

University of Strathclyde
Department of Educational and Professional Studies

**THE ROLE
OF STUDY SUPPORT
FOR PUPILS
FROM SOCIALLY
DISADVANTAGED
BACKGROUNDS**

by

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**A thesis presented in fulfillment of the requirements
for the degree of Doctor of Philosophy**

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APPENDICES

Appendix A:

DESCRIPTION OF THE KEY STAGES

The Key Stages were first defined in the 1988 Education Reform Act to accompany the introduction of the National Curriculum.

The following table shows a range of information relating to the Key Stages.

			Age of pupil at beginning of the academic year	Exams typically sat at end of Stage
Nursery and reception years		Key Stage 0 or 'Foundation Stage'	3-5 years	
Infant School	Years 1-2	Key Stage 1	5-7 years	
Junior School	Years 3-6	Key Stage 2	7-11 years	
Secondary Schools	Years 7-9	Key Stage 3	11-14 years	
	Year 10-11	Key Stage 4	14-16 years	GCSEs
Sixth Form	Years12-13	Key Stage 5	16-18 years	A-Levels, AS-Levels, NVQs and HNDs

Appendix B:
DETAILED TABLES TO ACCOMPANY
CHAPTER 3

Baseline Attainment Data

Table B1: Frequencies of Year 9 NVR scores

Year 9 (Standardised) NVR Score

NVR Score	Frequency	Percent	Valid Percent	Cumulative
70	74	.9	1.2	1.2
71	50	.6	.8	2.1
72	109	1.3	1.8	3.9
73	86	1.0	1.4	5.3
74	98	1.2	1.6	6.9
75	84	1.0	1.4	8.3
76	99	1.2	1.6	10.0
77	127	1.5	2.1	12.1
78	148	1.8	2.5	14.5
79	110	1.3	1.8	16.3
80	142	1.7	2.4	18.7
81	160	1.9	2.7	21.3
82	131	1.6	2.2	23.5
83	156	1.9	2.6	26.1
84	173	2.1	2.9	29.0
85	198	2.4	3.3	32.3
86	244	2.9	4.0	36.3
87	200	2.4	3.3	39.6
88	188	2.2	3.1	42.7
89	170	2.0	2.8	45.6
90	187	2.2	3.1	48.7
91	187	2.2	3.1	51.8
92	198	2.4	3.3	55.0
93	177	2.1	2.9	58.0
94	169	2.0	2.8	60.8
95	193	2.3	3.2	64.0
96	142	1.7	2.4	66.3
97	161	1.9	2.7	69.0
98	138	1.6	2.3	71.3
99	140	1.7	2.3	73.6
100	142	1.7	2.4	76.0
101	130	1.5	2.2	78.1
102	110	1.3	1.8	80.0
103	122	1.5	2.0	82.0
104	108	1.3	1.8	83.8
105	81	1.0	1.3	85.1
106	98	1.2	1.6	86.7
107	66	.8	1.1	87.8
108	83	1.0	1.4	89.2
109	72	.9	1.2	90.4
110	60	.7	1.0	91.4
111	56	.7	.9	92.3
112	47	.6	.8	93.1
113	64	.8	1.1	94.2
114	38	.5	.6	94.8
115	55	.7	.9	95.7
116	25	.3	.4	96.1
117	30	.4	.5	96.6
118	18	.2	.3	96.9
119	28	.3	.5	97.4
120	28	.3	.5	97.8
121	20	.2	.3	98.2
122	14	.2	.2	98.4
123	17	.2	.3	98.7
124	14	.2	.2	98.9
125	10	.1	.2	99.1
126	3	.0	.0	99.1
127	11	.1	.2	99.3
128	7	.1	.1	99.4
129	8	.1	.1	99.6
130	4	.0	.1	99.6
131	1	.0	.0	99.7
132	3	.0	.0	99.7
133	12	.1	.2	99.9
134	4	.0	.1	100.0
135	2	.0	.0	100.0
Total	6030	71.9	100.0	
Missing	-9999	28.1		
Total	8390	100.0		

Table B2: Frequencies of Year 9 English SATS results

SATS English

SATS Level	Frequency	Percent	Valid Percent	Cumulative Percent
1	6	.1	.1	.1
2	21	.3	.4	.5
3	518	6.2	9.3	9.8
4	1720	20.5	30.8	40.6
5	1886	22.5	33.8	74.4
6	1144	13.6	20.5	94.9
7	269	3.2	4.8	99.7
8	16	.2	.3	100.0
Total	5580	66.5	100.0	
Missing -9999	2810	33.5		
Total	8390	100.0		

Table B3: Frequencies of Year 9 Maths SATS results

SATS Maths

SATS Level	Frequency	Percent	Valid Percent	Cumulative Percent
2	93	1.1	1.5	1.5
3	1338	15.9	21.7	23.2
4	1954	23.3	31.6	54.8
5	1537	18.3	24.9	79.7
6	943	11.2	15.3	95.0
7	295	3.5	4.8	99.8
8	14	.2	.2	100.0
Total	6174	73.6	100.0	
Missing -9999	2216	26.4		
Total	8390	100.0		

Table B4: Frequencies of Year 9 Science SATS results

SATS Science

SATS Level		Frequency	Percent	Valid Percent	Cumulative Percent
	1	5	.1	.1	.1
	2	141	1.7	2.3	2.4
	3	1355	16.2	22.4	24.8
	4	2149	25.6	35.6	60.4
	5	1567	18.7	25.9	86.3
	6	709	8.5	11.7	98.0
	7	118	1.4	2.0	100.0
	8	1	.0	.0	100.0
	Total	6045	72.1	100.0	
Missing	-9999	2345	27.9		
Total		8390	100.0		

Baseline Attendance Data

Table B5: Frequencies of Year 9 Attendance

Year 9 Attendance

Attendance		Frequency	Percent	Valid Percent	Cumulative Percent
	<10%	29	.3	.5	.5
	10-19%	21	.3	.4	.9
	20-29%	34	.4	.6	1.5
	30-39%	48	.6	.9	2.3
	40-49%	78	.9	1.4	3.7
	50-59%	126	1.5	2.2	6.0
	60-69%	223	2.7	4.0	9.9
	70-79%	475	5.7	8.4	18.4
	80-89%	1257	15.0	22.3	40.7
	90%+	3338	39.8	59.3	100.0
	Total	5629	67.1	100.0	
Missing	9999	2761	32.9		
Total		8390	100.0		

Output Attainment Data

Table B6: Frequencies of GCSE English results

GCSE English				
Grade Level	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	286	3.4	5.1	5.1
2.00	663	7.9	11.9	17.1
3.00	1108	13.2	19.9	37.0
4.00	1273	15.2	22.9	59.9
5.00	1277	15.2	23.0	82.8
6.00	620	7.4	11.1	94.0
7.00	289	3.4	5.2	99.2
8.00	45	.5	.8	100.0
Total	5561	66.3	100.0	
Missing -9999.00	2829	33.7		
Total	8390	100.0		

Table B7: Frequencies of GCSE Maths results

GCSE Maths				
Grade Level	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	650	7.7	11.8	11.8
2.00	1002	11.9	18.1	29.9
3.00	1132	13.5	20.5	50.4
4.00	988	11.8	17.9	68.3
5.00	1002	11.9	18.1	86.4
6.00	572	6.8	10.4	96.8
7.00	161	1.9	2.9	99.7
8.00	18	.2	.3	100.0
Total	5525	65.9	100.0	
Missing -9999.00	2865	34.1		
Total	8390	100.0		

Table B8: Frequencies of GCSE Science results

GCSE Science

Grade Level		Frequency	Percent	Valid Percent	Cumulative Percent
	1.00	377	4.5	7.4	7.4
	2.00	779	9.3	15.4	22.8
	3.00	995	11.9	19.6	42.4
	4.00	1095	13.1	21.6	64.0
	5.00	1081	12.9	21.3	85.4
	6.00	425	5.1	8.4	93.8
	7.00	291	3.5	5.7	99.5
	8.00	25	.3	.5	100.0
	Total	5068	60.4	100.0	
Missing	-9999.00	3322	39.6		
	Total	8390	100.0		

Table B9: Frequencies of Best 5 GCSE passes

Best 5 GCSE

Total Score	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	56	.7	1.0	1.0
2.00	52	.6	1.0	2.0
3.00	61	.7	1.1	3.1
4.00	63	.8	1.2	4.3
5.00	58	.7	1.1	5.4
6.00	80	1.0	1.5	6.8
7.00	91	1.1	1.7	8.5
8.00	111	1.3	2.0	10.6
9.00	87	1.0	1.6	12.2
10.00	129	1.5	2.4	14.5
11.00	137	1.6	2.5	17.1
12.00	139	1.7	2.6	19.6
13.00	161	1.9	3.0	22.6
14.00	150	1.8	2.8	25.4
15.00	180	2.1	3.3	28.7
16.00	186	2.2	3.4	32.1
17.00	208	2.5	3.8	36.0
18.00	220	2.6	4.1	40.0
19.00	199	2.4	3.7	43.7
20.00	204	2.4	3.8	47.5
21.00	230	2.7	4.2	51.7
22.00	241	2.9	4.4	56.1
23.00	246	2.9	4.5	60.7
24.00	229	2.7	4.2	64.9
25.00	266	3.2	4.9	69.8
26.00	296	3.5	5.5	75.3
27.00	205	2.4	3.8	79.1
28.00	169	2.0	3.1	82.2
29.00	159	1.9	2.9	85.1
30.00	144	1.7	2.7	87.8
31.00	149	1.8	2.7	90.5
32.00	106	1.3	2.0	92.5
33.00	95	1.1	1.8	94.2
34.00	84	1.0	1.5	95.8
35.00	78	.9	1.4	97.2
36.00	50	.6	.9	98.1
37.00	43	.5	.8	98.9
38.00	23	.3	.4	99.4
39.00	17	.2	.3	99.7
40.00	18	.2	.3	100.0
Total	5420	64.6	100.0	
Missing -9999.00	2970	35.4		
Total	8390	100.0		

Output Attendance Data

Table B10: Frequencies of Year 11 Attendance

Year 11 Attendance

Attendance		Frequency	Percent	Valid Percent	Cumulative Percent
	<10%	17	.2	.5	.5
	10-19%	20	.2	.6	1.1
	20-29%	19	.2	.6	1.7
	30-39%	28	.3	.8	2.5
	40-49%	66	.8	2.0	4.5
	50-59%	120	1.4	3.6	8.1
	60-69%	170	2.0	5.1	13.2
	70-79%	321	3.8	9.7	22.9
	80-89%	735	8.8	22.1	45.0
	90%+	1827	21.8	55.0	100.0
	Total	3323	39.6	100.0	
Missing	System	5067	60.4		
Total		8390	100.0		

Schools Involved in The National Evaluation of Study Support

Table B11: List of schools involved in the National Evaluation of Study Support

			Junior Cohort	Senior Cohort
England	Bedfordshire	John Bunyan Upper School and Community College		✓
	Birmingham	Byng Kenrick Central School		✓
		Golden Hillock School	✓	
		Heartlands High School		✓
		Moseley School	✓	
		Queensbridge School	✓	
		Shenley Court School		Withdrew during the study
		Swanshurst School	✓	
		Yardleys School	✓	
	Camden	Hampstead School		✓
		Haverstock School		✓
		South Camden Community College		✓
	County Durham	King James First High School		✓
		Stanley School of Technology		✓
	Liverpool	Anfield Community Comprehensive School		✓
		Broadgreen Community Comprehensive School		✓
		Campion Catholic High School for Boys		✓
		Fazakerley High School		✓
	Newcastle-upon-Tyne	Gosforth High School		✓
		Kenton School		✓
		Walker Comprehensive School		✓
		West Denton High School		✓
		Westgate Community College		✓
	Newham	Forest Gate Community School		✓
		Lister School		✓
		Sarah Bonnell School	✓	✓
		Royal Docks Community School	✓	✓
	Sandwell	Bristnall Hall High School		✓
		Churchfields High School		✓
		George Salter High School		✓
		Perryfields High School		✓
		Shirelands Language College		✓
		St Michael's C of E High School		✓
		Tividale High School and Community College		✓
		Warley High School		✓

(Continued overleaf)

Table B11 (continued): List of schools involved in The National Evaluation of Study Support

			Junior Cohort	Senior Cohort
England	Sheffield	Chaucer Secondary School	✓	✓
		The Herries School	✓	✓
		Yewlands School	✓	✓
	Tower Hamlets	Central Foundation Girls School		✓
		Langdon Park School		✓
		George Green's School		✓
		Mulberry School for Girls		✓
		Oaklands School		✓
Wales	Cardiff	Cathays High School		✓
		Fitzalan High School		✓
		Glan Ely High School		✓
		Rumney High School		✓
		St Illtyd's High School		✓
		Willows High School		✓
Scotland	N Lanarkshire	St Aidan's High School		✓
	West Lothian	St Kentigern's Academy		✓

- Notes:
- (1) The two Scottish schools were excluded from all analyses involving GSCE results because Scotland has its own examination system.
 - (2) Whilst it is common for schools to participate in research studies anonymously, it is possible to list the National Evaluation schools in the above table because they were named within the name evaluation report (MacBeath, Kirwan, Myers *et al* 2001).

Missing Responses

Table B12: Number and Percentage of Missing Responses

		Number of Cases	Number of Missing Responses	Percentage of Missing Responses
Pupil Characteristics	Gender	8341	49	.6
	FME	7444	946	11.3
	Ethnic Background	6522	1868	22.3
Baseline Data	School Attendance	5629	2761	32.9
	Attainment			
	NVR Stand	6030	2360	28.1
	SATS English	5580	2810	33.5
	SATS Maths	6174	2216	26.4
	SATS Science	6045	2345	27.9
	Attitude			
	Factor 1	6169	2221	26.5
	Factor 2	6210	2180	26.0
	Factor 3	6406	1984	23.6
	Factor 4	6020	2370	28.2
	Factor 5	3713	4677	55.7
	Total	3365	5025	59.9
Study Support Attendance	Year 10 Maths	5342	3048	36.3%
	Year 10 English	5342	3048	36.3%
	Year 10 Science	5342	3048	36.3%
	Year 10 Subject-focussed	5342	3048	36.3%
	Year 10 Non-subject focussed	5339	3051	36.4%
	Year 10 Maths	5120	3270	39.0%
	Year 10 English	5120	3270	39.0%
	Year 10 Science	5120	3270	39.0%
	Year 10 Subject-focussed	5119	3271	39.0%
	Year 10 Non-subject focussed	5117	3273	39.0%
	Attendance at Yr 11 Easter School	5967	2423	28.9
Post-Test Data	School Attendance	3323	5067	60.4
	Attainment			
	GCSE English	5561	2829	33.7
	GCSE Maths	5525	2865	34.1
	GCSE Science	5068	3322	39.6
	GCSE Best5	5420	2970	35.4
	Attitude			
	Scale 1	4809	3581	42.7
	Scale 2	4833	3557	42.4
	Scale 3	4974	3416	40.7
	Scale 4	4734	3656	43.6
	Scale 5	3744	4646	55.4
	Total	3376	5014	59.8
All Data Items		260	8130	3.1%

Differences in Mean Scores for FSM and non-FSM Pupils: Attainment

Table B13: Year 9 Attainment
Differences in mean scores for FSM and non-FSM pupils

	FSM	n	Mean	SD	SE Mean	LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS				
						F	p	Equal Variances Assumed	Mean Difference	t	df	p
NVR	No	3495	93.60	12.81	.217	24.838	.000	No	3.60	10.82	4813	.000
	Yes	2121	90.00	11.62	.252							
SATS English	No	3199	4.91	1.05	.019	3.842	.050	Yes	0.31	9.91	5037	.000
	Yes	1840	4.61	1.05	.024							
SATS Maths	No	3381	4.67	1.19	.020	37.318	.000	No	0.50	15.78	4712	.000
	Yes	2119	4.17	1.12	.024							
SATS Science	No	3316	4.47	1.07	.019	68.505	.000	No	0.44	15.08	4515	.000
	Yes	2062	4.03	1.02	.023							

Table B14: GCSE Attainment Measures
Differences in mean scores for FSM and non-FSM pupils

	FSM	n	Mean	SD	SE Mean	LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS				
						F	p	Equal Variances Assumed	Mean Difference	t	df	p
English	No	3109	4.29	1.54	.028	0.561	.454	Yes	0.61	13.13	4836	.000
	Yes	1729	3.68	1.54	.037							
Maths	No	3128	3.82	1.64	.029	2.667	.103	Yes	0.59	12.03	4831	.000
	Yes	1705	3.23	1.61	.039							
Science	No	2917	4.06	1.59	.029	8.594	.003	No	0.48	9.49	3017.6	.000
	Yes	1517	3.58	1.62	.042							
Best 5	No	2970	21.75	8.37	.154	9.246	.002	No	3.16	12.04	3387	.000
	Yes	1694	18.59	8.77	.213							

Differences in Mean Scores for FSM and non-FSM Pupils: Attitudes

Table B15: Baseline Attitudes - Differences in mean scores for FSM and non-FSM pupils

	FSM	n	Mean	SD	SE Mean	LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS				
						F	p	Equal Variances Assumed	Mean Difference	t	df	p
Factor 1	No	3426	48.19	7.03	.120	4.700	.030	No	0.27	1.36	4321	.201
	Yes	2128	47.92	7.43	.161							
Factor 2	No	3430	39.49	5.05	.086	2.302	.129	Yes	0.18	1.31	5602	.190
	Yes	2174	39.31	5.25	.113							
Factor 3	No	3551	41.06	3.08	.052	17.520	.000	No	0.44	4.92	4369	.000
	Yes	2224	40.63	3.40	.072							
Factor 4	No	3312	19.36	2.63	.046	9.921	.002	No	0.67	8.79	4261	.000
	Yes	2109	18.69	2.82	.061							
Factor 5	No	2197	12.90	2.65	.056	0.675	.411	Yes	-0.01	-0.07	3378	.943
	Yes	1183	12.91	2.68	.078							
Total Score	No	2001	161.79	14.49	.324	6.268	.012	No	2.11	3.58	1973	.000
	Yes	1053	159.68	15.91	.490							

Table B16: Output Attitudes - Differences in mean scores for FSM and non-FSM pupils

	FSM	n	Mean	SD	SE Mean	LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS				
						F	p	Equal Variances Assumed	Mean Difference	t	df	p
Factor 1	No	2816	46.79	7.102	.134	21.312	.000	No	0.69	2.79	2670	.005
	Yes	1460	46.10	7.980	.209							
Factor 2	No	2835	35.66	5.778	.109	7.257	.007	No	0.26	1.31	2791	.191
	Yes	1472	35.40	6.225	.162							
Factor 3	No	2899	40.18	3.289	.061	23.151	.000	No	0.46	4.02	2726	.000
	Yes	1511	39.72	3.764	.097							
Factor 4	No	2784	18.83	2.830	.054	9.324	.002	No	0.75	7.73	2726	.000
	Yes	1445	18.08	3.066	.081							
Factor 5	No	2305	13.86	2.893	.060	10.753	.001	No	-0.01	-0.11	1899	.911
	Yes	1054	13.88	3.139	.097							
Total Score	No	2104	155.49	15.758	.344	25.601	.000	No	2.33	3.42	1598	.001
	Yes	937	153.16	18.042	.589							

Differences in Mean Scores for FSM and non-FSM Pupils: Attendance

Table B17: Attendance in Year 9 and Year 11
Differences in mean scores for FSM and non-FSM pupils

	FSM	n	Mean	SD	SE Mean	LEVENE'S TEST FOR EQUALITY OF VARIANCES		T-TEST FOR EQUALITY OF MEANS				
						F	p	Equal Variances Assumed	Mean Differen ce	t	df	p
Year 9	No	3047	88.85	13.31	.241	106.729	0.000	No	4.24	9.42	3516	.000
	Yes	1979	84.60	16.94	.381							
Year 11	No	2012	87.82	13.77	.307	108.950	0.000	No	5.54	8.61	1722	.000
	Yes	1076	82.28	18.56	.566							

Appendix C:

EXCERPT FROM AN NFER-NELSON NON-VERBAL REASONING TEST FOR PUPILS AGED 12-14

These questions are all about shapes and patterns.

There are two basic types of question.

In the first type, you are given two figures inside a large oval. You have to decide how they are alike and then find which of the six figures below them also belongs inside the oval.

Look at Example 1.

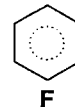
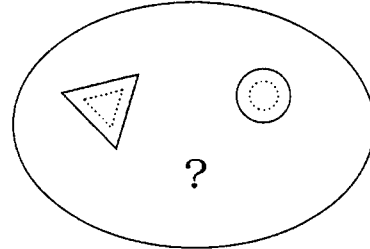
The answer letter has been circled for you.

All the other questions have figures arranged in a pattern. In each question, one piece is missing. Its place is shown by a question mark. You have to decide which of the six figures is the missing one and circle its letter.

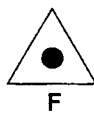
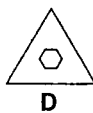
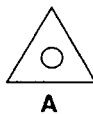
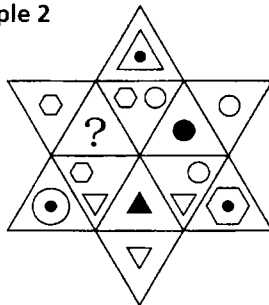
Look at Examples 2 and 3 below.

The answer letters have been circled for you.

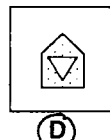
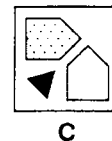
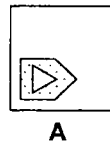
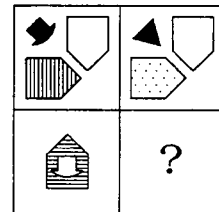
Example 1



Example 2



Example 3



Appendix D:

EXCERPT FROM *YOU AND YOUR SCHOOL:*
A QUESTIONNAIRE FOR YEAR 11 STUDENTS
(PUBLISHED BY NFER)

NFER use only

1 You and your school

1.1 Look at the sentences below.

We want you to read each one and then see whether you agree or not with what has been said. When you have decided, circle the number in the column that is closest to what you feel.

Example:

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
a) I like watching television	①	2	3	4	5
b) I like rainy days	1	2	③	4	5

In (a) I have circled the number 1 in the **strongly agree** column to show that I agree with this sentence because I like watching television very much.

In (b) I have circled the number 3 in the **disagree** column to show that I disagree with this sentence because I do not like rainy days.

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure	
I am very happy when I am at school	1	2	3	4	5	10
My school has sensible rules	1	2	3	4	5	11
Homework is important in helping me to do well at school	1	2	3	4	5	12
Schools should teach things that will be useful when we get jobs	1	2	3	4	5	13
Schools should help us to do as well as possible in exams like GCSE	1	2	3	4	5	14
School is a waste of time for me	1	2	3	4	5	15
School work is worth doing	1	2	3	4	5	16
Schools should help us to be independent and stand on our own two feet	1	2	3	4	5	17
Most of the time I don't want to go to school	1	2	3	4	5	18
My parents think it is important for me to do well at school	1	2	3	4	5	19

continued on next page

Appendix E:

GUIDANCE ISSUED TO SCHOOLS FOR THE COMPLETION OF THE QUESTIONNAIRES

Year 11 Student Questionnaires

Guidance for Administration

Study Support Hotlines: 0141 950 3186 (Elaine Kirkland)
0141 950 3185 (Euan McKay)

The questionnaires are intended for all Year 11 students

For administration of the questionnaires, please group the students in whichever way is most convenient for the school - eg form classes or whole year groups. Each questionnaire is labelled with the school name and student's name. There are spares if needed. If any of these are used, please make sure that the school name, student's name and date of birth are entered clearly on the front cover.

- Each questionnaire should take no longer than 15-20 minutes for students to complete.
- Please tell the students that it is very important that they give their honest opinions about school life. Please stress that this is not an exam - there are no right or wrong answers.
- Please re-assure students that no one will see their answers - their completed questionnaires will be put into one of the large envelopes provided and these will be sealed.
- Labels with students' names have been attached to the questionnaires. Please make sure that each student completes the questionnaire that bears his/her own name. Students who have joined the school in the last two years will not have a labelled questionnaire - they should complete a blank one. Please ensure that the questionnaires without labels are completed only by students for whom there are no pre-labelled questionnaires.
- Please go over the practice item on page 1 of the attendance questionnaire and the example on page 2 of the NFER attitude questionnaire with the students and then ask them to work through the questionnaire, *circling one number only in answer to each question*.
- When all students are finished, ask them to put their questionnaires into the large envelope supplied and seal it there and then, in view of the students.
- Absent students may complete the questionnaire at another time, but it is important that they complete the one bearing their own name. Their questionnaires should be sealed into a second envelope. We are very anxious to have a near 100% return rate. We would be grateful if you could use whatever means at your disposal to encourage all pupils to complete the questionnaire.
- If any student does not complete the questionnaire at all, please write 'absent' on the top right hand corner of his/her booklet and make sure it is returned with the others.
- Please thank the students.

Thank you for your help

Appendix F:

EXAMPLE OF A YEAR 11 STUDY SUPPORT QUESTIONNAIRE

Learning Out Of Lesson Time

KING JAMES I SCHOOL

This questionnaire is part of a survey of young people in England, Wales and Scotland to find out what helps them in their learning and makes them feel good about themselves.

Because we are interested in your opinions, please write in
the space below your full name (in block letters, please):

Your Surname:

Your First Name(s):

Your Date of Birth:

On the next three pages are questions about activities and other things which happen out of school hours, i.e. before school, at lunchtime, after school, during weekends and holidays.

Some of the questions are about school, some ask about things at home or at other clubs, libraries or centres which you may go to. The questions list activities at school. The questions which ask about home and other places need you to tell us what the activities are.

Please fill in the form by placing a tick in the box which best describes how often you do that activity. If you have not heard of it, then put a tick in the Never box. There is an example below to help you.

	Very often or regularly	From time to time	Never or hardly ever
<i>Extra Maths Club</i>	☒	☐	☐
<i>Library Homework Club</i>	☐	☒	☐
<i>Music Club</i>	☐	☐	☒

Please tell us about the activities in your school outside lesson time which you go to now, while you are in year 11:

How often do you attend?	Very often or regularly	From time to time	Never or hardly ever
Study Support for GCSE (English)	☐	☐	☐
Study Support for GCSE (Maths)	☐	☐	☐
Study Support for GCSE (Science)	☐	☐	☐
Study Support for GCSE (Other Subjects)	☐	☐	☐
Yr 11 Mentoring	☐	☐	☐
After school sports	☐	☐	☐
IT Activities	☐	☐	☐
Drama	☐	☐	☐

Have you ever acted as a tutor or teacher for other pupils? (In your school a tutor may be called a mentor, peer educator, reading partner, learning assistant or buddy).

Yes

☐

No

☐

Has another pupil ever acted as a tutor or teacher for you?

Yes

☐

No

☐

Have you ever been part of a school programme where someone from outside school acts as a mentor to you?

Yes

☐

No

☐

Please tell us some basic facts about yourself:

Are you:	Male:	☐	Female:	☐
At home, amongst your family, do you use:	English:	☐	Both English and other language (please specify):	☐
	Other language (Please specify):	☐		

How would you describe your ethnic background:

Asian - Indian	☐	White - European	☐
Asian - Pakistani	☐	White - Other	☐
Asian - Bangladeshi	☐	Black African	☐
Asian - Chinese	☐	Black Caribbean	☐
Asian - Other	☐	Other	☐
Mixed	☐		

Please tell us about the activities outside school which help you with your school work - for example, supplementary school, private tutor.

Name of the activity	I usually go every week	I go about once a month	I have been once or twice
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

Do you have a computer you can use [other than a games machine]?

Yes, at home: ☐

Yes, at a friend's or relative's house: ☐

Yes, at a library or youth centre: ☐

No: ☐

Now that you've thought about learning for a while, you may have some ideas about what helps you to learn and what makes learning difficult:

Things that help me learn:	Things that make it difficult for me to learn:

Thank you very much for completing this questionnaire.

We will be finding out what thousands of young people across the country think about learning out of school, and we shall tell you the results.

Prof. John Macbeath University of Strathclyde		Prof. Kate Myers Keele University
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Appendix G:

GUIDANCE ISSUED TO SCHOOLS REGARDING THE COLLATION OF GCSE RESULTS

YEAR 11 SCHOOLS

10 July 2000

Dear Study Support Co-ordinator

National Evaluation of Study Support: Collection of GCSE and GNVQ Results

I am writing with reference to the collection of GCSE and GNVQ results data, which is part of the final round of data collection in the National Evaluation of Study Support.

In his letter dated 1 June 2000, Tony Kirwan explained that QIE would be sending you forms for listing examination results. You will find three different forms for your Year 11 students (held on our database) enclosed with this letter. The first form is for recording GCSE (full course) results, the second is for GCSE Short Course results and the third is for GNVQ results. If none of the students held on our database undertook any GCSE Short Courses, then simply write "No students entered for GCSE Short Courses" across the form and return it to us. If none of your students undertook any GNVQs, then you should write "No students entered for GNVQs" across the GNVQ form and return it to us. All three forms are largely self-explanatory, but please study the attached sheet of guidelines before you complete any of the forms.

Please note that the return date for the forms is **Friday 29 September**. As Tony outlined in his letter, a **payment of £150.00** will be made to each school **on receipt of the data at QIE**. This is an acknowledgement of the time and effort required in transcribing the information required on to the form(s).

Do not delay the return of your forms if the school appeals against any results:

- if you are appealing against any exam results (for the students on the QIE database), including GCSE Short Courses and GNVQs, then please use the separate form enclosed (entitled "Notification of Appeals Form") to notify us of the subjects for which you will be submitting appeals. We will then send a form for you to use to inform us of the results of these appeals.
- if you are not appealing against any of the exam results, tick the appropriate box on the "Notification of Appeals Form".

Whether or not you are appealing against any results, the "Notification of Appeals Form" should be returned to QIE with the examination results forms enclosed with this letter by Friday 29 September.

Please do not hesitate to contact me on 0141-950-3185 if you have any questions about the completion of the forms. It may be sensible for you to retain a copy of all completed forms for your records.

Once again, many thanks for your continued support with the project.

Best wishes for a relaxing summer break.

Yours sincerely

Euan S McKay

ENCS

Quality in Education Centre, University of Strathclyde
**NATIONAL EVALUATION OF STUDY SUPPORT:
 COLLECTION OF GCSE AND GNVQ RESULTS**

IMPORTANT: Please remember that we are only collecting the results of those students presently held on our database. It is NOT necessary for you to provide results for any pupils NOT listed on the forms which we have provided.

(1) GCSE form

English)
 Maths) Enter the grade achieved by Student
 Science)

Note: *English Language* and *English Literature* should be entered separately. In the case of *Science*, only one grade should be entered: i.e. either Double or Single.

Composite Point Score for Best 5 Passes:

Enter a composite point score for the student's best 5 passes. Point scores should be calculated as outlined in the table below:

GCSE grade	Point score
A*	8
A	7
B	6
C	5
D	4
E	3
F	2
G	1

Please note that the point score should be based on full GCSE courses only - the results of GCSE Short Courses and GNVQs should not be included in the calculation.

Total Number of Passes A-C) Enter the appropriate number of passes achieved by
Total Number of Passes A-G) the student (again, only full GCSE passes should be
 included)

GCSE Short Course(s) Please tick the box if the student sat any GCSE Short Courses. Details of the subjects undertaken and the grades achieved should be recorded on the GCSE Short Courses form (see 2 below).

GNVQ Please tick the box if the student sat any GNVQ examinations. Details of the GNVQ(s) undertaken and the grades achieved should be recorded on the GNVQ form (see 3 below).

(2) GCSE Short Courses form

Please enter, in the blank column headings, the titles of any GCSE Short Courses undertaken by your students and then write the Grades achieved beside the appropriate students' names. There are sufficient columns on the form for up to five courses. Should you require more than five columns, please make a photocopy of the blank form. If none of the students held on the QIE database undertook any GCSE Short Courses, then simply write "No students entered for GCSE Short Courses" across the form and return it to us.

(3) GNVQ form

Please enter the titles of any GNVQs undertaken by your students in the column headings. Beside the appropriate students' names you should tick the course level and write the Grade achieved. There are sufficient columns on the form for up to three courses. Should you require more columns, please make a photocopy of the blank form. If none of the students held on the QIE database undertook any GNVQs, then simply write "No students entered for GNVQs" across the form and return it to us.

