Teacher B interview

**Researcher:** So, first question. All right so this is the question. Why did you ask it

here? By here I mean at the beginning of the lesson.

**Teacher:**  I would say I asked it because I wanted to make an introduction to the

topic to grab learners’ attention because they know that people grow.

So I wanted to create the question in their heads why is growth

happening, you see?

**Researcher:** Yea

**Teacher:** So when they give me their responses, I will then give them my answer

which is directed to mitosis, which is the topic that we are going to be

talking about.

**Researcher:** So in a way channeling their thinking towards the mitosis without them

knowing …

**Teacher:** Without them knowing that I’m channeling them towards that.

**Researcher:** Yea. And then is there any other way that you could have phrased it?

**Teacher:** Ehm… I don’t think there is any other way to rephrase it because Im

asking it like this when I'm giving it when I'm giving the response Im

also teaching them part of an exam question. Because if the exam

comes to say what is the importance of mitosis. And the first answer

there is, it multiplies the cells for growth and for repairing of damaged

cells. So me asking it like that is also teaching them to answer an exam

question to say, that growth is one of the important aspects of mitosis.

**Researcher:** Because I think it seemed general, the learner could have just said

growth means an increase in size, you know.

**Teacher:** Yea.

**Researcher:** But, without them knowing that it is in line with this specific topic that

we are about to start. You see.

**Teacher:** Yea.

**Researcher:** You then asked a follow-up question, do you think learners would have

an idea at this point?

**Teacher:**  Uhm, the follow-up question was based on…, because when I said

what is growing then someone said, an increase in size. If I would say

what makes us grow, the learner would say something else, like we

have to eat so that we can grow. So but if I say how does growing

happen then, Im trying to make the child think of something deeper. I

knew exactly that they wouldn’t get the answer correct but I wanted

them to try and dig deeper into the question of growth, by saying how

does it happen?

**Researcher:** Yea because some of them actually said, what was the question, how

does growing happen or what makes us grow? They then said food.

But they quickly reprimanded one another and said its cells. I don't

know if you have a clear recollection of that. At this stage, I think you

might have hinted, because we just came from cells and then move to

mitosis. So I think you might have hinted when you were teaching

cells that, cells do divide, cells do grow, and that is what causes

growth. Hence they were able to call themselves into order when you

were saying, food? And you did not respond to that first answer,

whether it's wrong or right, why is it not supposed to be food in this

case because we are talking about cells? You know, why is that?

**Teacher:** You know at some point when I am in class and teaching I refrain from

making any statements or arguments about something that is not really

direct to the topic that Im teaching. Because if I would explain the food

part, some learners would focus more on the food part. And it will stay

in their minds that when they have to answer the question, they will

want to repeat what I have explained when it comes to the food part,

which is not…

**Researcher:** Which is not in line with the topic

**Teacher:** in line with the topic… so that's why I really refrain from talking about

something that is not relevant to the topic. So that's why I ignored that

one. I ignored it on purpose because by explaining it, they would think

that its part of the content, meanwhile I'm trying to explain why it is

wrong so… I’ll make…, I’ll give them information that is not going to

help in the exam

**Researcher:** And they are going to be able to understand which one is in line with

this and which one is not in line with this. How am I supposed to

respond to the question I remember we spoke about this in class.

**Teacher:** Yea.

**Researcher:** Okay, all right…

**Teacher:** Because learners are very sensitive to what you say. If you say

something especially if you tell them that this is not in line with the

content, they are easy to grab that part.

**Researcher:** I wonder why.

**Teacher:** The one that is in line with the content becomes difficult for them, so

that is why I usually just don’t

**Researcher:** Entertain

**Teacher:** Entertain anything that is going to drive me away from the content.

**Researcher:** Okay, but when you asked the follow-up question, how does growing

occur because they know what growing is but now how does it occur?

You were still trying to channel them to think deeper. Like searching in

their minds and let that question or that growing sink in their minds.

And also touch on the prior knowledge, of something that they’ve

already done.

**Teacher:** Yes.

**Researcher:** Because most of these terms are really not new to them, the term cell is

not new to them, and the term growth is not new to them. So when

they have to link the two and access their prior knowledge and be able

to make up, actually whatever it may be that they can think of, and say

okay, probably this is how growth occurs.

