understand what lightning is?

A: No Sir,

Q: Why?

A: ..because you find other people telling that witchdoctors fight and again somebody telling that lightning is caused by heat, so you wouldn't understand what to take.

Q: Emm...do you think there'll be a way at school of being able to teach you to understand the cause of lightning ?

A: Yes Sir because if you've got an example to show how it is caused, then there is a chance to understand.

Q: What example maybe, can you elaborate it?

A: Sir maybe like emm... a teacher comes with something that can show that lightning is caused by this ... yeah you can understand it but Sir.....

Q: You need something like what?

A: Something like ... 'cause sometimes you find yourself maybe ill or you are washing dishes 'cause sometimes you find lightning hitting you , so if maybe the teacher comes with water or something like electricity.

Q: So basically what you're saying to me is that you don't want just a teacher to talk, but to come with something to show you that will be able to convince you?

A: Yes Sir.

Q: And seeing that thing how will it help you?

A: To be careful of lightning and that don't play when there is lightning 'cause my mother used to tell me that I must not play a ball when there's lightning.

Q: Ok. Emm...here.... yeah somewhere you wrote that it is dangerous, is it because of what your mother said, and why is it so dangerous?

A: 'Cause my mother told me so.

Q: that....?

A: ...that lightning is dangerous.

Q: Ok. So the sunny day, can you go back to the sunny day and the rain and the fact that it is dangerous, you know maybe I still want to go back to the one you are saying...now you have all these stories neh, and someone has ... I've got to come to class to teach you, how would you want me to teach you besides bringing something?

A: By telling us the tips of lightning. We can understand it by you telling us that lightning is really dangerous 'cause you can't just play outside when there's lightning.

Q: So then should I ignore your observation about lightning and tell you what science says or should I include in my teaching?

A: I think you should include what I said.

Q: And at any stage do you believe what you think of lightning is right or it's wrong , or what is right is what your teachers should tell you?

A: Yeah. I once asked my father what is lightning but he didn't tell me but when maybe you ask the teacher 'cause he/she has experience. Yeah you can also believe in what teachers are saying.

Q: So at school when they're teaching they use the OBE method and everything , do you think it's helping that method, is it helping?

A: Yes Sir. I think it's helping 'cause if it wasn't helping we wouldn't.... the teacher wouldn't ask about lightning.

Q: So here you wrote, I asked how should those concepts be taught and you said by just listening carefully and dealing with the reasons and good and good reasons/ what do you mean good reasons?

A: I mean ... it's like they must tell us the reasons but good ones 'cause sometimes you find people are telling you the reasons but you can't get them.

Q: You can't understand them?

A: Yes Sir. Maybe like they explain it, it would be good.

Q: Maybe if I ask further like, I've got lightning now what would be a good reason?

A: Sir.... Good reason, how to learn about lightning, like, I've told you Sir you mustn't play a ball in the house when there's lightning. Sometimes you mustn't go in the middle of the trees 'cause lightning is gonna ... yeah attract you.

Q: Ok. Thank you for taking part in this project and as I mentioned earlier you will be given a chance to listen to the tape and to read the transcript.

1. LEARNER 1

Q: Good morning

A: Morning Sir

Q: I see here you wrote that according to the information that you get from your community when it starts raining, its because the rain Queen is crying you are going to have lightning because God is cross and is fighting with the devil, Do you believe that?

A: Sometimes I believe it because I mean no one ever came up with the real meaning why we lightning it just technological reasons why we get lightning and because the atmosphere around you is different a thing.

Q: Like I see here you said it is formed when the negative and positive charges and when clouds become dark then it starts with the rain and it evaporate then the water starts gaining up in the clouds, become more negatively charged and then the lightning hit with the strike and at a nearest time point but, this is a conventional definition. It is the definition you get at school, do you agree with me?

A: Sometimes I agree with you because teachers explain it in their own way and then I also interpret it in my own way.

Q: So do you say... do you find it different, that is... do you find the definition from your community, your parents and the definition from school, do you find them different?

A: I find them different because my mother explains it in her different meanings and my teachers also come up with different meanings, so It is different. It's two different meanings.

Q: Alright. Does the definition you learnt from your teacher disturb you from understanding the definition you learnt from your parents or your community? I see here you said it doesn't disturb you and later you said no but, maybe sometimes it does. What is disturbing about the different definitions?

A: Ok my parents definition is to what lightning is, is stories and my teacher's definition is just one simple straight answer, so when my parents tell me stories it's just too difficult to keep everything in mind, but then when my teachers explain It, it's easy to remember.

Q: Yeah but, in terms of lets say you are writing science your science, which one will you use.

A: I'll use my teacher's definition.

Q: But which one do you... which one will you... why will you use your teacher's definition as opposed to your mother's or parent's definition?

A: Because my teachers definition is much easier for me to study and it's because... it's just and my parents definition it's maybe long stories, it's just long stories and my teacher's definition it's just...short paragraphs...

Q: So... you rather use the teacher's definition?

A: Yes.

Q: Then tell me in terms of school are you comfortable with that another definition is use at school as opposed to the one you use, won't you rather ask teaching both and if you are teaching both how would you...which will you be teaching, how would you be involved in that? I hope I'm not asking a difficult question?

A: Ok! If it's both... maybe something might not be the same but, it might have similar paragraphs or something and then in the end it's gonna become one thing so... both things can, yeah it's not a problem for me 'cause in the end if we all different meanings and we have our.....maybe in the end we gonna come up with one meaning and then the teachers are gonna be able to teach us with that meaning.

Q: Right tell me in the class how would the teachers teach you because I think now the way they are teaching ... When they teach you do they refer.... Do they even talk about the definition that you get at home...or they just come with the definition , or with the other definition....conventional definition?