*Please remember that all completed forms should be returned (in the pre-paid envelope) to Euan McKay
 at the Quality in Education Centre, University of Strathclyde, 74 Southbrae Drive, Glasgow G13 1PP
 not later than Friday 29 September 2000. Thank you.*

	Model 0	Model 1	Model 2(10)	Model 3(10)	Model 3a(10)	Model 4(10)
Intercept	R (at school level)	R (at school level)	R (at school level)	R (at school level)	R (at school level)	R (at school level)
Baseline (Centered)	F	F	F	F	F	F
Male	F	F	F	F	F	F
FSM	F	F	F	F	F & R (at school level)	F & R (at school level)
White	F	F	F	F	F	F
Yr10 Study Support	F	F	F & R (at school level)	F & R (at school level)	F & R (at school level)	F & R (at school level)
Yr 11 Study Support	F	F	F	F	F	F
FSM*Yr10 Study Support	-	-	-	F	F	F & R (at school level)
INTERPRETING THE MODELS Note: The Models are incremental (i.e. Model 1 is Model 0 with pupils assigned to different schools and Model 2 is Model 1 with the additional of a random term for study support.).	In Model 0 all pupils are assigned to the same school.	As Model 0, except the pupils are assigned to their own schools. A statistical difference between the loglikelihood of Models 0 and 1 suggests a school effect. The coefficients of Yr10 and Yr11 Study Support indicate the benefit of attending Study Support for the average pupil across all schools.	As Model 1, but with the addition of a random term for study support. A statistical difference between the loglikelihood of Models 1 and 2 suggests that the effectiveness of Study Support varies between schools.	As Model 2, but with the addition of a fixed term for the interaction between FSM and Study Support. Model 3 therefore tests if the effect of Study Support is different for FSM and non-FSM pupils. As FSM pupils are coded 1 and Non-FSM pupils 0, a positive coefficient indicates that FSM pupils benefit more than non-FSM pupils.	As Model 3, except the FSM term becomes random. Model 3a is necessary for comparison with Model 4.	As Model 3a, but with the additional of a random term for the FSM*Study Support interaction. A statistical difference between the loglikelihood of Models 3a and 4 suggests that there is variation in the difference in the effectiveness of Study Support between FSM and non-FSM pupils between schools.
			Model 2(11)	Model 3(11)	Model 3a(11)	Model 4(11)
Intercept	F	F	F	F	F	F
Baseline (Centered)	F	F	F	F	F	F
Male	F	F	F	F	F	F
FSM	F	F	F	F	F & R (at school level)	F & R (at school level)
White	F	F	F	F	F	F
Yr10 Study Support	F	F	F	F	F	F
Yr 11 Study Support	F	F	F & R (at school level)	F & R (at school level)	F & R (at school level)	F & R (at school level)
FSM*Yr11 Study Support	-	-	-	F	F	F & R (at school level)

F = Fixed parameter R = Random parameter

Appendix I: THE MODELS

MODEL 1.0

Degree of freedom = 2312 cases - (7 fixed pars + 0 random pars) = 2305

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.822	0.436	52.344	0.000
NVR (centered)	0.300	0.010	30.000	0.000
Male	-1.370	0.259	5.290	0.000
FSM	-1.745	0.278	6.277	0.000
White	-1.521	0.279	5.452	0.000
Yr10 Subject SS	1.009	0.265	3.808	0.000
Yr11 Subject SS	2.189	0.362	6.047	0.000
Random				
Between schools	0.000	0.000		
Between students	37.279	1.093		
Intra-school correlation	0.000			
Loglikelihood	14920.0			
Number of cases in use	2312			

MODEL 1.0 with School Dummies

Degree of freedom = 2312 cases - (38 fixed pars + 0 random pars) =

2274

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	21.211	0.676	31.377	0.000
NVR (centered)	0.300	0.010	30.000	0.000
Male	-1.302	0.260	5.008	0.000
FSM	-1.460	0.282	5.177	0.000
White	-0.874	0.336	2.601	0.009
Yr10 Subject SS	1.282	0.314	4.083	0.000
Yr11 Subject SS	3.440	0.383	8.982	0.000
School 5	2.031	0.745	2.726	0.006
School 6	5.002	0.873	5.730	0.000
School 7	0.034	0.852	0.040	0.968
School 8	-1.574	0.839	1.876	0.061
School 9	4.279	0.797	5.369	0.000
School 10	-0.952	0.843	1.129	0.259
School 11	1.710	0.828	2.065	0.039
School 15	-1.980	0.897	2.207	0.027
School 19	-2.293	0.845	2.714	0.007
School 20	-0.247	0.932	0.265	0.791
School 22	1.515	2.002	0.757	0.449
School 25	-1.269	0.887	1.431	0.153
School 26	0.541	1.034	0.523	0.601
School 29	-0.741	1.032	0.718	0.473
School 30	-1.995	0.901	2.214	0.027
School 31	-4.248	1.100	3.862	0.000
School 32	-2.425	0.923	2.627	0.009
School 33	0.838	0.970	0.864	0.388
School 34	0.942	0.856	1.100	0.271
School 35	-1.170	0.803	1.457	0.145
School 36	-2.642	1.117	2.365	0.018
School 37	-1.045	1.049	0.996	0.319
School 38	-1.548	1.076	1.439	0.150
School 39	0.064	0.911	0.070	0.944
School 40	1.228	0.915	1.342	0.180
School 41	-0.702	1.182	0.594	0.553
School 44	-3.154	1.007	3.132	0.002
School 45	-2.875	0.930	3.091	0.002
School 47	-0.959	0.919	1.044	0.297
School 49	-1.585	0.934	1.697	0.090
School 51	0.844	0.933	0.905	0.366
Random				
Between schools	0.000	0.000		
Between students	21.211	0.676		
Intra-school correlation	0.000			
Loglikelihood	14643.1			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.0 (chi-square)	276.9			
Additional degrees of freedom compared with Model 1.0	31			
p value	0.000			
Significance of p value	<0.001			

MODEL 1.1 (Null Model)

Degree of freedom = 2312 cases - (1 fixed par + 1 random par) = 2310

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	23.018	0.393	58.570	0.000
Random				
Between schools	4.098	1.231		
Between students	50.173	1.486		
Intra-school correlation	0.076			
Loglikelihood	15672.4			
Number of cases in use	2312			

MODEL 1.1

Degree of freedom = 2312 cases - (7 fixed pars + 1 random par) = 2304

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.975	0.577	36.352	0.000
NVR (centered)	0.300	0.010	30.000	0.000
Male	-1.307	0.258	5.066	0.000
FSM	-1.488	0.279	5.333	0.000
White	-0.994	0.325	3.058	0.002
Yr10 Subject SS	1.246	0.303	4.112	0.000
Yr11 Subject SS	3.333	0.379	8.794	0.000
Random				
Between schools	3.643	1.049		
Between students	33.509	0.992		
Intra-school correlation	0.098			
Loglikelihood	14740.9			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.0 (chi-square)	179.1			
Additional degrees of freedom compared with Model 1.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	11.1%			
Variance explained at pupil level	33.2%			
Total variance explained	31.5%			

MODEL 1.2(10)

Degree of freedom = 2312 cases - (7 fixed pars + 3 random pars) = 2302

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.892	0.589	35.470	0.000
NVR (centered)	0.299	0.010	29.900	0.000
Male	-1.322	0.258	5.124	0.000
FSM	-1.481	0.279	5.308	0.000
White	-0.990	0.324	3.056	0.002
Yr10 Subject SS	1.301	0.366	3.555	0.000
Yr11 Subject SS	3.375	0.379	8.905	0.000
Random				
Level 2				
Variance: Intercept	3.917	1.294		
Covariance: Yr10 Subject SS x Intercept	-0.802	0.890		
Variance: Yr10 Subject SS	1.079	0.957		
Level 1				
	33.364	0.993		
Correlation between intercept and slope (Yr10 Subject SS)	-0.390			
Loglikelihood	14738.7			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.1 (chi-square)	2.2			
Additional degrees of freedom compared with Model 1.1	2			
p value	0.333			
Significance of p value	n.s.			

MODEL 1.2(11)

Degree of freedom = 2312 cases - (7 fixed pars + 3 random pars) = 2302

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.670	0.713	28.990	0.000
NVR (centered)	0.298	0.010	29.800	0.000
Male	-1.268	0.257	4.934	0.000
FSM	-1.428	0.278	5.137	0.000
White	-1.019	0.321	3.174	0.002
Yr10 Subject SS	1.258	0.299	4.207	0.000
Yr11 Subject SS	3.572	0.557	6.413	0.000
Random				
Level 2				
Variance: Intercept	7.682	3.058		
Covariance: Yr11 Subject SS x Intercept	-4.462	2.396		
Variance: Yr11 Subject SS	3.766	2.175		
Level 1				
	33.158	0.987		
Correlation between intercept and slope (Yr11 Subject SS)	-0.830			
Loglikelihood	14725.3			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.1 (chi-square)	15.6			
Additional degrees of freedom compared with Model 1.1	2			
p value	0.000			
Significance of p value	<0.001			

MODEL 1.3(10)

Degree of freedom = 2312 cases - (8 fixed pars + 3 random pars) = 2301

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	21.047	0.587	35.855	0.000
NVR (centered)	0.299	0.010	29.900	0.000
Male	-1.311	0.258	5.081	0.000
FSM	-2.053	0.385	5.332	0.000
White	-0.955	0.325	2.938	0.003
Yr10 Subject SS	0.920	0.396	2.323	0.020
Yr11 Subject SS	3.369	0.378	8.913	0.000
FSM*Yr10 Subject SS	1.158	0.540	2.144	0.032
Random				
Level 2				
Variance: Intercept	3.766	1.249		
Covariance: Yr10 Subject SS x Intercept	-0.641	0.841		
Variance: Yr10 Subject SS	0.889	0.898		
Level 1				
	33.337	0.992		
Correlation between intercept and slope (Yr10 Subject SS)	-0.350			
Loglikelihood	14734.1			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.2(10) (chi-square)	4.6			
Additional degrees of freedom compared with Model 1.2(10)	1			
p value	0.032			
Significance of p value	<0.05			

MODEL 1.3(11)

Degree of freedom = 2312 cases - (8 fixed pars + 3 random pars) = 2301

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	21.280	0.729	29.191	0.000
NVR (centered)	0.298	0.010	29.800	0.000
Male	-1.251	0.257	4.868	0.000
FSM	-3.045	0.707	4.307	0.000
White	-1.009	0.320	3.153	0.002
Yr10 Subject SS	1.280	0.299	4.281	0.000
Yr11 Subject SS	2.848	0.607	4.692	0.000
FSM*Yr11 Subject SS	1.892	0.762	2.483	0.013
Random				
Level 2				
Variance: Intercept	6.824	2.794		
Covariance: Yr11 Subject SS x Intercept	-3.730	2.165		
Variance: Yr11 Subject SS	3.140	1.972		
Level 1				
	33.117	0.986		
Correlation between intercept and slope (Yr11 Subject SS)	-0.806			
Loglikelihood	14719.1			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.2(11) (chi-square)	6.2			
Additional degrees of freedom compared with Model 1.2(11)	1			
p value	0.013			
Significance of p value	<0.05			

MODEL 1.3(10)a

Degree of freedom = 2312 cases - (8 fixed pars + 6 random pars) = 2298

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.969	0.599	35.007	0.000
NVR (centered)	0.299	0.010	29.900	0.000
Male	-1.321	0.257	5.140	0.000
FSM	-1.937	0.428	4.526	0.000
White	-0.985	0.324	3.040	0.002
Yr10 Subject SS	1.001	0.403	2.484	0.013
Yr11 Subject SS	3.376	0.378	8.931	0.000
FSM*Yr10 Subject SS	0.937	0.571	1.641	0.101
Random				
Level 2				
Variance: Intercept	4.096	1.409		
Covariance: FSM x Intercept	-0.938	0.829		
Variance: FSM	0.838	0.801		
Covariance: Yr10 Subject SS x Intercept	-0.753	0.898		
Covariance: Yr10 Subject SS x FSM	0.332	0.626		
Variance: Yr10 Subject SS	0.914	0.903		
Level 1				
	33.212	0.994		
Correlation between intercept and slope (FSM)	-0.506			
Correlation between intercept and slope (Yr10 Subject SS)	-0.389			
Loglikelihood	14732.6			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.3(10) (chi-square)	1.5			
Additional degrees of freedom compared with Model 1.3(10)	3			
p value	0.682			
Significance of p value	>0.05			

MODEL 1.3(11)a

Degree of freedom = 2312 cases - (8 fixed pars + 6 random pars) = 2298

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.767	0.790	26.287	0.000
NVR (centered)	0.299	0.010	29.900	0.000
Male	-1.250	0.256	4.883	0.000
FSM	-2.748	0.735	3.739	0.000
White	-0.995	0.319	3.119	0.002
Yr10 Subject SS	1.250	0.298	4.195	0.000
Yr11 Subject SS	3.330	0.639	5.211	0.000
FSM*Yr11 Subject SS	1.485	0.768	1.934	0.053
Random				
Level 2				
Variance: Intercept	9.117	3.465		
Covariance: FSM x Intercept	-3.167	1.481		
Variance: FSM	1.288	0.908		
Covariance: Yr11 Subject SS x Intercept	-5.296	2.569		
Covariance: Yr11 Subject SS x FSM	2.646	1.148		
Variance: Yr11 Subject SS	4.043	2.168		
Level 1				
	32.921	0.985		
Correlation between intercept and slope (FSM)	-0.924			
Correlation between intercept and slope (Yr11 Subject SS)	-0.872			
Loglikelihood	14712.2			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.3(11) (chi-square)	6.9			
Additional degrees of freedom compared with Model 1.3(11)	3			
p value	0.075			
Significance of p value	>0.05			

MODEL 1.4(10)

Degree of freedom = 2312 cases - (8 fixed pars + 10 random pars) = 2294

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.969	0.599	35.007	0.000
NVR (centered)	0.299	0.010	29.900	0.000
Male	-1.321	0.257	5.140	0.000
FSM	-1.937	0.428	4.526	0.000
White	-0.985	0.324	3.040	0.002
Yr10 Subject SS	1.001	0.403	2.484	0.013
Yr11 Subject SS	3.377	0.378	8.934	0.000
FSM*Yr10 Subject SS	0.937	0.571	1.641	0.101
Random				
Level 2				
Variance: Intercept	4.097	1.407		
Covariance: FSM x Intercept	-0.938	0.828		
Variance: FSM	0.837	0.800		
Covariance: Yr10 Subject SS x Intercept	-0.754	0.897		
Covariance: Yr10 Subject SS x FSM	0.332	0.625		
Variance: Yr10 Subject SS	0.915	0.902		
Covariance: FSM*Yr10 Subject SS x Intercept	0.000	0.000		
Covariance: FSM*Yr10 Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr10 Subject SS x Yr10 Subject SS	0.000	0.000		
Variance: FSM*Yr10 Subject SS	0.000	0.000		
Level 1				
	33.212	0.994		
Correlation between intercept and slope (FSM)	-0.507			
Correlation between intercept and slope (Yr10 Subject SS)	-0.389			
Correlation between intercept and slope (FSM*Yr10 Subject SS)	#DIV/0!			
Loglikelihood	14732.6			
Number of cases in use	2312			
Difference in loglikelihood compared with Model 1.3(10)a (chi-square)	0.0			
Additional degrees of freedom compared with Model 1.3(10)a	4			
p value	1.000			
Significance of p value	>0.05			

MODEL 1.4(11)

Degree of freedom = 2312 cases - (8 fixed pars + 10 random pars) = 2294

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept				
NVR (centered)				
Male				
FSM				
White				
Yr10 Subject SS				
Yr11 Subject SS				
FSM*Yr11 Subject SS				
Random				
Level 2				
Variance: Intercept				
Covariance: FSM x Intercept				
Variance: FSM				
Covariance: Yr11 Subject SS x Intercept				
Covariance: Yr11 Subject SS x FSM				
Variance: Yr11 Subject SS				
Covariance: FSM*Yr11 Subject SS x Intercept				
Covariance: FSM*Yr11 Subject SS x FSM				
Covariance: FSM*Yr11 Subject SS x Yr11 Subject SS				
Variance: FSM*Yr11 Subject SS				
Level 1				
Correlation between intercept and slope (FSM)				
Correlation between intercept and slope (Yr11 Subject SS)				
Correlation between intercept and slope (FSM*Yr11 Subject SS)				
Loglikelihood				
Number of cases in use				
Difference in loglikelihood compared with Model 1.3(11)a (chi-square)				
Additional degrees of freedom compared with Model 1.3(11)a				
p value				
Significance of p value				

Running this model results in the error message:
V gone -ve definite for block 0 iteration aborted
(random pass) (moni)

MODEL 2.0

Degree of freedom = 2310 cases - (7 fixed pars + 0 random pars) =

2303

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	23.462	0.441	53.202	0.000
NVR (centered)	0.303	0.010	30.300	0.000
Male	-1.629	0.260	6.265	0.000
FSM	-1.830	0.280	6.536	0.000
White	-1.775	0.277	6.408	0.000
Yr10 Non-Subject SS	1.337	0.347	3.853	0.000
Yr11 Non-Subject SS	1.114	0.358	3.112	0.002
Random				
Between schools	0.000	0.000		
Between students	37.755	1.108		
Intra-school correlation	0.000			
Loglikelihood	14936.4			
Number of cases in use	2310			

MODEL 2.0 with School Dummies

Degree of freedom = 2310 cases - (38 fixed pars + 0 random pars) =

2272

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	23.574	0.719	32.787	0.000
NVR (centered)	0.305	0.010	30.500	0.000
Male	-1.530	0.267	5.730	0.000
FSM	-1.621	0.287	5.648	0.000
White	-0.961	0.343	2.802	0.005
Yr10 Non-Subject SS	1.037	0.419	2.475	0.013
Yr11 Non-Subject SS	1.215	0.363	3.347	0.001
School 5	2.225	0.758	2.935	0.003
School 6	1.579	0.821	1.923	0.055
School 7	-0.594	0.865	0.687	0.492
School 8	-1.079	0.861	1.253	0.210
School 9	3.651	0.814	4.485	0.000
School 10	-1.176	0.856	1.374	0.170
School 11	0.296	0.814	0.364	0.716
School 15	-2.974	0.887	3.353	0.001
School 19	-2.376	0.863	2.753	0.006
School 20	-0.274	0.950	0.288	0.773
School 22	2.047	2.041	1.003	0.316
School 25	-1.937	0.889	2.179	0.029
school 26	-0.365	1.023	0.357	0.721
School 29	-0.818	1.050	0.779	0.436
School 30	-2.978	0.908	3.280	0.001
School 31	-5.628	1.108	5.079	0.000
School 32	-2.854	0.932	3.062	0.002
School 33	0.761	0.990	0.769	0.442
School 34	1.241	0.892	1.391	0.164
School 35	-0.510	0.884	0.577	0.564
School 36	-2.793	1.144	2.441	0.015
School 37	-2.008	1.065	1.885	0.059
School 38	-1.527	1.100	1.388	0.165
School 39	-0.160	0.923	0.173	0.862
School 40	0.458	0.909	0.504	0.614
School 41	-2.155	1.213	1.777	0.076
School 44	-2.091	1.089	1.920	0.055
School 45	-2.410	0.958	2.516	0.012
School 47	-2.027	0.926	2.189	0.029
School 49	-2.511	0.924	2.718	0.007
School 51	0.728	0.951	0.766	0.444
Random				
Between schools	0.000	0.000		
Between students	34.817	1.024		
Intra-school correlation	0.000			
Loglikelihood	14718.3			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.0 (chi-square)	218.1			
Additional degrees of freedom compared with Model 2.0	31			
p value	0.000			
Significance of p value	<0.001			

MODEL 2.1 (Null)

Degree of freedom = 2310 cases - (1 fixed par + 1 random par) = 2308

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	23.017	0.393	58.567	0.000
Random				
Between schools	4.101	1.232		
Between students	50.215	1.488		
Intra-school correlation	0.076			
Loglikelihood	15660.8			
Number of cases in use	2310			

MODEL 2.1

Degree of freedom = 2310 cases - (7 fixed pars + 1 random par) = 2302

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.777	0.586	38.869	0.000
NVR (centered)	0.305	0.010	30.500	0.000
Male	-1.550	0.264	5.871	0.000
FSM	-1.640	0.284	5.775	0.000
White	-1.158	0.329	3.520	0.000
Yr10 Non-Subject SS	1.116	0.401	2.783	0.005
Yr11 Non-Subject SS	1.216	0.360	3.378	0.001
Random				
Between schools	2.947	0.880		
Between students	34.818	1.032		
Intra-school correlation	0.078			
Loglikelihood	14809.9			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.0 (chi-square)	126.5			
Additional degrees of freedom compared with Model 2.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	28.1%			
Variance explained at pupil level	30.7%			
Total variance explained	30.5%			

MODEL 2.2(10)

Degree of freedom = 2310 cases - (7 fixed pars + 3 random pars) = 2300

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.698	0.671	33.827	0.000
NVR (centered)	0.304	0.010	30.400	0.000
Male	-1.545	0.266	5.808	0.000
FSM	-1.655	0.284	5.827	0.000
White	-1.153	0.329	3.505	0.000
Yr10 Non-Subject SS	1.206	0.528	2.284	0.022
Yr11 Non-Subject SS	1.209	0.361	3.349	0.001
Random				
Level 2				
Variance: Intercept	4.848	2.198		
Covariance: Yr10 Non-Subject SS x Intercept	-2.133	1.726		
Variance: Yr10 Non-Subject SS	2.333	1.790		
Level 1				
	34.607	1.030		
Correlation between intercept and slope (Y10 Non-Subject SS)	-0.634			
Loglikelihood	14806.9			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.1 (chi-square)	3			
Additional degrees of freedom compared with Model 2.1	2			
p value	0.223			
Significance of p value	n.s.			

MODEL 2.2(11)

Degree of freedom = 2310 cases - (7 fixed pars + 3 random pars) = 2300

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.293	0.777	28.691	0.000
NVR (centered)	0.300	0.010	30.000	0.000
Male	-1.519	0.263	5.776	0.000
FSM	-1.606	0.282	5.695	0.000
White	-1.106	0.327	3.382	0.001
Yr10 Non-Subject SS	1.046	0.401	2.608	0.009
Yr11 Non-Subject SS	1.705	0.613	2.781	0.005
Random				
Level 2				
Variance: Intercept	9.225	3.400		
Covariance: Yr11 Non-Subject SS x Intercept	-6.162	2.810		
Variance: Yr11 Non-Subject SS	5.913	2.687		
Level 1				
	34.093	1.016		
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.834			
Loglikelihood	14787.0			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.1 (chi-square)	22.9			
Additional degrees of freedom compared with Model 2.1	2			
p value	0.000			
Significance of p value	<0.001			

MODEL 2.3(10)

Degree of freedom = 2310 cases - (8 fixed pars + 3 random pars) = 2299

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.813	0.695	32.824	0.000
NVR (centered)	0.304	0.010	30.400	0.000
Male	-1.542	0.266	5.797	0.000
FSM	-2.039	0.692	2.947	0.003
White	-1.152	0.329	3.502	0.000
Yr10 Non-Subject SS	1.070	0.574	1.864	0.062
Yr11 Non-Subject SS	1.200	0.361	3.324	0.001
FSM*Yr10 Non-Subject SS	0.456	0.752	0.606	0.544
Random				
Level 2				
Variance: Intercept	4.775	2.175		
Covariance: Yr10 Non-Subject SS x Intercept	-2.103	1.718		
Variance: Yr10 Non-Subject SS	2.349	1.798		
Level 1				
	34.617	1.030		
Correlation between intercept and slope (Yr10 Non-Subject SS)	-0.628			
Loglikelihood	14806.5			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.2(10) (chi-square)	0.4			
Additional degrees of freedom compared with Model 2.2(10)	1			
p value	0.527			
Significance of p value	>0.05			

MODEL 2.3(11)

Degree of freedom = 2310 cases - (8 fixed pars + 3 random pars) = 2299

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.331	0.811	27.535	0.000
NVR (centered)	0.300	0.010	30.000	0.000
Male	-1.518	0.264	5.750	0.000
FSM	-1.709	0.696	2.455	0.014
White	-1.107	0.327	3.385	0.001
Yr10 Non-Subject SS	1.045	0.401	2.606	0.009
Yr11 Non-Subject SS	1.661	0.668	2.487	0.013
FSM*Yr11 Non-Subject SS	0.122	0.755	0.162	0.872
Random				
Level 2				
Variance: Intercept	9.206	3.422		
Covariance: Yr11 Non-Subject SS x Intercept	-6.152	2.827		
Variance: Yr11 Non-Subject SS	5.911	2.699		
Level 1				
	34.108	1.016		
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.834			
Loglikelihood	14787.0			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.2(11) (chi-square)	0.0			
Additional degrees of freedom compared with Model 2.2(11)	1			
p value	1.000			
Significance of p value	>0.05			

MODEL 2.3(10)a

Degree of freedom = 2310 cases - (8 fixed pars + 6 random pars) =

2296

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.755	0.697	32.647	0.000
NVR (centered)	0.304	0.010	30.400	0.000
Male	-1.536	0.265	5.796	0.000
FSM	-2.029	0.758	2.677	0.007
White	-1.124	0.328	3.427	0.001
Yr10 Non-Subject SS	1.090	0.580	1.879	0.060
Yr11 Non-Subject SS	1.171	0.361	3.244	0.001
FSM*Yr10 Non-Subject SS	0.413	0.803	0.514	0.607
Random				
Level 2				
Variance: Intercept	4.590	2.180		
Covariance: FSM x Intercept	-0.845	1.179		
Variance: FSM	1.532	1.015		
Covariance: Yr10 Non-Subject SS x Intercept	-2.133	1.709		
Covariance: Yr10 Non-Subject SS x FSM	0.719	1.053		
Variance: Yr10 Non-Subject SS	2.295	1.769		
Level 1				
	34.368	1.029		
Correlation between intercept and slope (FSM)	-0.319			
Correlation between intercept and slope (Y10 Non-Subject SS)	-0.657			
Loglikelihood	14801.8			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.3(10) (chi-square)	4.7			
Additional degrees of freedom compared with Model 2.3(10)	3			
p value	0.195			
Significance of p value	>0.05			

MODEL 2.3(11)a

Degree of freedom = 2310 cases - (8 fixed pars + 6 random pars) =

2296

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.374	0.783	28.575	0.000
NVR (centered)	0.301	0.010	30.100	0.000
Male	-1.531	0.263	5.821	0.000
FSM	-1.825	0.737	2.476	0.013
White	-1.087	0.326	3.334	0.001
Yr10 Non-Subject SS	1.053	0.400	2.633	0.009
Yr11 Non-Subject SS	1.546	0.650	2.378	0.017
FSM*Yr11 Non-Subject SS	0.248	0.768	0.323	0.747
Random				
Level 2				
Variance: Intercept	8.232	3.214		
Covariance: FSM x Intercept	0.863	1.276		
Variance: FSM	1.307	0.945		
Covariance: Yr11 Non-Subject SS x Intercept	-5.508	2.649		
Covariance: Yr11 Non-Subject SS x FSM	-1.279	1.175		
Variance: Yr11 Non-Subject SS	5.506	2.571		
Level 1				
	33.911	1.017		
Correlation between intercept and slope (FSM)	0.263			
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.818			
Loglikelihood	14783.0			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.3(11) (chi-square)	4.0			
Additional degrees of freedom compared with Model 2.3(11)	3			
p value	0.261			
Significance of p value	>0.05			

MODEL 2.4(10)

Degree of freedom = 2310 cases - (8 fixed pars + 10 random pars) = 2292

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.754	0.697	32.646	0.000
NVR (centered)	0.304	0.010	30.400	0.000
Male	-1.536	0.265	5.796	0.000
FSM	-2.028	0.758	2.675	0.008
White	-1.124	0.328	3.427	0.001
Yr10 Non-Subject SS	1.090	0.580	1.879	0.060
Yr11 Non-Subject SS	1.171	0.361	3.244	0.001
FSM*Yr10 Non-Subject SS	0.413	0.803	0.514	0.607
Random				
Level 2				
Variance: Intercept	4.596	2.175		
Covariance: FSM x Intercept	-0.848	1.178		
Variance: FSM	1.532	1.015		
Covariance: Yr10 Non-Subject SS x Intercept	-2.136	1.707		
Covariance: Yr10 Non-Subject SS x FSM	0.722	1.053		
Variance: Yr10 Non-Subject SS	2.294	1.769		
Covariance: FSM*Yr10 Non-Subject SS x Intercept	0.000	0.000		
Covariance: FSM*Yr10 Non-Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr10 Non-Subject SS x Yr10 Non-Subject SS	0.000	0.000		
Variance: FSM*Yr10 Non-Subject SS	0.000	0.000		
Level 1				
	34.368	1.029		
Correlation between intercept and slope (FSM)	-0.320			
Correlation between intercept and slope (Yr10 Non-Subject SS)	-0.658			
Correlation between intercept and slope (FSM*Yr10 Non-Subject SS)	#DIV/0!			
Loglikelihood	14801.8			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.3(10)a (chi-square)	0.0			
Additional degrees of freedom compared with Model 2.3(10)a	4			
p value	1.000			
Significance of p value	>0.05			

MODEL 2.4(11)

Degree of freedom = 2310 cases - (8 fixed pars + 10 random pars) =

2292

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	22.514	0.718	31.357	0.000
NVR (centered)	0.301	0.010	30.100	0.000
Male	-1.508	0.263	5.734	0.000
FSM	-2.086	0.734	2.842	0.005
White	-1.083	0.326	3.322	0.001
Yr10 Non-Subject SS	1.045	0.399	2.619	0.009
Yr11 Non-Subject SS	1.401	0.554	2.529	0.012
FSM*Yr11 Non-Subject SS	0.483	0.756	0.639	0.523
Random				
Level 2				
Variance: Intercept	6.259	2.730		
Covariance: FSM x Intercept	3.128	2.132		
Variance: FSM	2.107	3.282		
Covariance: Yr11 Non-Subject SS x Intercept	-3.369	2.150		
Covariance: Yr11 Non-Subject SS x FSM	-3.556	1.819		
Variance: Yr11 Non-Subject SS	3.149	2.063		
Covariance: FSM*Yr11 Non-Subject SS x Intercept	-3.432	2.259		
Covariance: FSM*Yr11 Non-Subject SS x FSM	-0.611	3.173		
Covariance: FSM*Yr11 Non-Subject SS x Yr11 Non-Subject SS	3.674	1.935		
Variance: FSM*Yr11 Non-Subject SS	0.227	3.733		
Level 1				
	33.878	1.018		
Correlation between intercept and slope (FSM)	0.861			
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.759			
Correlation between intercept and slope (FSM*Yr11 Non-Subject SS)	-2.879			
Loglikelihood	14779.2			
Number of cases in use	2310			
Difference in loglikelihood compared with Model 2.3(11)a (chi-square)	3.8			
Additional degrees of freedom compared with Model 2.3(11)a	4			
p value	0.434			
Significance of p value	>0.05			

MODEL 3.0

Degree of freedom = 2699 cases - (7 fixed pars + 0 random pars) = 2692

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.821	0.043	88.860	0.000
SATS Maths (centered)	1.147	0.016	71.688	0.000
Male	-0.096	0.035	2.743	0.006
FSM	-0.231	0.039	5.923	0.000
White	-0.357	0.038	9.395	0.000
Yr10 Maths	0.276	0.054	5.111	0.000
Yr11 Maths	0.205	0.037	5.541	0.000
Random				
Between schools	0.000	0.000		
Between students	0.822	0.022		
Intra-school correlation	0.000			
Loglikelihood	7122.4			
Number of cases in use	2699			

MODEL 3.0 with School Dummies

Degree of freedom = 2699 cases - (39 fixed pars + 0 random pars) = 2660

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.594	0.087	41.310	0.000
SATS Maths (centered)	1.148	0.015	76.533	0.000
Male	-0.113	0.035	3.229	0.001
FSM	-0.218	0.039	5.590	0.000
White	-0.238	0.047	5.064	0.000
Yr10 Maths	0.199	0.063	3.159	0.002
Yr11 Maths	0.265	0.039	6.795	0.000
School 5	0.380	0.113	3.363	0.001
School 6	0.954	0.122	7.820	0.000
School 7	-0.096	0.129	0.744	0.457
School 8	0.301	0.125	2.408	0.016
School 9	0.266	0.112	2.375	0.018
School 10	-0.166	0.119	1.395	0.163
School 11	0.179	0.121	1.479	0.139
School 15	0.285	0.128	2.227	0.026
School 19	-0.059	0.127	0.465	0.642
School 20	0.196	0.127	1.543	0.123
School 22	0.261	0.139	1.878	0.061
School 25	0.267	0.136	1.963	0.050
school 26	-0.621	0.156	3.981	0.000
School 30	-0.074	0.139	0.532	0.595
School 31	-0.032	0.163	0.196	0.844
School 33	0.389	0.139	2.799	0.005
School 34	0.209	0.126	1.659	0.097
School 35	-0.318	0.122	2.607	0.009
School 36	0.360	0.186	1.935	0.053
School 37	0.157	0.147	1.068	0.286
School 38	0.315	0.164	1.921	0.055
School 39	0.113	0.133	0.850	0.396
School 40	-0.152	0.134	1.134	0.257
School 41	-0.593	0.184	3.223	0.001
School 43	0.088	0.125	0.704	0.481
School 44	-0.200	0.165	1.212	0.226
School 45	0.062	0.141	0.440	0.660
School 46	0.534	0.114	4.684	0.000
School 47	-0.028	0.131	0.214	0.831
School 49	-0.067	0.136	0.493	0.622
School 51	0.408	0.131	3.115	0.002
School 52	-0.028	0.132	0.212	0.832
Random				
Between schools	0.000	0.000		
Between students	0.748	0.020		
Intra-school correlation	0.000			
Loglikelihood	6837.6			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.0 (chi-square)	284.8			
Additional degrees of freedom compared with Model 3.0	32			
p value	0.000			
Significance of p value	<0.001			

MODEL 3.1 (Null)

Degree of freedom = 2699 cases - (1 fixed par + 1 random par) = 2697

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.858	0.069	55.913	0.000
Random				
Between schools	0.123	0.039		
Between students	2.476	0.068		
Intra-school correlation	0.047			
Loglikelihood	10157.5			
Number of cases in use	2699			

MODEL 3.1

Degree of freedom = 2699 cases - (7 fixed pars + 1 random par) = 2691

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.709	0.068	54.544	0.000
SATS Maths (centered)	1.147	0.015	76.467	0.000
Male	-0.112	0.035	3.200	0.001
FSM	-0.219	0.039	5.615	0.000
White	-0.259	0.045	5.756	0.000
Yr10 Maths	0.218	0.061	3.574	0.000
Yr11 Maths	0.266	0.039	6.821	0.000
Random				
Between schools	0.081	0.022		
Between students	0.748	0.020		
Intra-school correlation	0.098			
Loglikelihood	6943.3			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.0 (chi-square)	179.1			
Additional degrees of freedom compared with Model 3.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	34.1%			
Variance explained at pupil level	69.8%			
Total variance explained	68.1%			

MODEL 3.2(10)

Degree of freedom = 2699 cases - (7 fixed pars + 3 random pars) = 2689

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.704	0.070	52.914	0.000
SATS Maths (centered)	1.144	0.015	76.267	0.000
Male	-0.104	0.035	2.971	0.003
FSM	-0.214	0.039	5.487	0.000
White	-0.260	0.045	5.778	0.000
Yr10 Maths	0.276	0.078	3.538	0.000
Yr11 Maths	0.263	0.039	6.744	0.000
Random				
Level 2				
Variance: Intercept	0.092	0.026		
Covariance: Yr10 Maths x Intercept	-0.062	0.028		
Variance: Yr10 Maths	0.060	0.038		
Level 1	0.745	0.020		
Correlation between intercept and slope (Yr10 Maths)	-0.834			
Loglikelihood	6935.3			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.1 (chi-square)	8			
Additional degrees of freedom compared with Model 3.1	2			
p value	0.018			
Significance of p value	<0.05			

