

SECTION SIX

TEACHERS' VIEWS OF THE IMPACT OF THE MUSEUM VISIT ON THEIR PUPILS

6.0 Introduction

This section reviews the data from Form A, Q.12-18, which asked teachers to estimate to what extent their pupils had achieved specific learning outcomes during the museum visit they had just undertaken. Teachers completed this questionnaire as their visits ended, thinking specifically about that particular occasion and those pupils who were with them. The statistical data is complemented by evidence from the case-studies and focus groups, where teachers discussed their knowledge, experience and feelings about the learning outcomes stimulated by museum visits in a more general way, calling on their memories of a number of visits on a number of different occasions.

The section examines the statistical evidence, looking at each of the five Generic Learning Outcomes in turn. The statistical data is followed in each case by evidence from discussions with teachers; there is one exception – the inter-relationships between Knowledge and Understanding and Attitudes and Values were very complex, and the discussions with teachers in relation to these two GLOs are presented together.

Throughout this section comparisons are made between responses in 2005 and 2003 as well as between the Phase1 and 2 museums and these are accompanied by a chi square analysis to indicate when a difference can be considered to be statistically significant. Due to the addition of a new 'don't know' category in 2005, comparisons with the 2003 study are not as straightforward as the other chi square tests used in this report. Teachers' responding 'don't know' in 2005 had to be removed from the chi square tests as no comparable category existed in 2003. Mostly this was unproblematic as responses in the 'don't know' category made up only a small percentage of the overall responses. However in some cases the 'don't know' category contained quite a few responses. In these cases the exclusion from the analysis may have produced a significant difference between the 2003 and 2005 results. This difference is misleading as it may well be that more teachers were opting to tick the 'don't know' category in 2005 therefore depressing the percentages of all other categories. All instances where this may have occurred are noted in the text accompanying the tables.

The consensus amongst the teachers we spoke to as part of the qualitative research was that museums could be a very powerful teaching tool for all pupils regardless of socio-cultural or ability background. While teachers used the museum in different ways with different objectives, as we have discussed in the previous section, there was an overwhelming agreement that the museum experience had very positive learning outcomes for pupils.

6.1 Teachers' talking about museums

Compared to the 2003 study, teachers were more articulate in talking about a diverse range of learning outcomes for their pupils as a result of a museum visit. In addition, from discussions with teachers, the impact of a museum visit in relation to issues concerning social and cultural identity and inclusion was more of a focus for teachers in 2005 than in 2003. For those teachers who were focused on these issues, the museum was potentially a powerful tool in relation to identity, cultural entitlement, aspiration, class mobility and inclusion, regardless of the pupils socio-economic or cultural background, although it was noted that the museum cannot act alone in facilitating changes in attitudes or values. See discussion below especially in Sections 6.3 and 6.6, see also Section 7.

In general, teachers thought that museums were a learning resource from which all pupils, no matter their ability, cultural or social background, could derive meaningful learning outcomes.

6.2 Enjoyment, Inspiration, Creativity

There were two questions on the Teachers' Questionnaire that asked about Enjoyment, Inspiration, Creativity. The first was a general question - Q.12: 'To what extent do you think your pupils have enjoyed or been inspired by their museum visit?', which was a new question in 2005, and the second was a more specific question - Q.16: 'To what extent will you be using the museum experience to promote creativity?'. The table below presents the results for Q. 12.

Table 6.2a: Form A, Q.12: 'To what extent do you think your pupils have enjoyed or been inspired by their museum visit?' (new question), 2005

	Enjoyed the experience	Excited by new ways of learning	New interests aroused	Inspired to learn more	Inspired to make something creative
	2005	2005	2005	2005	2005
TOTAL	1,632	1,632	1,632	1,632	1,632
Very likely	1,337 82%	869 53%	913 56%	880 54%	748 46%
Quite likely	277 17%	645 40%	643 39%	670 41%	631 39%
Neither	1 0%	59 4%	32 2%	31 2%	134 8%
Quite unlikely	2 0%	17 1%	5 0%	10 1%	43 3%
Very unlikely	1 0%	4 0%	4 0%	2 0%	10 1%
Don't know	0 0%	7 0%	6 0%	9 1%	27 2%
Not stated	14 1%	31 2%	29 2%	30 2%	39 2%

Eighty-two percent (82%) of teachers stated that it was 'very likely' that their pupils would have enjoyed the visit, and more than half of the teachers thought it 'very likely' that their pupils would have new interests aroused, be inspired to learn more and be excited by new ways to learn.

The percentages of teachers who ticked 'likely' and 'very likely' for each of the sub-questions is given below:

- 99% - enjoyed the museum visit,
- 95% - have new interests aroused,
- 95% - be inspired to learn more,
- 93% - be excited by new ways to learn, and
- 85% - inspired to make something creative.

These figures are very high; teachers overwhelmingly endorse the potential of museums to inspire further learning.

Q.12 was a new one in 2005. It was a surprise in 2003 to find that Enjoyment, Inspiration, Creativity was the strongest learning outcome for teachers, and it was felt that the questions asked in the Teachers' Questionnaire did not really probe far enough on this dimension. While evidence from the focus groups seemed very positive, the research in 2003 did not have quantitative evidence to support this powerful qualitative evidence. Asking the question in 2005 has provided resoundingly conclusive statistical evidence of the power of museums to stimulate and take forward their pupils' learning.

When comparisons are made between the Phase 1 and Phase 2 museums in relation to the new question on creativity, there is no significant difference¹ for all outcomes.

Table 6.2b: Form A, Q.12: 'To what extent do you think your pupils have enjoyed or been inspired by their museum visit?', (new question), comparing the Phase 1 and Phase 2 museums, 2005

Enjoyment, Inspiration, Creativity	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
Enjoyed the experiences	82%	81%	83%
New interests aroused	56%	57%	55%
Inspired to learn more	54%	54%	54%
Excited by new ways to learn	53%	55%	52%
Inspired to make something creative	46%	46%	46%

Base: all teachers' responses Q.12: 'To what extent do you think your pupils have enjoyed or been inspired by their museum visit?', 'very likely' only, 2005 (1632); Q.12 'very likely' only Phase 1, 2005(773); Q.12 'very likely' only, Phase 2, 2005 (856)

¹

Enjoyment, Inspiration, Creativity	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Enjoyed the experiences	3	5.02	0.17	>0.05
New interests aroused	4	1.80	0.77	>0.05
Inspired to learn more	4	3.82	0.43	>0.05
Excited by new ways to learn	4	7.34	0.12	>0.05
Inspired to make something creative	4	1.13	0.89	>0.05

The second, more specific, question on creativity, Q. 16, also resulted in high positive values, with some differences from 2003.

