REAL SCIENCE AND SCHOOL SCIENCE: ENDLESS WONDER VERSUS THE DRIVE TO EXPLORE

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ABSTRACT *Science may be simply defined as a way of finding out about how the world works. It is often viewed as objective and being built on a step-wise procedural base. The question arises as to whether school science needs to be different to cutting-edge ('real') science since the outcomes have different purposes, one requiring scientific breakthroughs, the other being imitative and simple. The divergence between these two realities of science impacts on the development of science curricula in that relevance for students, rather than purely imitating real science, steers science curricula.*

This paper reports on an ethnographic case study of a Year 7 Science class, incorporating weekly observations of science lessons, focus group interviews with students and teacher discussions. The focus of the research is on the evolution of students' perceptions and expectations of science over the course of the year.

A reconstruction of the first science lesson using student interview responses embodies two main themes that have arisen from the research.

The first relates to students' perceptions and expectations of school science compared to 'real' science. Five characteristics have been drawn out from the data describing the differences between real and school science. Also, characterisation of the culture of school science explores what students mean by the term 'doing science'.

The second theme relates to the values attached to the terms 'fun' and 'interesting', and the implications they have for learning science. These are value-laden adjectives often used by students and teachers to describe aspects of school science. The distinction between fun and interesting appears to encapsulate whether a response is a reflexive reaction to an experience that is non-threatening and emancipatory (fun), or whether curiosity has been aroused, which prompts students to ask questions, thereby initiating the learning process (interesting). It may be that students that are interested in searching for answers in science exhibit a 'drive to explore' the natural world, whereas, students who show no indication of wanting to find out but are still responsive, especially to the fun elements of the classroom, perhaps remain fascinated in a state of 'endless wonder'.

'Welcome to science,' says the teacher. 'It's really good, and we're gonna have heaps of fun!' For a Year 7 class entering the world of secondary school science for the first time, this sounds absolutely 'awesome'. Indeed, this is how the teacher in this study introduced School science to a class of Year seven students. However, as awe-inspiring as such a statement may be, the question remains: Is it possible to maintain and accommodate the anticipation that such bold statements evoke?

As a teacher of Year seven science myself, I have found that as the year progresses, an eager group of students can, in fact, become less attentive, and negativity and apathy become the dominant attitudes towards science, with science lessons being perceived as boring by some students.

In order to investigate the this wane in student attitudes, I was inspired to embark on an interpretive ethnographic case study of Year 7 science. The study was designed to explore whether students' perceptions of school science reflected their perceptions of science, encompassing 'science' in all its dimensions as perceived by the students (in and out of the school context), and whether their experience of school science is indicative of what they expect all science to be like. The purpose of the study was to investigate the continuity of experiences that students face during their first year of science in a secondary school setting. The research questions related to what students perceived to be science within its many dimensions and what they expected of science; how these perceptions and expectations evolved over the year; and whether there were certain experiences that appeared to influence this evolution.

This wane in student interest in science during the transition from primary to secondary school is prominent in literature. report on the generalisation that there is an apparent down turn in motivation, expressed through 'negative attitudes and behavioural patterns, which appear to negate the benefits of learning in school' (p. 287). report on some of the factors contributing towards the developing and changing perceptions of students, such as students' expectation of a high degree of practical hands-on activities, school size and teacher pedagogy. consider that the boredom associated with some work done by students, especially those in their middle years of schooling, may not necessarily be indicative of a lack of interest and enjoyment, but more a lack of challenge, where challenge is a part of the learning environment.

My study involved a year 7 class from an independent school in the Ballarat area, including the female teacher (T). The study employed ethnographic methods to follow the class through the 2001 school year, including participant observation once a week, student focus group semi-structured interviews once a term, and informal interviews and discussions with key informants throughout the year . Categorical analysis saw the emergence of various themes. During interviews I was able to explore the emergent themes and gather student insight, clarification of terms, and meanings of experiences students had in science lessons.

What follows is a reconstruction capturing the experience of their first science lesson, synthesised from student interview responses. The reconstruction provides a snapshot of how students perceived science early in their transition from primary to secondary school. From the reconstruction emerge two themes relating to, first, how students perceive school science and real science, and secondly, the depiction of science as being fun and interesting (as mapped in the Appendix). Both of these themes are explored in the light of the reconstruction. In conclusion a number of questions have been raised in order to prompt discussion about how the two themes can be used to promote learning in science.