MODEL 3.2(11)

Degree of freedom = 2699 cases - (7 fixed pars + 3 random pars) = 2689

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.699	0.077	48.039	0.000
SATS Maths (centered)	1.144	0.015	76.267	0.000
Male	-0.106	0.035	3.029	0.002
FSM	-0.210	0.039	5.385	0.000
White	-0.268	0.044	6.091	0.000
Yr10 Maths	0.221	0.060	3.683	0.000
Yr11 Maths	0.277	0.066	4.197	0.000
Random				
Level 2				
Variance: Intercept	0.122	0.036		
Covariance: Yr11 Maths x Intercept	-0.076	0.030		
Variance: Yr11 Maths	0.088	0.034		
Level 1	0.734	0.020		
Correlation between intercept and slope (Yr11 Maths)	-0.733			
Loglikelihood	6916.5			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.1 (chi-square)	26.8			
Additional degrees of freedom compared with Model 3.1	2			
p value	0.000			
Significance of p value	<0.001			

MODEL 3.3(10)

Degree of freedom = 2699 cases - (8 fixed pars + 3 random pars) = 2688

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.705	0.071	52.183	0.000
SATS Maths (centered)	1.144	0.015	76.267	0.000
Male	-0.104	0.035	2.971	0.003
FSM	-0.217	0.042	5.167	0.000
White	-0.260	0.045	5.778	0.000
Yr10 Maths	0.270	0.089	3.034	0.002
Yr11 Maths	0.263	0.039	6.744	0.000
FSM*Yr10 Maths	0.015	0.101	0.149	0.882
Random				
Level 2				
Variance: Intercept	0.092	0.026		
Covariance: Yr10 Maths x Intercept	-0.063	0.028		
Variance: Yr10 Maths	0.061	0.039		
Level 1				
	0.745	0.020		
Correlation between intercept and slope (Yr10 Maths)	-0.841			
Loglikelihood	6935.2			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.2(10) (chi-square)	0.1			
Additional degrees of freedom compared with Model 3.2(10)	1			
p value	0.752			
Significance of p value	>0.05			

MODEL 3.3(11)

Degree of freedom = 2699 cases - (8 fixed pars + 3 random pars) = 2688

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.724	0.078	47.744	0.000
SATS Maths (centered)	1.144	0.015	76.267	0.000
Male	-0.108	0.035	3.086	0.002
FSM	-0.276	0.056	4.929	0.000
White	-0.268	0.044	6.091	0.000
Yr10 Maths	0.217	0.060	3.617	0.000
Yr11 Maths	0.234	0.071	3.296	0.001
FSM*Yr11 Maths	0.124	0.075	1.653	0.098
Random				
Level 2				
Variance: Intercept	0.122	0.036		
Covariance: Yr11 Maths x Intercept	-0.078	0.031		
Variance: Yr11 Maths	0.089	0.034		
Level 1				
	0.734	0.020		
Correlation between intercept and slope (Yr11 Maths)	-0.749			
Loglikelihood	6913.8			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.2(11) (chi-square)	2.7			
Additional degrees of freedom compared with Model 3.2(11)	1			
p value	0.100			
Significance of p value	>0.05			

MODEL 3.3(10)a

Degree of freedom = 2699 cases - (8 fixed pars + 6 random pars) = 2685

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.699	0.068	54.397	0.000
SATS Maths (centered)	1.143	0.015	76.200	0.000
Male	-0.103	0.035	2.943	0.003
FSM	-0.216	0.052	4.154	0.000
White	-0.253	0.045	5.622	0.000
Yr10 Maths	0.282	0.093	3.032	0.002
Yr11 Maths	0.258	0.039	6.615	0.000
FSM*Yr10 Maths	-0.012	0.107	0.112	0.911
Random				
Level 2				
Variance: Intercept	0.081	0.024		
Covariance: FSM x Intercept	0.010	0.015		
Variance: FSM	0.028	0.019		
Covariance: Yr10 Maths x Intercept	-0.044	0.025		
Covariance: Yr10 Maths x FSM	-0.034	0.020		
Variance: Yr10 Maths	0.054	0.035		
Level 1				
	0.740	0.020		
Correlation between intercept and slope (FSM)	0.210			
Correlation between intercept and slope (Yr10 Maths)	-0.665			
Loglikelihood	6929.9			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.3(10) (chi-square)	5.3			
Additional degrees of freedom compared with Model 3.3(10)	3			
p value	0.151			
Significance of p value	>0.05			

MODEL 3.3(11)a

Degree of freedom = 2699 cases - (8 fixed pars + 6 random pars) = 2685

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.717	0.076	48.908	0.000
SATS Maths (centered)	1.143	0.015	76.200	0.000
Male	-0.108	0.035	3.086	0.002
FSM	-0.270	0.062	4.355	0.000
White	-0.264	0.044	6.000	0.000
Yr10 Maths	0.214	0.060	3.567	0.000
Yr11 Maths	0.237	0.071	3.338	0.001
FSM*Yr11 Maths	0.105	0.077	1.364	0.173
Random				
Level 2				
Variance: Intercept	0.112	0.035		
Covariance: FSM x Intercept	0.010	0.017		
Variance: FSM	0.020	0.017		
Covariance: Yr11 Maths x Intercept	-0.075	0.030		
Covariance: Yr11 Maths x FSM	-0.011	0.017		
Variance: Yr11 Maths	0.090	0.034		
Level 1				
	0.730	0.020		
Correlation between intercept and slope (FSM)	0.211			
Correlation between intercept and slope (Yr11 Maths)	-0.747			
Loglikelihood	6911.2			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.3(11) (chi-square)	2.6			
Additional degrees of freedom compared with Model 3.3(11)	3			
p value	0.457			
Significance of p value	>0.05			

MODEL 3.4(10)

Degree of freedom = 2699 cases - (8 fixed pars + 10 random pars) = 2681

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.699	0.068	54.397	0.000
SATS Maths (centered)	1.143	0.015	76.200	0.000
Male	-0.103	0.035	2.943	0.003
FSM	-0.261	0.052	5.019	0.000
White	-0.253	0.045	5.622	0.000
Yr10 Maths	0.282	0.093	3.032	0.002
Yr11 Maths	0.258	0.039	6.615	0.000
FSM*Yr10 Maths	-0.012	0.107	0.112	0.911
Random				
Level 2				
Variance: Intercept	0.081	0.024		
Covariance: FSM x Intercept	0.010	0.015		
Variance: FSM	0.028	0.019		
Covariance: Yr10 Maths x Intercept	-0.044	0.025		
Covariance: Yr10 Maths x FSM	-0.034	0.020		
Variance: Yr10 Maths	0.054	0.035		
Covariance: FSM*Yr10 Maths x Intercept	0.000	0.000		
Covariance: FSM*Yr10 Maths x FSM	0.000	0.000		
Covariance: FSM*Yr10 Maths x Yr10 Maths	0.000	0.000		
Variance: FSM*Yr10 Maths	0.000	0.000		
Level 1				
	0.740	0.020		
Correlation between intercept and slope (FSM)	0.210			
Correlation between intercept and slope (Yr10 Maths)	-0.665			
Correlation between intercept and slope (FSM*Yr10 Maths)	#DIV/0!			
Loglikelihood	6929.9			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.3(10)a (chi-square)	0.0			
Additional degrees of freedom compared with Model 3.3(10)a	4			
p value	1.000			
Significance of p value	>0.05			

MODEL 3.4(11)

Degree of freedom = 2699 cases - (8 fixed pars + 10 random pars) = 2681

Dependent variable: GCSE Maths

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	3.723	0.078	47.731	0.000
SATS Maths (centered)	1.145	0.015	76.333	0.000
Male	-0.111	0.035	3.171	0.002
FSM	-0.275	0.055	5.000	0.000
White	-0.262	0.044	5.955	0.000
Yr10 Maths	0.214	0.060	3.567	0.000
Yr11 Maths	0.224	0.075	2.987	0.003
FSM*Yr11 Maths	0.121	0.090	1.344	0.179
Random				
Level 2				
Variance: Intercept	0.123	0.036		
Covariance: FSM x Intercept	0.000	0.000		
Variance: FSM	0.000	0.000		
Covariance: Yr11 Maths x Intercept	-0.086	0.033		
Covariance: Yr11 Maths x FSM	0.000	0.000		
Variance: Yr11 Maths	0.104	0.041		
Covariance: FSM*Yr11 Maths x Intercept	0.021	0.028		
Covariance: FSM*Yr11 Maths x FSM	0.000	0.000		
Covariance: FSM*Yr11 Maths x Yr11 Maths	-0.035	0.031		
Variance: FSM*Yr11 Maths	0.065	0.038		
Level 1				
	0.728	0.020		
Correlation between intercept and slope (FSM)	#DIV/0!			
Correlation between intercept and slope (Yr11 Maths)	-0.760			
Correlation between intercept and slope (FSM*Yr11 Maths)	0.235			
Loglikelihood	6908.5			
Number of cases in use	2699			
Difference in loglikelihood compared with Model 3.3(11)a (chi-square)	2.7			
Additional degrees of freedom compared with Model 3.3(11)a	4			
p value	0.609			
Significance of p value	>0.05			

MODEL 4.0

Degree of freedom = 2485 cases - (7 fixed pars + 0 random pars) = 2478

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.571	0.045	101.578	0.000
SATS English (centered)	0.939	0.020	46.950	0.000
Male	-0.137	0.040	3.425	0.001
FSM	-0.258	0.044	5.864	0.000
White	-0.034	0.042	0.810	0.418
Yr10 English	-0.043	0.104	0.413	0.679
Yr11 English	-0.152	0.041	3.707	0.000
Random				
Between schools	0.000	0.000		
Between students	0.956	0.027		
Intra-school correlation	0.000			
Loglikelihood	6932.6			
Number of cases in use	2485			

MODEL 4.0 with School Dummies

Degree of freedom = 2485 cases - (38 fixed pars + 0 random pars) =

2447

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.018	0.092	43.674	0.000
SATS English (centered)	0.975	0.019	51.316	0.000
Male	-0.166	0.039	4.256	0.000
FSM	-0.221	0.043	5.140	0.000
White	-0.091	0.050	1.820	0.069
Yr10 English	0.253	0.113	2.239	0.025
Yr11 English	0.036	0.043	0.837	0.403
School 5	0.498	0.125	3.984	0.000
School 6	1.077	0.129	8.349	0.000
School 7	0.446	0.136	3.279	0.001
School 8	-0.140	0.137	1.022	0.307
School 9	1.352	0.118	11.458	0.000
School 10	0.087	0.128	0.680	0.497
School 11	0.658	0.129	5.101	0.000
School 15	0.402	0.138	2.913	0.004
School 19	0.279	0.136	2.051	0.040
School 20	0.787	0.136	5.787	0.000
School 22	0.234	0.146	1.603	0.109
School 25	1.181	0.152	7.770	0.000
school 26	0.300	0.161	1.863	0.063
School 30	0.211	0.150	1.407	0.160
School 31	0.502	0.188	2.670	0.008
School 33	0.556	0.153	3.634	0.000
School 34	0.469	0.140	3.350	0.001
School 35	0.271	0.131	2.069	0.039
School 36	0.710	0.218	3.257	0.001
School 37	-0.250	0.154	1.623	0.105
School 38	0.576	0.172	3.349	0.001
School 39	0.413	0.147	2.810	0.005
School 40	0.550	0.141	3.901	0.000
School 41	0.434	0.192	2.260	0.024
School 43	0.770	0.133	5.789	0.000
School 44	0.507	0.164	3.091	0.002
School 45	-0.110	0.150	0.733	0.463
School 47	0.364	0.143	2.545	0.011
School 49	0.249	0.142	1.754	0.080
School 51	0.368	0.154	2.390	0.017
School 52	0.995	0.141	7.057	0.000
Random				
Between schools	0.000	0.000		
Between students	0.815	0.023		
Intra-school correlation	0.000			
Loglikelihood	6504.5			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.0 (chi-square)	428.1			
Additional degrees of freedom compared with Model 4.0	31			
p value	0.000			
Significance of p value	<0.001			

MODEL 4.1 (Null)

Degree of freedom = 2485 cases - (1 fixed par + 1 random par) = 2483

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.464	0.071	62.873	0.000
Random				
Between schools	0.137	0.040		
Between students	1.767	0.050		
Intra-school correlation	0.072			
Loglikelihood	8526.8			
Number of cases in use	2485			

MODEL 4.1

Degree of freedom = 2485 cases - (7 fixed pars + 1 random par) = 2477

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.482	0.079	56.734	0.000
SATS English (centered)	0.972	0.019	51.158	0.000
Male	-0.165	0.039	4.231	0.000
FSM	-0.222	0.043	5.163	0.000
White	-0.087	0.049	1.776	0.076
Yr10 English	0.218	0.111	1.964	0.050
Yr11 English	0.026	0.043	0.605	0.545
Random				
Between schools	0.125	0.034		
Between students	0.814	0.023		
Intra-school correlation	0.133			
Loglikelihood	6614.3			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.0 (chi-square)	318.3			
Additional degrees of freedom compared with Model 4.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	8.8%			
Variance explained at pupil level	53.9%			
Total variance explained	50.7%			

MODEL 4.2(10)

Degree of freedom = 2485 cases - (7 fixed pars + 3 random pars) = 2475

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.480	0.078	57.436	0.000
SATS English (centered)	0.973	0.019	51.211	0.000
Male	-0.164	0.039	4.205	0.000
FSM	-0.221	0.043	5.140	0.000
White	-0.084	0.049	1.714	0.087
Yr10 English	0.309	0.153	2.020	0.044
Yr11 English	0.027	0.043	0.628	0.530
Random				
Level 2				
Variance: Intercept	0.122	0.034		
Covariance: Yr10 English x Intercept	0.036	0.057		
Variance: Yr10 English	0.060	0.082		
Level 1				
	0.813	0.023		
Correlation between intercept and slope (Yr10 English)	0.421			
Loglikelihood	6612.4			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.1 (chi-square)	1.9			
Additional degrees of freedom compared with Model 4.1	2			
p value	0.387			
Significance of p value	>0.05			

MODEL 4.2(11)

Degree of freedom = 2485 cases - (7 fixed pars + 3 random pars) = 2475

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.470	0.081	55.185	0.000
SATS English (centered)	0.967	0.019	50.895	0.000
Male	-0.163	0.038	4.289	0.000
FSM	-0.216	0.043	5.023	0.000
White	-0.083	0.049	1.694	0.090
Yr10 English	0.258	0.112	2.304	0.021
Yr11 English	0.021	0.073	0.288	0.774
Random				
Level 2				
Variance: Intercept	0.131	0.038		
Covariance: Yr11 English x Intercept	-0.033	0.030		
Variance: Yr11 English	0.095	0.040		
Level 1				
	-0.296			
Correlation between intercept and slope (Yr11 English)	-0.296			
Loglikelihood	6593.0			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.1 (chi-square)	21.3			
Additional degrees of freedom compared with Model 4.1	2			
p value	0.000			
Significance of p value	<0.001			

MODEL 4.3(10)

Degree of freedom = 2485 cases - (8 fixed pars + 3 random pars) =

2474

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.487	0.079	56.797	0.000
SATS English (centered)	0.971	0.019	51.105	0.000
Male	-0.165	0.039	4.231	0.000
FSM	-0.243	0.044	5.523	0.000
White	-0.083	0.049	1.694	0.090
Yr10 English	0.164	0.156	1.051	0.293
Yr11 English	0.024	0.043	0.558	0.577
FSM*Yr10 English	0.458	0.202	2.267	0.023
Random				
Level 2				
Variance: Intercept	0.122	0.034		
Covariance: Yr10 English x Intercept	0.046	0.052		
Variance: Yr10 English	0.044	0.070		
Level 1				
	0.812	0.023		
Correlation between intercept and slope (Yr10 English)	0.628			
Loglikelihood	6607.2			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.2(10) (chi-square)	5.2			
Additional degrees of freedom compared with Model 4.2(10)	1			
p value	0.023			
Significance of p value	<0.05			

MODEL 4.3(11)

Degree of freedom = 2485 cases - (8 fixed pars + 3 random pars) =

2474

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.476	0.081	55.259	0.000
SATS English (centered)	0.967	0.019	50.895	0.000
Male	-0.163	0.038	4.289	0.000
FSM	-0.235	0.054	4.352	0.000
White	-0.083	0.049	1.694	0.090
Yr10 English	0.256	0.112	2.286	0.022
Yr11 English	0.004	0.079	0.051	0.960
FSM*Yr11 English	0.050	0.086	0.581	0.561
Random				
Level 2				
Variance: Intercept	0.131	0.038		
Covariance: Yr11 English x Intercept	-0.034	0.030		
Variance: Yr11 English	0.095	0.040		
Level 1				
	0.799	0.023		
Correlation between intercept and slope (Yr11 English)	-0.305			
Loglikelihood	6592.7			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.2(11) (chi-square)	0.3			
Additional degrees of freedom compared with Model 4.2(11)	1			
p value	0.584			
Significance of p value	>0.05			

MODEL 4.3(10)a

Degree of freedom = 2485 cases - (8 fixed pars + 6 random pars) = 2471

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.481	0.081	55.321	0.000
SATS English (centered)	0.972	0.019	51.158	0.000
Male	-0.165	0.039	4.231	0.000
FSM	-0.234	0.050	4.680	0.000
White	-0.083	0.048	1.729	0.084
Yr10 English	0.121	0.092	1.315	0.189
Yr11 English	0.026	0.042	0.619	0.536
FSM*Yr10 English	0.437	0.196	2.230	0.026
Random				
Level 2				
Variance: Intercept	0.137	0.039		
Covariance: FSM x Intercept	-0.033	0.021		
Variance: FSM	0.018	0.018		
Covariance: Yr10 English x Intercept	0.031	0.035		
Covariance: Yr10 English x FSM	0.078	0.029		
Variance: Yr10 English	0.127	0.058		
Level 1				
	0.809	0.023		
Correlation between intercept and slope (FSM)	-0.665			
Correlation between intercept and slope (Yr10 English)	0.235			
Loglikelihood	6597.8			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.3(10) (chi-square)	9.4			
Additional degrees of freedom compared with Model 4.3(10)	3			
p value	0.024			
Significance of p value	<0.05			

MODEL 4.3(11)a

Degree of freedom = 2485 cases - (8 fixed pars + 6 random pars) = 2471

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.465	0.085	52.529	0.000
SATS English (centered)	0.968	0.019	50.947	0.000
Male	-0.163	0.038	4.289	0.000
FSM	-0.212	0.062	3.419	0.001
White	-0.086	0.048	1.792	0.073
Yr10 English	0.265	0.112	2.366	0.018
Yr11 English	0.022	0.079	0.278	0.781
FSM*Yr11 English	0.004	0.088	0.045	0.964
Random				
Level 2				
Variance: Intercept	0.149	0.044		
Covariance: FSM x Intercept	-0.041	0.024		
Variance: FSM	0.027	0.021		
Covariance: Yr11 English x Intercept	-0.037	0.033		
Covariance: Yr11 English x FSM	0.013	0.021		
Variance: Yr11 English	0.096	0.040		
Level 1				
	0.794	0.023		
Correlation between intercept and slope (FSM)	-0.646			
Correlation between intercept and slope (Yr11 English)	-0.309			
Loglikelihood	6587.5			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 4.3(11) (chi-square)	5.2			
Additional degrees of freedom compared with Model 4.3(11)	3			
p value	0.158			
Significance of p value	>0.05			

MODEL 4.4(10)

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept				
SATS English (centered)				
Male				
FSM				
White				
Yr10 English				
Yr11 English				
FSM*Yr10 English				
Random				
Level 2				
Variance: Intercept				
Covariance: FSM x Intercept				
Variance: FSM				
Covariance: Yr10 English x Intercept				
Covariance: Yr10 English x FSM				
Variance: Yr10 English				
Covariance: FSM*Yr10 English x Intercept				
Covariance: FSM*Yr10 English x FSM				
Covariance: FSM*Yr10 English x Yr10 English				
Variance: FSM*Yr10 English				
Level 1				
Correlation between intercept and slope (FSM)				
Correlation between intercept and slope (Yr10 English)				
Correlation between intercept and slope (FSM*Yr10 English)				
Loglikelihood				
Number of cases in use				
Difference in loglikelihood compared with Model 3.3(10)a (chi-square)				
Additional degrees of freedom compared with Model 3.3(10)a				
p value				
Significance of p value				

Running this model results in the numeric warning:
V has gone negative definite

MODEL 4.4(11)

Degree of freedom = 2485 cases - (8 fixed pars + 10 random pars) = 2467

Dependent variable: GCSE English

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.469	0.083	53.843	0.000
SATS English (centered)	0.966	0.019	50.842	0.000
Male	-0.165	0.038	4.342	0.000
FSM	-0.214	0.061	3.508	0.000
White	-0.088	0.048	1.833	0.067
Yr10 English	0.259	0.112	2.313	0.021
Yr11 English	0.022	0.075	0.293	0.769
FSM*Yr11 English	-0.020	0.105	0.190	0.849
Random				
Level 2				
Variance: Intercept	0.142	0.043		
Covariance: FSM x Intercept	-0.032	0.027		
Variance: FSM	0.024	0.027		
Covariance: Yr11 English x Intercept	-0.022	0.032		
Covariance: Yr11 English x FSM	0.000	0.026		
Variance: Yr11 English	0.077	0.041		
Covariance: FSM*Yr11 English x Intercept	-0.033	0.044		
Covariance: FSM*Yr11 English x FSM	-0.004	0.038		
Covariance: FSM*Yr11 English x Yr11 English	0.014	0.043		
Variance: FSM*Yr11 English	0.081	0.081		
Level 1				
	0.791	0.023		
Correlation between intercept and slope (FSM)	-0.548			
Correlation between intercept and slope (Yr11 English)	-0.210			
Correlation between intercept and slope (FSM*Yr11 English)	-0.308			
Loglikelihood	6585.3			
Number of cases in use	2485			
Difference in loglikelihood compared with Model 3.3(11)a (chi-square)	2.2			
Additional degrees of freedom compared with Model 3.3(11)a	4			
p value	0.699			
Significance of p value	>0.05			

MODEL 5.0

Degree of freedom = 2488 cases - (7 fixed pars + 0 random pars) = 2481

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.115	0.048	85.729	0.000
SATS Science (centered)	1.140	0.020	57.000	0.000
Male	-0.318	0.040	7.950	0.000
FSM	-0.097	0.045	2.156	0.031
White	-0.341	0.043	7.930	0.000
Yr10 Science	0.030	0.067	0.448	0.654
Yr11 Science	0.328	0.042	7.810	0.000
Random				
Between schools	0.000	0.000		
Between students	0.990	0.028		
Intra-school correlation	0.000			
Loglikelihood	7028.2			
Number of cases in use	2488			

MODEL 5.0 with School Dummies

Degree of freedom = 2488 cases - (39 fixed pars + 0 random pars) =

2449

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.287	0.102	42.029	0.000
SATS Science (centered)	1.126	0.020	56.300	0.000
Male	-0.261	0.040	6.525	0.000
FSM	-0.162	0.045	3.600	0.000
White	-0.230	0.053	4.340	0.000
Yr10 Science	0.024	0.080	0.300	0.764
Yr11 Science	0.315	0.043	7.326	0.000
School 5	0.331	0.136	2.434	0.015
School 6	-0.392	0.135	2.904	0.004
School 7	-0.195	0.145	1.345	0.179
School 8	-0.394	0.135	2.919	0.004
School 9	0.155	0.127	1.220	0.222
School 10	-0.614	0.139	4.417	0.000
School 11	-0.246	0.137	1.796	0.073
School 15	-0.334	0.145	2.303	0.021
School 19	-0.317	0.146	2.171	0.030
School 20	-0.176	0.143	1.231	0.219
School 22	0.391	0.153	2.556	0.011
School 25	-0.245	0.246	0.996	0.319
school 26	-0.403	0.173	2.329	0.020
School 30	-0.241	0.154	1.565	0.118
School 31	-1.021	0.180	5.672	0.000
School 33	0.490	0.169	2.899	0.004
School 34	-0.065	0.142	0.458	0.647
School 35	-0.665	0.136	4.890	0.000
School 36	-0.336	0.228	1.474	0.141
School 37	-0.210	0.182	1.154	0.249
School 38	-0.337	0.191	1.764	0.078
School 39	-0.386	0.152	2.539	0.011
School 40	-0.103	0.150	0.687	0.492
School 41	-0.603	0.284	2.123	0.034
School 43	-1.009	0.145	6.959	0.000
School 44	-0.469	0.180	2.606	0.009
School 45	-0.736	0.157	4.688	0.000
School 46	0.089	0.155	0.574	0.566
School 47	-0.397	0.153	2.595	0.010
School 49	-0.441	0.155	2.845	0.004
School 51	0.304	0.153	1.987	0.047
School 52	-0.294	0.148	1.986	0.047
Random				
Between schools	0.000	0.000		
Between students	0.889	0.025		
Intra-school correlation	0.000			
Loglikelihood	6730.0			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.0 (chi-square)	298.2			
Additional degrees of freedom compared with Model 5.0	32			
p value	0.000			
Significance of p value	<0.001			

MODEL 5.1 (Null)

Degree of freedom = 2488 cases - (1 fixed par + 1 random par) = 2486

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.157	0.090	46.189	0.000
Random				
Between schools	0.227	0.065		
Between students	2.173	0.062		
Intra-school correlation	0.095			
Loglikelihood	9059.9			
Number of cases in use	2488			

MODEL 5.1

Degree of freedom = 2488 cases - (7 fixed pars + 1 random par) = 2480

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.035	0.078	51.731	0.000
SATS Science (centered)	1.126	0.020	56.300	0.000
Male	-0.266	0.040	6.650	0.000
FSM	-0.155	0.045	3.444	0.001
White	-0.255	0.051	5.000	0.000
Yr10 Science	0.028	0.078	0.359	0.720
Yr11 Science	0.320	0.043	7.442	0.000
Random				
Between schools	0.111	0.031		
Between students	0.889	0.025		
Intra-school correlation	0.111			
Loglikelihood	6835.8			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.0 (chi-square)	192.4			
Additional degrees of freedom compared with Model 5.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	51.1%			
Variance explained at pupil level	59.1%			
Total variance explained	58.3%			

MODEL 5.2(10)

Degree of freedom = 2488 cases - (7 fixed pars + 3 random pars) = 2478

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.035	0.078	51.731	0.000
SATS Science (centered)	1.125	0.020	56.250	0.000
Male	-0.266	0.040	6.650	0.000
FSM	-0.153	0.045	3.400	0.001
White	-0.256	0.051	5.020	0.000
Yr10 Science	0.010	0.099	0.101	0.920
Yr11 Science	0.321	0.043	7.465	0.000
Random				
Level 2				
Variance: Intercept	0.109	0.031		
Covariance: Yr10 Science x Intercept	0.005	0.036		
Variance: Yr10 Science	0.035	0.044		
Level 1				
	0.888	0.025		
Correlation between intercept and slope (Yr10 Science)	0.081			
Loglikelihood	6835.3			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.1 (chi-square)	0.5			
Additional degrees of freedom compared with Model 5.1	2			
p value	0.779			
Significance of p value	>0.05			

MODEL 5.2(11)

Degree of freedom = 2488 cases - (7 fixed pars + 3 random pars) = 2478

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.030	0.083	48.554	0.000
SATS Science (centered)	1.123	0.020	56.150	0.000
Male	-0.264	0.040	6.600	0.000
FSM	-0.153	0.045	3.400	0.001
White	-0.252	0.051	4.941	0.000
Yr10 Science	0.025	0.077	0.325	0.745
Yr11 Science	0.326	0.057	5.719	0.000
Random				
Level 2				
Variance: Intercept	0.137	0.041		
Covariance: Yr11 Science x Intercept	-0.043	0.026		
Variance: Yr11 Science	0.038	0.024		
Level 1				
	0.882	0.025		
Correlation between intercept and slope (Yr11 Science)	-0.596			
Loglikelihood	6828.6			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.1 (chi-square)	7.2			
Additional degrees of freedom compared with Model 5.1	2			
p value	0.027			
Significance of p value	<0.05			

MODEL 5.3(10)

Degree of freedom = 2488 cases - (8 fixed pars + 3 random pars) = 2477

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.038	0.078	51.769	0.000
SATS Science (centered)	1.125	0.020	56.250	0.000
Male	-0.267	0.040	6.675	0.000
FSM	-0.166	0.047	3.532	0.000
White	-0.254	0.051	4.980	0.000
Yr10 Science	-0.030	0.112	0.268	0.789
Yr11 Science	0.322	0.043	7.488	0.000
FSM*Yr10 Science	0.135	0.148	0.912	0.362
Random				
Level 2				
Variance: Intercept	0.109	0.031		
Covariance: Yr10 Science x Intercept	0.001	0.037		
Variance: Yr10 Science	0.043	0.048		
Level 1				
	0.887	0.025		
Correlation between intercept and slope (Yr10 Science)	0.015			
Loglikelihood	6834.5			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.2(10) (chi-square)	0.8			
Additional degrees of freedom compared with Model 5.2(10)	1			
p value	0.371			
Significance of p value	>0.05			

MODEL 5.3(11)

Degree of freedom = 2488 cases - (8 fixed pars + 3 random pars) = 2477

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.034	0.085	47.459	0.000
SATS Science (centered)	1.123	0.020	56.150	0.000
Male	-0.264	0.040	6.600	0.000
FSM	-0.163	0.058	2.810	0.005
White	-0.252	0.051	4.941	0.000
Yr10 Science	0.025	0.077	0.325	0.745
Yr11 Science	0.318	0.063	5.048	0.000
FSM*Yr11 Science	0.024	0.087	0.276	0.783
Random				
Level 2				
Variance: Intercept	0.137	0.041		
Covariance: Yr11 Science x Intercept	-0.044	0.026		
Variance: Yr11 Science	0.038	0.024		
Level 1				
	0.883	0.025		
Correlation between intercept and slope (Yr11 Science)	-0.610			
Loglikelihood	6828.5			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.2(11) (chi-square)	0.1			
Additional degrees of freedom compared with Model 5.2(11)	1			
p value	0.752			
Significance of p value	>0.05			

MODEL 5.3(10)a

Degree of freedom = 2488 cases - (8 fixed pars + 6 random pars) =

2474

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.035	0.076	53.092	0.000
SATS Science (centered)	1.124	0.020	56.200	0.000
Male	-0.267	0.040	6.675	0.000
FSM	-0.171	0.051	3.353	0.001
White	-0.251	0.051	4.922	0.000
Yr10 Science	0.004	0.087	0.046	0.963
Yr11 Science	0.321	0.043	7.465	0.000
FSM*Yr10 Science	0.112	0.143	0.783	0.434
Random				
Level 2				
Variance: Intercept	0.098	0.030		
Covariance: FSM x Intercept	0.009	0.017		
Variance: FSM	0.012	0.018		
Covariance: Yr10 Science x Intercept	-0.026	0.031		
Covariance: Yr10 Science x FSM	0.043	0.023		
Variance: Yr10 Science	0.043	0.042		
Level 1				
	0.886	0.025		
Correlation between intercept and slope (FSM)	0.262			
Correlation between intercept and slope (Yr10 Science)	-0.401			
Loglikelihood	6830.2			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.3(10) (chi-square)	4.3			
Additional degrees of freedom compared with Model 5.3(10)	3			
p value	0.231			
Significance of p value	>0.05			

MODEL 5.3(11)a

Degree of freedom = 2488 cases - (8 fixed pars + 6 random pars) =

2474

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.026	0.082	49.098	0.000
SATS Science (centered)	1.123	0.020	56.150	0.000
Male	-0.264	0.040	6.600	0.000
FSM	-0.160	0.062	2.581	0.010
White	-0.245	0.051	4.804	0.000
Yr10 Science	0.027	0.077	0.351	0.726
Yr11 Science	0.320	0.063	5.079	0.000
FSM*Yr11 Science	0.016	0.088	0.182	0.856
Random				
Level 2				
Variance: Intercept	0.122	0.039		
Covariance: FSM x Intercept	0.011	0.019		
Variance: FSM	0.012	0.018		
Covariance: Yr11 Science x Intercept	-0.040	0.025		
Covariance: Yr11 Science x FSM	-0.002	0.015		
Variance: Yr11 Science	0.038	0.024		
Level 1				
	0.881	0.025		
Correlation between intercept and slope (FSM)	0.287			
Correlation between intercept and slope (Yr11 Science)	-0.587			
Loglikelihood	6827.4			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.3(11) (chi-square)	1.1			
Additional degrees of freedom compared with Model 5.3(11)	3			
p value	0.777			
Significance of p value	>0.05			

MODEL 5.4(10)

Degree of freedom = 2488 cases - (8 fixed pars + 10 random pars) =

2470

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.040	0.076	53.158	0.000
SATS Science (centered)	1.125	0.020	56.250	0.000
Male	-0.271	0.040	6.775	0.000
FSM	-0.173	0.050	3.460	0.001
White	-0.253	0.050	5.060	0.000
Yr10 Science	-0.018	0.074	0.243	0.808
Yr11 Science	0.325	0.043	7.558	0.000
FSM*Yr10 Science	0.017	0.186	0.091	0.927
Random				
Level 2				
Variance: Intercept	0.101	0.031		
Covariance: FSM x Intercept	0.008	0.017		
Variance: FSM	0.012	0.019		
Covariance: Yr10 Science x Intercept	-0.033	0.027		
Covariance: Yr10 Science x FSM	0.037	0.022		
Variance: Yr10 Science	0.040	0.035		
Covariance: FSM*Yr10 Science x Intercept	0.110	0.069		
Covariance: FSM*Yr10 Science x FSM	-0.148	0.063		
Covariance: FSM*Yr10 Science x Yr10 Science	-0.094	0.058		
Variance: FSM*Yr10 Science	0.599	0.258		
Level 1				
	0.883	0.025		
Correlation between intercept and slope (FSM)	0.230			
Correlation between intercept and slope (Yr10 Science)	-0.519			
Correlation between intercept and slope (FSM*Yr10 Science)	0.447			
Loglikelihood	6822.7			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.3(10)a (chi-square)	7.5			
Additional degrees of freedom compared with Model 5.3(10)a	4			
p value	0.112			
Significance of p value	>0.05			