Table 6.2c: Form A, Q.16: 'To what extent will you be using the museum experience to promote creativity?', 2005

	Exploring new ideas		Creative writing		Other forms of creative work		Designing and making		Dance/drama	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
Total	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632
Very likely	56% 524	53% 865	52% 486	44% 712	42% 395	35% 578	41% 386	42% 688	18% 170	21% 347
Quite likely	33% 313	35% 576	27% 253	30% 493	33% 310	35% 578	34% 314	34% 548	27% 257	28% 452
Neither	4% 41	4% 62	8% 75	10% 162	10% 97	9% 153	10% 97	10% 164	23% 213	21% 341
Quite unlikely	1% 13	2% 26	4% 36	4% 70	2% 18	3% 50	6% 54	5% 74	13% 117	10% 157
Very unlikely	1% 8	1% 11	3% 26	3% 52	2% 15	2% 25	3% 25	3% 42	9% 86	8% 129
Don't know	n/a	1% 17	n/a	2% 29	n/a	4% 65	n/a	1% 22	n/a	3% 57
Not stated	4% 37	5% 75	6% 60	7% 114	11% 101	11% 183	6% 60	6% 94	10% 93	9% 149

The high levels of use of museums for creativity is clear when 'very likely' and 'likely' are combined.

A comparison of teachers' responses between 2003 and 2005 shows significant differences in the use of museums for 'creative writing', 'dance/drama', and 'other forms of creative work'.² Teachers' responding that it would be very likely the museum visit would be useful for creative writing and other forms of creative work show a decline, while there is a small increase in teachers considering the visit would be very important for 'dance and drama'. However, a closer inspection of 'dance/drama' and 'other forms of creative work' reveal a considerable proportion of teachers' fall within the 'don't know' category. As this category was only created in 2005 it is possible

²

Enjoyment, Inspiration, Creativity	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Exploring new ideas	4	1.88	0.60	>0.05
Creative writing	4	13.36	0.004	<0.05
Designing and making	4	1.53	0.67	>0.05
Other forms of creative work	4	8.90	0.031	<0.05
Dance/drama	4	8.67	0.03	<0.05

that these changes in teachers' responses are in fact due to the addition of this new category.

Table 6.2d: Form A, Q.16: 'To what extent will you be using the museum experience to promote creativity?', 2005, all positive values, all museums

Enjoyment, Inspiration, Creativity	'Very likely' and 'likely' all museums 2005
Exploring new ideas	88%
Creative writing	74%
Designing and making	76%
Other forms of creative work	70%
Dance/drama	49%

Base: all teachers' responses Q.16: 'To what extent will you be using the museum experience to promote creativity?', 'very likely' and 'likely' only, 2005 (1632)

A comparison of Q.16 across the Phase 1 and Phase 2 museums comparing responses reveals no significant differences.³

Table 6.2e: Form A, Q.16: 'To what extent will you be using the museum experience to promote creativity?', 2005, comparing the Phase 1 and Phase 2 museums

Enjoyment, Inspiration, Creativity	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
Exploring new ideas	53%	54%	53%
Creative writing	44%	44%	44%
Designing and making	42%	43%	41%
Other forms of creative work	35%	35%	36%
Dance/drama	21%	19%	23%

Base: all teachers' responses Q.16: 'To what extent will you be using the museum experience to promote creativity?', 'very likely' only, 2005 (1632); Q.16, 2005 Phase 1 (773); Q.16, 2005 Phase 2 (856)

³

Enjoyment, Inspiration, Creativity	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Exploring new ideas	4	3.89	0.42	>0.05
Creative writing	4	4.66	0.32	>0.05
Designing and making	4	3.28	0.51	>0.05
Other forms of creative work	4	4.88	0.30	>0.05
Dance/drama	4	8.47	0.08	>0.05

6.3 Enjoyment, Inspiration, Creativity: evidence from the focus groups and case-studies

In the 2003 study we found that there was a causal relationship between teachers' perceptions of their pupils' Enjoyment, Inspiration, Creativity and Knowledge and Understanding. In this study we wanted to take the opportunity to seek to further understand the relationship between Enjoyment, Inspiration, Creativity and learning outcomes more broadly. In the qualitative research we found that teachers thought enjoyment was central to good learning outcomes. Teachers said:

'Enjoyment leads to motivation [which] leads to learning'.

'Enjoyment opens children up to learning'.

'Enjoyment leads to a heightened sense of awareness'.

'I try to make learning fun... The museum experience is about learning through having fun'.

'Enjoyment on its own leads to a latent experience and they may make the connections later on'.

'Attendance has definitely improved. Well I think it's just that they enjoy it, so they come along'.

We found evidence that enjoyment could be a catalyst to a range of other learning outcomes. In the following quote the teacher described a shy, clever girl enjoying her museum visit and this enjoyment leading to a change both in her own attitude towards herself in terms of increased confidence and self esteem and in other pupils' attitudes towards her:

'One student was very able but badly bullied. [She] loved the museum and taking part in an exhibition inspired her and gave her confidence. Still talks about it even though it was a year ago... It increased her self-esteem and gave her a chance to feel safe in a museum. The boffs have a hard time at school, it's bad to be good in school, they don't answer questions in class. It's endemic. But in the museum it was different, she could answer questions and some of the kids who gave her stick liked her being there'.

Most teachers reflected that the impact of the museum visit as a catalyst for good learning outcomes was more complicated than their pupils having fun. Most teachers talked about the importance of an emotional and/or a personal connection as being central to the production of a positive learning outcome. For many teachers the impact of the museum on positive learning outcomes was due to the combination of the museum providing the possibility for their pupils to engage in a 'real' experience which elicited an emotional reaction:

'Children are engaging in a direct relationship with the subject'.
'It's about emotions, if emotions are triggered it helps you to learn whether it's negative or positive'.

'Emotional response is the catalyst because it is real'.

'Real connections exist [in the museum] and triggers the emotional response- "wow this is real"- this has to take place on a cognitive level... and we're seeing the emotional response'.

'Children are engaging in a direct relationship with the subject'.

'The concrete elements of a visit increases learning'.

'I think it brings history alive, they can actually feel what it would be like cos they've seen the clothes, it's not just a dry subject. It brings in something that they can relate... it's relating it to their own experiences and how different they are now'.

Can this personal connection, even if not in relation to a positive emotional experience, still be categorised as 'enjoyment'? One teacher's comment is interesting in this respect. He said:

'But very often it's not a positive experience, what makes it enjoyable is the making contact and having feelings about things... doing about WWII is like that... learning about the horror is not fun'.