Reconstruction of the First Lesson

I walk into the science room, not really sure what is going to happen. I didn't really enjoy science in primary school. It was kind of boring because we already knew half the stuff. We only just sat there and learnt off a text book and it wasn't fun. I am worried that I won't know how to do the experiments, I don't know much about science. I don't really want to be here, I actually wanted to go to sick bay, but I didn't.

The teacher asks us about what science we've done in primary school. It is interesting hearing about what other people have done and finding out what they know. The teacher says that science is going to be Fun.

Then the teacher shows us some scientists on a PowerPoint presentation. This is very interesting, finding out about different famous scientists.

She says that we are all scientists, but I can't imagine myself as a scientist. They invent new things and they know a lot about chemicals and that's all they work on. They work on their own and know what to do and they use big words. I don't want to be one of them when I leave school.

And then we go over to the lab. We get to put on lab coats. Everybody looks funny, but this is great, really fun. A man comes in and shows us some experiments where he mixes chemicals together. He shows us some with different chemicals changing colours: he puts two clears together and it changed to like a purple. These are a bit boring, but they are still interesting. Then he does some that have sparks going everywhere and one where this foamy stuff pops out. It looks really good. We don't see it very often. I've never seen an experiment, besides on TV. And everyone just goes Wow! And big expressions on their faces and you can just see that it is really fun and, when it's time to go it's like But I want to see more!

I think it is good that he can show us what to do because I always thought that science was really boring and you did stuff that had lots of abbreviations for stuff that was really simple. I think science is actually going to be better than I thought it was going to be, cos we did really easy experiments at my old school. I used to be scared of doing science cos I thought we had to make up our own experiments and I was thinking back what would happen like, how would we know. But it all seems fairly simple. You've just got to research the stuff.

This is what science is all about. We have the lab coat, we get to use special science equipment and play with chemicals. Now I feel that I will really be doing science. I think I am going to enjoy science now because of the experiments because it's fun, yeah, really interesting. Now when I walk into the science room, I think that something fun is always going to happen. There's so many different things you could actually do.

Discussion

Theme One: Students' perceptions of real versus school science

The first of the two themes emerging from the reconstruction relates to how students perceive school science compared to 'real' science. The reconstruction raises two main points relating to students' perceptions of school science and real science. One characterises the differences between real and school science, the other gives some insight as to how students perceive their science education at school.

The first point relates to the way school and real science are characterised, as drawn out by students' descriptions of scientists. The third paragraph summarises students' perception of a scientist, and since the scientist is a product of the culture of real science, an image of the real science culture can be constructed. The following description is a compilation of some of the interview responses students made to the question "What is the difference between the science you do at school and the science that scientists do outside of school?":

> She says that we are all scientists, but I can't imagine myself as a scientist. They invent new things and they know a lot about chemicals and that's all they work on. They work on their own and know what to do and they use big words.

Within that brief description, five characteristics have been identified that differentiate real science from school science. These characteristics, as described in Table 1, are: their purpose for doing what they do, types of activity or what they do, the importance of what they do, the level of learning or knowledge that they have, the focus or speciality of what they do, and the environmental factors within which they work.

	Real Science	**School Science**
Purpose	Add to the body of scientific knowledge	Educate from the existing body of scientific knowledge
Activity	More ground breaking, producing and discovering new things	Students just repeat what scientists have already done.
Importance	More important because scientists do it for a reason, it is used for more important things. It's more to find out why people get cancer and how to cure it, making the science they do more serious.	Less important. It doesn't mean much in the wider scheme of life. Its importance lies in its purpose of educating school students.
Level of Learning	Scientists are considered to know more, using big words, being more advanced in what they know and use more complex equipment because they would 'know what to do'.	Simple concepts that help students get used to science, using simple words to describe simple pracs.
Focus	The focus of real science is more specialised, so scientists focus on one aspect of science	School science is more broad
Environment	Scientists generally work on their own without constant supervision and do not have a teacher	In school science they are restricted to the constraints of the classroom environment. Also, the teacher directs the learning experiences and provides assistance.

Table 1. Comparison of the characterisation of real science and school science, as perceived by Year 7 students.

Some students considered there to be a great difference between what real scientists do and what they do in school science. The major difference was that scientists already know about the facts so do not need to do the simple experiments to learn the basics, as illustrated in the reconstruction: 'they know a lot about chemicals…know what to do and they use big words'. In fact, when students compared themselves to scientists some did not consider themselves as scientists, arguing that they do not know enough and that scientists know so much more, as related in the reconstruction: 'She says we are all scientists, but I can't imagine myself as a scientist.'