MODEL 5.4(11)

Degree of freedom = 2488 cases - (8 fixed pars + 10 random pars) =

2470

Dependent variable: GCSE Science

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	4.014	0.078	51.462	0.000
SATS Science (centered)	1.125	0.020	56.250	0.000
Male	-0.263	0.040	6.575	0.000
FSM	-0.163	0.068	2.397	0.017
White	-0.236	0.051	4.627	0.000
Yr10 Science	0.017	0.077	0.221	0.825
Yr11 Science	0.330	0.065	5.077	0.000
FSM*Yr11 Science	0.045	0.093	0.484	0.629
Random				
Level 2				
Variance: Intercept	0.103	0.035		
Covariance: FSM x Intercept	0.022	0.025		
Variance: FSM	0.038	0.035		
Covariance: Yr11 Science x Intercept	-0.021	0.026		
Covariance: Yr11 Science x FSM	0.020	0.026		
Variance: Yr11 Science	0.043	0.031		
Covariance: FSM*Yr11 Science x Intercept	-0.040	0.035		
Covariance: FSM*Yr11 Science x FSM	-0.045	0.043		
Covariance: FSM*Yr11 Science x Yr11 Science	-0.020	0.037		
Variance: FSM*Yr11 Science	0.041	0.067		
Level 1				
	0.880	0.025		
Correlation between intercept and slope (FSM)	0.352			
Correlation between intercept and slope (Yr11 Science)	-0.316			
Correlation between intercept and slope (FSM*Yr11 Science)	-0.616			
Loglikelihood	6823.2			
Number of cases in use	2488			
Difference in loglikelihood compared with Model 5.3(11)a (chi-square)	4.2			
Additional degrees of freedom compared with Model 5.3(11)a	4			
p value	0.380			
Significance of p value	>0.05			

MODEL 6.0

Degree of freedom = 1201 cases - (7 fixed pars + 0 random pars) =

1194

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.356	0.816	105.828	0.000
Yr9 Attendance (centered)	0.460	0.028	16.429	0.000
Male	0.203	0.456	0.445	0.656
FSM	-1.558	0.495	3.147	0.002
White	0.352	0.522	0.674	0.500
Yr10 Subject SS	0.888	0.458	1.939	0.053
Yr11 Subject SS	2.961	0.617	4.799	0.000
Random				
Between schools	0.000	0.000		
Between students	59.666	2.421		
Intra-school correlation	0.000			
Loglikelihood	8311.9			
Number of cases in use	1201			

MODEL 6.0 with School Dummies

Degree of freedom = 1201 cases - (20 fixed pars + 0 random pars) =

1181

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	88.051	0.962	91.529	0.000
Yr9 Attendance (centered)	0.448	0.026	17.231	0.000
Male	0.416	0.439	0.948	0.344
FSM	-2.172	0.474	4.582	0.000
White	-0.642	0.628	1.022	0.307
Yr10 Subject SS	0.179	0.501	0.357	0.721
Yr11 Subject SS	2.955	0.593	4.983	0.000
School 7	2.612	1.124	2.324	0.020
School 9	1.630	0.980	1.663	0.097
School 19	-0.276	1.345	0.205	0.837
School 26	2.300	1.315	1.749	0.081
School 30	-1.954	1.192	1.639	0.101
School 34	-0.312	1.024	0.305	0.761
School 35	-7.668	1.037	7.394	0.000
School 36	0.957	1.418	0.675	0.500
School 39	0.314	1.166	0.269	0.788
School 41	-8.192	1.527	5.365	0.000
School 44	-3.980	1.281	3.107	0.002
School 47	2.396	1.144	2.094	0.036
School 49	0.134	1.239	0.108	0.914
Random				
Between schools	0.000	0.000		
Between students	50.444	2.058		
Intra-school correlation	0.000			
Loglikelihood	8097.2			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.0 (chi-square)	214.7			
Additional degrees of freedom compared with Model 6.0	13			
p value	0.000			
Significance of p value	<0.001			

MODEL 6.1 (Null)

Degree of freedom = 1201 cases - (1 fixed par + 1 random par) =

1999

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	90.679	0.955	94.952	0.000
Random				
Between schools	11.794	4.813		
Between students	67.453	2.769		
Intra-school correlation	0.149			
Loglikelihood	8502.7			
Number of cases in use	1201			

MODEL 6.1

Degree of freedom = 1201 cases - (7 fixed pars + 1 random par) =

1193

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.121	1.213	71.823	0.000
Yr9 Attendance (centered)	0.447	0.026	17.192	0.000
Male	0.413	0.438	0.943	0.346
FSM	-2.141	0.473	4.526	0.000
White	-0.607	0.617	0.984	0.325
Yr10 Subject SS	0.227	0.494	0.460	0.646
Yr11 Subject SS	3.007	0.591	5.088	0.000
Random				
Between schools	11.116	4.463		
Between students	50.447	2.071		
Intra-school correlation	0.181			
Loglikelihood	8150.8			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.0 (chi-square)	161.1			
Additional degrees of freedom compared with Model 6.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	5.7%			
Variance explained at pupil level	25.2%			
Total variance explained	22.3%			

MODEL 6.2(10)

Degree of freedom = 1201 cases - (7 fixed pars + 3 random pars) =

1191

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.088	1.235	70.517	0.000
Yr9 Attendance (centered)	0.449	0.026	17.269	0.000
Male	0.433	0.438	0.989	0.323
FSM	-2.119	0.473	4.480	0.000
White	-0.581	0.616	0.943	0.346
Yr10 Subject SS	0.277	0.636	0.436	0.663
Yr11 Subject SS	2.995	0.592	5.059	0.000
Random				
Level 2				
Variance: Intercept	11.684	5.052		
Covariance: Yr10 Subject SS x Intercept	-1.503	2.409		
Variance: Yr10 Subject SS	1.529	1.791		
Level 1	50.255	2.071		
Correlation between intercept and slope (Yr10 Subject SS)	-0.356			
Loglikelihood	8150.4			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.1 (chi-square)	0.4			
Additional degrees of freedom compared with Model 6.1	2			
p value	0.819			
Significance of p value	>0.05			

MODEL 6.2(11)

Degree of freedom = 1201 cases - (7 fixed pars + 3 random pars) =

1191

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.844	1.392	62.388	0.000
Yr9 Attendance (centered)	0.444	0.026	17.077	0.000
Male	0.445	0.437	1.018	0.309
FSM	-2.131	0.472	4.515	0.000
White	-0.697	0.615	1.133	0.257
Yr10 Subject SS	0.263	0.491	0.536	0.592
Yr11 Subject SS	3.448	0.799	4.315	0.000
Random				
Level 2				
Variance: Intercept	16.983	8.143		
Covariance: Yr11 Subject SS x Intercept	-5.316	4.393		
Variance: Yr11 Subject SS	3.079	3.021		
Level 1	50.081	2.065		
Correlation between intercept and slope (Yr11 Subject SS)	-0.735			
Loglikelihood	8146.4			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.1 (chi-square)	4.4			
Additional degrees of freedom compared with Model 6.1	2			
p value	0.111			
Significance of p value	>0.05			

MODEL 6.3(10)

Degree of freedom = 1201 cases - (8 fixed pars + 3 random pars) =

1190

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.209	1.244	70.104	0.000
Yr9 Attendance (centered)	0.449	0.026	17.269	0.000
Male	0.426	0.438	0.973	0.331
FSM	-2.574	0.649	3.966	0.000
White	-0.551	0.617	0.893	0.372
Yr10 Subject SS	-0.014	0.702	0.020	0.984
Yr11 Subject SS	3.004	0.592	5.074	0.000
FSM*Yr10 Subject SS	0.938	0.915	1.025	0.306
Random				
Level 2				
Variance: Intercept	11.772	5.089		
Covariance: Yr10 Subject SS x Intercept	-1.685	2.446		
Variance: Yr10 Subject SS	1.577	1.816		
Level 1	50.254	2.071		
Correlation between intercept and slope (Yr10 Subject SS)	-0.391			
Loglikelihood	8149.3			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.2(10) (chi-square)	1.1			
Additional degrees of freedom compared with Model 6.2(10)	1			
p value	0.294			
Significance of p value	>0.05			

MODEL 6.3(11)

Degree of freedom = 1201 cases - (8 fixed pars + 3 random pars) =

1190

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.594	1.444	59.968	0.000
Yr9 Attendance (centered)	0.445	0.026	17.115	0.000
Male	0.427	0.438	0.975	0.330
FSM	-1.481	1.124	1.318	0.188
White	-0.693	0.615	1.127	0.260
Yr10 Subject SS	0.242	0.492	0.492	0.623
Yr11 Subject SS	3.761	0.937	4.014	0.000
FSM*Yr11 Subject SS	-0.785	1.224	0.641	0.521
Random				
Level 2				
Variance: Intercept	16.957	8.175		
Covariance: Yr11 Subject SS x Intercept	-5.456	4.513		
Variance: Yr11 Subject SS	3.443	3.200		
Level 1	50.079	2.065		
Correlation between intercept and slope (Yr11 Subject SS)	-0.714			
Loglikelihood	8146.1			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.2(11) (chi-square)	0.3			
Additional degrees of freedom compared with Model 6.2(11)	1			
p value	0.584			
Significance of p value	>0.05			

MODEL 6.3(10)a

Degree of freedom = 1201 cases - (8 fixed pars + 6 random pars) = 1187

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.071	1.198	72.680	0.000
Yr9 Attendance (centered)	0.447	0.026	17.192	0.000
Male	0.492	0.436	1.128	0.259
FSM	-2.526	0.832	3.036	0.002
White	-0.565	0.614	0.920	0.358
Yr10 Subject SS	0.087	0.688	0.126	0.899
Yr11 Subject SS	3.098	0.591	5.242	0.000
FSM*Yr10 Subject SS	0.588	0.985	0.597	0.551
Random				
Level 2				
Variance: Intercept	10.293	4.657		
Covariance: FSM x Intercept	1.753	2.397		
Variance: FSM	3.383	2.437		
Covariance: Yr10 Subject SS x Intercept	-1.375	2.265		
Covariance: Yr10 Subject SS x FSM	-0.465	1.523		
Variance: Yr10 Subject SS	1.378	1.716		
Level 1				
	49.666	2.058		
Correlation between intercept and slope (FSM)	0.297			
Correlation between intercept and slope (Yr10 Subject SS)	-0.365			
Loglikelihood	8144.1			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.3(10) (chi-square)	5.2			
Additional degrees of freedom compared with Model 6.3(10)	3			
p value	0.158			
Significance of p value	>0.05			

MODEL 6.3(11)a

Degree of freedom = 1201 cases - (8 fixed pars + 6 random pars) =

1187

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.293	1.412	61.114	0.000
Yr9 Attendance (centered)	0.442	0.026	17.000	0.000
Male	0.493	0.435	1.133	0.257
FSM	-1.348	1.247	1.081	0.280
White	-0.697	0.613	1.137	0.256
Yr10 Subject SS	0.184	0.488	0.377	0.706
Yr11 Subject SS	4.045	0.942	4.294	0.000
FSM*Yr11 Subject SS	-1.004	1.237	0.812	0.417
Random				
Level 2				
Variance: Intercept	15.705	7.816		
Covariance: FSM x Intercept	-0.346	3.267		
Variance: FSM	3.925	2.643		
Covariance: Yr11 Subject SS x Intercept	-5.453	4.442		
Covariance: Yr11 Subject SS x FSM	1.930	2.218		
Variance: Yr11 Subject SS	3.576	3.211		
Level 1				
	49.380	2.048		
Correlation between intercept and slope (FSM)	-0.044			
Correlation between intercept and slope (Yr11 Subject SS)	-0.728			
Loglikelihood	8138.9			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.3(11) (chi-square)	7.2			
Additional degrees of freedom compared with Model 6.3(11)	3			
p value	0.066			
Significance of p value	>0.05			

MODEL 6.4(10)

Degree of freedom = 1201 cases - (8 fixed pars + 10 random pars) = 1183

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.200	1.172	74.403	0.000
Yr9 Attendance (centered)	0.449	0.026	17.269	0.000
Male	0.467	0.435	1.074	0.283
FSM	-2.567	0.861	2.981	0.003
White	-0.629	0.614	1.024	0.306
Yr10 Subject SS	0.043	0.563	0.076	0.939
Yr11 Subject SS	3.015	0.589	5.119	0.000
FSM*Yr10 Subject SS	0.672	1.344	0.500	0.617
Random				
Level 2				
Variance: Intercept	9.696	4.061		
Covariance: FSM x Intercept	1.520	2.701		
Variance: FSM	3.846	3.345		
Covariance: Yr10 Subject SS x Intercept	0.000	0.000		
Covariance: Yr10 Subject SS x FSM	0.000	0.000		
Variance: Yr10 Subject SS	0.000	0.000		
Covariance: FSM*Yr10 Subject SS x Intercept	-0.840	4.155		
Covariance: FSM*Yr10 Subject SS x FSM	-4.056	4.462		
Covariance: FSM*Yr10 Subject SS x Yr10 Subject SS	0.000	0.000		
Variance: FSM*Yr10 Subject SS	10.762	8.149		
Level 1				
	49.330	2.044		
Correlation between intercept and slope (FSM)	0.249			
Correlation between intercept and slope (Yr10 Subject SS)	#DIV/0!			
Correlation between intercept and slope (FSM*Yr10 Subject SS)	-0.082			
Loglikelihood	8139.7			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.3(10)a (chi-square)	4.4			
Additional degrees of freedom compared with Model 6.3(10)a	4			
p value	0.355			
Significance of p value	>0.05			

MODEL 6.4(11)

Degree of freedom = 1201 cases - (8 fixed pars + 10 random pars) =

1183

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.594	1.444	59.968	0.000
Yr9 Attendance (centered)	0.445	0.026	17.115	0.000
Male	0.427	0.438	0.975	0.330
FSM	-1.481	1.124	1.318	0.188
White	-0.693	0.615	1.127	0.260
Yr10 Subject SS	0.242	0.492	0.492	0.623
Yr11 Subject SS	3.761	0.937	4.014	0.000
FSM*Yr11 Subject SS	-0.785	1.224	0.641	0.521
Random				
Level 2				
Variance: Intercept	16.966	8.133		
Covariance: FSM x Intercept	0.000	0.000		
Variance: FSM	0.000	0.000		
Covariance: Yr11 Subject SS x Intercept	-5.463	4.491		
Covariance: Yr11 Subject SS x FSM	0.000	0.000		
Variance: Yr11 Subject SS	3.448	3.190		
Covariance: FSM*Yr11 Subject SS x Intercept	0.000	0.000		
Covariance: FSM*Yr11 Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr11 Subject SS x Yr11 Subject SS	0.000	0.000		
Variance: FSM*Yr11 Subject SS	0.000	0.000		
Level 1				
	50.078	2.066		
Correlation between intercept and slope (FSM)	#DIV/0!			
Correlation between intercept and slope (Yr11 Subject SS)	-0.714			
Correlation between intercept and slope (FSM*Yr11 Subject SS)	#DIV/0!			
Loglikelihood	8146.1			
Number of cases in use	1201			
Difference in loglikelihood compared with Model 6.3(11)a (chi-square)	-7.2			
Additional degrees of freedom compared with Model 6.3(11)a	4			
p value	na			
Significance of p value	na			

MODEL 7.0

Degree of freedom = 1200 cases - (7 fixed pars + 0 random pars) = 1193

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	85.451	0.671	127.349	0.000
Yr9 Attendance (centered)	0.455	0.027	16.852	0.000
Male	-0.159	0.438	0.363	0.717
FSM	-2.174	0.481	4.520	0.000
White	-0.096	0.501	0.192	0.848
Yr10 Non-Subject SS	3.887	0.506	7.682	0.000
Yr11 Non-Subject SS	2.325	0.542	4.290	0.000
Random				
Between schools	0.000	0.000		
Between students	56.016	2.274		
Intra-school correlation	0.000			
Loglikelihood	8229.2			
Number of cases in use	1200			

MODEL 7.0 with School Dummies

Degree of freedom = 1200 cases - (20 fixed pars + 0 random pars) = 1180

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.945	0.988	89.013	0.000
Yr9 Attendance (centered)	0.451	0.026	17.346	0.000
Male	-0.071	0.440	0.161	0.872
FSM	-2.223	0.475	4.680	0.000
White	-0.754	0.629	1.199	0.231
Yr10 Non-Subject SS	0.929	0.621	1.496	0.135
Yr11 Non-Subject SS	2.401	0.539	4.455	0.000
School 7	2.558	1.121	2.282	0.023
School 9	2.283	1.003	2.276	0.023
School 19	0.079	1.357	0.058	0.954
School 26	2.569	1.254	2.049	0.041
School 30	-2.120	1.177	1.801	0.072
School 34	0.363	1.065	0.341	0.733
School 35	-5.699	1.160	4.913	0.000
School 36	1.454	1.429	1.017	0.309
School 39	0.697	1.157	0.602	0.547
School 41	-8.277	1.544	5.361	0.000
School 44	-2.455	1.404	1.749	0.081
School 47	2.252	1.126	2.000	0.046
School 49	0.577	1.187	0.486	0.627
Random				
Between schools	0.000	0.000		
Between students	50.502	2.061		
Intra-school correlation	0.000			
Loglikelihood	8091.9			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.0 (chi-square)	137.3			
Additional degrees of freedom compared with Model 7.0	13			
p value	0.000			
Significance of p value	<0.001			

MODEL 7.1 (Null)

Degree of freedom = 1200 cases - (1 fixed par + 1 random par) = 1198

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	90.686	0.955	94.959	0.000
Random				
Between schools	11.815	4.821		
Between students	67.467	2.771		
Intra-school correlation	0.149			
Loglikelihood	8495.9			
Number of cases in use	1200			

MODEL 7.1

Degree of freedom = 1200 cases - (7 fixed pars + 1 random par) = 1192

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.286	1.116	78.213	0.000
Yr9 Attendance (centered)	0.449	0.026	17.269	0.000
Male	-0.096	0.438	0.219	0.827
FSM	-2.217	0.474	4.677	0.000
White	-0.725	0.616	1.177	0.239
Yr10 Non-Subject SS	1.323	0.605	2.187	0.029
Yr11 Non-Subject SS	2.413	0.537	4.493	0.000
Random				
Between schools	8.696	3.547		
Between students	50.528	2.075		
Intra-school correlation	0.147			
Loglikelihood	8142.7			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.0 (chi-square)	86.5			
Additional degrees of freedom compared with Model 7.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	26.4%			
Variance explained at pupil level	25.1%			
Total variance explained	25.3%			

MODEL 7.2(10)

Degree of freedom = 1200 cases - (7 fixed pars + 3 random pars) =

1190

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.832	1.533	56.642	0.000
Yr9 Attendance (centered)	0.447	0.026	17.192	0.000
Male	0.034	0.443	0.077	0.939
FSM	-2.228	0.470	4.740	0.000
White	-0.657	0.601	1.093	0.275
Yr10 Non-Subject SS	2.402	1.413	1.700	0.089
Yr11 Non-Subject SS	2.343	0.534	4.388	0.000
Random				
Level 2				
Variance: Intercept	19.635	9.591		
Covariance: Yr10 Non-Subject SS x Intercept	-17.082	9.157		
Variance: Yr10 Non-Subject SS	18.467	9.807		
Level 1				
	49.625	2.047		
Correlation between intercept and slope (Yr10 Non-Subject SS)	-0.897			
Loglikelihood	8130.4			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.1 (chi-square)	12.3			
Additional degrees of freedom compared with Model 7.1	2			
p value	0.002			
Significance of p value	<0.01			

MODEL 7.2(11)

Degree of freedom = 1200 cases - (7 fixed pars + 3 random pars) =

1190

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.355	1.546	55.857	0.000
Yr9 Attendance (centered)	0.442	0.026	17.000	0.000
Male	0.133	0.436	0.305	0.760
FSM	-2.055	0.469	4.382	0.000
White	-0.704	0.607	1.160	0.246
Yr10 Non-Subject SS	1.098	0.601	1.827	0.068
Yr11 Non-Subject SS	3.544	1.129	3.139	0.002
Random				
Level 2				
Variance: Intercept	23.430	10.416		
Covariance: Yr11 Non-Subject SS x Intercept	-14.054	7.580		
Variance: Yr11 Non-Subject SS	12.309	6.525		
Level 1				
	49.077	2.027		
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.828			
Loglikelihood	8125.1			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.1 (chi-square)	17.6			
Additional degrees of freedom compared with Model 7.1	2			
p value	0.000			
Significance of p value	<0.001			

MODEL 7.3(10)

Degree of freedom = 1200 cases - (8 fixed pars + 3 random pars) = 1189

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.242	1.593	54.766	0.000
Yr9 Attendance (centered)	0.446	0.026	17.154	0.000
Male	0.073	0.443	0.165	0.869
FSM	-3.369	0.956	3.524	0.000
White	-0.662	0.600	1.103	0.270
Yr10 Non-Subject SS	1.906	1.498	1.272	0.203
Yr11 Non-Subject SS	2.301	0.534	4.309	0.000
FSM*Yr10 Non-Subject SS	1.491	1.087	1.372	0.170
Random				
Level 2				
Variance: Intercept	20.870	10.215		
Covariance: Yr10 Non-Subject SS x Intercept	-18.529	9.871		
Variance: Yr10 Non-Subject SS	19.975	10.572		
Level 1				
	49.576	2.045		
Correlation between intercept and slope (Yr10 Non-Subject SS)	-0.908			
Loglikelihood	8128.6			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.2(10) (chi-square)	1.8			
Additional degrees of freedom compared with Model 7.2(10)	1			
p value	0.180			
Significance of p value	>0.05			

MODEL 7.3(11)

Degree of freedom = 1200 cases - (8 fixed pars + 3 random pars) = 1189

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.500	1.580	54.747	0.000
Yr9 Attendance (centered)	0.442	0.026	17.000	0.000
Male	0.139	0.436	0.319	0.750
FSM	-2.422	1.012	2.393	0.017
White	-0.708	0.607	1.166	0.244
Yr10 Non-Subject SS	1.103	0.601	1.835	0.067
Yr11 Non-Subject SS	3.366	1.192	2.824	0.005
FSM*Yr11 Non-Subject SS	0.463	1.130	0.410	0.682
Random				
Level 2				
Easter School	23.165	10.349		
Covariance: Yr11 Non-Subject SS x Intercept	-13.753	7.485		
Variance: Yr11 Non-Subject SS	11.935	6.405		
Level 1				
	49.127	2.029		
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.827			
Loglikelihood	8124.9			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.2(11) (chi-square)	0.2			
Additional degrees of freedom compared with Model 7.2(11)	1			
p value	0.655			
Significance of p value	>0.05			

MODEL 7.3(10)a

Degree of freedom = 1200 cases - (8 fixed pars + 6 random pars) = 1186

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.226	1.880	46.397	0.000
Yr9 Attendance (centered)	0.447	0.026	17.192	0.000
Male	0.174	0.439	0.396	0.692
FSM	-3.500	1.101	3.179	0.002
White	-0.630	0.590	1.068	0.286
Yr10 Non-Subject SS	1.823	1.779	1.025	0.306
Yr11 Non-Subject SS	2.339	0.530	4.413	0.000
FSM*Yr10 Non-Subject SS	1.777	1.168	1.521	0.128
Random				
Level 2				
Variance: Intercept	33.799	15.293		
Covariance: FSM x Intercept	-8.443	4.942		
Variance: FSM	3.051	2.269		
Covariance: Yr10 Non-Subject SS x Intercept	-31.494	14.699		
Covariance: Yr10 Non-Subject SS x FSM	8.668	4.786		
Variance: Yr10 Non-Subject SS	31.667	14.915		
Level 1				
	49.006	2.033		
Correlation between intercept and slope (FSM)	-0.831			
Correlation between intercept and slope (Yr10 Non-Subject SS)	-0.963			
Loglikelihood	8121.1			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.3(10) (chi-square)	7.5			
Additional degrees of freedom compared with Model 7.3(10)	3			
p value	0.058			
Significance of p value	>0.05			

MODEL 7.3(11)a

Degree of freedom = 1200 cases - (8 fixed pars + 6 random pars) = 1186

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.394	1.606	53.795	0.000
Yr9 Attendance (centered)	0.440	0.026	16.923	0.000
Male	0.199	0.435	0.457	0.647
FSM	-2.295	1.137	2.018	0.044
White	-0.756	0.606	1.248	0.212
Yr10 Non-Subject SS	1.057	0.599	1.765	0.078
Yr11 Non-Subject SS	3.501	1.223	2.863	0.004
FSM*Yr11 Non-Subject SS	0.328	1.172	0.280	0.780
Random				
Level 2				
Variance: Intercept	24.187	10.917		
Covariance: FSM x Intercept	-1.230	3.687		
Variance: FSM	3.219	2.370		
Covariance: Yr11 Non-Subject SS x Intercept	-14.820	7.913		
Covariance: Yr11 Non-Subject SS x FSM	1.385	2.892		
Variance: Yr11 Non-Subject SS	12.759	6.718		
Level 1				
	48.529	2.016		
Correlation between intercept and slope (FSM)	-0.139			
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.844			
Loglikelihood	8120.8			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.3(11) (chi-square)	4.1			
Additional degrees of freedom compared with Model 7.3(11)	3			
p value	0.251			
Significance of p value	>0.05			

MODEL 7.4(10)

Degree of freedom = 1200 cases - (8 fixed pars + 10 random pars) =

1182

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	87.018	1.628	53.451	0.000
Yr9 Attendance (centered)	0.447	0.026	17.192	0.000
Male	0.200	0.438	0.457	0.648
FSM	-3.394	0.947	3.584	0.000
White	-0.606	0.589	1.029	0.304
Yr10 Non-Subject SS	1.974	1.476	1.337	0.181
Yr11 Non-Subject SS	2.355	0.530	4.443	0.000
FSM*Yr10 Non-Subject SS	1.760	1.247	1.411	0.158
Random				
Level 2				
Variance: Intercept	23.483	11.088		
Covariance: FSM x Intercept	0.000	0.000		
Variance: FSM	0.000	0.000		
Covariance: Yr10 Non-Subject SS x Intercept	-20.449	10.382		
Covariance: Yr10 Non-Subject SS x FSM	0.000	0.000		
Variance: Yr10 Non-Subject SS	19.855	10.491		
Covariance: FSM*Yr10 Non-Subject SS x Intercept	-7.957	5.014		
Covariance: FSM*Yr10 Non-Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr10 Non-Subject SS x Yr10 Non-Subject SS	7.938	4.732		
Variance: FSM*Yr10 Non-Subject SS	4.787	3.316		
Level 1				
	48.901	2.026		
Correlation between intercept and slope (FSM)	#DIV/0!			
Correlation between intercept and slope (Yr10 Non-Subject SS)	-0.947			
Correlation between intercept and slope (FSM*Yr10 Non-Subject SS)	-0.750			
Loglikelihood	8117.6			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.3(10)a (chi-square)	3.5			
Additional degrees of freedom compared with Model 7.3(10)a	4			
p value	0.478			
Significance of p value	>0.05			

MODEL 7.4(11)

Degree of freedom = 1200 cases - (8 fixed pars + 10 random pars) =

1182

Dependent variable: Yr11 Attendance

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	86.394	1.606	53.795	0.000
Yr9 Attendance (centered)	0.440	0.026	16.923	0.000
Male	0.199	0.435	0.457	0.647
FSM	-2.295	1.137	2.018	0.044
White	-0.756	0.606	1.248	0.212
Yr10 Non-Subject SS	1.057	0.599	1.765	0.078
Yr11 Non-Subject SS	3.501	1.223	2.863	0.004
FSM*Yr11 Non-Subject SS	0.328	1.172	0.280	0.780
Random				
Level 2				
Variance: Intercept	24.190	10.920		
Covariance: FSM x Intercept	-1.232	3.688		
Variance: FSM	3.219	2.370		
Covariance: Yr11 Non-Subject SS x Intercept	-14.821	7.915		
Covariance: Yr11 Non-Subject SS x FSM	1.387	2.893		
Variance: Yr11 Non-Subject SS	12.760	6.719		
Covariance: FSM*Yr11 Non-Subject SS x Intercept	0.000	0.000		
Covariance: FSM*Yr11 Non-Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr11 Non-Subject SS x Yr11 Non-Subject SS	0.000	0.000		
Variance: FSM*Yr11 Non-Subject SS	0.000	0.000		
Level 1				
	48.529	2.016		
Correlation between intercept and slope (FSM)	-0.140			
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.844			
Correlation between intercept and slope (FSM*Yr11 Non-Subject SS)	#DIV/0!			
Loglikelihood	8120.8			
Number of cases in use	1200			
Difference in loglikelihood compared with Model 7.3(11)a (chi-square)	0.0			
Additional degrees of freedom compared with Model 7.3(11)a	4			
p value	1.000			
Significance of p value	>0.05			

MODEL 8.0

Degree of freedom = 1256 cases - (7 fixed pars + 0 random pars) = 1249

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	154.455	1.294	119.362	0.000
Yr9 Attitudes (centered)	0.518	0.027	19.185	0.000
Male	-4.390	0.751	5.846	0.000
FSM	-2.734	0.847	3.228	0.001
White	-1.814	0.862	2.104	0.036
Yr10 Subject SS	1.379	0.776	1.777	0.076
Yr11 Subject SS	5.123	1.057	4.847	0.000
Random				
Between schools	0.000	0.000		
Between students	173.029	6.866		
Intra-school correlation	0.000			
Loglikelihood	10030.2			
Number of cases in use	1256			

MODEL 8.0 with School Dummies

Degree of freedom = 1256 cases - (44 fixed pars + 0 random pars) = 1212

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	151.066	2.654	56.920	0.000
Yr9 Attitudes (centered)	0.505	0.027	18.704	0.000
Male	-4.215	0.765	5.510	0.000
FSM	-2.803	0.897	3.125	0.002
White	-0.112	1.100	0.102	0.919
Yr10 Subject SS	1.462	0.965	1.515	0.130
Yr11 Subject SS	7.526	1.183	6.362	0.000
School 5	3.923	3.005	1.305	0.192
School 6	5.535	3.047	1.817	0.070
School 7	-0.213	3.256	0.065	0.948
School 8	-2.007	3.132	0.641	0.522
School 9	0.600	2.778	0.216	0.829
School 10	1.084	3.378	0.321	0.748
School 11	5.685	3.142	1.809	0.071
School 15	-4.142	3.476	1.192	0.234
School 16	1.308	3.911	0.334	0.738
School 18	-10.061	3.457	2.910	0.004
School 19	-3.510	3.047	1.152	0.250
School 20	1.502	3.112	0.483	0.629
School 22	2.163	3.399	0.636	0.525
School 25	-4.879	3.573	1.366	0.172
School 26	-0.559	3.606	0.155	0.877
School 29	0.210	4.291	0.049	0.961
School 30	-1.019	3.310	0.308	0.758
School 31	3.004	4.512	0.666	0.506
School 32	-3.266	3.353	0.974	0.330
School 33	-7.596	3.448	2.203	0.028
School 34	4.350	3.538	1.230	0.219
School 35	-2.422	3.261	0.743	0.458
School 36	-0.738	3.929	0.188	0.851
School 37	2.944	3.781	0.779	0.436
School 38	9.317	7.845	1.188	0.235
School 39	0.421	3.627	0.116	0.908
School 40	-4.387	3.336	1.315	0.189
School 41	4.597	4.510	1.019	0.308
School 43	2.228	3.299	0.675	0.500
School 44	-8.356	3.523	2.372	0.018
School 45	0.228	3.553	0.064	0.949
School 46	11.018	4.262	2.585	0.010
School 47	-1.816	3.453	0.526	0.599
School 48	4.474	3.216	1.391	0.164
School 49	-4.042	3.469	1.165	0.244
School 51	1.943	3.852	0.504	0.614
School 53	1.189	3.148	0.378	0.706
Random				
Between schools	0.000	0.000		
Between students	163.294	6.508		
Intra-school correlation	0.000			
Loglikelihood	9920.4			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.0 (chi-square)	109.8			
Additional degrees of freedom compared with Model 8.0	37			
p value	0.000			
Significance of p value	<0.001			

MODEL 8.1 (Null)

Degree of freedom = 1256 cases - (1 fixed par + 1 random par) = 1254

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	156.501	0.825	189.698	0.000
Random				
Between schools	17.398	5.842		
Between students	228.530	9.255		
Intra-school correlation	0.071			
Loglikelihood	10430.6			
Number of cases in use	1256			

MODEL 8.1

Degree of freedom = 1256 cases - (7 fixed pars + 1 random par) = 1248

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.062	1.516	100.305	0.000
Yr9 Attitudes (centered)	0.509	0.027	18.852	0.000
Male	-4.306	0.752	5.726	0.000
FSM	-2.658	0.869	3.059	0.002
White	-0.915	0.987	0.927	0.354
Yr10 Subject SS	1.534	0.880	1.743	0.082
Yr11 Subject SS	6.900	1.141	6.047	0.000
Random				
Between schools	10.835	3.783		
Between students	163.408	6.618		
Intra-school correlation	0.062			
Loglikelihood	9999.9			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.0 (chi-square)	30.3			
Additional degrees of freedom compared with Model 8.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	37.7%			
Variance explained at pupil level	28.5%			
Total variance explained	29.1%			

MODEL 8.2(10)

Degree of freedom = 1256 cases - (7 fixed pars + 3 random pars) =

1246

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.062	1.516	100.305	0.000
Yr9 Attitudes (centered)	0.509	0.027	18.852	0.000
Male	-4.306	0.752	5.726	0.000
FSM	-2.658	0.869	3.059	0.002
White	-0.915	0.987	0.927	0.354
Yr10 Subject SS	1.534	0.880	1.743	0.082
Yr11 Subject SS	6.900	1.141	6.047	0.000
Random				
Level 2				
Variance: Intercept	10.837	3.788		
Covariance: Yr10 Subject SS x Intercept	0.000	0.000		
Variance: Yr10 Subject SS	0.000	0.000		
Level 1	163.408	6.618		
Correlation between intercept and slope (Yr10 Subject SS)	#DIV/0!			
Loglikelihood	9999.9			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.1 (chi-square)	0			
Additional degrees of freedom compared with Model 8.1	2			
p value	1.000			
Significance of p value	>0.05			