It may be possible to understand pupils engaging with a museum visit which was scary or 'disgusting' as pleasurable and enjoyable- for instance, one set of pupils we observed in a Tudor kitchen were very much enjoying expressing their 'errs!!!' to a skinned rabbit on display. However, it is more difficult (and possibly misleading) to understand the emotional response to something like a challenging depiction of conditions during the Blitz as consisting of 'enjoyment'.

One of the case-studies used Theatre in Education involving historical characters whose interaction with the pupils was designed to provoke an angry response from them.

Fig6.3a: 'Mr Symes' the Workhouse Master challenges an inmate



This particular museum programme involved working with KS3 pupils to communicate the complexity of an issue, exposing both sides of an argument. The pupils engaged with the material as a result of the actors' strategy of provoking a heightened emotional response. The response that was provoked was anger or outrage so this cannot be categorised as 'enjoyment' per se. The museum educator explained the strategy by saying:

'I try to make them angry... you watch them - they can look really bored out of their head, [but] if I start to talk about the jacket women- the unmarried mothers- they sort of unwind and then if it works. They argue with me as the workhouse master... I mean this whole concept of fun isn't necessarily what we're about, it's about yes it should be engaging and challenging'.

Learning elicited by this kind of emotional engagement can be described as 'inspiration' if we recall that 'inspiration' can be defined as the 'stimulation of the mind or emotions to a high level of feeling or activity'.⁴

We interviewed four of the teachers who attended this visit to the museum, and for them there was no doubt that the emotional engagement which was facilitated by the museum was very important to what the teachers felt had been a very good learning outcome from the day:

⁴ Dictionary.com, H<http://dictionary.reference.com/search?q=inspiration>H

'I think it has really quite an impact ... they think about themselves and other people and the world ... I think during the visit they are encouraged to think and reflect and to kind of put themselves into somebody else's situation. I think they do become more reflective and they've got a lot more empathy... And talking to them I think that's quite clear'.

As a result of the focus groups and case-studies we got a much more in-depth understanding of teachers' assessment of the impact of a museum visit on their pupils. We found that above all teachers described museums as having an impact to the extent that museums could provide an experience that the pupil could relate to emotionally. Because of this emotional engagement, the pupil was able to establish a personal connection to both the subject matter and to the experience of the museum.

6.4 Knowledge and Understanding

- ◆ Form A, Q.13: 'To what extent do you think your pupils have gained facts and information during their museum visit?'

The summary table below (6.4a) presents the overall responses and the following table (6.4b) presents the comparisons between the Phase 1 and the Phase 2 museums, and between the results in 2005 and 2003. The findings are very positive, especially when all positive values are considered.

Teachers ticked 'likely' or 'very likely' that their pupils would have gained facts and information as follows:

- 95% - subject specific facts,
- 80% - interdisciplinary facts,
- 76% - facts about museums,
- 65% - facts about themselves and/or the wider world, and
- 77% - other kinds of facts.

The comparison across museums shows no significant⁵ change except in the case of pupils gaining 'facts about themselves, their families and the wider world' for which higher number of teachers thought it was very likely in the Phase 2 museums. The comparison with 2003 does show a significant⁶ change for; 'Subject specific facts', 'Interdisciplinary or thematic facts', 'Information about museums or galleries', 'and 'Other kinds of facts' with teachers slightly less likely to think that their pupils will have gained facts as the result of their museum visit in 2005. However the inclusion of a 'don't

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Knowledge and Understanding	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Subject specific facts	4	0.95	0.92	>0.05
Interdisciplinary or thematic facts	4	0.95	0.92	>0.05
Other kinds of facts	4	5.77	0.22	>0.05
Information about museums and galleries	4	5.71	0.22	>0.05
Facts about themselves, their families or the wider world	4	13.15	0.01	<0.05

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Knowledge and Understanding	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Subject specific facts	3	23.20	0.00	<0.05
Interdisciplinary or thematic facts	3	26.73	0.00	<0.05
Other kinds of facts	3	15.20	0.002	<0.05
Information about museums and galleries	3	12.75	0.005	<0.05
Facts about themselves, their families or the wider world	3	1.81	0.61	>0.05

know' category still impacts on the 'Interdisciplinary or thematic facts' and 'Other kinds of facts' categories and thus it is possible that the changes in teachers' responses are due to more opting for the 'don't know' category in 2005.

As we saw in Section 5, teachers seem slightly less focused on the acquisition of facts and information and slightly more attuned towards using museums in relation to change or development of Attitudes and Values.

Table 6.4a: Form A, Q.13: 'To what extent do you think your pupils have gained facts and information during their museum visit?', 2005

	Subject-specific facts		Interdisciplinary or thematic facts		Other kinds of facts		Information about museums or galleries		Facts about themselves, their families or the wider world	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
TOTAL	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632
Very likely	681 73%	1,044 64%	339 36%	457 28%	310 33%	433 27%	266 28%	370 23%	194 21%	338 21%
Quite likely	223 24%	512 31%	464 50%	841 52%	465 50%	809 50%	471 50%	859 53%	440 47%	718 44%
Neither	5 1%	23 1%	48 5%	152 9%	60 6%	155 9%	97 10%	217 13%	160 17%	298 18%
Quite unlikely	6 1%	13 1%	22 2%	43 3%	20 2%	38 2%	45 5%	75 5%	70 7%	117 7%
Very unlikely	1 0%	3 0%	6 1%	12 1%	6 1%	14 1%	13 1%	29 2%	18 2%	47 3%
Don't know	n/a	7 0%	n/a	45 3%	n/a	73 4%	n/a	18 1%	n/a	40 2%
Not stated	20 2%	30 2%	57 6%	82 5%	75 8%	110 7%	44 5%	64 4%	54 6%	74 5%

Table 6.4b: Form A, Q.13: 'To what extent do you think your pupils have gained facts and information during their museum visit?' comparing the Phase 1 and Phase 2 museums, 2005