A: Sometimes they ask how do we think lightning is made up and sometimes she gives meanings of what she thinks and then in the end she is not gonna explain the meanings.

Q: But In the end what do you think.... does it actually come in the or it doesn't ...it is not used in any way , doe's it just vanishes?

A: Sometimes it doe's vanish.

Q: How?

A: The teacher sometimes says if we want we can add what we think lightning is , so obviously in other words we're also putting our own meanings in it .

Q: Do you think you get marks when you put your own meanings?

A: (LAUGH)

Q: So tell me, which emm... do you think maybe basically giving the two meanings ...emm, do you feel we should do away with the definition at number A and with definition number B or do you think we should find a way of using the two definition so that you are not disturbed when you learn.

A: I can use any meaning as long as I 'm able to understand what's going on.

Q: But that is the conventional definition, do you think... do you believe it is the real definition of lightning as opposed to this?

A: I think number B is the real one because usually before the lightning starts the negative and positive charges of the clouds crush and then.....

Q: So would you ever challenge your parents or your community and tell them that this is not the truth and the truth is emm...

A: Umm, I'll obviously tell them the true meaning, which one is right and which one is wrong , but then if they still want to believe that the rain Queen is crying or God is fighting , it's up to them.

Q: Ok. But with you, are you comfortable with the school's definition?

A: Yes.

Q: Mm.... Any other thing you want to say?

A: No Sir.

Q: Ok Lebogang thank you for your time and ...what we just discussed it is going to be transcribed neh.... and I will show you the actual transcription before it goes any where.

9. LEARNER 9

Q: Good morning

A: Morning Sir

Q: I'm going to ask you questions but all these questions are more or less based on the questionnaire that you completed. Right the first question here was according to your parents, elders, and community etc, what is lightning and how is it formed?

A: Basically according to my grandmother she tells me that lightning is formed *ka li sangomas haba loantshana or something* (through sangomas fighting against each other or something) and sometimes she says if sangomas *ba e rometse go wena* (a sangoma is snet to bewitch you) or something you should have eggs and candles in your house so that *e se kene ka mo gare and strikes* (it does not get into the house and strike you). So this eggs and candles are something to prevent lightning from striking.

Q:. But then according to your educators what is lightning?

A: lightning is when negative and positive charges connect together then they cause friction.

Q: You said something about the clothes here...

A: Yes if you are wearing bright colors they say, basically Mrs. Zwane says when you are wearing bright colors and walking in an open space, a golf field or something you must roll yourself into the smallest object so that lightning won't attract you.

Q: Right, on the third question it says.... you gave me the definition from your community and your parents and everything, then you gave me the definition from your school, do you find these definitions different and how so?

A: Yeah they do differ 'cause the one from my parents for me I do believe in that and I think they both do the same ... not quite the same but then they do have different saying in both of them. If they look like... compile a book with both of them so that we can understand the different between the two of them.

Q: So would you say in responding to the fourth question, does the definition of lightning from your teacher disturb you from understanding the definition from your grandmother?

A: No it doesn't disturb me. It's just that I do understand both of them, but then I believe most in the one from my grandmother.

Q: Then the other one which is more similar to that one saying the definition from your grandmother, does it disturb you from understanding the definition from your school?

A: No still it doesn't.

Q: Then how do you deal with both, now when you are in a classroom situation, maybe you are writing exams, how do you deal with both? Which one do you use?

A: I use the one from school 'cause they teach about it, so I can't say the sangoma's stuff when the teacher asks how lightning is formed.

Q: Why not?

A: Because they didn't teach me in that way, they taught me in another way and I have to use the one I'm taught.

Q: Don't you find that disturbing?

A: No for me itit is in a way but then, it doesn't affect me.

Q: Now my understanding is that you are compromising, you want to tell the teacher what they want to hear but what is it that you believe and maybe don't you think you should write what you believe?

A: Yeah, what mrs Zwane taught me is what I have to write. I can't just write something that she didn't teach me and then she 's gonna say no this is wrong.

Q: She is gonna say this is wrong but what are you saying?

A: I'm saying that I do compromise,sir.

Q: Right. Let me say you are a teacher, I give a class to teach and in your class there are people who believe what your grandmother taught you and there are those who believe in the school one and you want to teach them so that in the end they understand the two, how will you teach them?

A: I would first ask them which one do they believe in, the Western of the African one then if half of the class understand this one and the other half understand the other then I will try to find the easiest way to teach both of them so that they can understand.

Q: Here you say " I think both should be used in books so that we know about African science and the Western culture." What did you mean?

A: I meant like Sir... the one that my grandmother taught me, we should also learn about it and the stuff inside books so that we know that sangomasare they for real or what then *le di friction tse*, how do they connect to one another.

Q: And you believe somewhere there must be a connection?

A: Yeah there must be a connection.

Q: Would you try to explain to me how would they have connection?

A: I don't know how but they do have a connection.

Q: And you believe if they were in the books ,so do you think

A: And it's gonna be easier for people who believe in the culture thing.

Q: So do you believe at school like you said you compromise because you believe in this but at school you are taught differently, do you believe it would be a good idea for the cultural believe to be taught at school and why?

A: Yes it would be nice if we were taught in that way and reason being.....so that we can have a clear vision of what's going on.

Q: Emm....what do you mean what's going on?

A: Like umm.... I don't know how to answer that.

Q: My question was just now that we should... you believe this one is true but it is not what you were taught at school, is it a problem, that what some people believe is not taught at school?

A: In a way yes because you can't umm.... write something that don't believe and you won't basically understand. For instance that I believe in this then I'm doing this 'cause we want this.