MODEL 8.2(11)

Degree of freedom = 1256 cases - (7 fixed pars + 3 random pars) =

1246

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	150.781	1.838	82.035	0.000
Yr9 Attitudes (centered)	0.501	0.027	18.556	0.000
Male	-4.257	0.750	5.676	0.000
FSM	-2.613	0.866	3.017	0.003
White	-1.029	0.975	1.055	0.291
Yr10 Subject SS	1.596	0.871	1.832	0.067
Yr11 Subject SS	8.199	1.549	5.293	0.000
Random				
Level 2				
Variance: Intercept	28.867	16.504		
Covariance: Yr11 Subject SS x Intercept	-18.957	14.616		
Variance: Yr11 Subject SS	18.267	14.997		
Level 1	161.987	6.613		
Correlation between intercept and slope (Yr11 Subject SS)	-0.826			
Loglikelihood	9996.4			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.1 (chi-square)	3.5			
Additional degrees of freedom compared with Model 8.1	2			
p value	0.174			
Significance of p value	>0.05			

MODEL 8.3(10)

Degree of freedom = 1256 cases - (8 fixed pars + 3 random pars) = 1245

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.111	1.523	99.876	0.000
Yr9 Attitudes (centered)	0.509	0.027	18.852	0.000
Male	-4.313	0.752	5.735	0.000
FSM	-2.966	1.220	2.431	0.015
White	-0.881	0.991	0.889	0.374
Yr10 Subject SS	1.367	0.996	1.372	0.170
Yr11 Subject SS	6.904	1.142	6.046	0.000
FSM*Yr10 Subject SS	0.604	1.679	0.360	0.719
Random				
Level 2				
Variance: Intercept	10.855	3.789		
Covariance: Yr10 Subject SS x Intercept	0.000	0.000		
Variance: Yr10 Subject SS	0.000	0.000		
Level 1				
	163.518	6.618		
Correlation between intercept and slope (Yr10 Subject SS)	#DIV/0!			
Loglikelihood	9999.8			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.2(10) (chi-square)	0.1			
Additional degrees of freedom compared with Model 8.2(10)	1			
p value	0.752			
Significance of p value	>0.05			

MODEL 8.3(11)

Degree of freedom = 1256 cases - (8 fixed pars + 3 random pars) = 1245

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	149.641	1.985	75.386	0.000
Yr9 Attitudes (centered)	0.503	0.027	18.630	0.000
Male	-4.285	0.750	5.713	0.000
FSM	0.970	2.332	0.416	0.678
White	-1.064	0.976	1.090	0.276
Yr10 Subject SS	1.547	0.871	1.776	0.076
Yr11 Subject SS	9.558	1.787	5.349	0.000
FSM*Yr11 Subject SS	-4.132	2.491	1.659	0.097
Random				
Level 2				
Easter School	32.306	17.839		
Covariance: Yr11 Subject SS x Intercept	-23.204	16.234		
Variance: Yr11 Subject SS	23.433	16.894		
Level 1				
	161.495	6.596		
Correlation between intercept and slope (Yr11 Subject)	-0.843			
Loglikelihood	9993.8			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.2(11) (chi-square)	2.6			
Additional degrees of freedom compared with Model 8.2(11)	1			
p value	0.107			
Significance of p value	>0.05			

MODEL 8.3(10)a

Degree of freedom = 1256 cases - (8 fixed pars + 6 random pars) = 1242

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.163	1.498	101.577	0.000
Yr9 Attitudes (centered)	0.509	0.027	18.852	0.000
Male	-4.269	0.751	5.684	0.000
FSM	-2.948	1.316	2.240	0.025
White	-0.992	0.995	0.997	0.319
Yr10 Subject SS	1.324	0.979	1.352	0.176
Yr11 Subject SS	6.939	1.135	6.114	0.000
FSM*Yr10 Subject SS	0.552	1.755	0.315	0.753
Random				
Level 2				
Variance: Intercept	8.855	3.765		
Covariance: FSM x Intercept	2.843	3.946		
Variance: FSM	6.638	7.675		
Covariance: Yr10 Subject SS x Intercept	0.000	0.000		
Covariance: Yr10 Subject SS x FSM	0.000	0.000		
Variance: Yr10 Subject SS	0.000	0.000		
Level 1				
	162.334	6.654		
Correlation between intercept and slope (FSM)	0.371			
Correlation between intercept and slope (Yr10 Subject SS)	#DIV/0!			
Loglikelihood	9997.9			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.3(10) (chi-square)	1.9			
Additional degrees of freedom compared with Model 8.3(10)	3			
p value	0.593			
Significance of p value	>0.05			

MODEL 8.3(11)a

Degree of freedom = 1256 cases - (8 fixed pars + 6 random pars) = 1242

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept				
Yr9 Attitudes (centered)				
Male				
FSM				
White				
Yr10 Subject SS				
Yr11 Subject SS				
FSM*Yr11 Subject SS				
Random				
Level 2				
Variance: Intercept				
Covariance: FSM x Intercept				
Variance: FSM				
Covariance: Yr11 Subject SS x Intercept				
Covariance: Yr11 Subject SS x FSM				
Variance: Yr11 Subject SS				
Level 1				
Correlation between intercept and slope (FSM)				
Correlation between intercept and slope (Yr11 Subject SS)				
Loglikelihood				
Number of cases in use				
Difference in loglikelihood compared with Model 8.3(11) (chi-square)				
Additional degrees of freedom compared with Model 8.3(11)				
p value				
Significance of p value				

This model would not converge

MODEL 8.4(10)

Degree of freedom = 1256 cases - (8 fixed pars + 10 random pars) = 1238

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.102	1.498	101.537	0.000
Yr9 Attitudes (centered)	0.509	0.027	18.852	0.000
Male	-4.394	0.748	5.874	0.000
FSM	-3.175	1.251	2.538	0.011
White	-0.783	0.989	0.792	0.429
Yr10 Subject SS	1.397	0.980	1.426	0.154
Yr11 Subject SS	6.856	1.131	6.062	0.000
FSM*Yr10 Subject SS	0.638	2.120	0.301	0.764
Random				
Level 2				
Variance: Intercept	9.017	3.787		
Covariance: FSM x Intercept	-0.787	4.917		
Variance: FSM	3.301	10.291		
Covariance: Yr10 Subject SS x Intercept	0.000	0.000		
Covariance: Yr10 Subject SS x FSM	0.000	0.000		
Variance: Yr10 Subject SS	0.000	0.000		
Covariance: FSM*Yr10 Subject SS x Intercept	5.201	8.237		
Covariance: FSM*Yr10 Subject SS x FSM	-19.741	16.923		
Covariance: FSM*Yr10 Subject SS x Yr10 Subject SS	0.000	0.000		
Variance: FSM*Yr10 Subject SS	57.105	33.403		
Level 1				
	161.333	6.656		
Correlation between intercept and slope (FSM)	-0.144			
Correlation between intercept and slope (Yr10 Subject SS)	#DIV/0!			
Correlation between intercept and slope (FSM*Yr10 Subject SS)	0.229			
Loglikelihood	9995.5			
Number of cases in use	1256			
Difference in loglikelihood compared with Model 8.3(10)a (chi-square)	2.4			
Additional degrees of freedom compared with Model 8.3(10)a	4			
p value	0.663			
Significance of p value	>0.05			

MODEL 8.4(11)

Degree of freedom = 1256 cases - (8 fixed pars + 10 random pars) = 1238

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept				
Yr9 Attitudes (centered)				
Male				
FSM				
White				
Yr10 Subject SS				
Yr11 Subject SS				
FSM*Yr11 Subject SS				
Random				
Level 2				
Variance: Intercept				
Covariance: FSM x Intercept				
Variance: FSM				
Covariance: Yr11 Subject SS x Intercept				
Covariance: Yr11 Subject SS x FSM				
Variance: Yr11 Subject SS				
Covariance: FSM*Yr11 Subject SS x Intercept				
Covariance: FSM*Yr11 Subject SS x FSM				
Covariance: FSM*Yr11 Subject SS x Yr11 Subject SS				
Variance: FSM*Yr11 Subject SS				
Level 1				
Correlation between intercept and slope (FSM)				
Correlation between intercept and slope (Y11 Subject SS)				
Correlation between intercept and slope (FSM*Yr11 Subject SS)				
Loglikelihood				
Number of cases in use				
Difference in loglikelihood compared with Model 8.3(11)a (chi-square)				
Additional degrees of freedom compared with Model 8.3(11)a				
p value				
Significance of p value				

Running this model results in the numeric warning:
SSP matrix for fixed (random) part has gone negative definite

MODEL 9.0

Degree of freedom = 1255 cases - (7 fixed pars + 0 random pars) = 1248

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	154.303	1.329	116.105	0.000
Yr9 Attitudes (centered)	0.522	0.027	19.333	0.000
Male	-5.087	0.753	6.756	0.000
FSM	-2.855	0.848	3.367	0.001
White	-2.161	0.856	2.525	0.012
Yr10 Non-Subject SS	2.239	1.057	2.118	0.034
Yr11 Non-Subject SS	4.815	0.965	4.990	0.000
Random				
Between schools	0.000	0.000		
Between students	172.598	6.852		
Intra-school correlation	0.000			
Loglikelihood	10019.0			
Number of cases in use	1255			

MODEL 9.0 with School Dummies

Degree of freedom = 1255 cases - (44 fixed pars + 0 random pars) = 1211

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	151.147	2.766	54.645	0.000
Yr9 Attitudes (centered)	0.506	0.027	18.741	0.000
Male	-4.998	0.776	6.441	0.000
FSM	-3.034	0.899	3.375	0.001
White	-0.322	1.102	0.292	0.770
Yr10 Non-Subject SS	3.210	1.306	2.458	0.014
Yr11 Non-Subject SS	5.652	1.022	5.530	0.000
School 5	4.102	3.007	1.364	0.173
School 6	-0.431	2.897	0.149	0.882
School 7	0.371	3.267	0.114	0.910
School 8	0.350	3.158	0.111	0.912
School 9	2.157	2.831	0.762	0.446
School 10	2.438	3.386	0.720	0.472
School 11	5.350	3.104	1.724	0.085
School 15	-2.459	3.455	0.712	0.477
School 16	2.336	3.911	0.597	0.550
School 18	-11.760	3.395	3.464	0.001
School 19	-2.679	3.064	0.874	0.382
School 20	1.809	3.118	0.580	0.562
School 22	3.558	3.416	1.042	0.298
School 25	-5.090	3.576	1.423	0.155
School 26	-0.448	3.540	0.127	0.899
School 29	1.103	4.303	0.256	0.798
School 30	-2.375	3.296	0.721	0.471
School 31	0.198	4.494	0.044	0.965
School 32	-3.290	3.349	0.982	0.326
School 33	-6.086	3.467	1.755	0.079
School 34	6.281	3.608	1.741	0.082
School 35	2.882	3.456	0.834	0.404
School 36	1.433	3.967	0.361	0.718
School 37	3.982	3.838	1.038	0.300
School 38	10.649	7.876	1.352	0.177
School 39	0.905	3.634	0.249	0.803
School 40	-4.872	3.310	1.472	0.141
School 41	3.773	4.538	0.831	0.406
School 43	1.883	3.223	0.584	0.559
School 44	-3.520	3.750	0.939	0.348
School 45	2.127	3.573	0.595	0.552
School 46	12.019	4.279	2.809	0.005
School 47	-1.973	3.451	0.572	0.568
School 48	1.685	3.145	0.536	0.592
School 49	-4.932	3.431	1.437	0.151
School 51	1.983	3.862	0.513	0.608
School 53	3.482	3.190	1.092	0.275
Random				
Between schools	0.000	0.000		
Between students	164.085	6.543		
Intra-school correlation	0.000			
Loglikelihood	9918.6			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.0 (chi-square)	100.4			
Additional degrees of freedom compared with Model 9.0	37			
p value	0.000			
Significance of p value	<0.001			

MODEL 9.1 (Null)

Degree of freedom = 1255 cases - (1 fixed par + 1 random par) = 1253

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	156.498	0.825	189.695	0.000
Random				
Between schools	17.417	5.823		
Between students	228.695	9.267		
Intra-school correlation	0.071			
Loglikelihood	10423.3			
Number of cases in use	1255			

MODEL 9.1

Degree of freedom = 1255 cases - (7 fixed pars + 1 random par) = 1247

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.835	1.549	98.667	0.000
Yr9 Attitudes (centered)	0.513	0.027	19.000	0.000
Male	-5.070	0.760	6.671	0.000
FSM	-2.854	0.870	3.280	0.001
White	-1.363	0.978	1.394	0.164
Yr10 Non-Subject SS	2.593	1.179	2.199	0.028
Yr11 Non-Subject SS	5.509	0.993	5.548	0.000
Random				
Between schools	9.476	3.458		
Between students	164.341	6.658		
Intra-school correlation	0.055			
Loglikelihood	9995.7			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.0 (chi-square)	23.3			
Additional degrees of freedom compared with Model 9.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	45.6%			
Variance explained at pupil level	28.1%			
Total variance explained	29.4%			

MODEL 9.2(10)

Degree of freedom = 1255 cases - (7 fixed pars + 3 random pars) = 1245

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	152.780	1.487	102.744	0.000
Yr9 Attitudes (centered)	0.512	0.027	18.963	0.000
Male	-4.993	0.762	6.552	0.000
FSM	-2.934	0.870	3.372	0.001
White	-1.257	0.982	1.280	0.201
Yr10 Non-Subject SS	2.642	1.222	2.162	0.031
Yr11 Non-Subject SS	5.535	0.989	5.597	0.000
Random				
Level 2				
Variance: Intercept	4.398	6.099		
Covariance: Yr10 Non-Subject SS x Intercept	0.579	6.282		
Variance: Yr10 Non-Subject SS	5.583	9.552		
Level 1				
	163.895	6.668		
Correlation between intercept and slope (Yr10 Non-Subject SS)	0.117			
Loglikelihood	9994.7			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.1 (chi-square)	1			
Additional degrees of freedom compared with Model 9.1	2			
p value	0.607			
Significance of p value	>0.05			

MODEL 9.2(11)

Degree of freedom = 1255 cases - (7 fixed pars + 3 random pars) = 1245

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	150.862	1.853	81.415	0.000
Yr9 Attitudes (centered)	0.510	0.027	18.889	0.000
Male	-5.034	0.756	6.659	0.000
FSM	-2.907	0.865	3.361	0.001
White	-1.145	0.978	1.171	0.242
Yr10 Non-Subject SS	2.696	1.177	2.291	0.022
Yr11 Non-Subject SS	7.304	1.573	4.643	0.000
Random				
Level 2				
Variance: Intercept	30.545	14.538		
Covariance: Yr11 Non-Subject SS x Intercept	-28.205	15.151		
Variance: Yr11 Non-Subject SS	37.488	18.234		
Level 1				
	160.238	6.560		
Correlation between intercept and slope (Yr11 Non-subject SS)	-0.834			
Loglikelihood	9988.2			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.1 (chi-square)	7.5			
Additional degrees of freedom compared with Model 9.1	2			
p value	0.024			
Significance of p value	<0.05			

MODEL 9.3(10)

Degree of freedom = 1255 cases - (8 fixed pars + 3 random pars) = 1244

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	153.353	1.523	100.691	0.000
Yr9 Attitudes (centered)	0.512	0.027	18.963	0.000
Male	-5.015	0.762	6.581	0.000
FSM	-5.696	2.402	2.371	0.018
White	-1.215	0.982	1.237	0.216
Yr10 Non-Subject SS	1.912	1.319	1.450	0.147
Yr11 Non-Subject SS	5.541	0.989	5.603	0.000
FSM*Yr10 Non-Subject SS	3.157	2.564	1.231	0.218
Random				
Level 2				
Variance: Intercept	3.664	5.697		
Covariance: Yr10 Non-Subject SS x Intercept	1.210	5.898		
Variance: Yr10 Non-Subject SS	4.994	9.170		
Level 1				
	163.920	6.667		
Correlation between intercept and slope (Yr10 Non-Subject SS)	0.283			
Loglikelihood	9993.1			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.2(10) (chi-square)	1.6			
Additional degrees of freedom compared with Model 9.2(10)	1			
p value	0.206			
Significance of p value	>0.05			

MODEL 9.3(11)

Degree of freedom = 1255 cases - (8 fixed pars + 3 random pars) = 1244

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	151.035	1.917	78.787	0.000
Yr9 Attitudes (centered)	0.510	0.027	18.889	0.000
Male	-5.034	0.756	6.659	0.000
FSM	-3.460	2.012	1.720	0.086
White	-1.150	0.978	1.176	0.240
Yr10 Non-Subject SS	2.699	1.177	2.293	0.022
Yr11 Non-Subject SS	7.092	1.691	4.194	0.000
FSM*Yr11 Non-Subject SS	0.676	2.213	0.305	0.760
Random				
Level 2				
Easter School	30.229	14.529		
Covariance: Yr11 Non-Subject SS x Intercept	-27.718	15.105		
Variance: Yr11 Non-Subject SS	36.764	18.145		
Level 1				
	160.399	6.566		
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.831			
Loglikelihood	9988.1			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.2(11) (chi-square)	0.1			
Additional degrees of freedom compared with Model 9.2(11)	1			
p value	0.752			
Significance of p value	>0.05			

MODEL 9.3(10)a

Degree of freedom = 1255 cases - (8 fixed pars + 6 random pars) = 1241

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	153.483	1.504	102.050	0.000
Yr9 Attitudes (centered)	0.512	0.027	18.963	0.000
Male	-5.000	0.760	6.579	0.000
FSM	-5.759	2.422	2.378	0.018
White	-1.272	0.987	1.289	0.198
Yr10 Non-Subject SS	1.818	1.277	1.424	0.155
Yr11 Non-Subject SS	5.509	0.988	5.576	0.000
FSM*Yr10 Non-Subject SS	3.240	2.577	1.257	0.209
Random				
Level 2				
Variance: Intercept	3.078	5.566		
Covariance: FSM x Intercept	1.113	5.713		
Variance: FSM	2.345	6.500		
Covariance: Yr10 Non-Subject SS x Intercept	1.466	5.493		
Covariance: Yr10 Non-Subject SS x FSM	1.821	6.008		
Variance: Yr10 Non-Subject SS	3.256	8.369		
Level 1				
	163.498	6.725		
Correlation between intercept and slope (FSM)	0.414			
Correlation between intercept and slope (Yr10 Non-Subject SS)	0.463			
Loglikelihood	9992.2			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.3(10) (chi-square)	0.9			
Additional degrees of freedom compared with Model 9.3(10)	3			
p value	0.825			
Significance of p value	>0.05			

MODEL 9.3(11)a

Degree of freedom = 1255 cases - (8 fixed pars + 6 random pars) = 1241

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept				
Yr9 Attitudes (centered)				
Male				
FSM				
White				
Yr10 Non-Subject SS				
Yr11 Non-Subject SS				
FSM*Yr11 Non-Subject SS				
Random				
Level 2				
Variance: Intercept				
Covariance: FSM x Intercept				
Variance: FSM				
Covariance: Yr11 Non-Subject SS x Intercept				
Covariance: Yr11 Non-Subject SS x FSM				
Variance: Yr11 Non-Subject SS				
Level 1				
Correlation between intercept and slope (FSM)				
Correlation between intercept and slope (Yr11 Non-Subject SS)				
Loglikelihood				
Number of cases in use				
Difference in loglikelihood compared with Model 9.3(11) (chi-square)				
Additional degrees of freedom compared with Model 9.3(11)				
p value				
Significance of p value				

This model would not converge

MODEL 9.4(10)

Degree of freedom = 1255 cases - (8 fixed pars + 10 random pars) = 1237

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	153.482	1.504	102.049	0.000
Yr9 Attitudes (centered)	0.512	0.027	18.963	0.000
Male	-5.000	0.760	6.579	0.000
FSM	-5.758	2.422	2.377	0.018
White	-1.272	0.987	1.289	0.198
Yr10 Non-Subject SS	1.819	1.277	1.424	0.155
Yr11 Non-Subject SS	5.509	0.988	5.576	0.000
FSM*Yr10 Non-Subject SS	3.239	2.577	1.257	0.209
Random				
Level 2				
Variance: Intercept	3.079	5.564		
Covariance: FSM x Intercept	1.109	5.710		
Variance: FSM	2.333	6.494		
Covariance: Yr10 Non-Subject SS x Intercept	1.470	5.488		
Covariance: Yr10 Non-Subject SS x FSM	1.832	6.003		
Variance: Yr10 Non-Subject SS	3.247	8.361		
Covariance: FSM*Yr10 Non-Subject SS x Intercept	0.000	0.000		
Covariance: FSM*Yr10 Non-Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr10 Non-Subject SS x Yr10 Non-Subject SS	0.000	0.000		
Variance: FSM*Yr10 Non-Subject SS	0.000	0.000		
Level 1				
	163.500	6.725		
Correlation between intercept and slope (FSM)	0.414			
Correlation between intercept and slope (Yr10 Non-Subject SS)	0.465			
Correlation between intercept and slope (FSM*Yr10 Non-Subject SS)	#DIV/0!			
Loglikelihood	9992.2			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.3(10)a (chi-square)	0.0			
Additional degrees of freedom compared with Model 9.3(10)a	4			
p value	1.000			
Significance of p value	>0.05			

MODEL 9.4(11)

Degree of freedom = 1255 cases - (8 fixed pars + 10 random pars) = 1237

Dependent variable: Yr11 Attitudes

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	151.045	1.915	78.875	0.000
Yr9 Attitudes (centered)	0.510	0.027	18.889	0.000
Male	-5.034	0.756	6.659	0.000
FSM	-3.464	2.012	1.722	0.085
White	-1.151	0.978	1.177	0.239
Yr10 Non-Subject SS	2.699	1.177	2.293	0.022
Yr11 Non-Subject SS	7.083	1.688	4.196	0.000
FSM*Yr11 Non-Subject SS	0.681	2.213	0.308	0.758
Random				
Level 2				
Variance: Intercept	30.018	14.378		
Covariance: FSM x Intercept	0.000	0.000		
Variance: FSM	0.000	0.000		
Covariance: Yr11 Non-Subject SS x Intercept	-27.475	14.930		
Covariance: Yr11 Non-Subject SS x FSM	0.000	0.000		
Variance: Yr11 Non-Subject SS	36.479	17.942		
Covariance: FSM*Yr11 Non-Subject SS x Intercept	0.000	0.000		
Covariance: FSM*Yr11 Non-Subject SS x FSM	0.000	0.000		
Covariance: FSM*Yr11 Non-Subject SS x Yr11 Non-Subject SS	0.000	0.000		
Variance: FSM*Yr11 Non-Subject SS	0.000	0.000		
Level 1				
	160.415	6.567		
Correlation between intercept and slope (FSM)	#DIV/0!			
Correlation between intercept and slope (Yr11 Non-Subject SS)	-0.830			
Correlation between intercept and slope (FSM*Non-Subject SS)	#DIV/0!			
Loglikelihood	9988.1			
Number of cases in use	1255			
Difference in loglikelihood compared with Model 9.3(11)a (chi-square)	na			
Additional degrees of freedom compared with Model 9.3(11)a	na			
p value	na			
Significance of p value	na			

MODEL 10.0

Degree of freedom = 1689 cases - (7 fixed pars + 0 random pars) = 1682

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	20.997	0.566	37.097	0.000
NVR (centered)	0.288	0.012	24.000	0.000
Male	-1.518	0.301	5.043	0.000
FSM	-1.410	0.315	4.476	0.000
White	-1.153	0.331	3.483	0.001
Yr10 Subject SS	0.825	0.307	2.687	0.007
Yr11 Subject SS	3.075	0.458	6.714	0.000
Easter School	2.621	0.307	8.537	0.000
Random				
Between schools	0.000	0.000		
Between students	35.809	1.226		
Intra-school correlation	0.000			
Loglikelihood	10828.8			
Number of cases in use	1689			

MODEL 10.0 with School Dummies

Degree of freedom = 1689 cases - (30 fixed pars + 0 random pars) = 1659

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	19.517	0.714	27.335	0.000
NVR (centered)	0.275	0.012	22.917	0.000
Male	-1.114	0.300	3.713	0.000
FSM	-1.116	0.313	3.565	0.000
White	-0.263	0.416	0.632	0.527
Yr10 Subject SS	1.452	0.355	4.090	0.000
Yr11 Subject SS	3.085	0.448	6.886	0.000
Easter School	3.968	0.320	12.400	0.000
School 5	2.785	0.727	3.831	0.000
School 7	-1.078	0.863	1.249	0.212
School 8	-1.568	0.833	1.882	0.060
School 9	5.401	0.811	6.660	0.000
School 10	-0.941	0.836	1.126	0.260
School 11	1.374	0.849	1.618	0.106
School 19	-2.008	0.855	2.349	0.019
School 22	0.096	1.940	0.049	0.961
School 26	-0.133	1.030	0.129	0.897
School 29	-2.299	1.014	2.267	0.024
School 30	-0.679	0.912	0.745	0.457
School 32	-3.274	0.929	3.524	0.000
School 33	-0.864	0.955	0.905	0.366
School 34	0.824	0.833	0.989	0.323
School 37	-1.115	1.037	1.075	0.282
School 38	-2.579	1.063	2.426	0.015
School 39	0.335	0.917	0.365	0.715
School 40	1.498	0.919	1.630	0.103
School 41	-1.811	1.178	1.537	0.124
School 44	-3.590	1.002	3.583	0.000
School 45	-3.894	0.916	4.251	0.000
School 47	-2.826	0.936	3.019	0.003
Random				
Between schools	0.000	0.000		
Between students	31.286	1.076		
Intra-school correlation	0.000			
Loglikelihood	10578.7			
Number of cases in use	1689			
Difference in loglikelihood compared with Model 10.0 (chi-square)	250.1			
Additional degrees of freedom compared with Model 10.0	22			
p value	0.000			
Significance of p value	<0.001			

MODEL 10.1 (Null)

Degree of freedom = 1689 cases - (1 fixed par + 1 random par) = 1687

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	23.388	0.460	50.843	0.000
Random				
Between schools	4.003	1.428		
Between students	51.223	1.775		
Intra-school correlation	0.072			
Loglikelihood	11482.5			
Number of cases in use	1689			

MODEL 10.1

Degree of freedom = 1689 cases - (7 fixed pars + 1 random par) = 1681

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	18.997	0.724	26.239	0.000
NVR (centered)	0.276	0.011	25.091	0.000
Male	-1.164	0.298	3.906	0.000
FSM	-1.145	0.311	3.682	0.000
White	-0.374	0.401	0.933	0.351
Yr10 Subject SS	1.395	0.345	4.043	0.000
Yr11 Subject SS	3.112	0.445	6.993	0.000
Easter School	3.846	0.317	12.132	0.000
Random				
Between schools	4.392	1.453		
Between students	31.273	1.084		
Intra-school correlation	0.123			
Loglikelihood	10653.7			
Number of cases in use	1689			
Difference in loglikelihood compared with Model 10.0 (chi-square)	175.1			
Additional degrees of freedom compared with Model 10.0	1			
p value	0.000			
Significance of p value	<0.001			
Variance explained at school level	-9.7%			
Variance explained at pupil level	38.9%			
Total variance explained	35.4%			

MODEL 10.2

Degree of freedom = 1689 cases - (7 fixed pars + 3 random pars) = 1679

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	18.794	0.783	24.003	0.000
NVR (centered)	0.276	0.011	25.091	0.000
Male	-1.131	0.296	3.821	0.000
FSM	-1.156	0.309	3.741	0.000
White	-0.354	0.393	0.901	0.368
Yr10 Subject SS	1.318	0.340	3.876	0.000
Yr11 Subject SS	3.027	0.449	6.742	0.000
Easter School	4.035	0.536	7.528	0.000
Random				
Level 2				
Variance: Intercept	6.351	2.183		
Covariance: Easter School x Intercept	-3.937	1.763		
Variance: Easter School	3.986	1.851		
Level 1				
	30.737	1.071		
Correlation between intercept and slope (Easter School)	-0.782			
Loglikelihood	10639.9			
Number of cases in use	1689			
Difference in loglikelihood compared with Model 10.1 (chi-square)	13.8			
Additional degrees of freedom compared with Model 10.1	2			
p value	0.001			
Significance of p value	<0.01			

MODEL 10.3

Degree of freedom = 1689 cases - (8 fixed pars + 3 random pars) = 1678

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	18.891	0.788	23.973	0.000
NVR (centered)	0.276	0.011	25.091	0.000
Male	-1.128	0.296	3.811	0.000
FSM	-1.415	0.393	3.601	0.000
White	-0.343	0.393	0.873	0.383
Yr10 Subject SS	1.312	0.340	3.859	0.000
Yr11 Subject SS	3.010	0.449	6.704	0.000
Easter School	3.815	0.574	6.646	0.000
FSM*Easter School	0.660	0.620	1.065	0.287
Random				
Level 2				
Variance: Intercept	6.348	2.184		
Covariance: Easter School x Intercept	-3.930	1.767		
Variance: Easter School	3.963	1.857		
Level 1				
	30.737	1.071		
Correlation between intercept and slope (Easter School)	-0.784			
Loglikelihood	10638.8			
Number of cases in use	1689			
Difference in loglikelihood compared with Model 10.2 (chi-square)	1.1			
Additional degrees of freedom compared with Model 10.2	1			
p value	0.294			
Significance of p value	>0.05			

MODEL 10.3a

Degree of freedom = 1689 cases - (8 fixed pars + 6 random pars) =

1675

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	18.798	0.807	23.294	0.000
NVR (centered)	0.276	0.011	25.091	0.000
Male	-1.138	0.295	3.858	0.000
FSM	-1.282	0.443	2.894	0.004
White	-0.375	0.391	0.959	0.338
Yr10 Subject SS	1.297	0.339	3.826	0.000
Yr11 Subject SS	3.054	0.448	6.817	0.000
Easter School	3.894	0.570	6.832	0.000
FSM*Easter School	0.458	0.632	0.725	0.469
Random				
Level 2				
Variance: Intercept	6.964	2.459		
Covariance: FSM x Intercept	-1.243	1.117		
Variance: FSM	0.776	0.842		
Covariance: Easter School x Intercept	-3.971	1.826		
Covariance: Easter School x FSM	0.506	0.889		
Variance: Easter School	3.785	1.794		
Level 1				
	30.617	1.074		
Correlation between intercept and slope (FSM)	-0.535			
Correlation between intercept and slope (Easter School)	-0.773			
Loglikelihood	10637.1			
Number of cases in use	1689			
Difference in loglikelihood compared with Model 10.3 (chi-square)	1.7			
Additional degrees of freedom compared with Model 10.3	3			
p value	0.637			
Significance of p value	>0.05			

MODEL 10.4

Degree of freedom = 1689 cases - (8 fixed pars + 10 random pars) =

1671

Dependent variable: Best 5 GCSE score

PARAMETER	Estimate	S.E.	t	p
Fixed				
Intercept	18.918	0.790	23.947	0.000
NVR (centered)	0.276	0.011	25.091	0.000
Male	-1.154	0.295	3.912	0.000
FSM	-1.446	0.447	3.235	0.001
White	-0.288	0.390	0.738	0.460
Yr10 Subject SS	1.229	0.339	3.625	0.000
Yr11 Subject SS	3.013	0.447	6.740	0.000
Easter School	3.835	0.499	7.685	0.000
FSM*Easter School	0.963	0.831	1.159	0.247
Random				
Level 2				
Variance: Intercept	6.643	2.361		
Covariance: FSM x Intercept	-0.702	1.289		
Variance: FSM	1.109	1.231		
Covariance: Easter School x Intercept	-3.209	1.669		
Covariance: Easter School x FSM	-0.558	1.031		
Variance: Easter School	2.368	1.570		
Covariance: FSM*Easter School x Intercept	2.207	2.440		
Covariance: FSM*Easter School x FSM	-2.896	2.133		
Covariance: FSM*Easter School x Easter School	-0.559	2.049		
Variance: FSM*Easter School	6.825	4.546		
Level 1				
	30.520	1.074		
Correlation between intercept and slope (FSM)	-0.259			
Correlation between intercept and slope (Easter School)	-0.809			
Correlation between intercept and slope (FSM*Easter School)	0.328			
Loglikelihood	10632.7			
Number of cases in use	1689			
Difference in loglikelihood compared with Model 10.3a (chi-square)	4.4			
Additional degrees of freedom compared with Model 10.3a	4			
p value	0.355			
Significance of p value	>0.05			

Appendix J:

CHARACTERISTICS OF PUPILS INCLUDED IN THE MULTILEVEL MODELS

Group 1

Table J1: Sample Characteristics for Group 1 Models

Number of pupils	2312		
Gender	Male	1084	46.9%
	Female	1228	53.1%
Free School Meals	Yes	742	32.1%
	No	1570	67.9%
Ethnic Background	White	1512	65.4%
	Black	800	34.6%
Attended Yr 10 Subject Study Support	Yes	1141	49.4%
	No	1171	50.6%
Attended Yr11 Subject Study Support	Yes	1957	84.6%
	No	355	15.4%
Number of Schools	32		

Table J2: Statistics for Baseline and Output Measures for Group 1 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: NVR	2312	70	135	93.5	.257	92.0	86.0	12.3
Output: Best 5	2312	1	40	23.4	.154	24.0	26.0	7.4

Table J3: Frequencies for Group 1 Baseline Measure (Year 9 NVR scores)

