



Antarctica Exhibition

Evaluation with Families with children aged 7-11

4 April 2007

The Comms Station/ Base Camp Interactive

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1.0 Introduction

The activity evaluated for this report was one of three computer interactives tested as part of the formative evaluation undertaken in April 2007 for *Antarctica*, a temporary exhibition to be held at the Natural History Museum.

Evaluation was carried out with families with children of the target age range (7-11 years)

Aspects to explore with the participants were

Can visitors log-on using their ticket OK?

Can they start the game ok?

Can they use the controls ok?

Do they read the evidence around the laptop?

Do they engage with the scenarios?

Do they like the ending?

Does the fact that we are encouraging them to go online afterwards register? and what are they expecting when they go online?

Are they getting the visitor outcomes?

- Emergencies happen in Antarctica
- You have to sort out emergencies

2.0 Methodology

The evaluation was carried out on a Wednesday in the Easter holidays when there were plenty of visitors at the museum.

Families with children aged 7 – 11 were invited to the evaluation space where three activities were being tested simultaneously. The children did the activity singly, whereas in the exhibition they might well help each other out.

A question sheet was used by the evaluator (see Appendix 1).

The child was invited to 'look and do'. The evaluator knelt on the floor to be able to see the screen and the child's face at the same time and usually only asked questions when the activity was completed.

Children were thanked and could choose a postcard to take home.

3.0 Results

16 children completed the activity and the questions.

As the exhibits were all being tested in the same room, the children moved between the activities and parents tended to have a quick look and then sit to one side and rest or chat. Only one child had help from a parent with the Comms activity and that was the youngest who needed help with reading. Details of accompanying parents seemed less relevant under these circumstances; I believe there were 14 mothers and 4 fathers present but I did not speak to them all. The children were as follows:

Age	6	7	8	9	10	11
Girls	√		√	√√√	√	√√√
Boys			√√	√	√√√	√

The questions and responses are given below:

1. Seamless log-on with ticket? *Not possible to test this*
2. Can they start the game ok? *Not relevant as they were told how to start, using the Down key.*

3. Can they use the controls ok?		<i>There were two hesitations about how to enter the multiple-choice letters, because the children were excited and did not read/take in the instructions. But there was usually no problem with this.</i>
4. Do they read the evidence around the laptop? <i>Observe.</i> <i>(If not, ask for & record comments)</i>	YES x 2 <i>(Both girls)</i> NO x 14	'I love the pieces of info on the desk' (final comment, G, 9) <i>The children saw the screen and expected everything to be on it. The papers/files/post-its around it were not seen as relevant by most children. Comments were:</i> 'I didn't notice it' (G, 9) 'The information would've been useful if I'd noticed it.' (B, 8) 'I got it right – just guessed. I'd have been more sure if I'd seen it (<i>the information</i>)' (G,8) 'Didn't notice it. I'm used to everything being on the screen' (B, 10) <i>Three other children said much the same.</i> 'I chose the hot-water bottle. I didn't see the information' (G, 10) One girl aged 11 got the answer wrong at first and then looked round, found and used the data. Boy aged 11 liked the desk info, but had expected to find it somewhere on the screen. Boy aged 10 said it (the info) would have been useful if he'd seen it. He hadn't stopped to look because he'd just wanted to carry on with the questions (<i>This is a powerful drive – HO</i>) <i>He thought you could put the info 'around the writing on the screen'.</i>
5. Do they engage with the scenarios? <i>(Note reactions observed.)</i> Ask what they liked/ did not like Note 1 : Only two of the scenarios were accessible (hypothermia and crossing the ice) and those who wanted to do more than one		Yes, in a range of ways from 'Interesting... looks like you're on a mission!' (G, 9) and 'I liked it all – even when I didn't know which to choose' (different G, 9) to 'I chose to ski across because I like skiing best' (B, 8) <i>They were all sufficiently engaged to</i>