Q: So you're saying once you don't believe in something you wont perform the best and how would it affect you at school, would it affect other people also knowing that they understand this but they gave to write the different one?

A: It does affect because like umm.... I would compromise but then if I were to be taught in that way obviously maybe I would perform better than I do now.

Q: Better in terms of?

A: Like marks and stuff like results.

Q: So tell me could you, do you have any question maybe I've asked enough questions, maybe difficult ones and I apologize for that, but would you ask any question then based on what we discussed?

A: No Sir

Q: Ok Lerato, thank you for participating in this project and this thing is going to be transcribed, to be put into books and you'll be the first to read it if it is a true reflection of what we discussed then you will sign it. Thank you

8. DINEO PHUKANOKA

Q: Good morning

A: Morning Sir

Q: Here in front of me I've got a questionnaire that you completed and I would like some clarity on some of the statement that you made here. Right the first question is: according to your parents, elders, people around you and community, what is lightning and how is it formed?

A: According to these people lightning is when ancestors are fighting or it's a sign from God when He is angry or when two witchdoctors are like fighting against each other for different reasons.

Q: Right, then the other question here was according to your teachers, what is lightning and how is it formed?

A: At school lightning is when the two clouds are rubbing against each other and they cause friction of static electricity and causes lightning.

Q: Ok. Do the two definitions that you just gave me are they different?

A: Yes they are different

Q: and how so?

A: Ok the first definition, from my parents and grandparents, they are explaining to me in a way that it has to do with my tradition and ancestors and everything and at school it says lightning is a form of science like

Q: And the two definitions they are different as you said, which one do you use at school and the one from your community does it disturb you from learning science?

A: No it doesn't disturb me 'cause it shows me that they are both different and helps me to learn in both ways how lightning is formed.

Q: So it does help you?

A: Yes.

Q: Maybe could you explain to me how does it help you?

A: Ok. Seeing that at school it's in the form of science, it teaches me how in the science world lightning is formed and the community one it shows me the traditional stuff.

Q: So you feel the traditional stuff should be traditional and the science one should be the scientific one and do they have the relationship according to you?

A: They would have a relationship 'cause they are both different so like...they can both learn from each other how they are. They could have a relationship..

Q: So....you know what I want to get at here is emm....u don't find it disturbing you but you find them different and you're saying it is helping you?

A: Yes because I'm learning what lightning is traditionally and scientifically.

Q: And it helps you howhow does it.....

A: At school lightning is like when clouds rub against each other and at home is when ancestors fight against each other or God is angry and they are both different but at same time they teach me what lightning is in different ways.

Q: So what makes the clouds rub against each other

A: Yeah maybe it's like that. When the witchdoctors are fighting they are able to make the clouds rub against each other then they cause lightning.

Q: But haven't you thought of that, what you just said when you like dealing with lightning In terms of school.....

A: No. in a way 'cause I think I know where lightning comes from and then I think of the way taught me at school and at home.

Q: So lets say emm.... Going to the last question, how should these two concepts be taught to you in such a way that they don't disturb each other and you said "I think they should be taught to me and explained and maybe in that way we can understand the actual meaning of what lightning is. What do you mean?

A: We can maybe at school and traditional stuff, put it all together and teaches in class like how lightning is in the traditional stuff and scientifically then you like explain to us, like we said what if the ancestors are making the clouds rub against each other and then they cause lightning.

Q: So who should be put it together according to you?

A: Yeah Sir us and the teachers. We have the information from home and the teachers have the information from school. We can all discuss it together and share ideas with each other.

Q: this is very interesting, so you feel you have to take part in the lesson.

A: Yes Sir, yes

Q: How would that happen, I'm just trying to imagine in the classroom, how would you do it, let's say you were a teacher, how would you explain to learners who have different beliefs.

A: I will tell the learners that we are discussing lightning and then if they have some form of ideas, how like lightning is and sit together and write it, discuss it and share ideas, in the other way we can all learn from that.

Q: You know I find it interesting like....right I'm done with the questions. Do you have anything to ask me in terms of this topic?

A: No.....

Q: Right, thank you for participating in this project, I'm going to transcribe our discussion and you'll be the first to read it and from there if you are convinced that it is a true reflection of what we've been discussing about then you'll sign it. Thank you

A: Thank you Sir

6. Learner 6

Q: Good morning Ayanda....

A: Morning Sir.

Q: Right, we are going to discuss your responses to your questionnaire that I gave you. Right, I realize that here you said that according to your parents lightning is caused by friction in the clouds but here you eh... what did you say to get heavy and they start rubbing against each other so the lightning strikes and you say some people believe that the lightning is caused by the witchcraft, ya...what are you actually saying?

A: its Ok I believe, my parents told me that um..um.. like it is cause by , there is moreso people in the community believe that it is caused by two people witchcraft each other. like maybe they are fighting each other over something.

Q: Alright. Then at school they say that it would be the same definition as your parents gave you so, at number three the question said is the definition of lightning from your parents or from your community different from that of school?

A: No. from my parents it's not different but from the community it is different.

Q: Ok... and I guess you believe in the definition that your parents gave you, which...

A: is similar to the teacher's definition

Q: and then there is this definition from your community. Doesn't it affect you maybe when you have to learn science at school, don't you some how feel that it affect you.

A: No it doesn't 'cause people talk and it doesn't in any kind of a way

Q: So you believe in what those people are saying is not actually scientific?

A: No, it's just the superstitious

Q: So what is the definition of the lightning according to your school? How do you define it?

A; It's like when it's too hot and then winter comes and It's too cold actually and then the clouds gets heavy of the rain drops and then it becomes more of the positive charges than negative charges and then they starts to rub and then the lightning strikes.