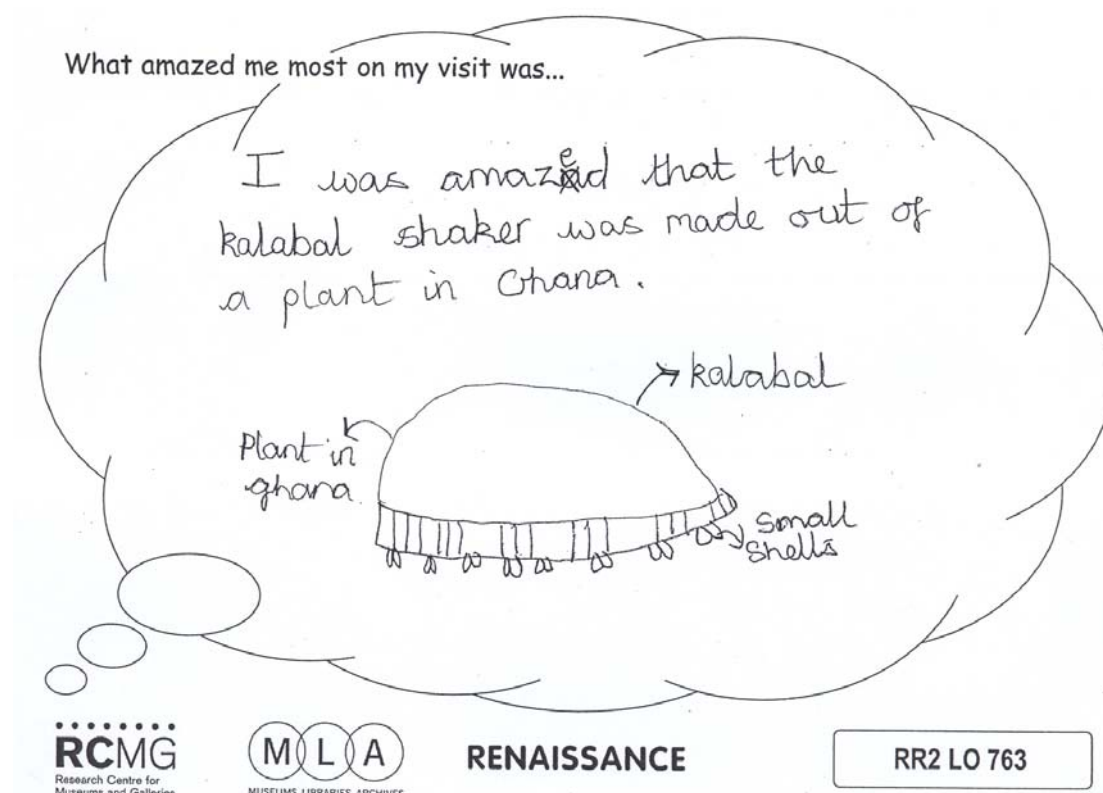
Knowledge and Understanding	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
Subject specific facts	64%	65%	63%
Interdisciplinary or thematic facts	28%	28%	29%
Other kinds of facts	27%	25%	28%
Information about museums and galleries	23%	24%	22%
Facts about themselves, their families or the wider world	21%	18%	24%

Base: all teachers' responses Q.13: 'To what extent do you think your pupils have gained facts and information during their museum visit?', 'Very likely' only, 2005 (1632); Q.13: 2005 Phase 1 (773); Q.13: 2005 Phase 2 (856)

Evidence from the Form Bs completed by pupils reveal the different kinds of facts and information that can be learnt. These could be as specific as Sona, aged 9, finding out about the kalabal shaker at the Horniman.

Evidence from the focus groups is presented at 6.6.

Fig 6.4c: Form B, KS2 and below, visit by 9 year old pupil to the Horniman



6.5 Attitudes and Values

There was one question on the Teachers' Questionnaire about Attitudes and Values, and this was the same as the question in 2003. Form A, Q.15: 'To what extent do you think that the museum visit will have enabled your pupils to feel more positive about any of the following?' The table below presents the responses as a whole.

Table 6.5a: Form A, Q.15: 'To what extent do you think that the museum visit will have enabled your pupils to feel more positive about any of the following?', 2005

	Learning		Museums/ galleries		Other people/ communities		Themselves and their abilities		Anything else	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
TOTAL	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632
Very likely	473 51%	690 42%	482 51%	723 44%	370 44%	503 31%	288 31%	452 28%	120 13%	179 11%
Quite likely	402 43%	809 50%	380 41%	754 46%	439 47%	809 50%	490 52%	895 55%	283 30%	415 25%
Neither	23 2%	57 3%	33 4%	67 4%	71 8%	171 10%	91 10%	171 10%	200 21%	300 18%
Quite unlikely	2 0%	8 0%	6 1%	11 1%	9 1%	39 2%	16 2%	27 2%	12 1%	14 1%
Very unlikely	2 0%	3 0%	2 0%	6 0%	6 1%	14 1%	5 1%	9 1%	5 1%	9 1%
Don't know	n/a	9 1%	n/a	18 1%	n/a	26 2%	n/a	24 1%	n/a	230 14%
Not stated	34 4%	56 3%	33 4%	53 3%	41 4%	70 4%	46 5%	54 3%	316 34%	485 30%

Taking all positive values, teachers ticked 'likely' and 'very likely' as follows:

- 92% more positive about learning,
- 90% more positive about museums and galleries,
- 83% more positive about themselves and their abilities, and
- 81% more positive about other people and communities.

A comparison between teachers' responses in the Phase 1 and Phase 2 museums shows no significant⁷ differences, while a comparison with the 2003 figures does show a significant⁸ difference for 'Learning', 'Museums/ gallery' and 'Other people/communities'. These outcomes show a decrease in teachers considering it was 'very likely' the pupils had felt more positive about these in 2005. The small percentage of teachers using the 'don't know' category means it is unlikely this has affected the change in teachers' response to these questions.

Table 6.5b: Form A, Q.15: 'To what extent do you think that the museum visit will have enabled your pupils to feel more positive about any of the following?', 2005, comparing the Phase 1 and Phase 2 museums

Attitudes and Values	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
Museums/galleries	44%	42%	47%
Learning	42%	41%	43%
Other people/communities	31%	29%	33%
Themselves and their abilities	28%	27%	28%
Anything else	11%	11%	11%

Base: all teachers' responses Q.15: 'To what extent do you think that the museum visit will have enabled your pupils to feel more positive about any of the following?', 'very likely' only, 2005 (1632); Q.15: Phase 1, 2005 (773); Q.15: Phase 2, 2005 (856)

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Attitudes and Values	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Museums/galleries	4	7.52	0.11	>0.05
Learning	4	4.88	0.30	>0.05
Other people/communities	4	4.54	0.39	>0.05
Themselves and their abilities	4	7.85	0.10	>0.05
Anything else	4	2.71	0.61	>0.05

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Attitudes and Values	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Museums/galleries	3	11.45	0.01	<0.05
Learning	3	17.12	0.001	<0.05
Other people/communities	3	25.25	0.00	<0.05
Themselves and their abilities	3	2.97	0.40	>0.05
Anything else	3	0.12	0.99	>0.05

6.6 Knowledge and Understanding and Attitudes and Values: evidence from the focus groups and case-studies

The evidence from the focus groups and case-studies about Knowledge and Understanding and Attitudes and Values is discussed together as there are such close links between attitudes to subject matter and increase in knowledge about that subject matter. In any discussion with teachers about pupils and their learning, it is very difficult to separate the cognitive from the affective.