<p>(when it was quieter) found they usually got the same one twice.</p> <p>Note 2 Powerdown - The electricity failure (See Appendix 2) every 8 minutes did not happen.</p> <p><i>Questions added part way through the session and asked at this point:</i> Was the text/ writing at the right speed for you or too fast/ too slow? (11 children were asked)</p> <p>What did you think of the photos? (11 children were asked)</p>	<p>complete the task. When asked, 12 children were positive about the experience (Enjoyed it/ 'Really good' etc) while two (B, 8 and G 11) said it was 'ok'. The boy aged 8 was not really interested in answering questions – once he'd done the activity his mind was on what he could do next (a little hyperactive). The girl (11) said it wasn't something she was particularly interested in.</p> <p>OK x 5; 'a little too fast' or 'a bit fast' x 4; Too fast! x 2 NB The text speed is likely to have contributed to the incomplete reading of the instructions in the orange-bordered box. It is important to leave text up so that slower readers can still get it (see Q re 'Ending')</p> <p>The photos – Good x 7 'Blurred' x 2 (They hadn't worked out possible reasons for this) 'Could be a bit bigger?' 'They didn't show people doing things in Antarctica, like looking at the ice and discussing it' (B, 11) 'Fast' x 1 OK x 1</p> <p>NB The children did not single out any other aspect they did not like.</p>
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<p>6. What did you think of the ending? (Record comments and reasons)</p>		<p><i>This question also relates to the speed of the text. The last two pages were difficult for some because the message would disappear before they had finished it, so I had to tell them what it said so they could answer the question.</i></p> <ul style="list-style-type: none"> • Liked it / Good/ 'Really good' x 3 • Good (<i>big smile</i>) • 'Good – a cliff-hanger!' • 'Good for me, but not for little children – too scary' (B 10) • 'It would be good to see the hot drink being given' (G, 9) • 'It made me want to find out what had happened' (B, 10) • 'Scary' x 2 • 'Scary but fun' • 'Maybe a polar bear attacked! I'd like to find out.' (B, 9) • 'Something came... A polar bear?' (B, 10) • One Boy aged 8 said he'd been too excited at getting the right answer to read it properly. • 'The 'Thank you' was good' (She had 'forgotten' (<i>or not managed to read?</i>) the 'Help!' message. (G, 10) • OK x 1 • Don't know x 1
<p>7. Are you likely to follow this up at home in any way? (tick if they volunteer the online option un-prompted)</p> <p>If not, had you realised you could continue online? (<i>record comment</i>)</p>	<p>YES x 10, Maybe x 3, NO x 3</p> <p>No x 3</p>	<p>Most children said they would be interested in following this up online. Girl (11) 'Yes – to find out what happened!' Girl (10) was confident about finding it online.</p> <p>'Didn't notice it' (B, 8) Three children were worried about the web address and finding it A girl aged 8 with no computer at home said she would make up her own 'more difficult' follow-up, but might go on-line too.</p>
<p>8. What would you expect to find online? (Record comments)</p>		<p>'New levels of problems and difficulties – maybe different levels of questions. This one was a bit too easy (G, 9) 'The same kind of activity... maybe some new questions' (G, 9) 'Questions to answer, like these ones' (B, 8) 'More questions' (G, 8) 'Something to tell you what happened on base Alpha. And continue the game... more questions.' (B, 10)</p>