The difference between activity and importance is a product of their purpose: 'They invent new things…' Students perceived that the purpose of real science is to add to a body of knowledge where there are important scientific discoveries, such as a cure for AIDS or cancer. School science, in comparison, was perceived as having the purpose of educating school students from the existing body of knowledge by repeating what scientists have already done, and as such, giving school science less immediate importance.

The students also perceived there to be a difference in *how* scientists work and the environment in which they work: 'that's all they work on. They work on their own…' The work of scientists was perceived as being more specialised in that they focus on one aspect of science, compared to school science where students cover science broadly, skimming over all types of science. In the first part of the lesson represented in the reconstruction, the teacher presented and discussed different types of scientists, all working in their own field of science, so a chemist studies chemistry, a zoologist studies animals, a cell biologist studies cells. So from this instruction and pre-existing constructs of what scientists are, students had the perception that scientists operating in real science are very specialised in what they do. This perception has been carried through the year, although there has been a predominant shift in term four towards the idea that science is everything, which allows all students to, in fact, be scientists since they are continually exploring the surrounding world.

Another characteristic is the environment within which scientists operate, where scientists were seen to generally work on their own. This was a key issue for students in year seven. Many of the students enjoyed working in groups, so the belief that scientists work on their own leads them to conclude that they do not want to be a scientist. One of the aspects emerging from the interviews relating to the environment within which scientists operate is that they do not have a teacher telling them what needs to be done. So, they do not just work on their own, but they are independent workers, which must also assume that they have the level of learning to be able to sustain such independent work. Students, however, encounter school science within the constraints of the classroom. The teacher is seen as pivotal in directing their learning and learning experiences, so they consider themselves less independent than scientists.

Since students operate within the context of school science, they generally make no conscious comparison between what they do at school and what scientists do. After all, if students stopped at the idea that school science is less important than real science, then school science would be considered inferior and irrelevant. But educating students about science has its own agenda. Therefore, in an attempt to gain insight into how students perceived their science education, the second point emerging from the reconstruction within this theme is the characterisation of the culture of school science. The reconstruction suggests that school science is seen to be all about being in the lab, and now that they are exposed to the lab in secondary school, they believe they will actually be 'doing science.' Doing science is defined in the reconstruction as experiencing the lab in all its parts: the lab coat, chemicals, complicated experiments, proper scientific equipment and just *being in* the lab, all with the purpose of finding out about science:

> I used to be scared of doing science cos I thought we had to make up our own experiments and I was thinking back what would happen like, how would we know. But it all seems fairly simple. You've just got to research the stuff.
>
> This is what science is all about. We have the lab coat, we get to use special science equipment and play with chemicals. Now I feel that I will really be doing science.

Compared to their primary school experience, which was often wanting of science experiments in a formal lab, secondary science offered the students the opportunity to enter into this world of science.

In summary of this theme, an exploration of the literature has revealed substantial research in the past 20 years focusing on providing students with an 'authentic' experience of science . This has been as a response to the claim that school science, or 'textbook' science, is not representative of the 'science culture' . The purpose of an authentic experience of science is to give the students an opportunity to work *as* scientists, working from the conception of research questions to forming conclusions, thereby giving the students an authentic glimpse and appreciation for the Nature of Science. Proponents of authentic science experiences are , who believe such experiences have been used in two ways: first with a purpose of helping students learn about the nature of science and its products; and secondly where students are actually engaged in science in authentic ways, such as asking the questions and engaging in practices that resemble what happens in science labs. The question is, however, does it matter that students see their world of science as distinct from real science, and how does this impact on their learning of science? Given that even in these 'authentic' experiences the students operate within the context of the school and as such remain students, how authentic can such an experience be really?

Theme Two: The Descriptors of Science - Interesting and Fun

Other perceptions predominating the reconstruction are the description of science as interesting and fun. The second theme relates to the meanings attached to these terms and the implications they have for students in learning science.

Enjoying was the verb students associated with their experience of science: they enjoyed science as it was perceived as 'fun' and 'interesting'. This features as part of the reconstruction:

> I think I am going to like science now because of the experiments because it's fun, yeah, really interesting.

When asked what values they attached to the terms 'fun' and 'interesting' most of the students interviewed were able to make a distinction between something that was fun and something that might be considered interesting. The reconstruction demonstrates how students used the terms fun and interesting. The various meanings of these terms have been derived from interviews and described in Tables 2 and 3, along with a brief description of how each contributes to learning. The data indicating these descriptions is not represented in the reconstruction.