Q: Ok. Then there was another question here how should this concepts be taught , alright do you believe this concept that the community is talking about and everything, do you believe that this concept should taught at school?

A: No I don't believe.

Q: You don't believe it should be taught at school?

A: Mm...

Q: But as you are saying people are talking.

A: People are talking but, you know people are talking from to their minds. They don't actually know that for a fact that two people are distracting each other and stuff like that.

Q: So how do...if you were a teacher and you've got ...in class you've got learners who believe what people are saying how do you teach them and make sure that they don't believe in that but they believe in the conventional definition?

A: I'll try like...I'll tell them that if they believe in that witchcraft is the a real thing I'll tell them that it's not and I will even show them the books that it is not caused by two people and I'll teach them in that other way.

Q: People said it is caused when God is angry or something and how would you correct them if you were a teacher or if the teacher tells you that Ayandah how would you them or which method would you use.

A: Like when they say God is angry?

Q: Mm!

A: I don't know that 'cause I never heard people say that.

Q: But they say it in your class

A: They say that?

Q: Mm.

A: I'll tell them that it is not true 'cause people say when it's raining God is crying and if they say God is angry when the lightning strikes I ...I don't know.

Q: But would you agree with that or would you still....

A: No I don't agree with that.

Q: Would you still say lightning is caused?

A: by friction in the clouds

Q: And do you have any question to ask me?

A: How is lightning caused?

Q: I told you. The lightning is caused by the, the... there is a conventional definition that some clouds would be positively charged then they'll attract each other and the voltage will be formed. You know I would definitely agree with you.

A: It was a very short interview. You know what I am going to have someone to transcribe this and I will allow you to look at it.

A: Ok.

Q:So that you will be able to sign it to show that it is a true reflection of what you said.

5. WENDY

Q : Ah.... I am going to interview you and my questions are going to be based on how you responded on the questionnaire and I would like some clarity on some of the things , like on the questions like on the first question here I asked you the definition of the lightning according to your community. Emm.... Would you over and above what you said here explain again what you think your community or the world around you defines the lightning

A: Ok.... there are sometimes like, in the night I like watching the documentary...it's fun watching documentaries so most of them are about Africa and rough seas that go around and this ..this beliefs and all that , so one of the most fascinating one's was when there was this guy his is actually the chief of the village and he makes lightning when there isin the village or something he kind of like goes on the top of the mountain for about...I don't know, three or four days for a long time and when he gets there his got a cane that he got from his father and the father from his father and so on then he strikes it on the mountain and then he starts dancing and all this things. It's really amazing. After then the rain starts pouring down and he goes down start dancing and the village was really like astonished 'cause it is amazing.

Q; So he...he uses his cane?

A: Yes, his cane.

Q: And lightning strikes?

A: Exactly

Q: And the rain Queen?

A: The rain Queen, when he sees those chance they say that it's got something to do with him asking the rain Queen to being like raining day by Zulu and all that. I guess it must be something from long time ago or the... some history that they didn't mention.

Q: Right. Eh.... the second question was according to your teachers or your educators what is your question and the lightning and here as you said lightning is formed by two clouds when they are rubbing against each other and rapidly forming and creating friction and there is a spark which is called lightning.

A: Yes

Q: Can you explain that?

A: Well so far since primary they've been telling us the same thing over and over. It's all about friction and the spark is the lightning that you see the lightning up there shining when the two clouds are rubbing against each other

Q: Right that definition maybe compared to what you saw in the documentary em...do you find the different to what you have learnt from school.

A: Yes because if you see from the guy striking a cane on the mountain and now they telling us about this clouds rubbing against each other it's...there is not even one little thing that is compatible with the two.

Q: Right. Eh.. the other question was: does the definition lightning from your teacher disturb you from understanding the definition that you got from which ever source ? eh.. That is when you learn the two definitions....when you know the two definitions and now you a different definition, you saw something that causes lightning and at school you are told that there is something that causes lightning. Eh.... how does that affect you at school in terms of learning about lightning in your science.

A: Eh, I get confused 'cause when they tell you at school about this two clouds remember what you saw yesterday so, if you ask the teachers they will tell that those are just stories and it just kind of hurt me 'cause there are other teachers who do believe in those stories, so if you compare those with African philosophy and this science you know you think that maybe these people don't really care about this African things because I don't know what to believe anymore

Q: So which one do you believe in actually?

A: Honestly I wasn't brought up that kind of a girl who beliefs in the African things you know but, when I got my grandmother I enjoy all those things and we do this ritual things 'cause i'm a Zulu girl and I do wear those amabheshu and dance and all that but, when I come to school I have to face reality and you kind of put all those things that I learnt from my grandmother aside so, do believe that there are science you know and eh....

Q: Like when you have to put them aside emm... do you think that affects negatively maybe it disturbs you when you have to put them aside and do you feel maybe at school they don't they don't recognise those things?

A: Yes I feel like that totally because you might find some children, they do know a lot about those things...the African things but, when they come to school they kind like have to put those aside as well and then you go home you do like when you go home have to face some of the things your grandmother taught you and that you like get confused because eish the teachers at school also they make it hard. When they explain everything and then you try to correct them but you think that maybe you are wrong 'cause the children will laugh at you 'cause you actually believe on those things

Q: Right. Eh now that you said something about the teachers let me ask you, how should the teachers to teach you, maybe a way that you think you should be taught so that you are able to be comfortable and you are not disturbed, how should they teach you?

A: They should kind of research like some other people's believe in these this African sciences. They should do that in class, they can explain how these things are done also if they can't I mean like it's fun just knowing these things and actually like confirming it that it really does happen cause we don't know or if it's real or you know this imaginary things and the program was a fake or wasn't even real. So they should kind of find a way to combine these two; so in another side they should teach us about this science you know the real one, the one about the two clouds and all that and the one of the African emm...the other side so that we can maybe know the differences we can find a way to combine them in a way.