	<p>'Stuff you can find out about like dinosaurs and Antarctica. In Antarctica it's all ice that never melts – that makes it interesting.' (G, 10)</p> <p>'Information about Antarctica, ice, creatures that live there...' (G, 11)</p> <p>'About games – more games of all kinds' (G, 9)</p> <p>'Lots of info about Antarctica, question games and what happened at Camp Alpha.' (G, 11)</p> <p>'Why they went 'aaaargh!. Are polar bear becoming extinct?' (B, 9)</p> <p>'Science about Antarctica and what's happening about global warming.' (B, 11)</p> <p>'Research about Antarctica animals and miniature games... a few question games, a few action games, a few race games. And dangers in Antarctica.' (B, 10)</p> <p>'About Antarctica' (B, 10)</p> <p>Don't know x 3</p>
<p>9. What are the main messages you've got from doing the activity? (Record responses)</p> <p><i>?Emergencies happen in Antarctica ?You have to sort out emergencies</i></p>	<p>NB – Just doing one scenario was not enough for the children (apart from one) to draw out generalised messages; I believe they would have got much closer if they had done 2 or more.</p> <ul style="list-style-type: none"> • One boy (10) said 'There can be dangers in Antarctica' <p>Otherwise comments were:</p> <ul style="list-style-type: none"> • 'You'd know what to do if someone fell through ice. It could happen here.' (G, 9) • 'A man is crossing Antarctica but needs someone to help him.' (B, 8) • 'I learned you can ski if it's 12 cms and walk when the ice is higher (= thicker)' (G, 8) • 'Hot drinks make things worse' (G, 10) • 'If less than 10 cms, skiing is best' (G, 11) • Give a hot drink to people who've been in cold water. (G, 9) (G, 11) (B, 9) • 'About crossing ice safely' x 4 • Don't know x 3

<p>10. Any other comments?</p> <p>Comparisons with other activities</p>	<p>One boy (8) did 2 scenarios and was really pleased he got the right answer both times – he hadn't checked the info either time. 'Make it harder – Do lots more!' (G, 8) Boy (10) thought it was just right – not too hard and not too easy. Girl (11) did two scenarios and got it wrong twice, which probably contributed to her saying she wasn't particularly interested.</p> <p>Re: the Comms Station activity of the other two: 'It's less exciting but you learn more than on the other two.' (Boy, 9) Other comparisons: Boy (8) put Comms 3rd 'because it didn't have many pictures' Boy (11) put Comms equal 1st with the snowmobile. He liked Comms 'because it's a mission'.</p>
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Thankyou! (Postcard)

4.0 Summary and recommendations

'It's less exciting but you learn more than on the other two.' (Boy, 9)

The Comms Station activity successfully engaged all the children who tried it. They all completed the activity. They wanted to get the right answer to the multiple choice and were pleased when they did. The idea of being on some kind of mission was obviously appealing. Although only one boy voiced it clearly (see above), other participants found it satisfying because they learned something, and were pleased to tell what they had discovered. Although they had been engaged, there was a minority who were less satisfied at the end – one had got the wrong answers in two scenarios (having failed to read the info); one mis-remembered about hot drinks and one was in such a hurry it is doubtful he will remember any learning – but out of a sample of 16 children on holiday, this is not surprising.

The ending – the children found the dramatic ending of the message intriguing or 'scary but fun'. It is an excellent added incentive to visit the website to find out what really happened.

The idea of **the website** was obviously attractive to most of the children; they expected to find information and activities/ questions/ games on the site. A small number of children had some anxiety about finding the website but that would be overcome by the information on the tickets they could refer to at home.

Speed – some children did not manage to read all the text. Either this needs to be a little slower *and/or* it needs to be accessible on the screen a bit longer. For example, the page saying 'Thank you' and giving the cliff-hanger could have the subsequent message appearing below it, without blocking out the earlier message. At that point, some children were still excited about getting answers right and by the time they had focused on the Thank you etc message it had gone.

Or the cliff-hanger could be followed up by an open-ended question and a pause, encouraging speculation about what might have happened. Hopefully this would encourage families to talk about this and imagine possible scenarios.

Difficulty: It seemed to the evaluator that the activity was at the **right level of difficulty** for the age group. As there was some interesting learning involved in each scenario, completing two or more would make for a satisfying learning experience. The wider messages of the activity are less likely to be grasped if participants complete only one scenario.