Year 9 (Standardised) NVR Score				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 70	17	.7	.7	.7
71	11	.5	.5	1.2
72	33	1.4	1.4	2.6
73	30	1.3	1.3	3.9
74	25	1.1	1.1	5.0
75	30	1.3	1.3	6.3
76	33	1.4	1.4	7.7
77	38	1.6	1.6	9.4
78	45	1.9	1.9	11.3
79	34	1.5	1.5	12.8
80	46	2.0	2.0	14.8
81	58	2.5	2.5	17.3
82	48	2.1	2.1	19.4
83	53	2.3	2.3	21.7
84	66	2.9	2.9	24.5
85	70	3.0	3.0	27.6
86	86	3.7	3.7	31.3
87	81	3.5	3.5	34.8
88	64	2.8	2.8	37.5
89	67	2.9	2.9	40.4
90	70	3.0	3.0	43.5
91	76	3.3	3.3	46.8
92	80	3.5	3.5	50.2
93	66	2.9	2.9	53.1
94	68	2.9	2.9	56.0
95	79	3.4	3.4	59.4
96	69	3.0	3.0	62.4
97	67	2.9	2.9	65.3
98	63	2.7	2.7	68.0
99	57	2.5	2.5	70.5
100	66	2.9	2.9	73.4
101	52	2.2	2.2	75.6
102	44	1.9	1.9	77.5
103	59	2.6	2.6	80.1
104	50	2.2	2.2	82.2
105	31	1.3	1.3	83.6
106	50	2.2	2.2	85.7
107	21	.9	.9	86.6
108	37	1.6	1.6	88.2
109	32	1.4	1.4	89.6
110	23	1.0	1.0	90.6
111	26	1.1	1.1	91.7
112	13	.6	.6	92.3
113	22	1.0	1.0	93.3
114	19	.8	.8	94.1
115	28	1.2	1.2	95.3
116	7	.3	.3	95.6
117	11	.5	.5	96.1
118	8	.3	.3	96.4
119	9	.4	.4	96.8
120	12	.5	.5	97.3
121	11	.5	.5	97.8
122	6	.3	.3	98.1
123	7	.3	.3	98.4
124	6	.3	.3	98.6
125	5	.2	.2	98.8
126	1	.0	.0	98.9
127	6	.3	.3	99.1
128	3	.1	.1	99.3
129	5	.2	.2	99.5
130	3	.1	.1	99.6
131	1	.0	.0	99.7
132	1	.0	.0	99.7
133	4	.2	.2	99.9
134	2	.1	.1	100.0
135	1	.0	.0	100.0
Total	2312	100.0	100.0	

Table J4: Frequencies for Group 1 Output Measure (Best 5 GCSE passes)

Best 5 GCSE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	.1	.1	.1
	2	3	.1	.1	.2
	3	7	.3	.3	.5
	4	8	.3	.3	.9
	5	6	.3	.3	1.1
	6	8	.3	.3	1.5
	7	18	.8	.8	2.2
	8	24	1.0	1.0	3.3
	9	19	.8	.8	4.1
	10	26	1.1	1.1	5.2
	11	39	1.7	1.7	6.9
	12	39	1.7	1.7	8.6
	13	50	2.2	2.2	10.8
	14	41	1.8	1.8	12.5
	15	53	2.3	2.3	14.8
	16	68	2.9	2.9	17.8
	17	86	3.7	3.7	21.5
	18	81	3.5	3.5	25.0
	19	68	2.9	2.9	27.9
	20	92	4.0	4.0	31.9
	21	124	5.4	5.4	37.3
	22	113	4.9	4.9	42.2
	23	133	5.8	5.8	47.9
	24	119	5.1	5.1	53.1
	25	144	6.2	6.2	59.3
	26	167	7.2	7.2	66.5
	27	101	4.4	4.4	70.9
	28	100	4.3	4.3	75.2
	29	90	3.9	3.9	79.1
	30	78	3.4	3.4	82.5
	31	85	3.7	3.7	86.2
	32	72	3.1	3.1	89.3
	33	65	2.8	2.8	92.1
	34	43	1.9	1.9	93.9
	35	44	1.9	1.9	95.8
	36	30	1.3	1.3	97.1
	37	28	1.2	1.2	98.4
	38	15	.6	.6	99.0
	39	8	.3	.3	99.4
	40	15	.6	.6	100.0
	Total	2312	100.0	100.0	

Group 2

Table J5: Sample Characteristics for Group 2 Models

Number of pupils	2310		
Gender	Male	1083	46.9%
	Female	1227	53.1%
Free School Meals	Yes	742	32.1%
	No	1568	67.9%
Ethnic Background	White	1511	65.4%
	Black	799	34.6%
Attended Yr 10 Non-Subject Study Support	Yes	1891	81.9%
	No	419	18.1%
Attended Yr11 Non-Subject Study Support	Yes	1924	83.3%
	No	386	16.7%
Number of Schools	32		

Table J6: Statistics for Baseline and Output Measures for Group 2 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: NVR	2310	70	135	93.5	.257	92.0	86.0	12.4
Output: Best 5	2310	1	40	23.4	.154	24.0	26.0	7.4

Table J7: Frequencies for Group 2 Baseline Measure (Year 9 NVR scores)

Year 9 (Standardised) NVR Score				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 70	17	.7	.7	.7
71	11	.5	.5	1.2
72	33	1.4	1.4	2.6
73	30	1.3	1.3	3.9
74	25	1.1	1.1	5.0
75	30	1.3	1.3	6.3
76	33	1.4	1.4	7.7
77	38	1.6	1.6	9.4
78	45	1.9	1.9	11.3
79	34	1.5	1.5	12.8
80	46	2.0	2.0	14.8
81	58	2.5	2.5	17.3
82	48	2.1	2.1	19.4
83	53	2.3	2.3	21.7
84	65	2.8	2.8	24.5
85	70	3.0	3.0	27.5
86	86	3.7	3.7	31.3
87	81	3.5	3.5	34.8
88	64	2.8	2.8	37.5
89	67	2.9	2.9	40.4
90	70	3.0	3.0	43.5
91	76	3.3	3.3	46.8
92	80	3.5	3.5	50.2
93	66	2.9	2.9	53.1
94	68	2.9	2.9	56.0
95	79	3.4	3.4	59.4
96	69	3.0	3.0	62.4
97	67	2.9	2.9	65.3
98	63	2.7	2.7	68.1
99	56	2.4	2.4	70.5
100	66	2.9	2.9	73.3
101	52	2.3	2.3	75.6
102	44	1.9	1.9	77.5
103	59	2.6	2.6	80.0
104	50	2.2	2.2	82.2
105	31	1.3	1.3	83.5
106	50	2.2	2.2	85.7
107	21	.9	.9	86.6
108	37	1.6	1.6	88.2
109	32	1.4	1.4	89.6
110	23	1.0	1.0	90.6
111	26	1.1	1.1	91.7
112	13	.6	.6	92.3
113	22	1.0	1.0	93.2
114	19	.8	.8	94.1
115	28	1.2	1.2	95.3
116	7	.3	.3	95.6
117	11	.5	.5	96.1
118	8	.3	.3	96.4
119	9	.4	.4	96.8
120	12	.5	.5	97.3
121	11	.5	.5	97.8
122	6	.3	.3	98.1
123	7	.3	.3	98.4
124	6	.3	.3	98.6
125	5	.2	.2	98.8
126	1	.0	.0	98.9
127	6	.3	.3	99.1
128	3	.1	.1	99.3
129	5	.2	.2	99.5
130	3	.1	.1	99.6
131	1	.0	.0	99.7
132	1	.0	.0	99.7
133	4	.2	.2	99.9
134	2	.1	.1	100.0
135	1	.0	.0	100.0
Total	2310	100.0	100.0	

Table J8: Frequencies for Group 2 Output Measure (Best 5 GCSE passes)

Best 5 GCSE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	.1	.1	.1
	2	3	.1	.1	.2
	3	7	.3	.3	.5
	4	8	.3	.3	.9
	5	6	.3	.3	1.1
	6	8	.3	.3	1.5
	7	18	.8	.8	2.3
	8	24	1.0	1.0	3.3
	9	19	.8	.8	4.1
	10	26	1.1	1.1	5.2
	11	39	1.7	1.7	6.9
	12	39	1.7	1.7	8.6
	13	50	2.2	2.2	10.8
	14	41	1.8	1.8	12.6
	15	53	2.3	2.3	14.8
	16	68	2.9	2.9	17.8
	17	86	3.7	3.7	21.5
	18	81	3.5	3.5	25.0
	19	68	2.9	2.9	28.0
	20	92	4.0	4.0	31.9
	21	124	5.4	5.4	37.3
	22	113	4.9	4.9	42.2
	23	131	5.7	5.7	47.9
	24	119	5.2	5.2	53.0
	25	144	6.2	6.2	59.3
	26	167	7.2	7.2	66.5
	27	101	4.4	4.4	70.9
	28	100	4.3	4.3	75.2
	29	90	3.9	3.9	79.1
	30	78	3.4	3.4	82.5
	31	85	3.7	3.7	86.1
	32	72	3.1	3.1	89.3
	33	65	2.8	2.8	92.1
	34	43	1.9	1.9	93.9
	35	44	1.9	1.9	95.8
	36	30	1.3	1.3	97.1
	37	28	1.2	1.2	98.4
	38	15	.6	.6	99.0
	39	8	.3	.3	99.4
	40	15	.6	.6	100.0
Total		2310	100.0	100.0	

Group 3

Table J9: Sample Characteristics for Group 3 Models

Number of pupils	2699		
Gender	Male	1292	47.9%
	Female	1407	52.1%
Free School Meals	Yes	868	32.2%
	No	1831	67.8%
Ethnic Background	White	1620	60.0%
	Black	1079	40.0%
Attended Yr 10 Maths Study Support	Yes	370	13.7%
	No	2329	86.3%
Attended Yr11 Maths Study Support	Yes	1353	50.1%
	No	1346	49.9%
Number of Schools	33		

Table J10: Statistics for Baseline and Output Measures for Group 3 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: SATS Maths	2699	2	8	4.7	.022	5.0	4.0	1.2
Output: GCSE Maths	2699	1	8	3.9	.031	4.0	5.0	1.6

Table J11: Frequencies for Group 3 Baseline Measure (SATs Maths)

SATs Maths					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	17	.6	.6	.6
	3	401	14.9	14.9	15.5
	4	794	29.4	29.4	44.9
	5	763	28.3	28.3	73.2
	6	547	20.3	20.3	93.4
	7	170	6.3	6.3	99.7
	8	7	.3	.3	100.0
	Total	2699	100.0	100.0	

Table J12: Frequencies for Group 3 Output Measure (GCSE Maths)

GCSE Maths					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	197	7.3	7.3	7.3
	2	374	13.9	13.9	21.2
	3	535	19.8	19.8	41.0
	4	524	19.4	19.4	60.4
	5	586	21.7	21.7	82.1
	6	359	13.3	13.3	95.4
	7	109	4.0	4.0	99.4
	8	15	.6	.6	100.0
Total		2699	100.0	100.0	

Group 4

Table J13: Sample Characteristics for Group 4 Models

Number of pupils	2485		
Gender	Male	1145	46.1%
	Female	1340	53.9%
Free School Meals	Yes	752	30.3%
	No	1733	69.7%
Ethnic Background	White	1592	64.1%
	Black	893	35.9%
Attended Yr 10 English Study Support	Yes	95	3.8%
	No	2390	96.2%
Attended Yr11 English Study Support	Yes	894	36.0%
	No	1591	64.0%
Number of Schools	32		

Table J14: Statistics for Baseline and Output Measures for Group 4 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: SATs English	2485	3	8	5.0	.020	5.0	5.0	1.0
Output: GCSE English	2485	1	8	4.5	.028	5.0	5.0	1.4

Table J15: Frequencies for Group 4 Baseline Measure (SATS English)

SATS English					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	154	6.2	6.2	6.2
	4	646	26.0	26.0	32.2
	5	911	36.7	36.7	68.9
	6	609	24.5	24.5	93.4
	7	160	6.4	6.4	99.8
	8	5	.2	.2	100.0
	Total	2485	100.0	100.0	

Table J16: Frequencies for Group 4 Output Measure (GCSE English)

GCSE English					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	1.0	1.0	1.0
	2	145	5.8	5.8	6.9
	3	408	16.4	16.4	23.3
	4	617	24.8	24.8	48.1
	5	709	28.5	28.5	76.7
	6	370	14.9	14.9	91.5
	7	184	7.4	7.4	99.0
	8	26	1.0	1.0	100.0
Total		2485	100.0	100.0	

Group 5

Table J17: Sample Characteristics for Group 5 Models

Number of pupils	2488		
Gender	Male	1207	48.5%
	Female	1281	51.5%
Free School Meals	Yes	773	31.1%
	No	1715	68.9%
Ethnic Background	White	1543	62.0%
	Black	945	38.0%
Attended Yr 10 Science Study Support	Yes	263	10.6%
	No	2225	89.4%
Attended Yr11 Science Study Support	Yes	1094	44.0%
	No	1394	56.0%
Number of Schools	33		

Table J18: Statistics for Baseline and Output Measures for Group 5 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: SATS Science	2488	2	7	4.6	.021	5.0	4.0	1.0
Output: GCSE Science	2488	1	8	4.2	.031	4.0	5.0	1.6

Table J19: Frequencies for Group 5 Baseline Measure (SATS Science)

SATS Science					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	30	1.2	1.2	1.2
	3	316	12.7	12.7	13.9
	4	846	34.0	34.0	47.9
	5	833	33.5	33.5	81.4
	6	396	15.9	15.9	97.3
	7	67	2.7	2.7	100.0
Total		2488	100.0	100.0	

Table J20: Frequencies for Group 5 Output Measure (GCSE Science)

GCSE Science					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	94	3.8	3.8	3.8
	2	275	11.1	11.1	14.8
	3	450	18.1	18.1	32.9
	4	566	22.7	22.7	55.7
	5	621	25.0	25.0	80.6
	6	276	11.1	11.1	91.7
	7	188	7.6	7.6	99.3
	8	18	.7	.7	100.0
Total		2488	100.0	100.0	

Group 6

Table J21: Sample Characteristics for Group 6 Models

Number of pupils	1201		
Gender	Male	576	48.0%
	Female	625	52.0%
Free School Meals	Yes	363	30.2%
	No	838	69.8%
Ethnic Background	White	881	73.4%
	Black	320	26.6%
Attended Yr 10 Subject Study Support	Yes	608	50.6%
	No	593	49.4%
Attended Yr11 Subject Study Support	Yes	1005	83.7%
	No	196	16.3%
Number of Schools	14		

Table J22: Statistics for Baseline and Output Measures for Group 6 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: Year 9 Attendance	1201	38	100	91.6	.238	94.0	99.0	8.2
Output: Year 11 Attendance	1201	9	100	91.3	.255	94.0	99.0	8.8

Table J23: Frequencies for Group 6 Baseline Measure (Year 9 Attendance)

Year 9 Attendance					
Attendance		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30-39%	1	.1	.1	.1
	40-49%	4	.3	.3	.4
	50-59%	8	.7	.7	1.1
	60-69%	18	1.5	1.5	2.6
	70-79%	63	5.2	5.2	7.8
	80-89%	255	21.2	21.2	29.1
	90%+	852	70.9	70.9	100.0
	Total	1201	100.0	100.0	

Table J24: Frequencies for Group 6 Output Measure (Year 11 Attendance)

Year 11 Attendance					
Attendance		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10%	1	.1	.1	.1
	50-59%	7	.6	.6	.7
	60-69%	27	2.2	2.2	2.9
	70-79%	78	6.5	6.5	9.4
	80-89%	261	21.7	21.7	31.1
	90%+	827	68.9	68.9	100.0
	Total	1201	100.0	100.0	

Group 7

Table J25: Sample Characteristics for Group 7 Models

Number of pupils	1200		
Gender	Male	576	48.0%
	Female	624	52.0%
Free School Meals	Yes	363	30.3%
	No	837	69.8%
Ethnic Background	White	880	73.3%
	Black	320	26.7%
Attended Yr 10 Non-Subject Study Support	Yes	854	71.2%
	No	346	28.8%
Attended Yr11 Non-Subject Study Support	Yes	920	76.7%
	No	280	23.3%
Number of Schools	14		

Table J26: Statistics for Baseline and Output Measures for Group 7 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: Year 9 Attendance	1200	38	100	91.6%	.238	94.0	99.0	8.2
Output: Year 11 Attendance	1200	9	100	91.3%	.255	94.0	99.0	8.8

Table J27: Frequencies for Group 7 Baseline Measure (Year 9 Attendance)

Year 9 Attendance					
Attendance		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30-39%	1	.1	.1	.1
	40-49%	4	.3	.3	.4
	50-59%	8	.7	.7	1.1
	60-69%	18	1.5	1.5	2.6
	70-79%	63	5.3	5.3	7.8
	80-89%	254	21.2	21.2	29.0
	90%+	852	71.0	71.0	100.0
	Total	1200	100.0	100.0	

Table J28: Frequencies for Group 7 Output Measure (Year 11 Attendance)

Year 11 Attendance					
Attendance		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10%	1	.1	.1	.1
	50-59%	7	.6	.6	.7
	60-69%	27	2.3	2.3	2.9
	70-79%	78	6.5	6.5	9.4
	80-89%	260	21.7	21.7	31.1
	90%+	827	68.9	68.9	100.0
	Total	1200	100.0	100.0	

Group 8

Table J29: Sample Characteristics for Group 8 Models

Number of pupils	1256		
Gender	Male	596	47.5%
	Female	660	52.5%
Free School Meals	Yes	353	28.1%
	No	903	71.9%
Ethnic Background	White	915	72.9%
	Black	341	27.1%
Attended Yr 10 Subject Study Support	Yes	617	49.1%
	No	639	50.9%
Attended Yr11 Subject Study Support	Yes	1057	84.2%
	No	199	15.8%
Number of Schools	38		

Table J30: Statistics for Baseline and Output Measures for Group 8 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: Year 9 Attitudes	1256	99	200	163.2	.397	164.0	171.0	14.1
Output: Year 11 Attitudes	1256	94	199	156.4	.440	158.0	163.0	15.6

Group 9

Table J31: Sample Characteristics for Group 9 Models

Number of pupils	1255		
Gender	Male	596	47.5%
	Female	659	52.5%
Free School Meals	Yes	353	28.1%
	No	902	71.9%
Ethnic Background	White	914	72.8%
	Black	341	27.2%
Attended Yr 10 Non-Subject Study Support	Yes	1060	84.5%
	No	195	15.5%
Attended Yr11 Non-Subject Study Support	Yes	1005	80.1%
	No	250	19.9%
Number of Schools	38		

Table J32: Statistics for Baseline and Output Measures for Group 9 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: Year 9 Attitudes	1255	99	200	163.2	.397	164.0	171.0	14.1
Output: Year 11 Attitudes	1255	94	199	156.4	.441	158.0	163.0	15.6

Group 10

Table J33: Sample Characteristics for Group 10 Models

Number of pupils	1689		
Gender	Male	754	44.6%
	Female	935	55.4%
Free School Meals	Yes	572	33.9%
	No	1117	66.1%
Ethnic Background	White	1127	66.7%
	Black	562	33.3%
Attended Yr 10 Subject Study Support	Yes	928	54.9%
	No	761	45.1%
Attended Yr11 Subject Study Support	Yes	1478	87.5%
	No	211	12.5%
Attended Easter School	Yes	653	38.7%
	No	1036	61.3%
Number of Schools	23		

Table J34: Statistics for Baseline and Output Measures for Group 10 Models

	Number of Cases	Min	Max	Mean	SE of Mean	Median	Mode	SD
Baseline: NVR	2312	70	135	93.5	.257	92.0	86.0	12.3
Output: Best 5	2312	1	40	23.4	.154	24.0	26.0	7.4

Table J35: Frequencies for Group 10 Baseline Measure (Year 9 NVR scores)

Year 9 (Standardised) NVR Score				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 70	13	.8	.8	.8
71	7	.4	.4	1.2
72	20	1.2	1.2	2.4
73	16	.9	.9	3.3
74	15	.9	.9	4.2
75	24	1.4	1.4	5.6
76	21	1.2	1.2	6.9
77	24	1.4	1.4	8.3
78	31	1.8	1.8	10.1
79	23	1.4	1.4	11.5
80	30	1.8	1.8	13.3
81	42	2.5	2.5	15.7
82	35	2.1	2.1	17.8
83	36	2.1	2.1	20.0
84	51	3.0	3.0	23.0
85	48	2.8	2.8	25.8
86	72	4.3	4.3	30.1
87	55	3.3	3.3	33.3
88	48	2.8	2.8	36.2
89	52	3.1	3.1	39.3
90	53	3.1	3.1	42.4
91	54	3.2	3.2	45.6
92	59	3.5	3.5	49.1
93	47	2.8	2.8	51.9
94	52	3.1	3.1	54.9
95	62	3.7	3.7	58.6
96	49	2.9	2.9	61.5
97	52	3.1	3.1	64.6
98	47	2.8	2.8	67.4
99	39	2.3	2.3	69.7
100	45	2.7	2.7	72.4
101	40	2.4	2.4	74.7
102	31	1.8	1.8	76.6
103	45	2.7	2.7	79.2
104	35	2.1	2.1	81.3
105	22	1.3	1.3	82.6
106	43	2.5	2.5	85.1
107	17	1.0	1.0	86.1
108	30	1.8	1.8	87.9
109	22	1.3	1.3	89.2
110	17	1.0	1.0	90.2
111	18	1.1	1.1	91.3
112	10	.6	.6	91.9
113	19	1.1	1.1	93.0
114	11	.7	.7	93.7
115	20	1.2	1.2	94.8
116	7	.4	.4	95.3
117	9	.5	.5	95.8
118	6	.4	.4	96.2
119	7	.4	.4	96.6
120	10	.6	.6	97.2
121	8	.5	.5	97.6
122	5	.3	.3	97.9
123	5	.3	.3	98.2
124	4	.2	.2	98.5
125	2	.1	.1	98.6
126	1	.1	.1	98.6
127	6	.4	.4	99.0
128	2	.1	.1	99.1
129	5	.3	.3	99.4
130	2	.1	.1	99.5
131	1	.1	.1	99.6
132	1	.1	.1	99.6
133	3	.2	.2	99.8
134	2	.1	.1	99.9
135	1	.1	.1	100.0
Total	1689	100.0	100.0	

Table J36: Frequencies for Group 10 Output Measure (Best 5 GCSE passes)

Best 5 GCSE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	.1	.1	.1
	2	3	.2	.2	.3
	3	5	.3	.3	.6
	4	6	.4	.4	.9
	5	4	.2	.2	1.2
	6	5	.3	.3	1.5
	7	13	.8	.8	2.2
	8	17	1.0	1.0	3.3
	9	10	.6	.6	3.8
	10	13	.8	.8	4.6
	11	28	1.7	1.7	6.3
	12	29	1.7	1.7	8.0
	13	37	2.2	2.2	10.2
	14	34	2.0	2.0	12.2
	15	36	2.1	2.1	14.3
	16	51	3.0	3.0	17.3
	17	53	3.1	3.1	20.5
	18	56	3.3	3.3	23.8
	19	44	2.6	2.6	26.4
	20	66	3.9	3.9	30.3
	21	84	5.0	5.0	35.3
	22	76	4.5	4.5	39.8
	23	99	5.9	5.9	45.6
	24	83	4.9	4.9	50.6
	25	111	6.6	6.6	57.1
	26	118	7.0	7.0	64.1
	27	77	4.6	4.6	68.7
	28	71	4.2	4.2	72.9
	29	73	4.3	4.3	77.2
	30	63	3.7	3.7	80.9
	31	67	4.0	4.0	84.9
	32	56	3.3	3.3	88.2
	33	51	3.0	3.0	91.2
	34	36	2.1	2.1	93.4
	35	32	1.9	1.9	95.3
	36	20	1.2	1.2	96.4
	37	27	1.6	1.6	98.0
	38	12	.7	.7	98.8
	39	8	.5	.5	99.2
	40	13	.8	.8	100.0
Total		1689	100.0	100.0	

Appendix K: EXAMINING THE RESIDUALS

Standardised Level 1 Residuals by Normal Equivalent Scores
Standardised Level 2 Residuals by Normal Equivalent Scores
Standardised Level 1 Residuals by Predicted Values
Standardised Level 2 Residuals by Predicted Values
for All Group 1 Models and Model 1 for all Groups

MODEL 1.1

Figure K1: Standardised level 1 residuals by normal equivalent scores for Model 1.1

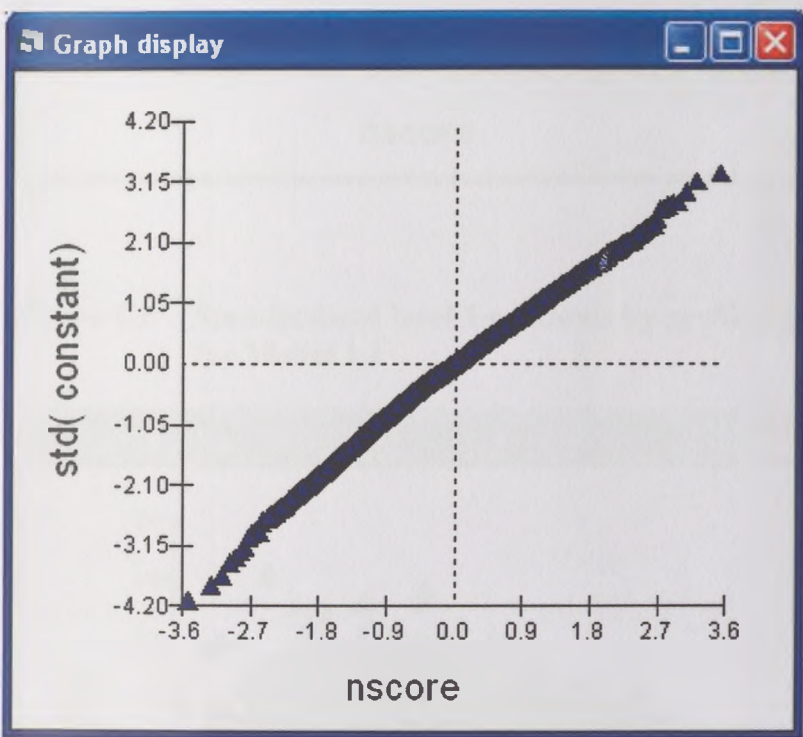


Figure K2: Standardised level 2 residuals by normal equivalent scores for Model 1.1

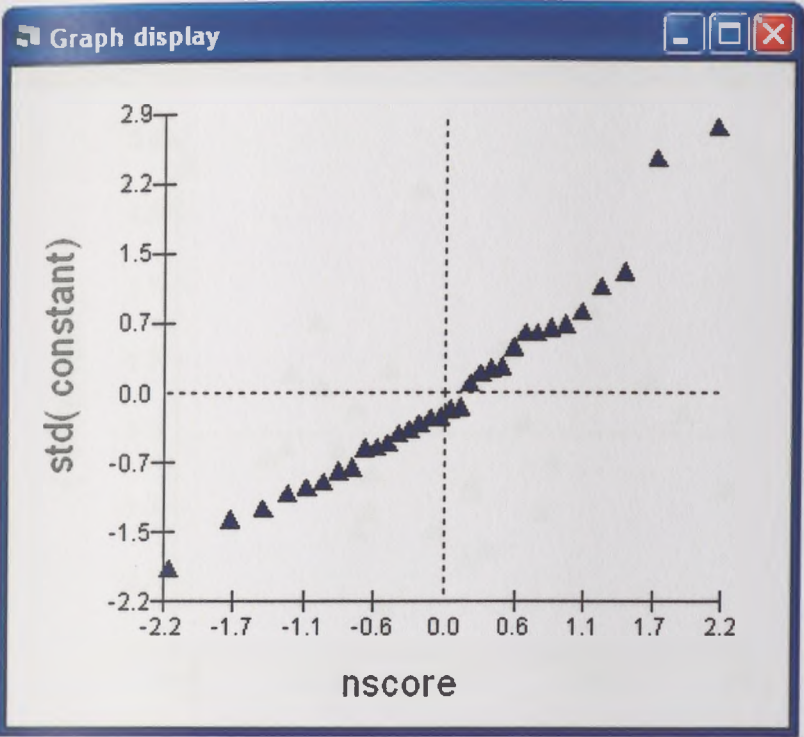


Figure K3: Standardised level 1 residuals by predicted values for Model 1.1

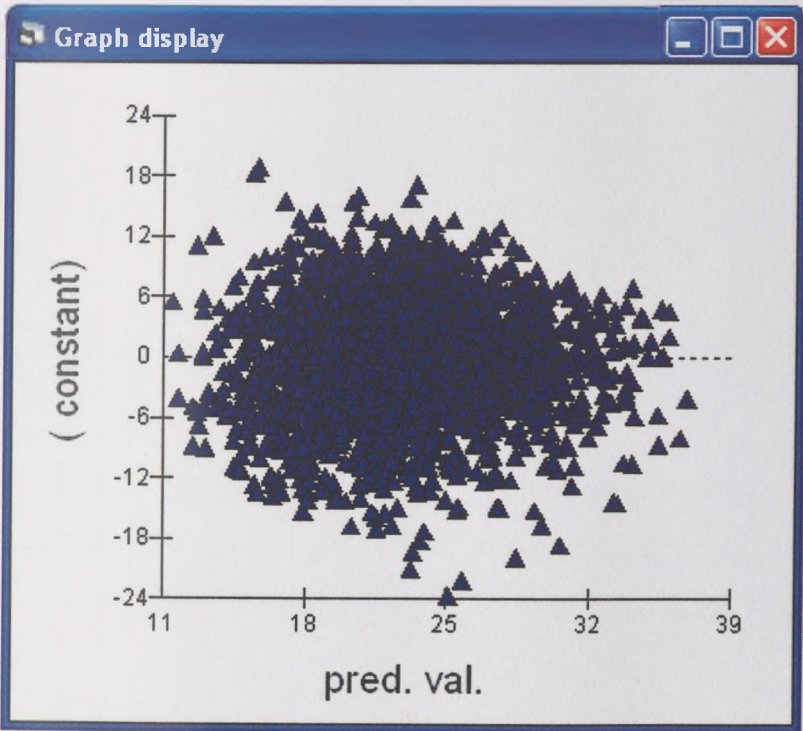
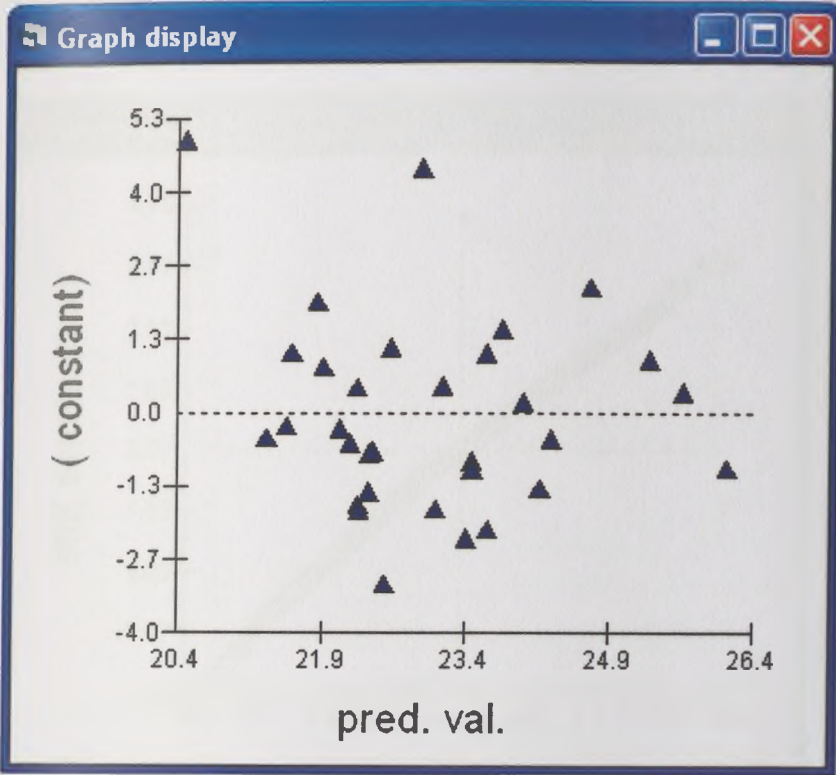


Figure K4: Standardised level 2 residuals by predicted values for Model 1.1



MODEL 1.2(10)

Figure K5: Standardised level 1 residuals by normal equivalent scores for Model 1.2(10)

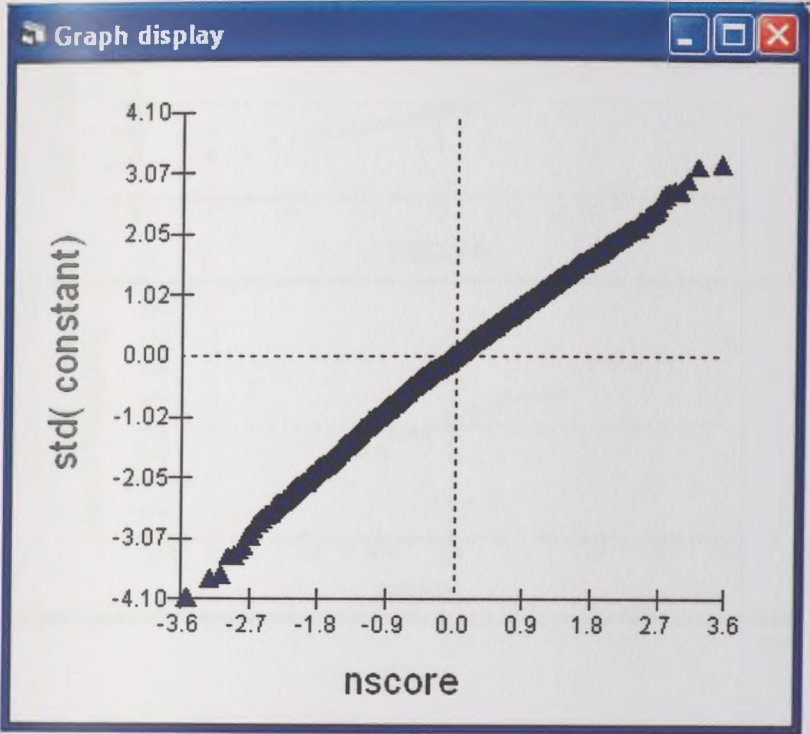


Figure K6: Standardised level 2 residuals by normal equivalent scores for Model 1.2(10)