Q: And eh...would you have any...eh...when they have done research and you are in class how do you think you should do it , do you think maybe they should or give you time to say what you know andhow do you think they should do it?

A: Yaa... it would be better if they do that. Like they ask us questions, what do you really believe and then you kind of explain or you tell them what you heard and then they find a way to explain that better because you get confused thinking how can a man just strike a cane and suddenly there is lightning so maybe if they research it and come write it on the board and you ask questions and then she tries to answer which or he answer if he or she can't answer it's fine 'cause you can't force a person to know something just out of knowing. You can't so of they can find a way to like on the board you ask questions or they ask questions and then you answer maybe you will know better of the two.

Q: Just umm...would you have something or ask anything to ask me?

A: Well why do most of the teachers if you really do ask them like what do you think about this African philosophy and then think, they say to you it's well it's really not true. I don't think, I don't believe in those things so how you think it will affect us? Don't you think some of the teachers should research it and put their believes aside for a while and kind of put other peoples's knowledge or kind of like if I go and ask a teacher now; then that teacher tells me something different so if I ask a teacher why don't you think this man this Chief or this man who was striking this cane, don't you think it's real and if they say no why do you think they don't believe in it?

Q: Maybe if I leave it aside do you think I do believe that the issue here is that teachers should really research and should know both sides?

A: Yes I think they should know more of both sides of sciences because that way you will know how to communicate with the teacher and agree or disagree within and not making it such a big issue. but we'll kind of we will know how to drive a conversation thinking, talking about this African philosophies then it will be a greater conversation or a better relationship between the two.

Q: Ok aa...in response to your question; I would say you know it's, I would agree with you that educators to...to research they need to put their personal beliefs aside and they've got to be neutral about issues and to.... to, you know to do a lot of research on such issues and to be able to listen to you and to allow you to express your feelings but then obviously the greater answer would be in the study 'cause we are now doing the study and the greater answer would be in the study. So let me thank you for taking part in this project and this project would be , this tape would be transferred and you'll be given a chance to read it so that you allow you know ,you are able to say this is a true reflection of what we discussed then from there that would happen probably in January. Thank you.

A: Thank you Sir.

4. RAMMUSO

Q: Good morning

A: Morning Sir

Q: Right, we are going to have a little discussion here. The discussion is based on your questionnaire. As here you wrote that... something about a bird. Tell me about the bird?

A: Um Sir, they say it has something to do with the sangomas, the stockers maybe like they want to kill someone sir ; they send lightning in a form of a bird, if it does not strike or misses you it will leave eggs under the ground. So Sir when it comes t that back again it will strike again in order for it not to come back you must dig up the eggs and throw them awayand they say.....

Q: So then we have here, you say according to your teachers they say the two clouds rub against each other , the positive and negative charges rub together then they form lightning. That's the definition from your school; do you have anything to add there?

A: No Sir.

Q: So do you find this definition of lightning from school and the one from your community different?

A: Yeah. The people from the community tells you about something from what happened like in the Africans. It's tradition Sir: like from ancestors Sir: the Ndebeles sir when they come from the mountains(initiation school) their chief strikes the cone on the ground and lightning strikes to show that that they are back. Aand the teachers tell us about European something...

Q: So then at school..... Then you've got this definition from the community and from school, which one should you say it's European and which one it' African and how do cope with that when you are at school?

A: Sir I understand both of them.

Q: So do you think both of them exist, they exist side by side or do you think one of them does not really exist?

A: Umm.... I believe the one of the African. It is better.

Q: You don't believe the other one ..

A: yes the European one?

Q: Emm....when you write examinations and everything, when you are taught at school, then how do you cope?

A: Sir I just.... they give us notes and study through them.

Q: So in exams which one do you write then, when you are asked at school to write?

A: The European one Sir, the one that says about clouds.

Q: Why not the African one?

A: Because they'll mark me wrong, maybe they don't know that one.

Q: So you just do it for the sake of getting marks and tell me, now that you are writing, you believe in the African one and you don't believe in the European one neh, how do think we should teach you at school as teachers so that you are able to cater for both?

A: They should teach us both African and European so that we can understand meanings not to know about the European one only. For us we want to know what the elder people say.

Q: So but how should teachers do, do you have suggestion of how should teachers do it?

A: They should teach us the African so that we know what happened, how does it happen you know....

Q. which one does your teacher teach or believe

A: she doesn't want to talk about African, when ever I talk about African she suppresses me and when ever I ask questions sometimes she doesn't answer them. I think people who write textbooks must research.

Q: So do you think the textbook don't have the African?

A: No, they don't. it's only the European one 'cause it talks about the negative and positive charges they don't mention the African way like we know it sir.

Q: So do you think maybe you could do better in science if you have your teachers teaching you both ways?

A: yes! sir.

Q: I think we are done here and maybe I should just mention to you that I'm going to write down everything and give you to read it, if it is a true reflection then you'll have to sign it as a true reflection. Thank you for participating in this project.

3. DINEO

Q: Good morning Dineo

A: Morning Sir

Q: Right, I'm going to ask you some questions and always referring that to the questionnaire and how you answered this questionnaire. Right, in the questions, the first question you said according to your parents or your community what is lightning and how is formed and here you said after the rain God is promising that is ...you're saying here the rainbow is a sign that God is making promises ok? Emm like... you say here your community tells you that God is angry or maybe there is some sangoma (witchdoctor) who is trying to bewitch someone, so which one is your actual one here?