Most participants only did one of the scenarios so their summing up of the main message was narrowed down to specifics; by doing two or more scenarios it would become far more likely that they would draw out more generalised messages about dealing with emergencies in Antarctica.

The information, files and post-its on the desk looked – *in this context* – like part of an office where trials were taking place. 14 out of 16 children answered questions without noticing or referring to the information provided. Even the evaluator did not at first realise that the post-its were part of the display and not just reminders for the technicians – so they did look authentic from that point of view. In addition to this, most of the children are used to working on one screen which gives them all the information they need, so they tended to *expect* that information would be on that screen. Also – if the children had remained with their parents/siblings/friends throughout, as they often do in exhibitions, it is more likely that someone in the group would have noticed and commented on the information.

However, the surrounding information would have far greater impact in the context of the finished exhibition, where it would be clearer to participants that these were there for them, for a good reason and were relevant to the exhibit. However, I think the notices will need a little colour - or some other differentiation however subtle – to make them look more attractive than the avalanche of paper (like worksheets) that can surround children in classrooms. Perhaps a map among the information would add to the colour.

When children did refer to the information they could find what they needed and use it. Obviously they only used the information relating to the two scenarios available but all the information looked clear and accessible. When asked for her final comment, one girl aged 9 said

‘I love the pieces of info on the desk’ .

Helen O’Riain
6 April 2007

Appendix 1 Evaluation checklist

Nos of adults / ages of children per family

Adult

Children

Need to know	√ if observed as problem-free	Comments. <i>Prompt re confusions. hesitations, negative body language etc</i>
Seamless log-on with ticket? Observe <i>(If not, ask for & record comments)</i>		
Can they start the game ok? Observe <i>(If not, ask for & record comments)</i>		
Can they use the controls ok? Observe <i>(If not, ask for & record comments)</i>		
Do they read the evidence around the laptop? <i>Observe.</i> <i>(If not, ask for & record comments)</i>		
Do they engage with the scenarios? <i>(Note reactions observed.)</i> Ask what they liked/ did not like		

<p>What did you think of the ending? <i>(Record comments and reasons)</i></p>		
<p>Are you likely to follow this up at home in any way? <i>(tick if they volunteer the online option un-prompted)</i></p> <p>If not, had you realised you could continue online? <i>(record comment)</i></p>	<input type="checkbox"/>	
<p>What would you expect to find online? <i>(Record comments)</i></p>		
<p>What are the main messages you've got from doing the activity? (Record responses)</p> <p><i>?Emergencies happen in Antarctica</i> <i>?You have to sort out emergencies</i></p>		
<p>Any other comments?</p>		

Thankyou! (Postcard)

1 Desktop

My computer
Research
My Antarctica photos
Notes
Reports from Camp Alpha

2 The attractor

ALERT!
Incoming urgent message
Scan your ticket
Receiving: location unknown, checking for possible virus

3 Incoming message

Incoming message
Location unknown, checking for possible virus //

Retrieving data, please wait
Test site incoming message, reading data //

Should check how long screens 2 and 3 take (virus checking, retrieving data, reading data etc) – should be no more than a few secs.

2 Scenario 1

Message from Camp Alpha
Message received hh:mm:ss from location 77° 23' S 95° 13' W

Help! John has fallen into cold water. We have managed to pull him out.
Ahmed says we should give John a warm drink.
Sally thinks we should make John walk around.
Tracey wants to give John a hot-water bottle.
Which is the right thing to do?

Look around the desk for the doctor's advice.. Type A, B or C.
A: Give him a warm drink
B: Make him walk around
C: Give him a hot-water bottle

3 Response

Outgoing message
Message sent hh:mm:ss from location 51° 29' N 0° 11' W

Sending answer and receiving data, please wait
Outgoing message sending data //

4 Retrieved data

Retrieved data

Message retrieved hh:mm:ss from location 77° 23' S 95° 13' W

If they have typed B

Oh dear! We tried that. He's getting worse. Try again.