**Teacher:** Yea, because if I say, in my head how I look at it, or how I looked at it,

is that if I say how does growing happen then Im challenging the

learner to think about growing as a person to say, okay, as I'm a person

the reason why I'm this height is because my skeleton is this height as

well. Then that means if I grow to be taller than this that means even

the skeleton, the bones must grow as well. I was then challenging them

to go inside the bone to say why the bone has to elongate or become

longer that's where the answer would be to say the cells will have

multiplied in the bones then the bones will become longer. So I was

trying to give them a very challenging level of thinking.

**Researcher:** Yea, it was an abstract question because as much as the topic of mitosis

as a whole is one of the important topics. But I feel like the CAPS

document or according to the syllabus, the information we are giving

these learners is very minimal. Because when It comes to this topic

learners are supposed to visualize something that they've never seen

before. When you tell them that there is one cell and then it divides and

it forms 2 cells that are identical to each other the learner is supposed

to visualize this whole thing so that it makes sense to them. So it's

really, I felt like it was an abstract question to be asked at the

beginning of the lesson.

**Teacher:** Okay?

**Researcher:** Not that it’s wrong but it actually grabs their attention to actually think,

because even after the lesson they are still going to think about this,

how does growing happen, like they want to visualize this in their

minds in their heads.

**Teacher:** Uhm… let’s also look at it from this other position, I believe that

learning becomes interesting once you realize that you don’t know. So

me asking an abstract question that they will think about and will not

get the answer it might drive them to the point, how does it

actually happen, to say that, now I want to know. Because maybe I

never thought of it before but now the question comes, how does this

thing happen? and Im failing to answer. Then if the question is difficult

maybe the learner will get that interest to say okay right now let me

just pay attention and listen because I want to know the answer to this

question.

**Researcher:** I actually agree with you one learner might be interested

to know this entire process and get this idea to go and google it, and

on google you'll find those assimilations and YouTube shows the

cells dividing and that is when it starts to make more sense to say oh

this is what happens. Nonetheless. Let us go the next…

All right what was the significance of that description you gave?

**Teacher:**  Describe was more of trying to create an image of what I'm going to be

talking about in the head. So that the learners can visualize say because

in general, even I or any other person that doesn’t how mitosis happens

then you tell the person that there is one cell and the cell is going to

divide and they will be 2, and the 2 divides then they will be 4. And

the person will start thinking that this division is just happening so…

what's actually happening in the process unless you give the person a

particular image, to see the actual thing. So me making an example of

a brick, say if this brick is one cell then we are to divide it to get 2

bricks and that means you are going to have a bigger structure than you

had before because it was one brick then there are 2 bricks, and the

structure is getting bigger. And the more you multiply, bringing more

bricks and the structure is going to become bigger, so what is that

process called if you had a smaller structure and later a bigger structure

and that means the structure has grown now the structure is bigger than

before.

**Researcher:** So sending this entire message of growth still.

**Teacher:** Exactly.

**Researcher:** Was it intentional for you to ask this question here?

**Teacher:** Eer, the question was a follow-up question to complete the first answer

that I highlighted, the importance of cell division. The first answer was

growth, then the second part of the answer there was supposed to be to

repair damaged tissues and replace damaged tissues and cells. So to

make that question was to complete this answer actually, to say these

are the 2 important aspects of cell division. It's for growth and for

the repairing of the cells and replacing torn tissues. So me highlighting

the growth alone without replacing then the answer is not complete. So

me making that question to make sure that this part of the content is

now complete because of this question, because they go together you

can’t separate them.

**Researcher:** Yea you can’t.

**Teacher:** Because they are both important in mitosis, it’s for the growth

and this one, so they have to go together. Once you ask the first one,

the second one must follow as soon as possible.

**Researcher:** Yea, but when the learners responded to say it’s cells you didn’t ask a

follow-up question to say how maybe, how does the cell repair the

damaged or torn tissues, you actually continued to explain to them how

it actually occurs.