A: Well I have to choose the one with my parents 'cause the sangoma one no.... I don't think it's right. So I'm choosing the first one 'cause I believe it and I should also believe what my parents say.

Q: What is the first one, what does it say?

A: It says lightning is like emm...produce when....when rain is coming, thunder, storm or something

Q: So why do you mention the sangoma's and yeah..... why did you mention it?

A: Sir because you want the parents and the community's answer, so I decided that I should write the two of them.

Q: And I see here you said according to your teachers lightning is caused when two clouds rub against each other and from static energy and something like that. Emm... here you said something like that Is from the scientists that the clouds rub against each other and maybe they are right, maybe God knows the real definition, what did you mean?

A: Sir here in the world we know God made products, maybe the scientists decided that they could this definition and use it for lightning. But God knows the real answer ..and maybe the scientists are wrong.

Q: So your parents and school's definitions different?

A: Yes they are different Sir.

Q: What's their difference?

A: Sir the different is that the teachers tells you about static energy and the clouds rubbing against each other and my parents are telling me that when rainbow comes and then the thunder then God is making a promise that it won't rain again or something.

Q: Ok. So the next question I remember was that does the definition of lightning disturb you from understanding the definition from your parents?

A: No Sir. It just gives me inspiration to my own definition in my own words.

Q: But learning from school how is your inspiration helping you? Right here you said something about the definition according to your parents and according to your teachers neh.... the two definitions do they make it easier for you to understand science at school, that is the concept of lightning at school or do they make it difficult when you have different definitions?

A: According to my understanding they make it feel easier and understandable, they can maybe also put them together by using also the parents one and the scientists one and making one definition that we can really understand. but both of them I understand, I know the difference between them.

Q: Yeah, what you just said takes back to question number f, which says how should those.... these concepts be taught so that they don't disturb each other. How should the teacher teach you so that you don't have a problem with the two different definitions?

A: They must know like...explain the static one 'cause I understand more the parents one more than the static one but I also understand but not clearly than what my parents told me..

Q: Yeah and what do you ...maybe you've got to tell me here , if you were a teacher and you've got students to teach, now that you know the two , how would you teach them so that they understand?

A: I would teach them what they taught me at school that of the static one 'cause maybe it's what they use in schools.

Q: So do you believe what is been taught you at school is the right one?

A: Yeah.

Q: And the other one?

A: It is not wrong but it helps the static one to sound more better.

Q: So maybe I just want to ask you further on the issue of what teachers should do, you know at some stage let me....yeah...so again just explain how would you want this to be taught to you so that you'll be able to understand?

A: I would like the teachers to teach me by the static one 'cause it's what they teach in schools and universities. It is what they teach, I'll prefer the static one.

Q: And how...how should they teach you?

A: In normal way that they teach us.

Q: How....what's the normal way?

A: Maybe when they tell us that it's when clouds are full of water and rub against each other you know, they form static energy and then lightning strikes.

Q: Would you participate in that lesson or would you want to tell them what you know, would you want just to listen to the teacher?

A: Yeah I would tell them what I know and understand.

Q: And do your teacher give you a chance to say what you know?

A:

No.....
.....

Q:

A: If they want to know what I understand they should see me in the exams when they mark, then they will know that this child understand this way or that way.

Q: Dineo I thank you for participating in this project and this thing is going to be transcribed and you will be able to read it and see if it is a true reflection of what we discussed. Thank you.

2. LINDOKUHLE

Q: hallo lindokuhle nkosi!!

A: *Yebo* (hi Sir)

Right ma'am. I have your questionnaire here and you said lightning is for....heat forms lightning isn't? How is it formed?

A: Yes. Umm Sir .my mind tells so. You find that you see the sun, today it's sunny emm then it develops wind then you find it's raining now then all of a sudden you see lightning. To my side it seems lightning is caused by heat Sir.

Q: So is any one telling you so or it's your belief... your observation?

A: It's my beliefs.

Q: The further more you say there are people who say the witchdoctors use lightning to fight each other. What were you saying actually?

A: Ehh..sir! Sometimes you find in stories witchdoctors fighting by lightning to see who is stronger than the other.

Q: So is it possible according to you that people can do that?

A: Ayi Sir...I don't think so.

Q: But giving that understanding and what do they say basically at schoolwhat do they say causes lightning?

A: nobody told me about lightning.

Q: Not even in class?

A: Yes Sir I don't remember.

Q: But you did the chapter on electrostatics isn't and where they told you about the positive and negative charges that the other cloud... that's the definition of conventional lightning , if I may remind you that the other clouds is negatively charged and the other is positively charged and when they attract each other banging against each other then electrical voltage develops, which is lightning.

A: Yeah I've heard!!

Q: and you did not do that at anytime or not?

A: Yeah Mrs Zwane also told us about that. But ahh.... Lightning sir...

Q: So giving your definition that you just said you observation which and what I just said emm...does it make sense? Do we have any similarities there?

A: No Sir.

Q: And giving the definition of lightning and what you know as lightning and what you've heard that witchdoctors are fighting and when you have all those like, do you think it will be possible for you to understand what lightning is?

A: No Sir,

Q: Why?

A: ..because you find other people telling that witchdoctors fight and again somebody telling that lightning is caused by heat, so you wouldn't understand what to take.

Q: Emm...do you think there'll be a way at school of being able to teach you to understand the cause of lightning ?

A: Yes Sir because if you've got an example to show how it is caused, then there is a chance to understand.

Q: What example maybe, can you elaborate it?

A: Sir maybe like emm... a teacher comes with something that can show that lightning is caused by this ... yeah you can understand it but Sir.....

Q: You need something like what?

A: Something like ... 'cause sometimes you find yourself maybe ill or you are washing dishes 'cause sometimes you find lightning hitting you , so if maybe the teacher comes with water or something like electricity.