However, the reconstruction does give examples of the type of experiences that may be deemed fun and/or interesting. Indeed, the perceptions of science as fun and interesting are a result of the experiences that students have in science, and as such, come to be indicative of school science. The experience of the first lesson has had such an effect on some students that, even in Term 4, students still recall the Chemical Demonstration as being a high point for the year. But even elements of this important experience could be distinguished as being either fun or interesting. For example, the more subtle reactions were not considered fun as they were less demonstrative, so were considered interesting, but not fun:

> He shows us some with different chemicals changing colours: he puts two clears together and it changed to like a purple. These are a bit boring, but they are still interesting.

In comparison, the explosive demonstrations that were high in action were classified as being fun, producing responses such as laughter, movement, satisfaction and a longing to experience it again:

> Then he does some that have sparks going everywhere and one where this foamy stuff pops out. It looks really good. We don't see it very often. I've never seen an experiment, besides on TV. And everyone just goes Wow! And big expressions on their faces and you can just see that it is really fun and, when it's time to go it's like But I want to see more!

This use of the terms interesting and fun presents positive images of science, and they potentially represent different aspects of the science

experience. It must, however, be stated that some students have also described something fun as being interesting: 'How can you have something that's fun but not interesting?' was a response from the interview. Perhaps the difference between these two experiences is, therefore, more to do with the absence of fun in the more subtle colour changing experiment, rather than the more demonstrative experiments just being fun.

'Interesting'

With this in mind, an examination of what interesting means[1] has given rise to five characteristics of an interesting experience, as listed in Table 2.

MEANINGS	DESCRIPTION
Something unexpected	Where they don't expect the answer or response
Something unknown or unfamiliar	Something 'weird' or different, or where students don't know how to get the answer, or they are in search of evidence to support the hypothesis stated by an informed source, such as the teacher or other students
It presents a challenge	Where the outcome is not obvious and they have to work it out, problem solving is required to answer the questions that arise
Not repeatable	Something new, experienced only once, otherwise it is not considered interesting as you already 'know' it
Attention grabbing	To be interested in something it has to grab your attention first, it has to be appealing
Links to learning	Prompted to ask questions. It then leads to learning through the problem solving process, through finding out how it worked, reading and learning, and where things are understood.

Table 2. Characteristics of "interesting" as defined by Year 7 students during focus group interviews.

An interesting experience was characterised in three ways: it could be deemed as unexpected; it encompassed the element of the unknown or it was different or weird; or it presented a challenge to them (as supported by), and problem solving was required to find the answer. Each type of interest expressed different responses, although they are all very much interrelated in that they all prompt the student to ask questions and seek answers, even just mentally. The difference, perhaps, and this needs further analysis, is the dominance of the type of interest, that is, the predominance of the unexpectedness, unfamiliarity and challenge in the experience. So, for example, where the students watched the chemicals changing colour in the Chemical Demonstrations the challenge was limited because it was being performed by the lab technician. There was definitely a sense of unexpectedness but the subtle reaction, perhaps, did not warrant a high degree of unexpectedness. Perhaps the more dominant was the sense of the unknown as the students did not know what was going to happen. This may be compared to the more demonstrative experiments, where the element of surprise, therefore unexpectedness, predominated.

The other two characteristics were seen by students to potentially act as requirements for an experience to be called interesting. The first characteristic was that the experience had to grab their attention and be appealing to be considered interesting. This suggests that there needs to be some existing construct for the experience to interact with.

However, the existing construct must not provide an exact re-run of the experience, as the second requirement of interest the students expressed was that it was not repeatable. Something ceased to be interesting if they had already done it or they already knew it. Once the answers became known, the intrinsic motivation to continue to be engaged became lost and it was no longer interesting. This suggests that interest, in fact, may actually inhibit the learning process, as suggested by : 'Individuals are known to suspend learning when they believe the learning has been accomplished' (p.442). You know it, you've done it; it is a progressional process where interesting experiences need to be built on rather than repeated.

However, students still learn from interesting experiences. For example, it may be the fact that a result was not expected that actually impressed the experience on a student and this may help them to remember the results or process, thereby learning from it. When the types of interesting experiences are exposed to students, they are prompted to ask questions, thereby initiating the learning process. When students are provoked into asking the questions, this may be characterised as a 'drive to explore', a deliberate decision, or even just a 'ripple effect', causing the person to embark on the journey to find out the answers to the questions. When students encounter something that is interesting, they are prompted to question and they have the motivation to embark on the journey of discovery, of finding the answer and learning something; to 'understand'.