**Teacher:** If you look at the elaboration from that question, I continued with the

visualization in mind to say, if I am to remove one brick from the

house then there is a whole, then I want to patch it, then what am I

supposed to do. That means I'm supposed to take another brick and put

it in there, you see, so this is me trying to explain the part of repairing,

because if I am to pull one brick from the house then I have to break

that brick, I can’t just pull it out. So my breaking that brick is part of

being damaged and wounded so how do I replace that one I take a new

brick to replace that part. So that was the…

**Researcher:** The initial idea

**Teacher:** The initial idea, to say I want to complete the answer and also

continue to the very same example, I made of the house, building a

house with bricks and I felt that bricks are a good example because to

cells because even bricks are identical to each other just like cells. So

you can’t have a smaller brick and a bigger brick and say you are

building a house. It does not happen. So it has to be a brick that is

exactly the same as the first one to build a house

**Researcher:** Plus it was the nearest example that could authenticate what you were

trying to…

**Teacher:** Exactly.

**Researcher:** Introducing the topic you started with is the significance of mitosis and

in most cases or most teachers, I'm one of those teachers, I don't

usually start with the significance. I start with the definition then I go

to the process, the phases then I go to the significance.

But I feel like when you started with the significance you sort of

created this inquisitiveness in the learners’ minds. Throughout the topic

the learner will now be questioning himself or herself, they will be

trying to understand the first question you asked about how growth

occurs. So for the entire lesson, the learner is now fascinated by the

entire description or the entire explanation you give about mitosis

because now they are trying to understand the growing part, visualize

the growing, and paint the image of the growing part because you

aroused interest beginning of the topic.

**Teacher:** To reply to that one, I would say that the significance of mitosis then

I'm giving the reply saying, it is for growth and for repairing the cells

right? The next thing is to say How do the cells divide to become

many, then that's where the content starts to come in the phases, and

everything so for me I think it was authentic to say let me bring what I

am going to teach an experience of everyday life to them first then

before I go to the deeper content, deeper questions because growing is

something that is happening to everyone and every day. So I bring this

one I'm trying to make an idea of saying what I am going to teach is

not something out of this world its something that is happening to you

as…

**Researcher:** You experience…

**Teacher:** Yea, as we speak right now, it's happening to you, you are growing,

you are a child and you are growing. So for you to grow we need to do

this mitosis. Then, how does it happen, and how does this mitosis

happen? Then we go to the phases to say for a cell to divide from one

cell to 2 cells this is what's supposed to happen. Then we go to the

phases. So I would say that it was for authenticating everything I was

going to say and bringing it to their level of understanding and

everyday living. So that is why I started with it. because me starting

with the definition, me telling them a definition to say mitosis is a type

of cell division that maintains the number of chromosomes. Already

the learner is going to be lost on that one. because I think

the moment you start to talk about, for example, the definition of

mitosis itself, I feel like for one it's complicated because you are

going to talk about maintaining the number of chromosomes which is

something very deep for Grade 10 learners. We maintain the number of

chromosomes, number 1 what is a chromosome. Why do we have to

maintain the chromosomes? So I feel like the definition in the first part

of teaching the content is confusing compared to the importance or the

significance.

**Researcher:** Of mitosis

**Teacher:** Of mitosis

**Researcher:** Yea, because, the learner, in order for the learner to be able to

understand and actually learn, they need to have something to build on.

So if you start with the growing part it’s something that they already

know that it's happening it's something that they observe and

experience themselves. So now they can be able to build on that

because now they know that the topic is about growing, so they can be

able to build on it.

**Teacher:** Yea, because if you come to look at it, when you introduce mitosis, by

that time the learner does not even know what a chromosome is, you

have to teach the chromosome when you start to go to the interphase

and the prophase to say, now the chromatin network that you know

unwinds to form the visible chromosomes. Then this is the

chromosome that they are going to form. And that's when they are

going to start to know the chromosome. So you mentioned the

definition that will include the number of chromosomes is something

else at the beginning.

**Researcher:** What was the significance of this question? What were you trying to

establish?