Q: So basically what you're saying to me is that you don't want just a teacher to talk, but to come with something to show you that will be able to convince you?

A: Yes Sir.

Q: And seeing that thing how will it help you?

A: To be careful of lightning and that don't play when there is lightning 'cause my mother used to tell me that I must not play a ball when there's lightning.

Q: Ok. Emm...here.... yeah somewhere you wrote that it is dangerous, is it because of what your mother said, and why is it so dangerous?

A: 'Cause my mother told me so.

Q: that....?

A: ...that lightning is dangerous.

Q: Ok. So the sunny day, can you go back to the sunny day and the rain and the fact that it is dangerous, you know maybe I still want to go back to the one you are saying...now you have all these stories neh, and someone has ... I've got to come to class to teach you, how would you want me to teach you besides bringing something?

A: By telling us the tips of lightning. We can understand it by you telling us that lightning is really dangerous 'cause you can't just play outside when there's lightning.

Q: So then should I ignore your observation about lightning and tell you what science says or should I include in my teaching?

A: I think you should include what I said.

Q: And at any stage do you believe what you think of lightning is right or it's wrong , or what is right is what your teachers should tell you?

A: Yeah. I once asked my father what is lightning but he didn't tell me but when maybe you ask the teacher 'cause he/she has experience. Yeah you can also believe in what teachers are saying.

Q: So at school when they're teaching they use the OBE method and everything , do you think it's helping that method, is it helping?

A: Yes Sir. I think it's helping 'cause if it wasn't helping we wouldn't.... the teacher wouldn't ask about lightning.

Q: So here you wrote, I asked how should those concepts be taught and you said by just listening carefully and dealing with the reasons and good and good reasons/ what do you mean good reasons?

A: I mean ... it's like they must tell us the reasons but good ones 'cause sometimes you find people are telling you the reasons but you can't get them.

Q: You can't understand them?

A: Yes Sir. Maybe like they explain it, it would be good.

Q: Maybe if I ask further like, I've got lightning now what would be a good reason?

A: Sir.... Good reason, how to learn about lightning, like, I've told you Sir you mustn't play a ball in the house when there's lightning. Sometimes you mustn't go in the middle of the trees 'cause lightning is gonna ... yeah attract you.

Q: Ok. Thank you for taking part in this project and as I mentioned earlier you will be given a chance to listen to the tape and to read the transcript.

1. LEBOGANG

Q: Good morning Lebo

A: Morning Sir

Q: Lebogang I see here you wrote that according to the information that you get from your community when it starts raining, its because the rain Queen is crying you are going to have lightning because God is cross and is fighting with the devil, Do you believe that?

A: Sometimes I believe it because I mean no one ever came up with the real meaning why we lightning it just technological reasons why we get lightning and because the atmosphere around you is different a thing.

Q: Like I see here you said it is formed when the negative and positive charges and when clouds become dark then it starts with the rain and it evaporate then the water starts gaining up in the clouds, become more negatively charged and then the lightning hit with the strike and at a nearest time point but, this is a conventional definition. It is the definition you get at school, do you agree with me?

A: Sometimes I agree with you because teachers explain it in their own way and then I also interpret it in my own way.

Q: So do you say... do you find it different, that is... do you find the definition from your community, your parents and the definition from school, do you find them different?

A: I find them different because my mother explains it in her different meanings and my teachers also come up with different meanings, so It is different. It's two different meanings.

Q: Alright. Does the definition you learnt from your teacher disturb you from understanding the definition you learnt from your parents or your community? I see here you said it doesn't disturb you and later you said no but, maybe sometimes it does. What is disturbing about the different definitions?

A: Ok my parents definition is to what lightning is, is stories and my teacher's definition is just one simple straight answer, so when my parents tell me stories it's just too difficult to keep everything in mind, but then when my teachers explain It, it's easy to remember.

Q: Yeah but, in terms of lets say you are writing science your science, which one will you use.

A: I'll use my teacher's definition.

Q: But which one do you... which one will you... why will you use your teacher's definition as opposed to your mother's or parent's definition?

A: Because my teachers definition is much easier for me to study and it's because... it's just and my parents definition it's maybe long stories, it's just long stories and my teacher's definition it's just...short paragraphs...

Q: So... you rather use the teacher's definition?

A: Yes.

Q: Then tell me in terms of school are you comfortable with that another definition is use at school as opposed to the one you use, won't you rather ask teaching both and if you are teaching both how would you...which will you be teaching, how would you be involved in that? I hope I'm not asking a difficult question?

A: Ok! If it's both... maybe something might not be the same but, it might have similar paragraphs or something and then in the end it's gonna become one thing so... both things can, yeah it's not a problem for me 'cause in the end if we all different meanings and we have our.....maybe in the end we gonna come up with one meaning and then the teachers are gonna be able to teach us with that meaning.

Q: Right tell me in the class how would the teachers teach you because I think now the way they are teaching ... When they teach you do they refer.... Do they even talk about the definition that you get at home...or they just come with the definition , or with the other definition....conventional definition?

A: Sometimes they ask how do we think lightning is made up and sometimes she gives meanings of what she thinks and then in the end she is not gonna explain the meanings.

Q: But In the end what do you think.... does it actually come in the or it doesn't ...it is not used in any way , doe's it just vanishes?

A: Sometimes it doe's vanish.

Q: How?

A: The teacher sometimes says if we want we can add what we think lightning is , so obviously in other words we're also putting our own meanings in it .

Q: Do you think you get marks when you put your own meanings?