When asked about Knowledge and Understanding teachers were much less forthcoming about analysing the ways in which their pupils gained facts and information than they were about Enjoyment, Inspiration, Creativity as a result of a visit to the museum. This seemed to be more to do with an assumption that they would gain facts as the museum was generally acknowledged as a source of primary evidence and information rather than meaning that teachers did not think this was an important outcome of a museum visit. Their pupils on the other hand, as we will see in Section 7, were very descriptive about the range of facts and information they learnt on a museum visit.

Teachers were most forthcoming about the Knowledge and Understanding pupils gained about themselves and the wider world as the result of a museum visit. In this sense teachers tended to talk about Knowledge and Understanding in terms of the impact of a museum visit on pupils' Attitudes and Values. In other words teachers believed that a museum visit was important in that it gave their pupils Knowledge and Understanding of themselves, those around them and the world, which in turn affected their Attitudes and Values.

For instance, one secondary teacher described how a museum visit which involved being introduced to a number of points of view in relation to the ways in which poverty was dealt with in the nineteenth century might challenge some of her pupils' attitudes to contemporary poverty:

'I would like to think that it's going to produce somebody a bit more rounded... because we do have students here who are quite arrogant and quite affluent and they're very blinkered in their view of people who are poor as scumbags. So I'm hoping that maybe... if they do have preconceived ideas... by speaking to the actors from both perspectives, it will make them hopefully think in the future that there may be more than one way of looking at it. For instance I said, "so don't we have any poor people nowadays?" And they all said "well not really". And I said "so you don't think poor people exist any more then, they were only in Victorian times?" And then they said "well they've got food and they've got a house but they might not have a job". And I said "well then aren't they still living in poverty?" "Oh it's not the same sort of poverty". And I said "but it is; it's still poverty". And so I was trying to get them to understand the continuity of things'.

This teacher also expected her pupils to improve by at least half a level on their assessed assignments they did for this topic because they enjoyed the visit, and were emotionally connected with it. This resulted in them engaging more fully with information presented by the museum which meant they had both a better Knowledge and Understanding of the topic and a more enthusiastic attitude to the assignment they had to do. In fact as you will see in Section 7, this teacher's pupils also believed they would improve a level on their assignments, and we are able to show that they did.

In one of the focus groups a KS3 teacher recounted how a number of pupils in her class had used the opportunity of the Self Portrait UK competition to communicate some of their experiences of being Muslim girls.⁹ The teacher felt that the experience of travelling to London to see her portrait displayed in the National Portrait Gallery had been particularly significant for one girl who came from a very conservative Muslim environment with little exposure to the larger world.

Fig 6.6a: Self Portrait UK entry



⁹ Self Portrait UK was a Channel 4 campaign challenging 14- to 19-year-olds to explore their culture and identity, by making a self-portrait about who they are, what they want to say and how they want to be seen. They were presented at a number of public galleries, including London's National Portrait Gallery, from 10 December 2004. See Channel 4, *Self Portrait UK, 14 to 19*, <http://www.channel4.com/learning/microsites/S/selfportraituk14to19/H>

Fig 6.6b: Self Portrait UK entry



In another very different example, a KS2 teacher at an inner city school in a very deprived area (according to the IMD 2004) with a very high population of pupils from an Asian background, found that the increase in Knowledge and Understanding that her pupils gained about the police as a result of a visit to a Police Museum had a positive effect on their attitudes towards the police:

'I took a class to the Police Museum. I have some boys who stigmatise the police because their families have had run-ins with the police; a cousin has been locked up. They would say things like "I hate the police". But when they got there the boys were really enthusiastic, they got to try things on and sit on a motorbike. They had a huge change in attitude and I didn't hear them speak against the police quite so much. Not sure how long it will last. Not sure if this attitude was carried home, they come from families which have lots to do with the police so it may remerge with time'.

Another primary teacher described using an exhibition about Mesopotamia to help the pupils understand that this was Iraq's ancient history. They were then able to 'make links and change values, it was a surprise about Iraq for the children'.

In addition, a museum visit can change a child's attitudes to the museum itself by giving them a better understanding of it:

'A lot of children think museums are boring. They do not experience [these things] in their home life... [A visit] changes their attitude towards museums - they see that they are not boring'.

As already discussed in relation to Enjoyment, Inspiration, Creativity, teachers thought that an emotional and personal engagement with the museum was essential for a good learning outcome. Many teachers described how Knowledge and Understanding was basic to enabling this emotional connection to occur. In this sense many of the teachers talked about positive learning outcomes from museum visits because the museum facilitates a particular kind of Knowledge and Understanding which enables pupils to feel empathy with the topic:

'... actually concentrating and looking, and extracting evidence... creates empathy'.

'During the visit they are encouraged to think and reflect and to kind of put themselves into somebody else's situation. I think they do become more reflective and they've got a lot more empathy I think'.

In addition to the museum being an important provider of Knowledge and Understanding it also has an important function in the demystification of knowledge. A number of teachers mentioned that the museum was important in providing pupils with access to people who they might not usually come across and, through this, providing the pupils with Knowledge and Understanding of the reality of, for instance, an artist's life. A number of KS3 and above teachers talked about this in terms of making people (and the knowledge they represent) accessible, for these teachers this could also broaden a pupil's vocational choices:

'They didn't know you could talk to a real artist, that's got their work in a gallery. They just feel as if, you know, is it really him, he's just got trainers on'.

'Listening to someone who's an expert, we once had this young PhD student talking about nuclear fuels and I thought this is going to go right over their heads and the fact that the expert was so engaging, so interesting. And she made this very, very difficult topic really come alive... and the pupils that came with us, you know, got so much out of that'.

'It was just nice that they were getting confident talking to people and talking to them about how they'd got to be artists and what their job was like...'

6.7 Action, Behaviour, Progression

There were two questions that dealt with teachers' views of the extent to which museum visits can enable new experiences that lead to progression for their pupils. Form A, Q.17: 'To what extent do you think that the experience of the museum will result in you working with your students in a different way?' Form A, Q.18: 'To what extent do you anticipate that the museum visit will support pupil development?'. The results across the museums are given in the two tables below.