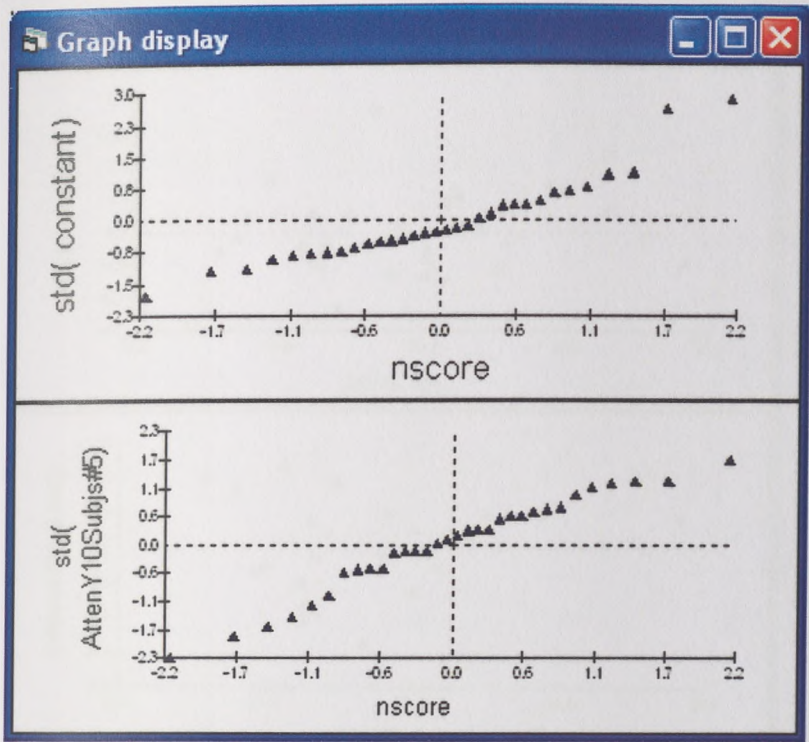


Figure K7: Standardised level 1 residuals by predicted values for Model 1.2(10)

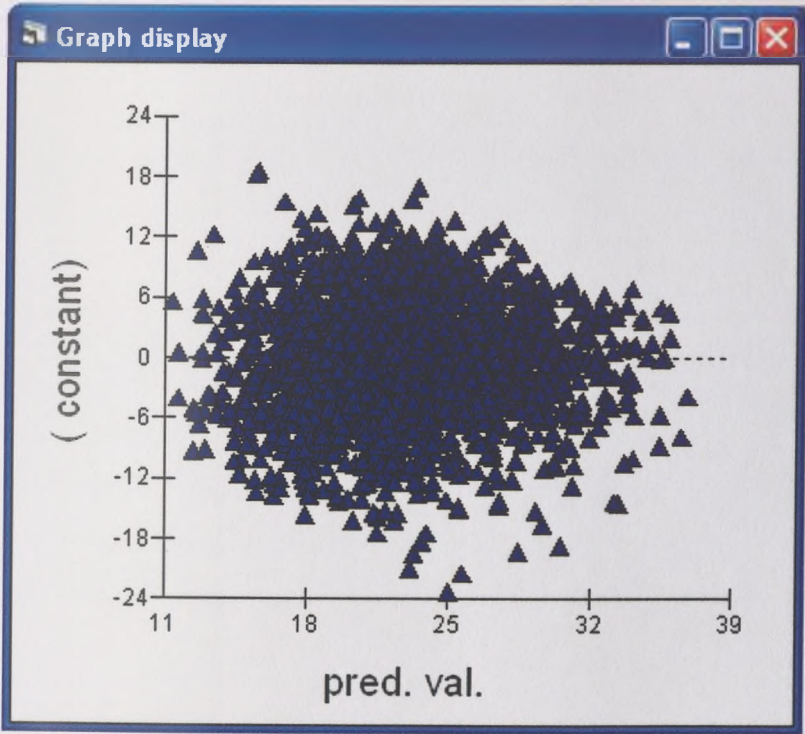
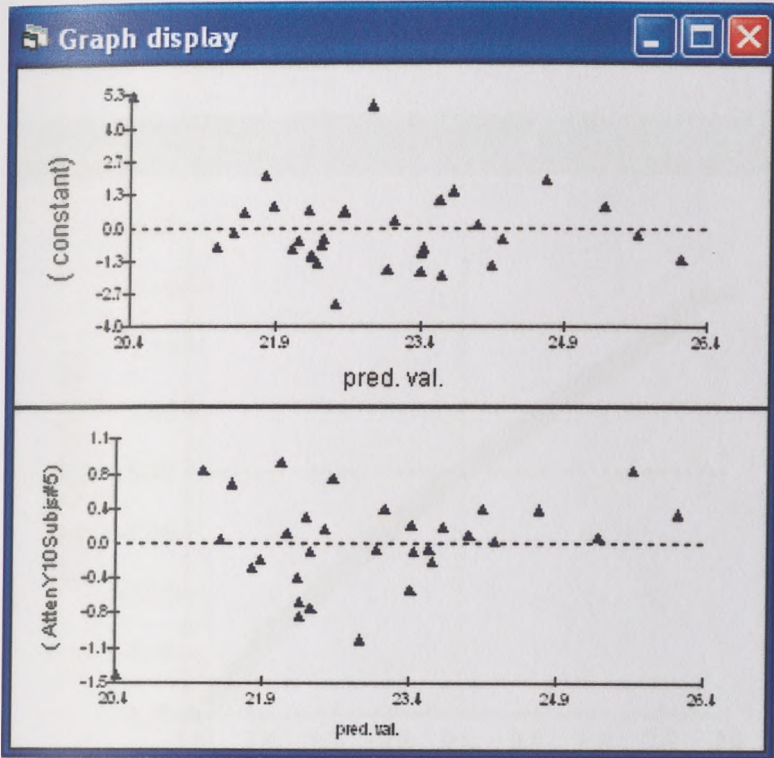


Figure K8: Standardised level 2 residuals by predicted values for Model 1.2(10)



MODEL 1.2(11)

Figure K9: Standardised level 1 residuals by normal equivalent scores for Model 1.2(11)

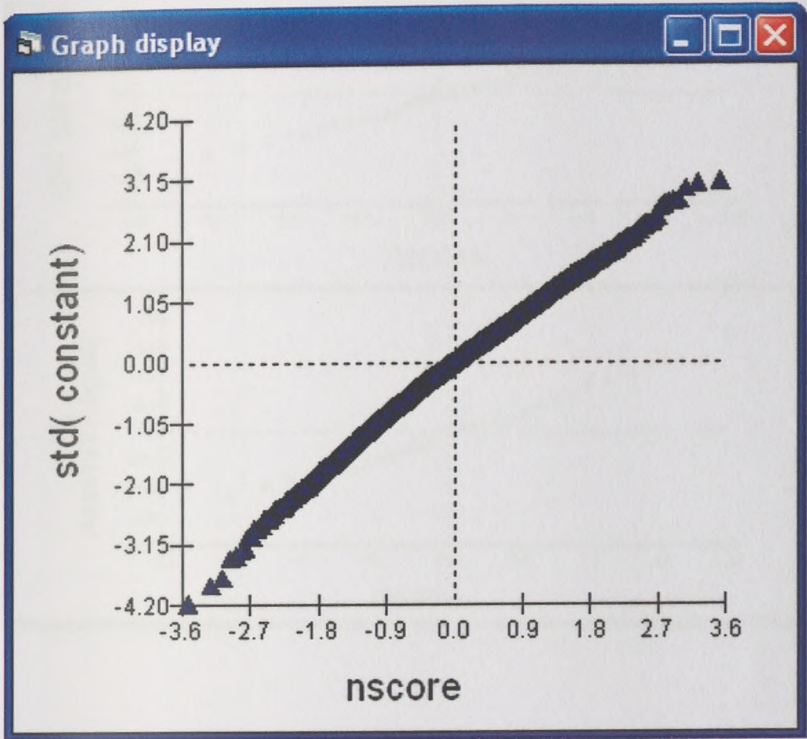


Figure K10: Standardised level 2 residuals by normal equivalent scores for Model 1.2(11)

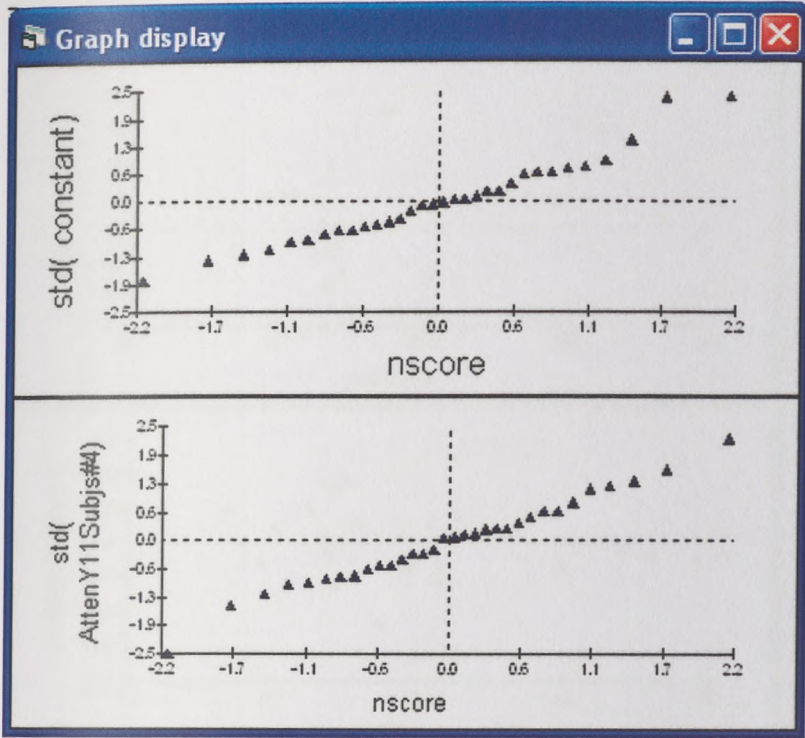


Figure K11: Standardised level 1 residuals by predicted values for Model 1.2(11)

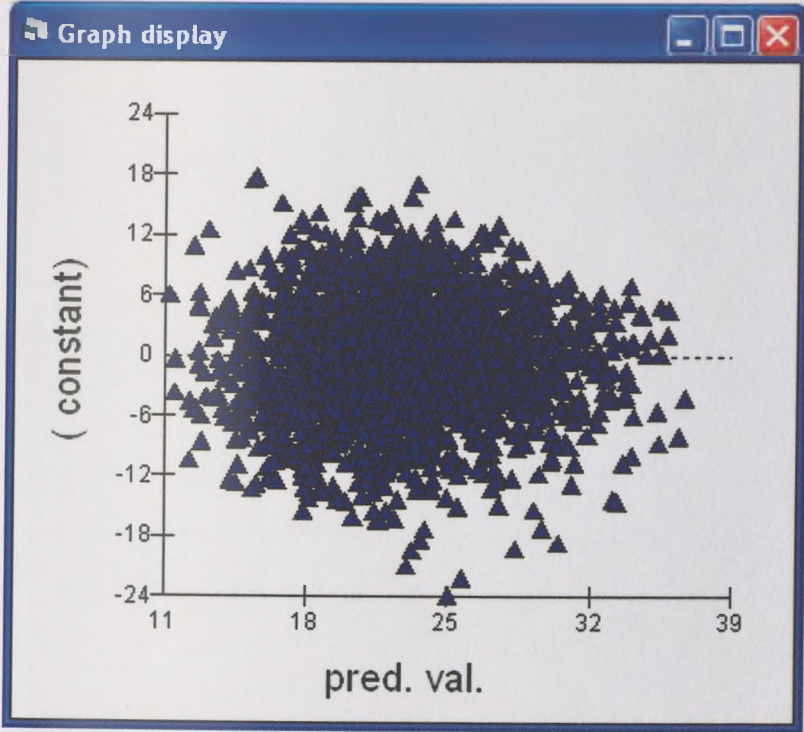
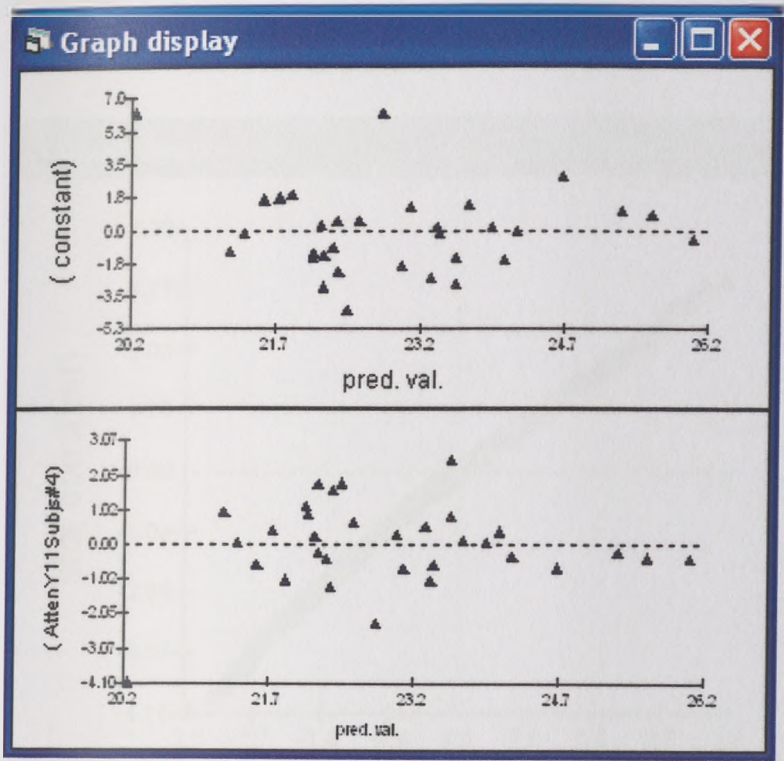


Figure K12: Standardised level 2 residuals by predicted values for Model 1.2(11)



MODEL 1.3(10)

Figure K13: Standardised level 1 residuals by normal equivalent scores for Model 1.3(10)

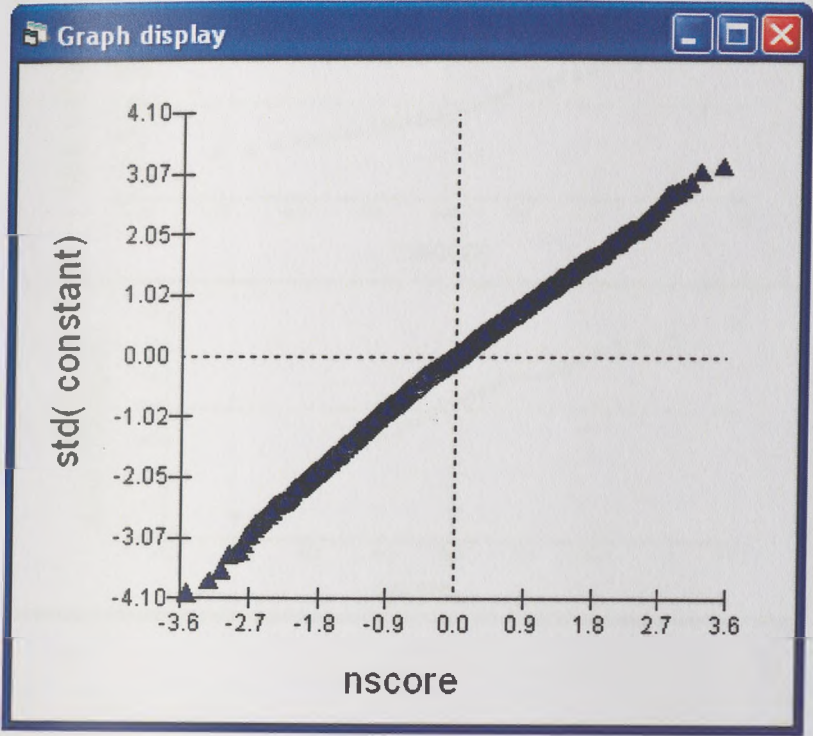


Figure K14: Standardised level 2 residuals by normal equivalent scores for Model 1.3(10)

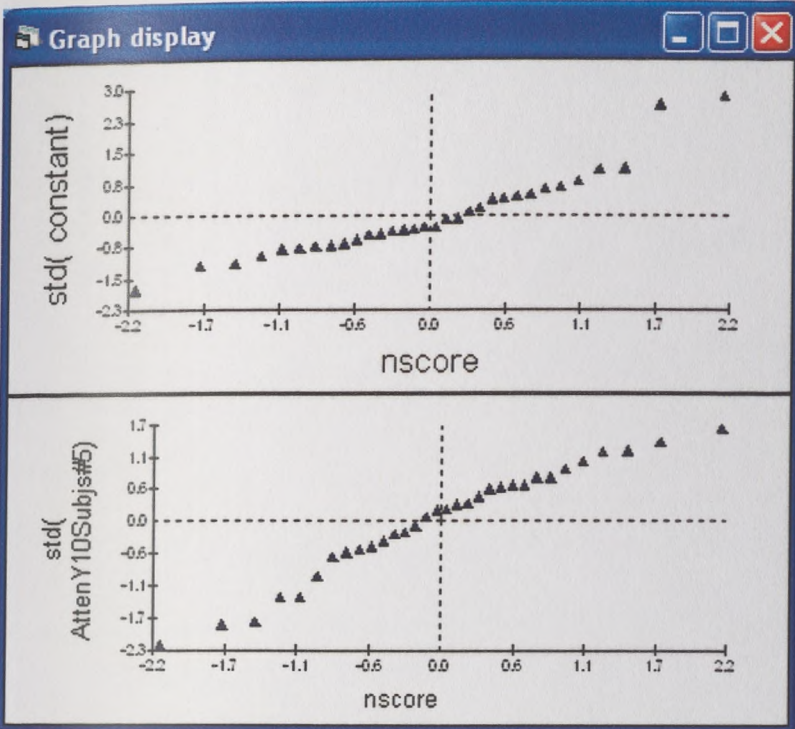


Figure K15: Standardised level 1 residuals by predicted values for Model 1.3(10)

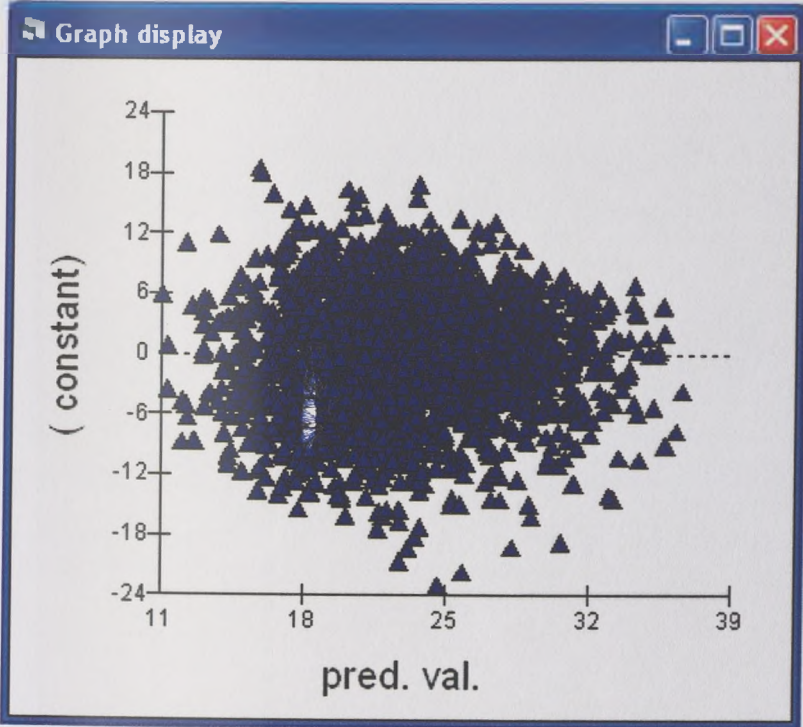
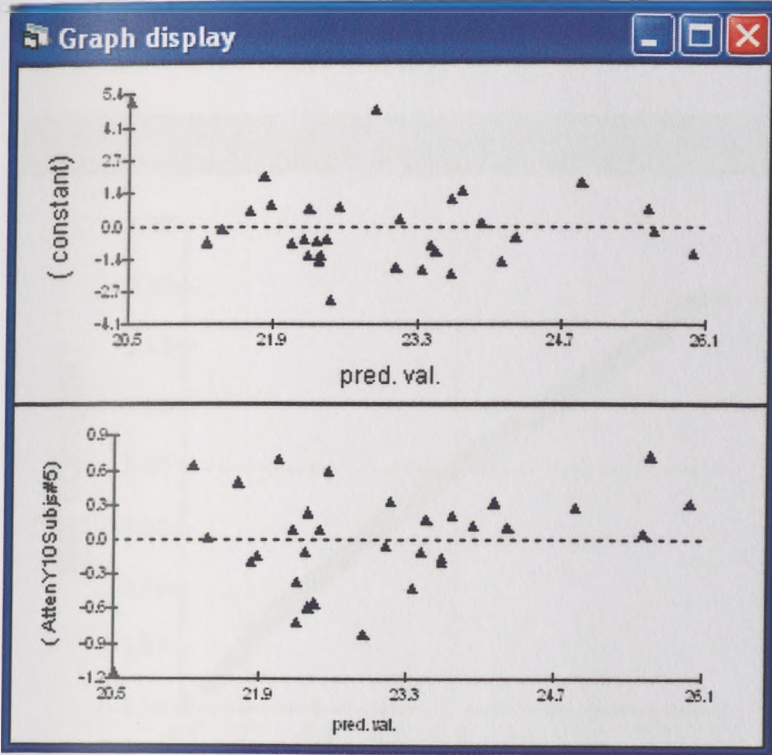


Figure K16: Standardised level 2 residuals by predicted values for Model 1.3(10)



MODEL 1.3(11)

Figure K17: Standardised level 1 residuals by normal equivalent scores for Model 1.3(11)

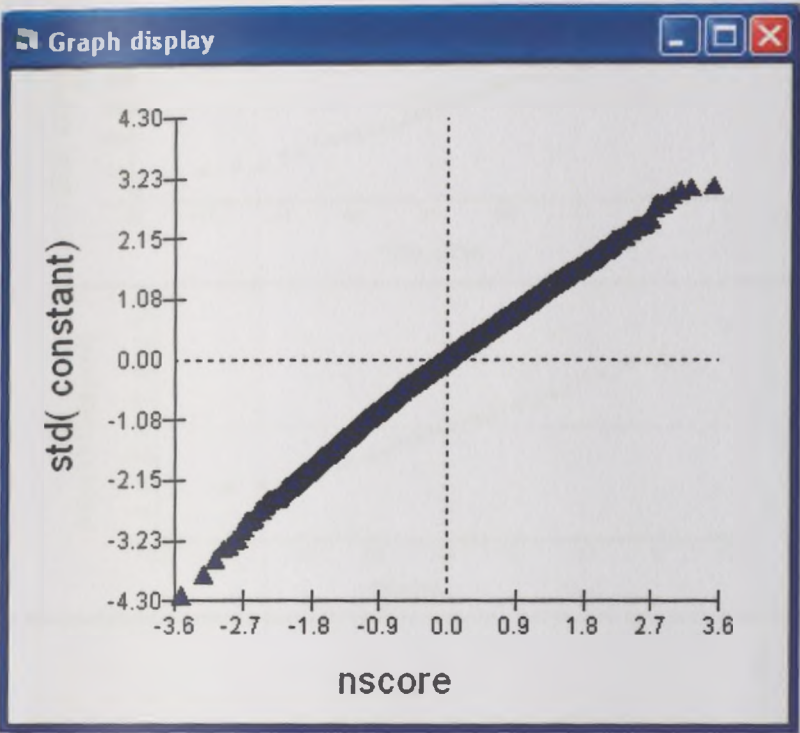


Figure K18: Standardised level 2 residuals by normal equivalent scores for Model 1.3(11)

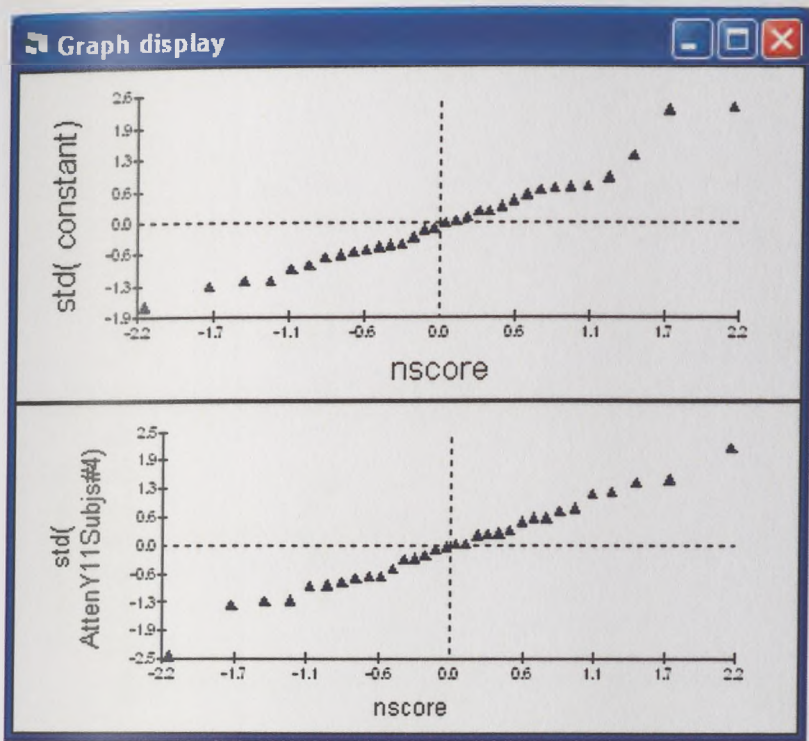


Figure K19: Standardised level 1 residuals by predicted values for Model 1.3(11)

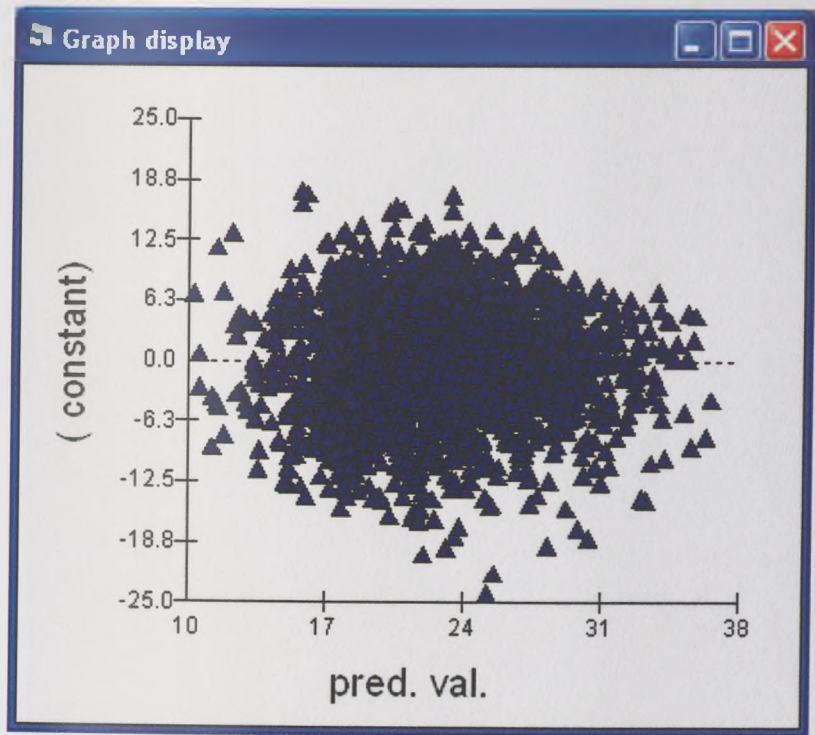
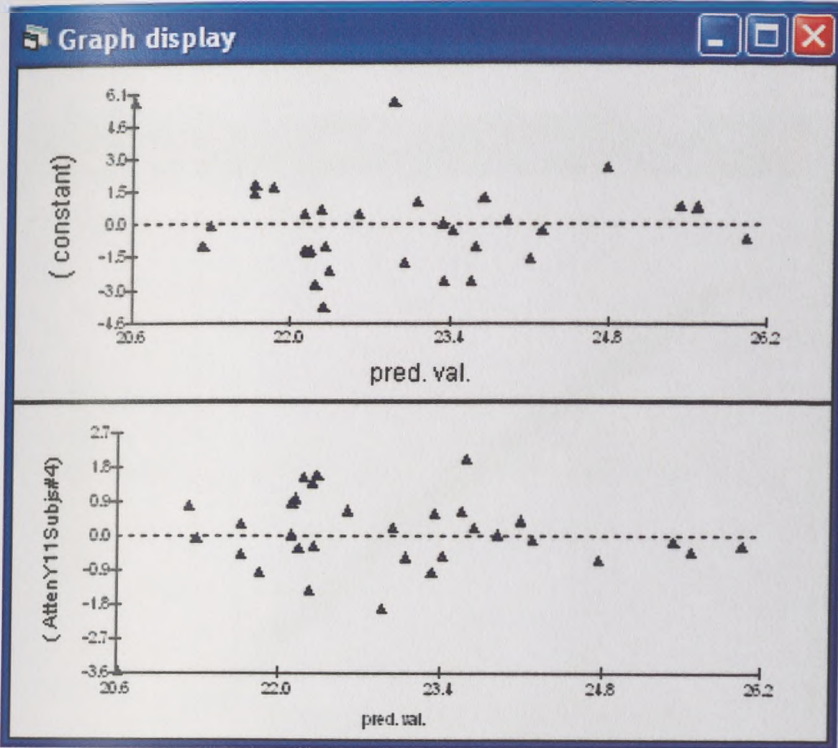


Figure K20: Standardised level 2 residuals by predicted values for Model 1.3(11)



MODEL 1.3a(10)

Figure K21: Standardised level 1 residuals by normal equivalent scores for Model 1.3a(10)

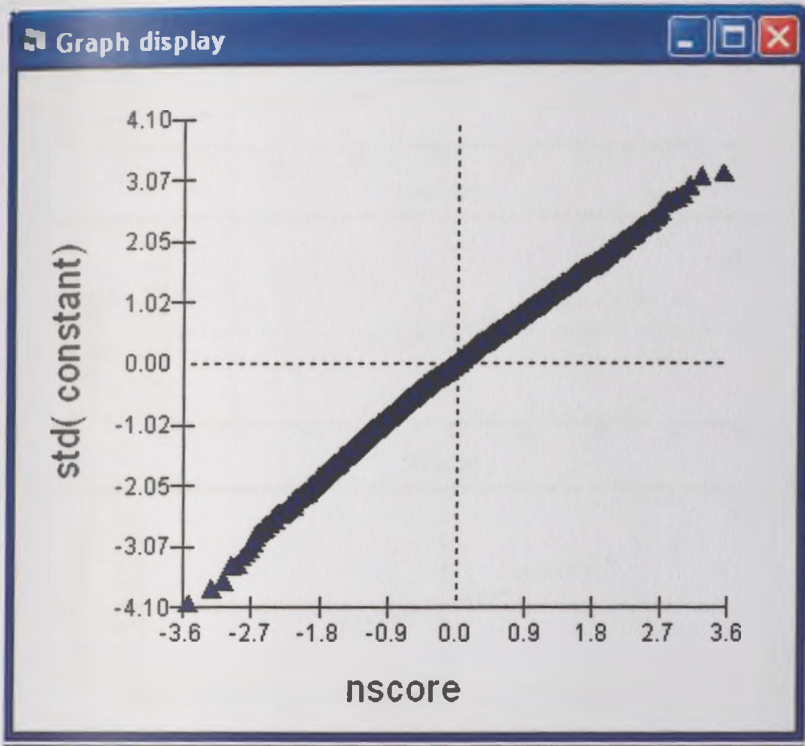


Figure K22: Standardised level 2 residuals by normal equivalent scores for Model 1.3a(10)

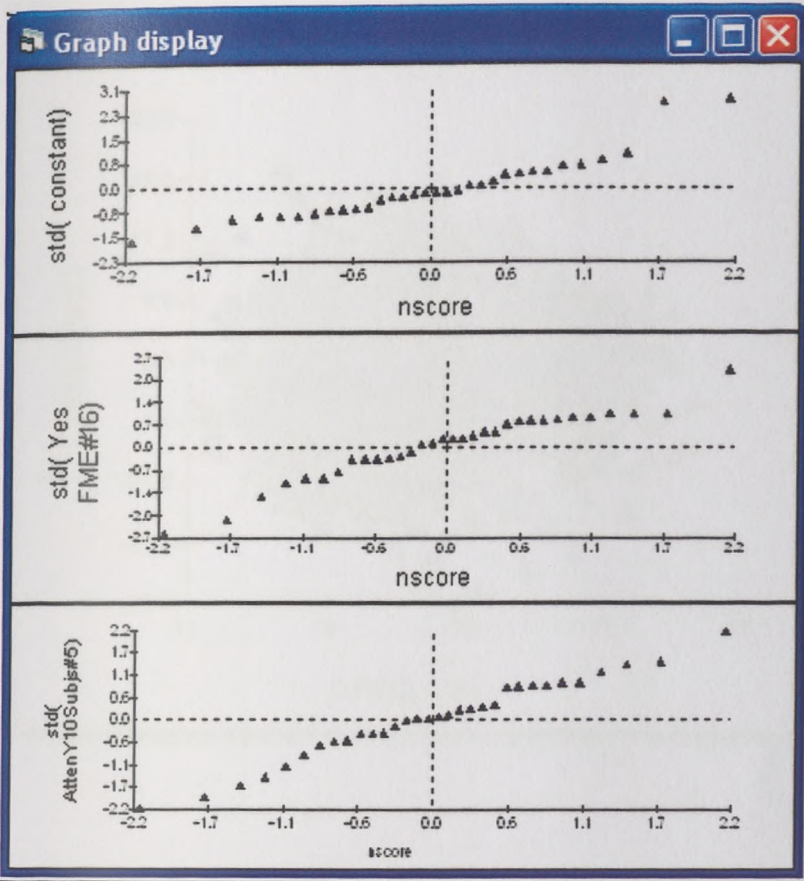


Figure K23: Standardised level 1 residuals by predicted values for Model 1.3a(10)