A: (LAUGH)

Q: So tell me, which emm... do you think maybe basically giving the two meaningsemm, do you feel we should do away with the definition at number A and with

definition number B or do you think we should find a way of using the two definition so that you are not disturbed when you learn.

A: I can use any meaning as long as I 'm able to understand what's going on.

Q: But that is the conventional definition, do you think... do you believe it is the real definition of lightning as opposed to this?

A: I think number B is the real one because usually before the lightning starts the negative and positive charges of the clouds crush and then.....

Q: So would you ever challenge your parents or your community and tell them that this is not the truth and the truth is emm...

A: Umm, I'll obviously tell them the true meaning, which one is right and which one is wrong , but then if they still want to believe that the rain Queen is crying or God is fighting , it's up to them.

Q: Ok. But with you, are you comfortable with the school's definition?

A: Yes.

Q: Mm.... Any other thing you want to say?

A: No Sir.

Q: Ok Lebogang thank you for your time and ...what we just discussed it is going to be transcribed neh.... and I will show you the actual transcription before it goes any where.

9. LERATO

Q: Good morning

A: Morning Sir

Q: I'm going to ask you questions but all these questions are more or less based on the questionnaire that you completed. Right the first question here was according to your parents, elders, and community etc, what is lightning and how is it formed?

A: Basically according to my grandmother she tells me that lightning is formed *ka li sangomas haba loantshana or something* (through sangomas fighting against each other or something) and sometimes she says if sangomas *ba e rometse go wena* (a sangoma is snet to bewitch you) or something you should have eggs and candles in your house so that *e se kene ka mo gare and strikes* (it does not get into the house and strike you). So this eggs and candles are something to prevent lightning from striking.

Q:. But then according to your educators what is lightning?

A: lightning is when negative and positive charges connect together then they cause friction.

Q: You said something about the clothes here...

A: Yes if you are wearing bright colors they say, basically Mrs. Zwane says when you are wearing bright colors and walking in an open space, a golf field or something you must roll yourself into the smallest object so that lightning won't attract you.

Q: Right, on the third question states.... you gave me the definition from your community and your parents and everything, then you gave me the definition from your school, do you find these definitions different and how so?

A: Yeah they do differ 'cause the one from my parents for me I do believe in that and I think they both do the same ... not quite the same but then they do have different saying in both of them. If they look like... compile a book with both of them so that we can understand the different between the two of them.

Q: So would you say in responding to the fourth question, does the definition of lightning from your teacher disturb you from understanding the definition from your grandmother?

A: No it doesn't disturb me. It's just that I do understand both of them, but then I believe most in the one from my grandmother.

Q: Then the other one which is more similar to that one saying the definition from your grandmother, does it disturb you from understanding the definition from your school?

A: No still it doesn't.

Q: Then how do you deal with both, now when you are in a classroom situation, maybe you are writing exams, how do you deal with both? Which one do you use?

A: I use the one from school 'cause they teach about it, so I can't say the sangoma's stuff when the teacher asks how lightning is formed.

Q: Why not?

A: Because they didn't teach me in that way, they taught me in another way and I have to use the one I'm taught.

Q: Don't you find that disturbing?

A: No for me itit is in a way but then, it doesn't affect me.

Q: Now my understanding is that you are compromising, you want to tell the teacher what they want to hear but what is it that you believe and maybe don't you think you should write what you believe?

A: Yeah, what Mrs Zwane taught me is what I have to write. I can't just write something that she didn't teach me and then she 's gonna say no this is wrong.

Q: She is gonna say this is wrong but what are you saying?

A: I'm saying that I do compromise, sir.

Q: Right. Let me say you are a teacher, I give a class to teach and in your class there are people who believe what your grandmother taught you and there are those who believe in the school one and you want to teach them so that in the end they understand the two, how will you teach them?

A: I would first ask them which one do they believe in, the Western or the African one then if half of the class understand this one and the other half understand the other then I will try to find the easiest way to teach both of them so that they can understand.

Q: Here you say "I think both should be used in books so that we know about African science and the Western culture." What did you mean?

A: I meant like Sir... the one that my grandmother taught me, we should also learn about it and the stuff inside books so that we know that sangomasare they for real or what then *le di friction tse*, how do they connect to one another.

Q: And you believe somewhere there must be a connection?

A: Yeah there must be a connection.

Q: Would you try to explain to me how would they have connection?

A: I don't know how but they do have a connection.

Q: And you believe if they were in the books ,so do you think
.....

A: And it's gonna be easier for people who believe in the culture thing.

Q: So do you believe at school like you said you compromise because you believe in this but at school you are taught differently, do you believe it would be a good idea for the cultural believe to be taught at school and why?

A: Yes it would be nice if we were taught in that way and reason being.....so that we can have a clear vision of what's going on.

Q: Emm....what do you mean what's going on?

A: Like umm.... I don't know how to answer that.

Q: My question was just now that we should... you believe this one is true but it is not what you were taught at school, is it a problem, that what some people believe is not taught at school?

A: In a way yes because you can't umm.... write something that don't believe and you won't basically understand. For instance that I believe in this then I'm doing this 'cause we want this.

Q: So you're saying once you don't believe in something you won't perform the best and how would it affect you at school, would it affect other people also knowing that they understand this but they have to write the different one?

A: It does affect because like umm.... I would compromise but then if I were to be taught in that way obviously maybe I would perform better than I do now.

Q: Better in terms of?

A: Like marks and stuff like results.

Q: So tell me could you, do you have any question maybe I've asked enough questions, maybe difficult ones and I apologize for that, but would you ask any question then based on what we discussed?

A: No Sir

Q: Ok Lerato, thank you for participating in this project and this thing is going to be transcribed, to be put into books and you'll be the first to read it if it is a true reflection of what we discussed then you will sign it. Thank you