Table 6.7a: Form A, Q.17: 'To what extent do you think that the experience of the museum will result in you working with your students in a different way?', 2005

	Undertaking new activities		Using their new skills		Enabling them to work with their peers in new ways		Other new ways of working in the classroom	
	2003	2005	2003	2005	2003	2005	2003	2005
TOTAL	936	1,632	936	1,632	936	1,632	936	1,632
Very likely	334 36%	502 31%	328 35%	532 33%	210 22%	375 23%	203 22%	371 23%
Quite likely	405 43%	774 47%	384 41%	734 45%	404 43%	728 45%	372 40%	620 38%
Neither	110 12%	183 11%	132 14%	183 11%	199 21%	302 19%	225 24%	328 20%
Quite unlikely	30 3%	44 3%	31 3%	53 3%	53 6%	79 5%	47 5%	81 5%
Very unlikely	7 1%	30 2%	7 1%	30 2%	7 1%	32 2%	11 1%	48 3%
Don't know	n/a	20 1%	n/a	23 1%	n/a	35 2%	n/a	62 4%
Not stated	50 5%	79 5%	54 6%	77 5%	63 7%	81 5%	78 8%	122 7%

Taking all positive values for Q.17, teachers ticked 'likely' and 'very likely' as follows:

- 78% - undertaking new activities with their pupils following the museum visit,
- 78% - pupils to be using new skills,
- 68% - pupils to work with their peers in new ways, and
- 61% - working in other new ways in the classroom.

Comparing 2003 and 2005, only one of the outcomes 'using their new skills' showed a significant difference.¹⁰ Teachers surveyed in 2005 were slightly less inclined to think it was 'very likely' pupils would use their new skills and more inclined to be uncertain or think it 'unlikely' that pupils would use their new skills back in the classroom. The small amount of teachers choosing the 'don't know' category in 2005 suggests this had little bearing on the change in teachers' responses.

Table 6.7b: Form A, Q.18: 'To what extent do you anticipate that the museum visit will support pupil development?', 2005

	In their subject-related understanding		In increased motivation to learn		In their cultural understanding		In increased confidence		In learning across the curriculum	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
TOTAL	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632
Very likely	668 71%	1126 69%	455 49%	678 42%	357 38%	574 35%	357 38%	574 35%	330 35%	574 35%
Quite likely	214 23%	407 25%	383 41%	755 46%	430 46%	699 43%	430 46%	779 48%	468 50%	776 48%
Neither	17 2%	29 2%	47 5%	88 5%	93 10%	193 12%	93 10%	156 10%	72 8%	145 9%
Quite unlikely	4 0%	8 0%	4 0%	15 1%	8 1%	42 3%	8 1%	25 2%	12 1%	40 2%
Very unlikely	1 0%	4 0%	3 0%	5 0%	4 0%	12 1%	4 0%	8 0%	5 1%	7 0%
Don't know	n/a	13 1%	n/a	25 2%	n/a	32 2%	n/a	28 2%	n/a	23 1%
Not stated	32 3%	45 3%	44 5%	66 4%	44 5%	80 5%	44 5%	62 4%	49 5%	67 4%

¹⁰

Action, Behaviour, Progression	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Using their new skills	3	8.55	0.036	<0.05
Undertaking new activities	3	7.24	0.07	>0.05
Other new ways of working in the classroom	3	6.80	0.078	>0.05
Enabling them to work with their peers in new ways	3	2.80	0.42	>0.05

Taking all positive values for Q.18, teachers ticked 'likely' and 'very likely' as follows:

- 94% - subject-related understanding,
- 88% - increased motivation to learn,
- 83% - increased confidence,
- 83% - learning across the curriculum would,
- 78% - cultural understanding, and
- 61% - assessed work.

There is less confidence in the extent to which pupils' assessed work would be improved, with only 61% of teachers expecting to see this. However, Section 7 will provide some evidence of the ways in which the museum experience can impact on the assessed work of pupils. This research study suggests that teachers do not fully use the potential of museum-based learning, and that if they were more confident about the impact of a museum experience on assessed work, pupils could achieve more.

Two outcomes, 'Motivation to learn' and 'Cultural understanding' show a significant difference between the two studies.¹¹ Teachers in 2005 were less inclined to think it was 'very likely' for either of these outcomes. Again the 'don't know' figure is relatively small and unlikely to have impacted on the figures.

¹¹

Action, Behaviour, Progression	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
In their subject-related understanding	3	1.91	0.59	>0.05
In increased motivation to learn	3	11.94	0.008	<0.05
In learning across the curriculum	3	4.43	0.22	>0.05
In their cultural understanding	3	9.53	0.02	<0.05
In increased confidence	3	3.75	0.29	>0.05
In their assessed work	3	6.04	0.11	>0.05

The two tables below compare the percentages of those teachers who responded 'very likely' in the Phase 1 and the Phase 2 museums in 2005. The differences between the museums in 2005 show no significant difference^{12, 13}.

Table 6.7c: Form A, Q.17: 'To what extent do you think that the experience of the museum will result in you working with your students in a different way?', 2005, comparing the percentages of those teachers responding 'very likely' in the Phase 1 and the Phase 2 museums

Action, Behaviour, Progression	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
Using their new skills	33%	34%	31%
Undertaking new activities	31%	31%	30%
Other new ways of working in the classroom	23%	24%	22%
Enabling them to work with their peers in new ways	23%	24%	22%

Base: all teachers' responses Q.17: 'To what extent do you think that the experience of the museum will result in you working with your students in a different way?', 2005 (1632); Q.17: Phase 1, 2005 (773); Q.17: Phase 2, 2005 (856)

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Action, Behaviour, Progression	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Using their new skills	4	2.94	0.57	>0.05
Undertaking new activities	4	4.86	0.30	>0.05
Other new ways of working in the classroom	4	3.49	0.48	>0.05
Enabling them to work with their peers in new ways	4	2.77	0.60	>0.05

13

Action, Behaviour, Progression	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
In their subject-related understanding	4	2.51	0.64	>0.05
In increased motivation to learn	4	2.47	0.65	>0.05
In learning across the curriculum	4	1.16	0.88	>0.05
In their cultural understanding	4	5.77	0.22	>0.05
In increased confidence	4	4.68	0.32	>0.05
In their assessed work	4	1.27	0.87	>0.05

Table 6.7d: Form A, Q.18: 'To what extent do you anticipate that the museum visit will support pupil development?', 2005, comparing the percentages of those teachers responding 'very likely' in the Phase 1 and the Phase 2 museums

Action, Behaviour, Progression	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
In their subject-related understanding	69%	69%	69%
In increased motivation to learn	41%	42%	41%
In learning across the curriculum	35%	36%	35%
In their cultural understanding	35%	32%	38%
In increased confidence	35%	37%	34%
In their assessed work	19%	21%	19%

Base: all teachers' responses: Q.18: 'To what extent do you anticipate that the museum visit will support pupil development?', 'very likely' only, 2005 (1632); Q.18: Phase 1, 2005 (773); Q.18: Phase 2, 2005 (856)

6.8 Action, Behaviour, Progression: evidence from the focus groups and case-studies

In the 2003 study, teachers rated Action, Behaviour, Progression less highly as a learning outcome of a museum visit compared with other learning outcomes. In 2005, we asked teachers in the focus groups and case-studies about this and found that initially teachers thought of Action, Behaviour, Progression as only related to long term progression. When asked why teachers didn't seem to value this GLO as much as others in the 2003 study one teacher commented:

'We don't always see Action, Behaviour, Progression immediately; these are long term aims so it might be one reason why they are not considered important'.