Look around the desk for the doctor's advice. Type A or C.

A: Give him a warm drink

C: Give him a hot-water bottle

or C

Oh dear! We tried that. He's getting worse. Try again.

Look around the desk for the doctor's advice. Type A or B.

A: Give him a warm drink

B: Make him walk around

If they have typed A

Thank goodness! You're right. He seems to be getting better.

If they type two wrong answers

Oh dear! We tried that. He's still getting worse.

5 finale

Thanks for your help. We'll call back tomorrow. Oh wait... hang on. Oh no... help... help us... aaaaarrgh...

Message terminated

Use your ticket to visit the Ice Station Team online at home, to save Camp Alpha.

6 Scenario 2

Message from Camp Alpha

Message received hh:mm:ss from location 77° 23' S 95° 13' W

Help! We have to travel across a frozen sea, but the ice is quite thin, only 12 centimetres.

Alia says we can ski across.

Josh thinks we can walk across.

Tim thinks we can drive the snowmobile across.

Which is the right thing to do?

Look around the desk for rules about travelling on ice. Type A, B or C.

A: Ski across

B: Walk across

C: Drive the snowmobile across

7 Response as 3

8 Retrieved data

Retrieved data

Message retrieved hh:mm:ss from location 77° 23' S 95° 13' W

If they have typed B

Oh dear! The ice is cracking. Try again.

Look again at the rules for travelling on ice. Type A or C.

A: Ski across

C: Drive a snowmobile across

or C

Oh dear! The ice is cracking. Try again.

Look again at the rules for travelling on ice. Type A or B.

A: Ski across

B: Walk across

If they have typed A

Thank goodness! You are right. We've safely made it across.

If they type two wrong answers

Oh dear! The ice is breaking up all over. Our feet are getting wet.

9 Finale

Thanks for your help. We'll call you back tomorrow. Oh wait... hang on. Oh no... help... help us...
aaaaarrgh....

Message terminated

Use your ticket to visit the Ice Station Team online later to save Camp Alpha.

10 Scenario 3

Message from Camp Alpha

Message received hh:mm:ss from location 77° 23' S 95° 13' W

Help! Our camp is caught in a storm. We can't leave the tent, so we need to make our food last until it passes.

Grace thinks the storm will end this morning.

Marco says the storm will end this afternoon.

Mustafa says the storm will end tomorrow.

When will the storm end?

Look around the desk to check using the weather forecast. Type A, B or C.

A: This morning

B: This afternoon

C: Tomorrow

11 Response as 3

12 Retrieved data

Retrieved data

Message retrieved hh:mm:ss from location 77° 23' S 95° 13' W

If they have typed A

Oh dear! The storm is still raging. Try again.

Look around the desk for the weather forecast. Type B or C.

B: This afternoon

C: Tomorrow

or B

Oh dear! The storm is still raging. Try again.

Look around the desk for the weather forecast. Type A or C.

A: Morning

C: Tomorrow

If they have typed C

Thank goodness. The storm is dying down, and looks like it will be over by tomorrow. We'll make sure we make our food last until then.

If they type two wrong answers

Oh dear! The storm is still raging. We've eaten all the food now, and we're getting hungry.

13 Finale

Thanks for your help. We'll call you back tomorrow. Oh wait... hang on. Oh no... help... help us...
aaaaarrgh....

Message terminated

Use your ticket to visit the Ice Station Team online later to save Camp Alpha.

14 Powerdown

If the electricity in the base station goes off – this screen will need to dim and the following message appear briefly.

Power failure

The generator has gone down

Switching to battery

The game returns to normal but with

Battery life

*And a dropping level appearing. The powerdown will happen every 8 minutes and last for 20 second. Either a visitor gets the power going or it automatically switches on. *These times are subject to change.*