**Teacher:** Is linking the chromatin network to the chromosome to say this the

very same structure just that at different times. To say, if the cell is not

dividing the DNA in a form of a chromatin network. Then when the

cell starts to divide then the DNA is going to become chromosomes

now. Which is also an exam question that is asked especially in Grade

12. Say before cell division the DNA is chromatin, then when the cell

is now dividing the DNA will be as the chromosome. So me asking

that question and give them the answer because I gave the question

and I gave the answer at the same time without giving them a chance

of replying. It's because I knew that it was going to confuse them. They

are not going to get it right because it's a very very straightforward

question that requires knowledge for you to be able to answer it. So me

asking them without telling them what is happening they won’t be able

to get it right. So let me ask it and tell them the answer at the same

time in terms of… Im teaching it just like that, to say DNA is a

chromatin network but DNA is also a chromosome. That means this is

one and the same structure just that it's 2 different occasions. When the

cell is not dividing it's going to remain as chromatin when the cell

starts to divide then we going to have the chromosomes because…

maybe one person may have a question to say, inside the nucleus we

had a chromatin network and now we are dividing the chromatin

network was never mentioned but we mentioned a chromosome,

which was not there before,

**Researcher:** At the beginning.

**Teacher:** At the beginning. Because when we teach them about cells we don’t

talk about chromosomes we talk about chromatin networks. So now

the learner might think, where is the chromosome coming from now,

because when we were learning about cells it was not there. We never

labeled a chromosome. We never talked about any functions of the

chromosome. So there I was trying to link the chromatin network to

the chromosome, to say, this is one and the same thing just that on

different occasions it appears as different structures or different forms.

**Researcher:** But you didn’t dwell much on the DNA replication part.

**Teacher:** It’s because I felt like DNA replication is content for the next Grade to

focus on it that much. Here I just need to mention it so that they at least

hear that there is something called DNA replication that is going to

happen in interphase. But to say why is it important for the DNA to replicate and how it happens just to emphasize it, I feel like there is no

need for that because it's prescribed for the next Grade,

**Researcher:** Grade 12

**Teacher:** Yea, so now Im just making a blueprint to say there is something called

DNA replication takes place. The why and how it’s not on the Grade

10 content.

**Researcher:** So you phrased this question similar to how you phrased it in the first

lesson.

**Teacher:** It's a recap question, we are recapping we recapping but focusing on

exam questions. So the recapping part I usually do is in the form of the

exam questions that are coming from the previous lesson. So I create

the exam questions that I know, from the lesson we’ve had, the

possible exam question is this and this, then I use it to recap. Or as an

introduction for the second lesson.

**Researcher:** Okay so it was clearly a recap question. What was the significance of

this question asked here?

**Teacher:** I would say this was a direct exam question, so how can I teach it?

Then I can only teach it by the question and explaining how the answer

comes when answering that question. To say okay we have

karyokinesis which is the division of the nucleus and then we have

cytokinesis which is the division of the cytoplasm. Then which part is

the division of the nucleus, it’s the interphase to the anaphase. Then

which part is the cytokinesis then it's the telophase alone. So that one

was just teaching them the exam question as it is just by linking it to

the phases.

**Researcher:** Okay. In this section, you asked 2 questions. On the first

one you gave them the answer. Why?

**Teacher:** It’s for a clue because it was taught in the previous lesson so I can’t

give them full responses. But to see that they are lost, let me try and

give them a hint of the first question and see if they can complete the

second one.

**Researcher:** The second one. And they actually did. And this question was not

phrased like the one you asked for in the first lesson.

**Teacher:** It's because, as an individual you can’t change everything you said on

the previous day word for word, it. Is obviously going to change here

and there. So that is how it happened. If it was possible it was going to

be the same but I guess the vocab played a role in the phrasing of the

question.

**Researcher:** But I think it is necessary to do that because, with some questions, the

learner needs to… like you’re phrasing a question you need to let it

sink, like when you ask them a question they must think about it and

think about it and be able to go back to the question and understand

what is it that you were trying to say? So this one you were asking it

for the second time, you asked it in a different manner, and then when

when you ask again and it sinks into their heads in their minds they

must be able to recall that we did this yesterday.

**Teacher:** To see if they can connect if something is asked in a different manner,

to say this is the same answer.