However, when we probed teachers further, we found that teachers both expected significant progression from their pupils as a result of a museum visit and had experienced this progression. This was particularly so for pupils who for whatever reason were not good at academic or written work as their teachers believed that the museum gave them an opportunity to display their aptitudes in another way. Teachers felt that the impact of the museum for these kinds of pupils was particularly significant:

'We had a boy who loved history- not brilliant at anything else... at parents evening talking to his mother and I told her about English Heritage and as a result the whole family became members'.

'In the summer holidays I was visiting Staples and a chap ran towards me, calling my name and hugged me. It turned out he was an ex-student from 13 years ago who had been inspired to do computer science after a visit to Birmingham Museum and Art Gallery which had on display one of the first computers... ever since he had been on the visit it had triggered an enthusiasm and interest. He had language problems and special needs but he had forced his parents to get him a computer, triggered by that visit'.

'Museum visits give opportunities for those kids who are not academically strong on paper to shine'.

'Everyone gets to shine at the museum in a different way'.

'[A museum visit] motivates them to do their own learning... they bring in pictures, some joined the history club at the local library, watch TV programmes and look up on the Internet'.

Most striking, as was mentioned in Section 6.6, was a teacher who expected that her pupils would actually go up at least half a level on their assignment as a result of their visit to a museum. This echoes the experiences of a

teacher in the 2003 study where GCSE grades improved as a result of using a visit to Aston Hall. He said:

‘Without the museum visit we would not be able to deliver the [History] syllabus and exam marks would fall... Students tend to get better marks in coursework related to the museum visit than in exams’ (*What did you learn at the Museum today?* 2003).

In Section 7 we are able to show how a museum visit did in fact improve the grades of a group of pupils we observed in a case-study.

6.9 Skills

There was one question on the Teachers' Questionnaire about Skills, Form A, Q.14: 'To what extent do you think that your pupils will have increased or gained skills during their museum visit?'. The table below presents the data across all museums.

Taking all positive values, the statistics tell us that the percentage of teachers thinking it is 'likely' or 'very likely' that pupils will have increased or gained skills as a outcome of their museum visits in 2005 as follows:

- Thinking skills 92%
- Communication skills 87%
- Social skills 86%
- Practical skills 72%
- Creative skills 69%
- Literacy skills 66%
- Spatial skills 59%
- Other skills 41%
- Numeracy skills 23%
- ICT skills 10%

Comparing between the two studies four outcomes show a significant¹⁴ difference, 'Thinking skills', 'Literacy skills', 'Numeracy skills', 'Practical skills' and 'Other Skills'. While all these outcomes appear to be showing a decline in teachers' thinking it was 'very likely' pupils had increased or gained these skills it is important to note that 'Numeracy' and 'Other skills' have a sizeable 'don't know' category which has been excluded from the analysis. This new category maybe impacting on the 2005 results causing a declining in teachers' rating these outcomes 'likely' or 'very likely'.

¹⁴

Skills	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Thinking	3	16.99	0.001	<0.05
Communication	3	7.31	0.063	>0.05
Social	3	2.22	0.53	>0.05
Practical	3	8.20	0.042	<0.05
Creative	3	0.35	0.95	>0.05
Literacy	3	18.46	0.00	>0.05
Spatial	3	1.07	0.78	>0.05
Other	3	44.36	0.00	>0.05
Numeracy	3	14.29	0.003	<0.05
ICT	n/a	n/a	n/a	n/a

Table 6.9a: Form A, Q.14: 'To what extent do you think that your pupils will have increased or gained skills during their museum visit?', 2005

	ICT skills		Thinking skills		Communication skills		Social skills		Creative skills		Practical skills		Literacy skills		Spatial skills		Other skills		Numeracy skills	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
TOTAL	n/a	1,632	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632	936	1,632
Very likely	n/a	43	495	731	403	642	391	634	306	523	292	555	264	371	195	313	175	216	50	59
		3%	53%	45%	43%	39%	42%	39%	33%	32%	31%	34%	28%	23%	21%	19%	19%	13%	5%	4%
Quite likely	n/a	117	370	762	427	780	423	766	343	602	335	618	415	703	374	659	374	457	225	311
		7%	40%	47%	46%	48%	45%	47%	37%	37%	36%	38%	44%	43%	40%	40%	40%	28%	24%	19%
Neither	n/a	485	34	57	51	89	58	106	149	259	150	235	109	242	183	332	161	372	251	492
		30%	4%	3%	5%	5%	6%	6%	16%	16%	16%	14%	12%	15%	20%	20%	17%	23%	27%	30%
Quite unlikely	n/a	273	9	20	14	39	16	32	60	77	74	85	62	138	67	92	30	57	193	337
		17%	1%	1%	1%	2%	2%	2%	6%	5%	8%	5%	7%	8%	7%	6%	3%	3%	21%	21%
Very unlikely	n/a	492	2	11	4	17	5	12	18	48	21	37	18	58	20	54	7	46	110	228
		30%	0%	1%	0%	1%	1%	1%	2%	3%	2%	2%	2%	4%	2%	3%	1%	3%	12%	14%
Don't know	n/a	48	n/a	6	n/a	10	n/a	15	n/a	26	n/a	21	n/a	21	n/a	43	n/a	193	n/a	43
		3%		0%		1%		1%		2%		1%		1%		3%		12%		3%
Not stated	n/a	172	26	45	37	55	43	67	60	97	64	81	68	99	97	139	189	291	107	162
		10%	3%	3%	4%	3%	5%	4%	6%	5%	7%	5%	7%	6%	10%	9%	20%	18%	11%	10%

The table below compares the percentages of teachers saying 'very likely' in the Phase 1 and the Phase 2 museums. As with the other GLOs, there is little differentiation between the teachers in the different museums.