'Fun'

In comparison, as outlined in Table 3, the research shows that an experience was deemed fun when there was no pressure to perform or get the right answer (less pressure) or when the experience is 'big' (demonstrative) as in the case of the exploding foam tube and sparkling chemical reactions in the reconstruction. You get to be yourself (sense of freedom), and you can laugh and talk with your friends (friends element). If an experience is fun, you tend to want to do it again as expressed in the reconstruction, 'But I want to see more!', although this is not unconditional (repeatable to an extent). Some of these elements are not represented in the reconstruction.

MEANINGS	DESCRIPTION

Demonstrative	Action-packed, big responses, involves movement such as games, and even just getting out of their chair
Less pressure	Where they do not feel threatened in any way, such as reduced pressure to get the right answer and such embarrassment
Sense of freedom, more relaxed	Being relaxed and being able to do your own thing, but also not as in the idea of being free to be happy or giggling all the time.
Friends element	Being able to interact with your friends, such as laughing and talking
Repeatable to an extent	You will want to do it again, within limits
Links to learning	Provides the motivation to want to be engaged, so a requirement for students to have prolonged interest in some cases.

Table 3. Characteristics of "fun" as defined by Year seven students in focus group interviews.

Student responses in this study suggest that 'fun' embodies an emotive response rather than a cognitive response to the stimuli of the environment. One idea of fun that has been considered in the research is that when something is fun, the students are exhibiting signs of having fun, such as chatting, laughing, joking, but they have not necessarily gone to the level of asking themselves the question 'Why *am* I doing this? What information is it that I am finding out? Do I want to find this out or is there something else that I feel I want to explore instead?' It is when they reach that next level that something becomes *interesting* in the sense that they find themselves wanting to know more about it and ask themselves these questions. An analysis of such a 'fun' experience appears to suggest rather, that the interest may not be the 'type' that encourages them to ask the questions, as there would have had to be some interesting component in the experience for it to be labelled as fun.

This not a superficial response as first thought in this research, in the same way that perceptions are not a purely superficial response to a stimulus as there is a purposeful categorisation of the experience . Similarly, something 'fun' requires some evaluation of the experience in order to judge whether it is fun or not, but then, what does fun really mean? Is it just an emotive response? This needs further exploration.

Indeed, the fun element is imperative to some students to maintain their interest in science. A number of students stated, again not represented in the reconstruction but worth mentioning, that for their interest to be maintained, the teacher needed to keep it fun, otherwise science would get boring. Here, when asked what the teacher could do to increase learning, fun was intrinsically linked with interest and learning:

> Keep it fun, and not like start to make it real boring so that we don't want to learn anything. So that we're not just sitting there doing nothing. Like, keep us to *do* something. Cos if we're just sitting there waiting for other people to finish it gets a bit boring, nothing to do.

Baird et al. (1990) envisage challenge as comprising two main components – a cognitive/Metacognitive **demand** component and an affective **interest** (and **enjoyment**) component. The results of this study suggest that the use of the word 'interesting' by students is not just affective, where they say they enjoy science because it is fun and interesting. 'Interesting' appears to also have a cognitive component. Therefore, the idea that the cognitive action is separated from the interest, as suggested by Baird et al., is not represented in this study. Rather, interest as perceived by the students in this study appears to be considering two types of interest: the interest that is the affective part of fun, represented for example when students say they need for their interest to be maintained; and the interest that embodies the demand component of challenge, which is the cognitive/Metacognitive response to the situation, such as where students are prompted to question.

Conclusion

Both of these themes impact on how students align themselves to learning in science.

As a conclusion, in light of this statement and the findings of this study, I would like to raise two questions for discussion. (Preceding each question is a summary of the main findings relevant for that question. My response is given after each question.)

Question 1. Students operate within the world of school science, not real science; such a contextual difference is a reality. As the students in this study perceived, the importance, focus, and type of activity and environment are different because the purpose of school science education is different to that of real science. No matter how 'authentic' we attempt to make their science experience, students remain within the context of the school culture, not the culture of real science that has the primary activity of contributing to an expanding body of scientific knowledge. School science teaches the basic concepts from the existing body of knowledge. *Therefore, how can teachers use this inevitable dichotomy of real and school science to provide a science program that has a positive and prolonged impact on learning science?*

My response: This dichotomy may actually be necessary to keep school science relevant to the world of the students. In order to make it relevant to how the students already view the world and how it works, their existing constructs must be accessed and considered .