Comparing the Phase 1 and Phase 2 museums reveals a significance difference in teachers' responses for 'Practical skills', 'Numeracy skills', and 'ICT skills'.¹⁵ Teachers visiting Phase 2 museums were more inclined to think it 'unlikely' their pupils had improved their numeracy skills as part of the museum visit. However a larger proportion of teachers' visiting Phase 2 museums thought it likely that pupils would have increased their practical skills and ICT skills.

Table 6.9b: Form A, Q.14: 'To what extent do you think that your pupils will have increased or gained skills during their museum visit?', comparing the percentages of those teachers responding 'very likely' in the Phase 1 and the Phase 2 museums

Skills	Very likely, 2005	Very likely, Phase 1	Very likely, Phase 2
Thinking	45%	44%	45%
Communication	39%	41%	38%
Social	39%	40%	38%
Practical	34%	33%	35%
Creative	32%	31%	33%
Literacy	23%	24%	22%
Spatial	19%	20%	19%
Other	13%	13%	14%
Numeracy	4%	5%	2%
ICT	3%	3%	2%

Base: all teachers' responses Q.14: 'To what extent do you think that your pupils will have increased or gained skills during their museum visit?', 'very likely' only, 2005 (1632); Q.14: Phase 1, 2005 (773); Q.14: Phase 2, 2005 (856)

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Skills	Degrees of Freedom	Chi Square	Significance	Significance at 0.05
Thinking	4	3.14	0.54	>0.05
Communication	4	2.01	0.73	>0.05
Social	4	1.17	0.88	>0.05
Practical	4	10.93	0.03	<0.05
Creative	4	1.03	0.91	>0.05
Literacy	4	1.55	0.82	>0.05
Spatial	4	4.76	0.31	>0.05
Other	4	1.03	0.9	>0.05
Numeracy	4	16.36	0.003	<0.05
ICT	4	11.88	0.04	<0.05

6.10 Skills: evidence from the focus groups and case-studies

In the 2003 study teachers rated Skills less highly as a learning outcome of a museum visit, therefore we were particularly interested in understanding why this might be so. We discovered that if we asked teachers to provide a 'skills audit' of the skills they believed their pupils gained as a result of a museum visit teachers were able to provide a very substantial list of diverse skills:

- Social skills
- Working in teams
- Analytical skills
- Synthesising
- Role playing
- Empathy
- Self analysis
- Self expression
- Verbal skills
 - descriptive language
 - questioning language
 - talking to adults
- Enquiry
- Concentrating
- Making judgements
- Listening
- Looking
- Improvising
- Research skills
- 'Museum skills'

These generic skills were in addition to a whole range of skills which teachers mentioned in relation to specific museum projects their pupils had participated in such as: photography, ICT, drawing, painting, and writing.

6.11 Conclusion

This section explored teachers' expectations about the learning outcomes of their pupils in relation to museum-based learning. It is based on questionnaires completed by 1,643 teachers immediately after a museum visit, and also discussions with 31 teachers who expressed their views about the outcomes of museum learning reflecting on past experience of museum visits.

Those teachers who are using museums are extremely enthusiastic about them, especially in relation to the enjoyment experienced by their pupils and the increased motivation to learn that follows. Teachers were particularly articulate about Enjoyment, Inspiration, Creativity as an outcome of museum-based learning. They also talked about emotional engagement that could not really be called enjoyment but which was to some extent inspirational.

Ninety-nine percent (99%) of teachers thought it 'likely' or 'very likely' that their pupils would have enjoyed the museum visit, with 82% ticking 'very likely'. Ninety-five percent (95%) thought new interests would be aroused and pupils would be inspired to learn more. Ninety-three percent (93%) thought pupils would be excited by new ways to learn and 88% of teachers expected to be exploring new ideas with their pupils as an outcome of the museum visit. In discussions, teachers were explicit about the causal link between enjoyment and learning, saying, for example: 'enjoyment opens children up to learning' and 'enjoyment leads to a heightened sense of awareness'.

Knowledge and Understanding remains of key importance to teachers, with 95% of teachers thinking it is 'likely' or 'very likely' that their pupils would have gained subject-specific facts. The positive attitudes that museums can generate is well understood, with 92% of teachers thinking pupils will feel more positive about learning as an outcome of their museum visit. Pupils' expected progression was expressed most strongly in relation to increase in subject-related understanding, with 94% of teachers thinking this would improve. In discussions, it seemed that teachers understood progression as something that would happen in the middle to long term, and thus they were uncertain about what could be identified in the short-term, immediately following a museum visit. This may account for a larger number of teachers not responding to this part of Q.19, as discussed in Section 5. The most likely skills-related outcomes were thinking skills, with 92% of teachers anticipating an increase here; 87% of teachers expected an improvement in communication skills, and 86% expecting an improvement in social skills. The least likely skills-related area for learning to occur was in the area of ICT, and here it is very clear that unless teachers are deliberately using the museum to work on and around ICT, these skills are unlikely to be encouraged. When teachers in the focus groups were prompted to think more broadly about both Skills and Action, Behaviour, Progression, they were easily able to extend their views and give examples of these learning outcomes which they had observed in their pupils.

Above all, teachers felt that the museum could impact on learning outcome to the extent to which it engaged the pupils' emotional responses. This is

regarded as of major importance and achievable for all pupils. The tangibility of the experience and the opportunity to access information and feelings through the senses, combined with the possibility of individual emotional engagement makes the museum a powerful teaching tool. Pupils are able to deploy a broad range of learning styles, and respond to open-ended events in diverse ways.

Teachers' views about what their pupils had achieved did not vary greatly across the 69 museums. Their expectations in relation to their pupils' learning outcomes seemed to be much the same in nearly all instances, although there were one or two instances where small, but statistically significant differences were found. Section 4 reported a slightly larger number of teachers (3%) using the Phase 1 museums for curriculum-related work than in the Phase 2 museums, but this does not seem to have greatly affected teachers' views.

In their discussions of the value of museums to their pupils, teachers highlighted the importance of emotional engagement and the resulting personalised response from pupils. This was perceived as highly significant in stimulating learning. Some very original and successful ways of provoking emotional engagement were observed in museums, and this capacity of museums may be something that should be explored and reviewed further. One of the key issues in current government strategy is the personalisation of learning. It became clear during the case-study observations, and is also very evident in the responses in the pupils' Form Bs, that pupils are able to make a collective museum experience their own. Investing emotions, and through personalising and taking ownership of an aspect of experience, is one of the very important factors in museum-based learning.

Section 7 discusses the pupils own views about their learning.