Question 2. 'Fun' and 'interesting' can depict different parts of the school science experience, and can affect learning in different ways. This study has shown that it is not necessarily learning the science that keeps students interested in school science, but the way in which the science is taught, being the learning experiences and pedagogical aspects of the classroom. *Given the ways in which fun and interest are perceived by the students as impacting on their learning, how can teachers maintain student interest, and how do teachers build a culture that allows students to maintain the 'drive to explore', and push them out of their state of 'endless wonder'?*

My response: Given that students have different preferences for learning and employ different cognitive processes depending on their motivation for learning (Renninger, 1992), it is important to remember that just because some students do not participate in the 'fun side' of science does not mean that they are not responsive to the 'interesting side' of science, depending on what they see as relevant for them.

It may be of greater benefit, therefore, to focus less energy on providing simply a fun environment that gains students' interests where students

rely on the fun element to maintain interest, and more on building a classroom culture that fosters science as a relevant and purposeful activity. The process of *how* the students answer the how and why is most valuable to a group of year seven students. It is learning to focus their attention and powers of observation, *doing* something with the results, communicating those questions that target clarifying their understanding and knowing how to access the old knowledge and transact it with the new knowledge. These aspects of science are not exclusively science; they pertain to perhaps all aspects of life – in dealing with people, new situations, old situations, thinking rationally, logically and creatively. The emphasis on the attainment of knowledge should be secondary to fostering 'scientific thinking' , with the aim of tantalising interests and goals of the students, whereby the process of finding out becomes an interest, intrinsically motivating and leading to authentic learning.

Endnote

[1] defines interest as 'the selective persistence of engagement', also as a 'personal disposition or value orientation'. So, if something is of interest, it is especially valuable to that person.

References

Appendix Reconstruction map of themes

	I walk into the science room, not really sure what is going to happen. I didn't really enjoy science in primary school. It was kind of boring because we already knew half the stuff. We only just sat there and learnt off a text book and it wasn't fun. I am worried that I won't know how to do the experiments, I don't know much about science. I don't really want to be here, I actually wanted to go to sick bay, but I didn't.	THEME 2 – Not fun
	The teacher asks us about what science we've done in primary school. It is interesting hearing about what other people have done and finding out what they know. The teacher says that science is going to be Fun.	THEME 2 – Interest
	Then the teacher shows us some scientists on a PowerPoint presentation. This is very interesting, finding out about different famous scientists. She says that we are all scientists, but I can't imagine myself as a scientist. They invent new things and they know a lot about chemicals and that's all they work on. They work on their own and know what to do and they use big words. I don't want to be one of them when I leave school.	THEME 2 – Interest THEME 2 – Interest THEME 1 – School Science . . .
	And then we go over to the lab. We get to put on lab coats. Everybody looks funny, but this is great, really fun. A man comes in and shows us some experiments where he mixes chemicals together. He shows us some with different chemicals changing colours: he puts two clears together and it changed to like a purple. These are a bit boring, but they are still interesting. Then he does some that has sparks going everywhere and one where this foamy stuff pops out. It looks really good. We don't see it very often. I've never seen an experiment, besides on TV. And everyone just goes Wow! And big expressions on their faces and you can just see that it is really fun and, when it's time to go it's like But I want to see more!	THEME 2 – Interesting part of the experience **Description of an important and influential , experience – CHEMICAL DEMONSTRATIONS**
	I think it is good that he can show us what to do because I always thought that science was really boring and you did stuff that had lots of abbreviations for stuff that was really simple. I think science is actually going to be better than I thought it was going to be, cos we did really easy experiments at my old school. I used to be scared of doing science cos I thought we had to make up our own experiments and I was thinking back what would happen like, how would we know. But it all seems fairly simple. You've just got to research the stuff.	THEME 2 – Fun part of the experience THEME 1 – Real Science ….
	This is what science is all about. We have the lab coat, we get to use special science equipment and play with chemicals. Now I feel that I will really be doing science. I think I am going to enjoy science now because of the experiments because it's fun, yeah, really interesting. Now when I walk into the science room, I think that something fun is always going to happen. There's so many different things you could actually do.	THEME 1 – Science as Interesting and Fun THEME 1 – School Science . .
		THEME 1 – School Science….
		THEME 1 – School Science….