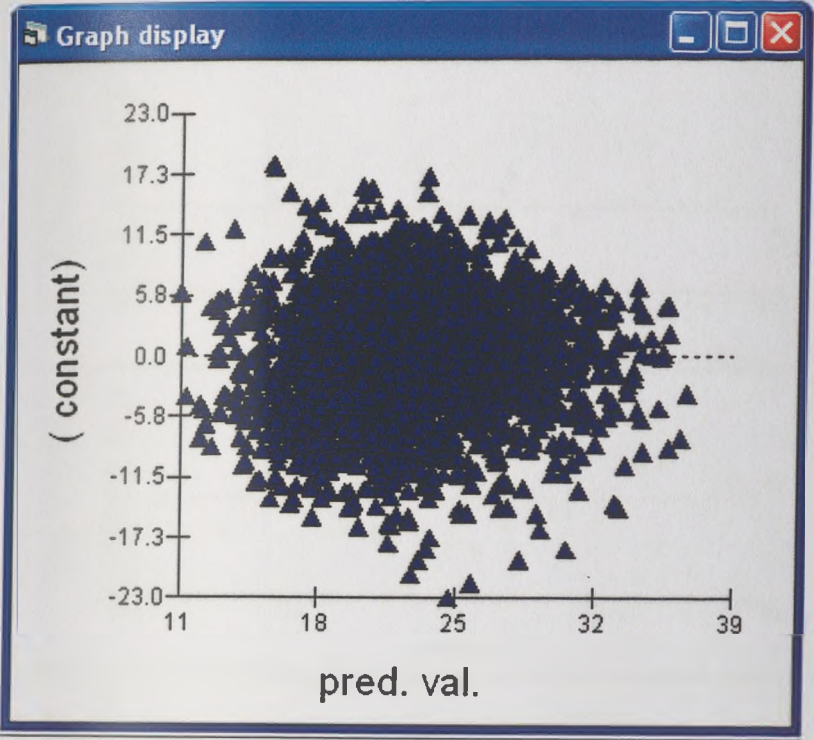


Figure K24: Standardised level 2 residuals by predicted values for Model 1.3a(10)

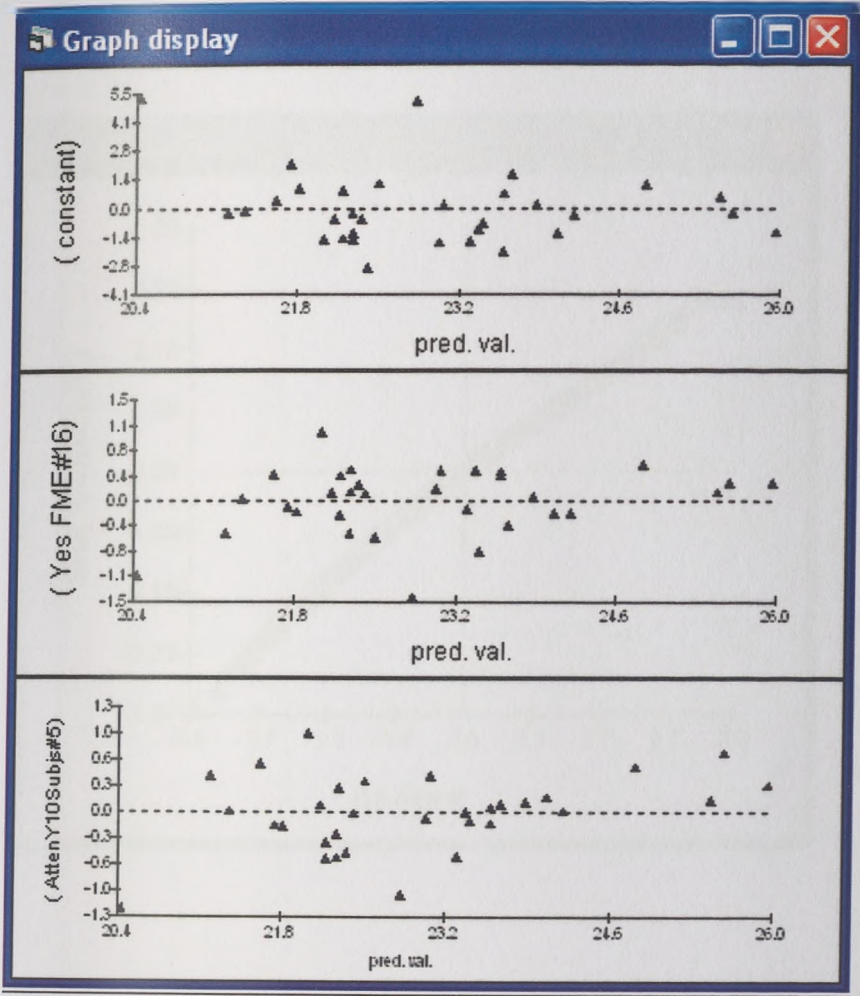


Figure K25: Standardised level 1 residuals by normal equivalent scores for Model 1.3a(11)

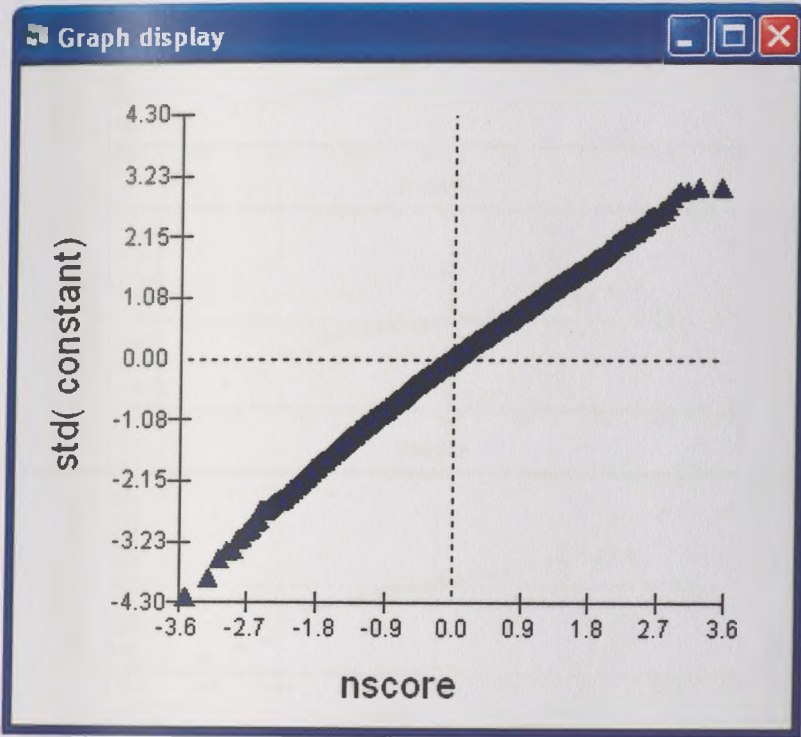


Figure K26: Standardised level 2 residuals by normal equivalent scores for Model 1.3a(11)

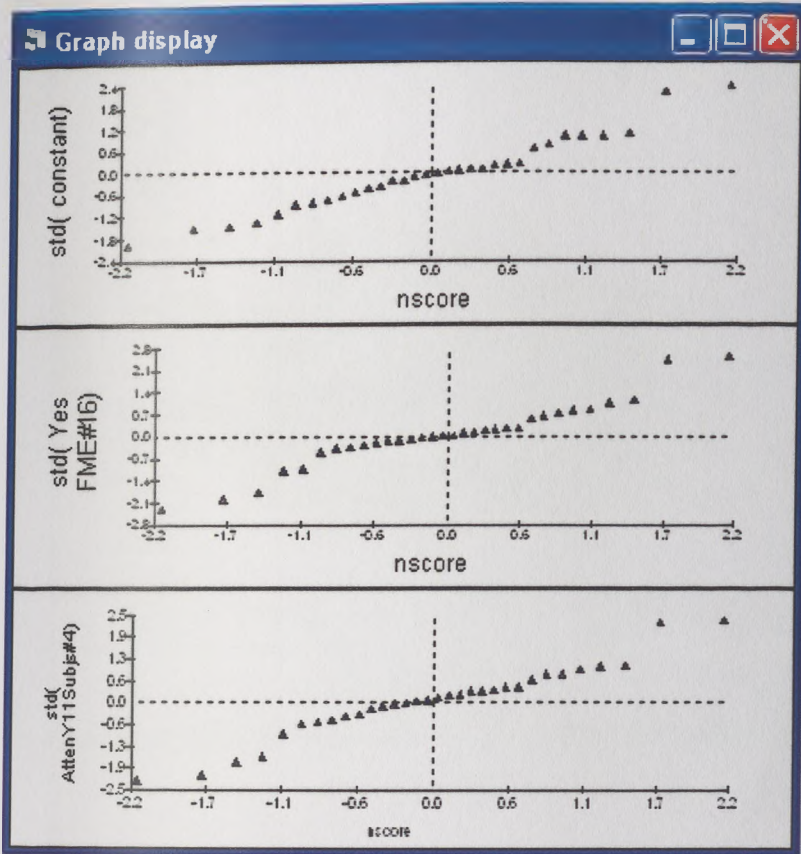


Figure K27: Standardised level 1 residuals by predicted values for Model 1.3a(11)

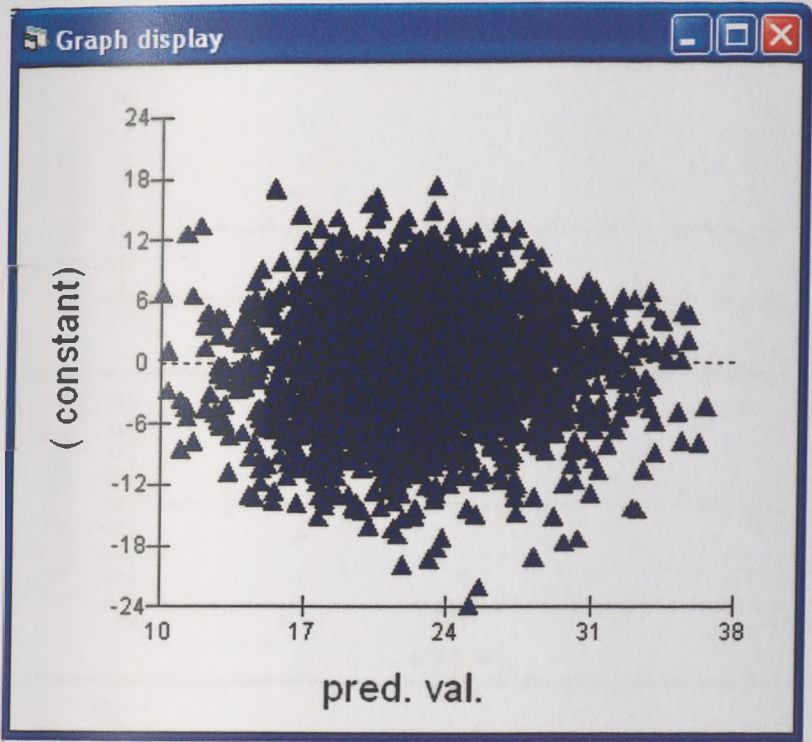
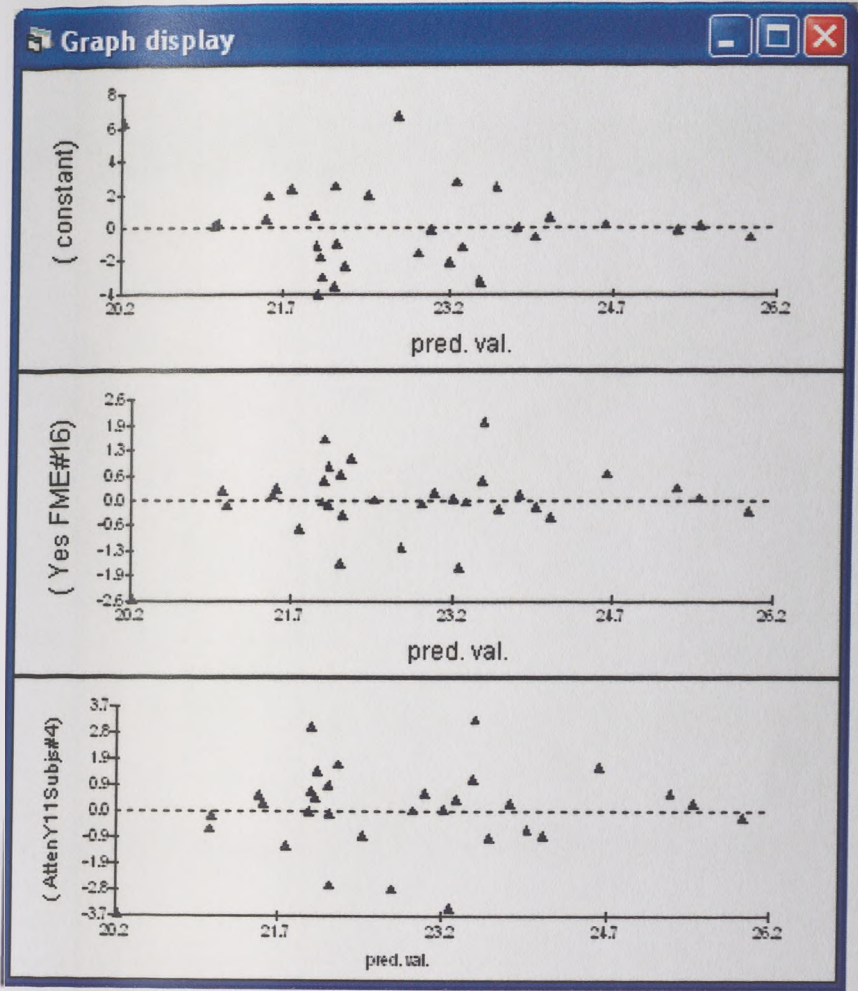


Figure K28: Standardised level 2 residuals by predicted values for Model 1.3a(11)



MODEL 1.4(10)

Figure K29: Standardised level 1 residuals by normal equivalent scores for Model 1.4(10)

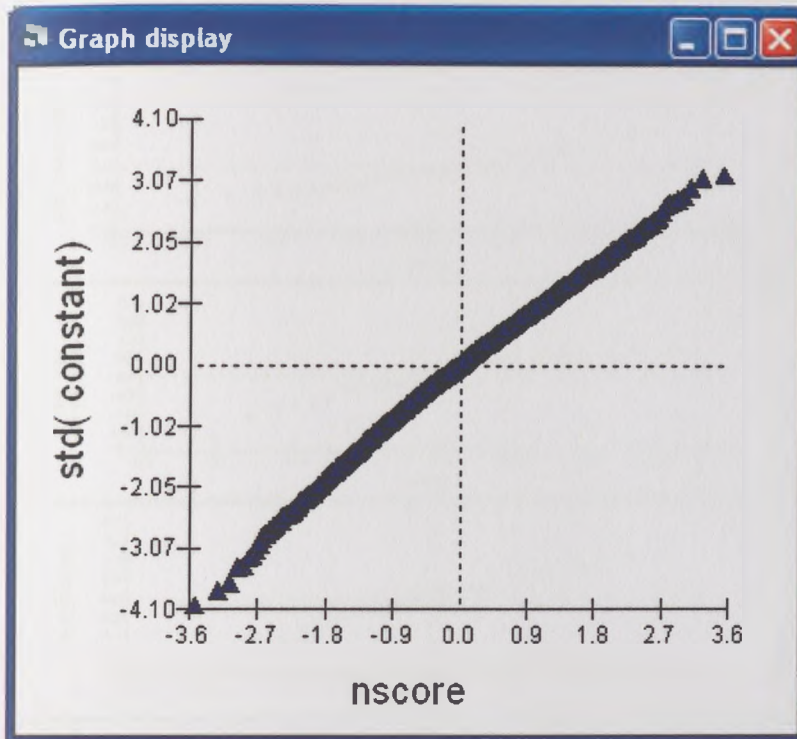
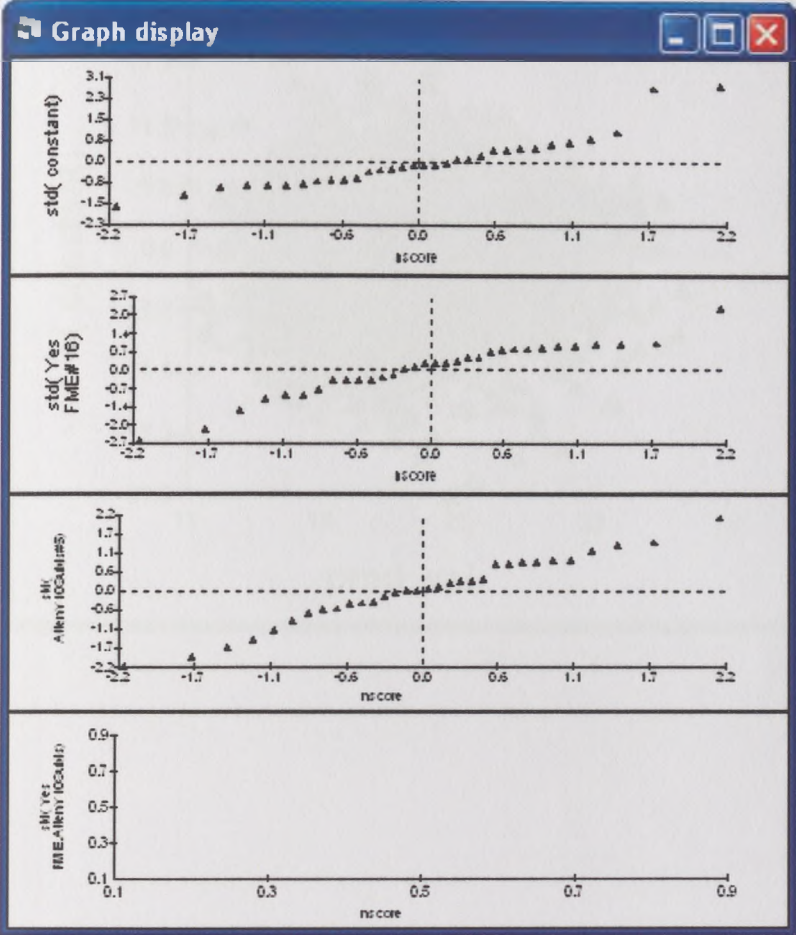


Figure K30: Standardised level 2 residuals by normal equivalent scores for Model 1.4(10)

Error: Not enough data(NSCO)
Error: Not enough data(sum)



Y-axis: std(constant)

Y-axis: std(Yes FME)

Y-axis: std
(AttenY10Subjects)

Y-axis: std(YesFME*
AttenY10Subject)

Figure K31: Standardised level 1 residuals by predicted values for Model 1.4(10)

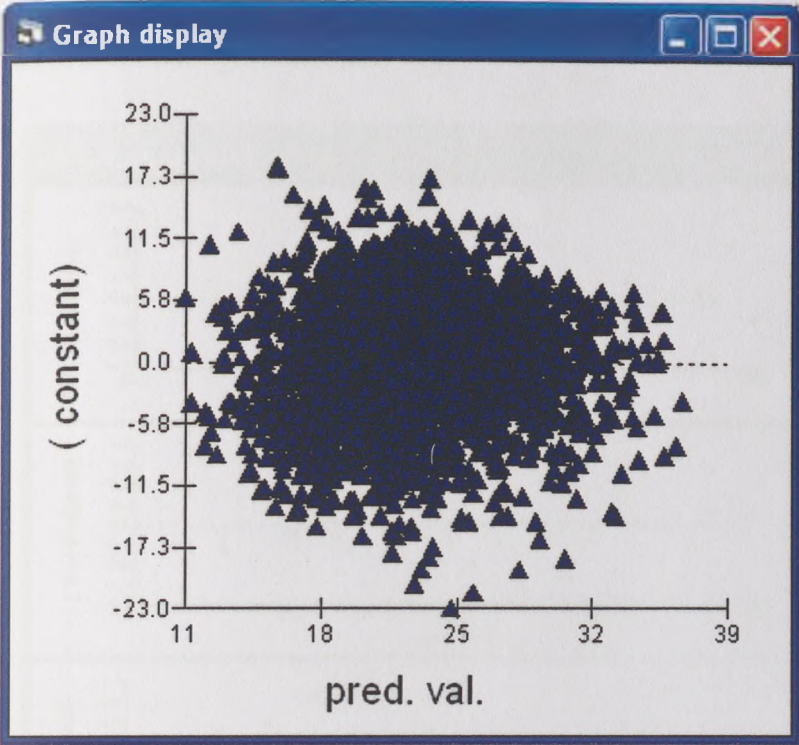
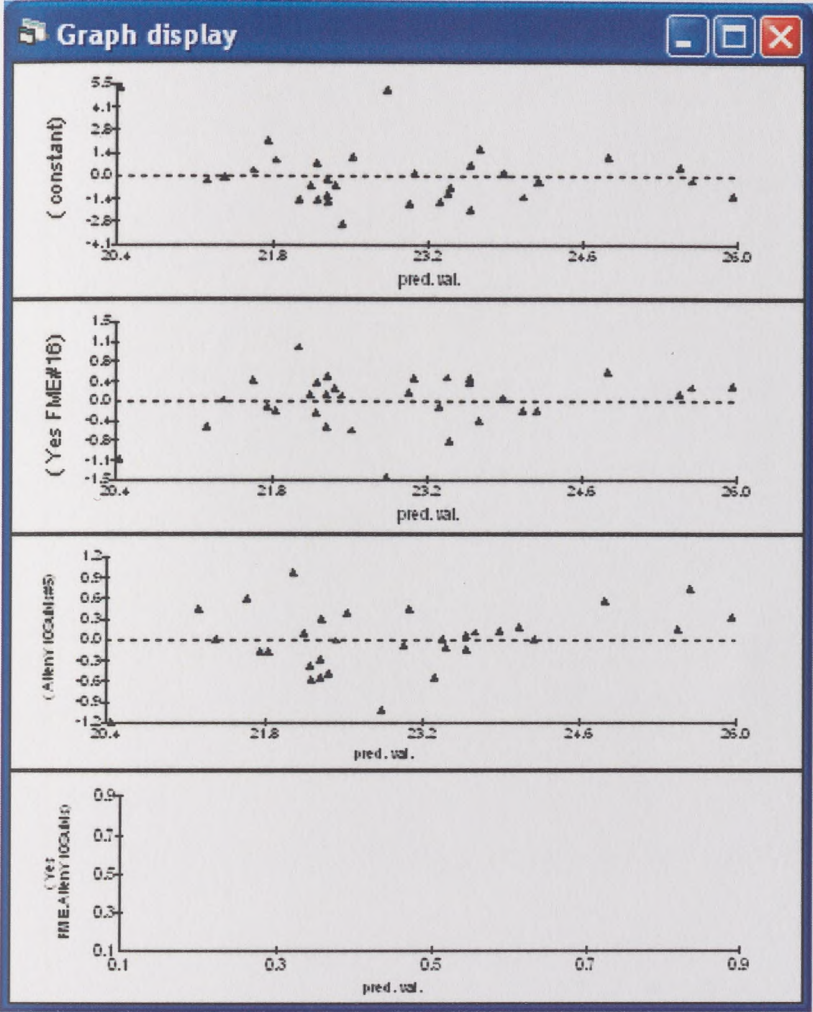


Figure K32: Standardised level 2 residuals by predicted values for Model 1.4(10)

Error: Not enough data(NSCO)
Error: Not enough data(sum)



Y-axis: std (constant)

Y-axis: std (Yes FME)

Y-axis: std
(AttenY10Subjects)

Y-axis: std (YesFME*
AttenY10Subject)

MODEL 1.4(11)

Error: V gone –ve definite for block 0 iteration aborted(random pass) (moni)

This model would not run

MODEL 2.1

Figure K33: Standardised level 1 residuals by normal equivalent scores for Model 2.1

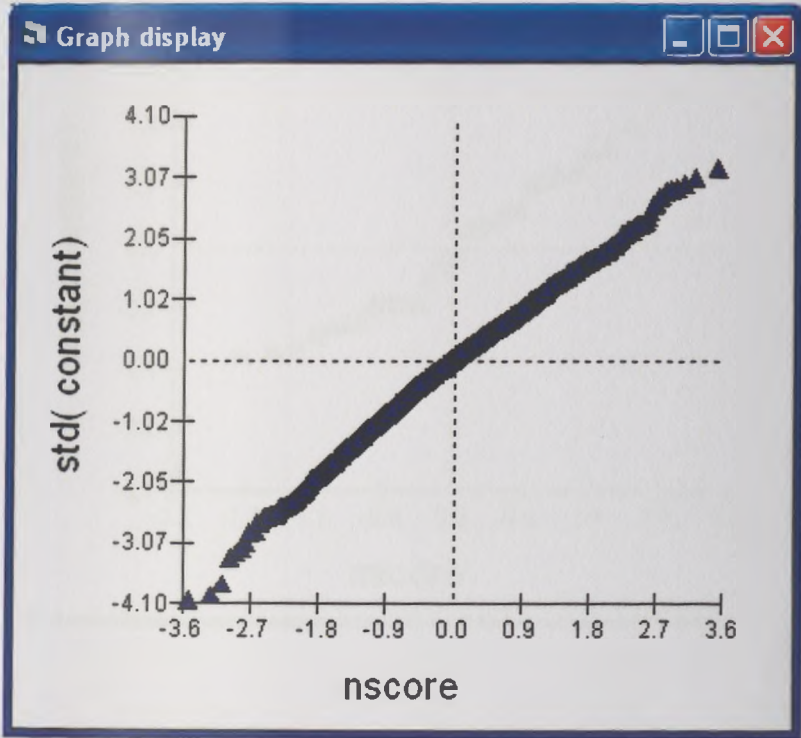


Figure K34: Standardised level 2 residuals by normal equivalent scores for Model 2.1

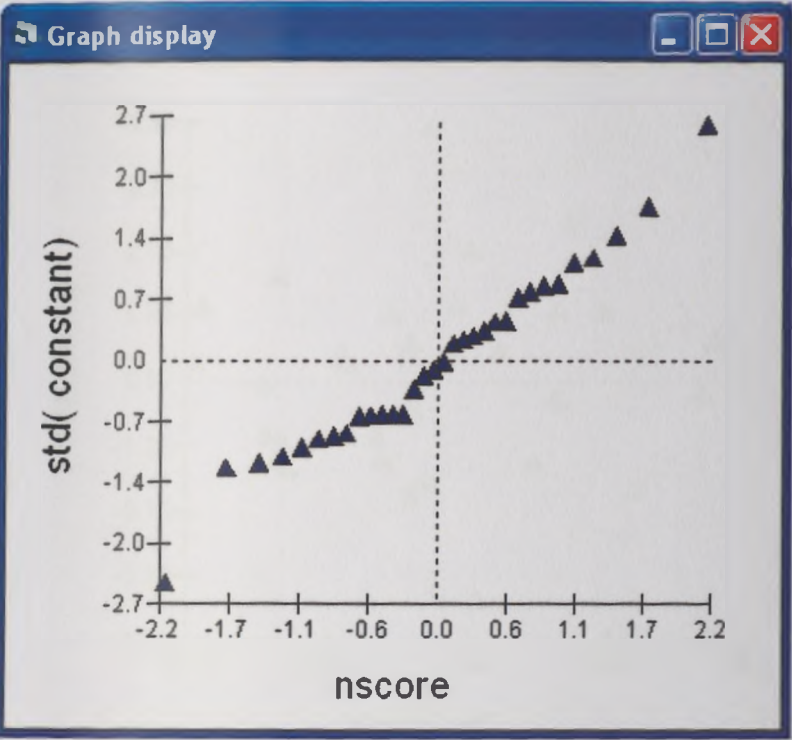


Figure K35: Standardised level 1 residuals by predicted values for Model 2.1

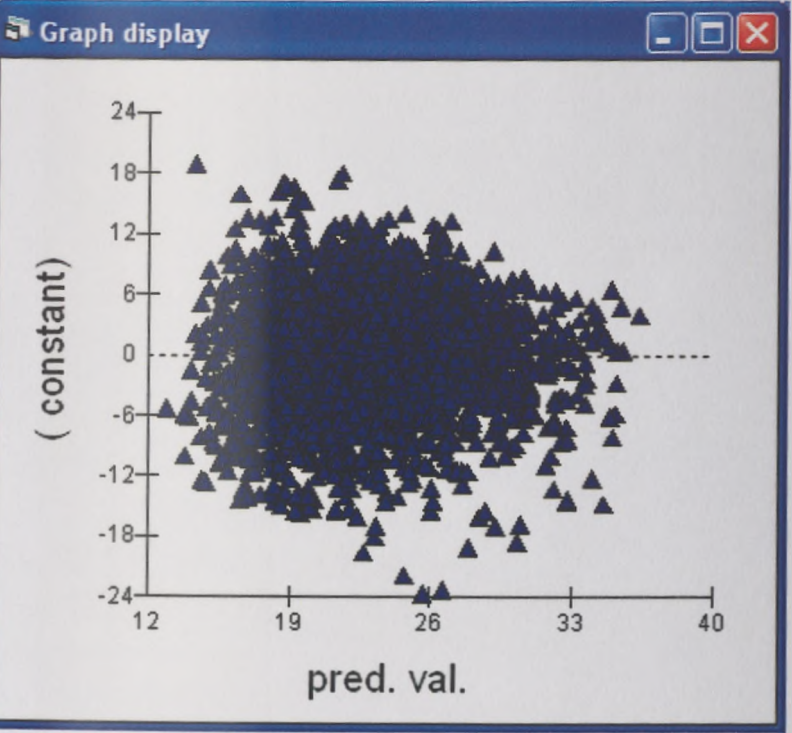
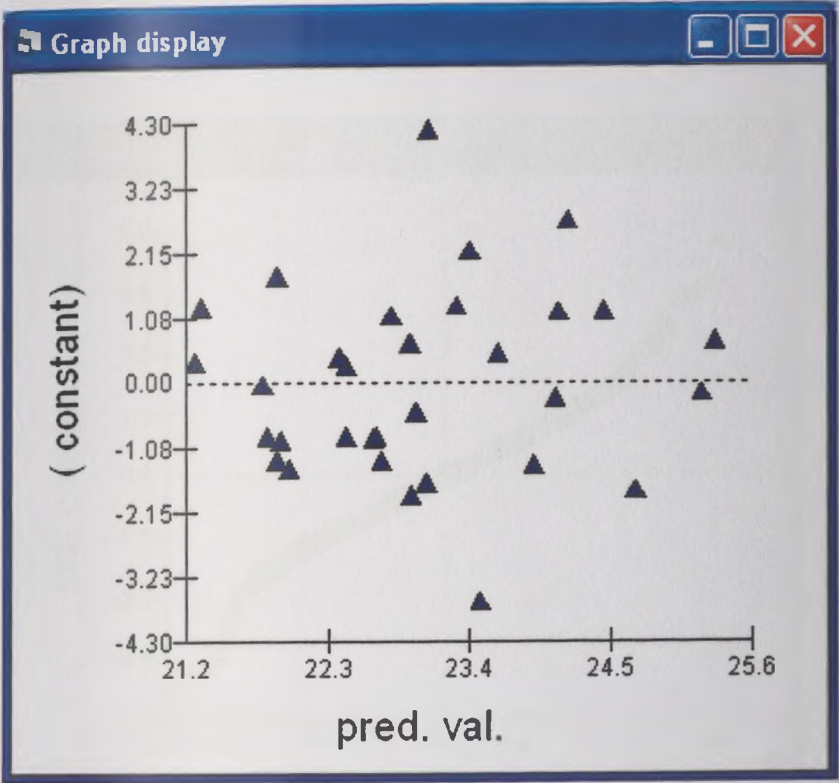


Figure K36: Standardised level 2 residuals by predicted values for Model 2.1



MODEL 3.1

Figure K37: Standardised level 1 residuals by normal equivalent scores for Model 3.1

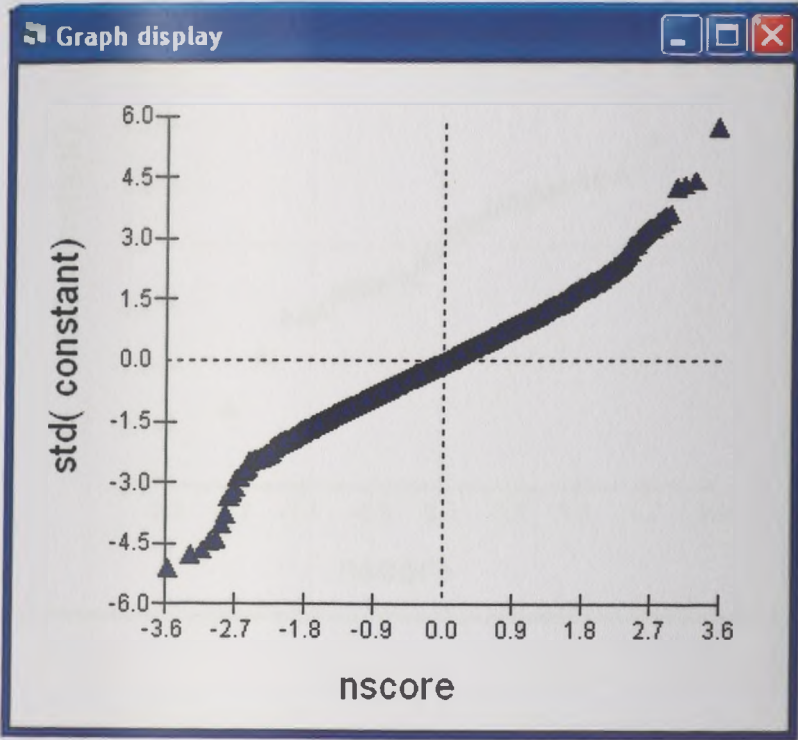


Figure K38: Standardised level 2 residuals by normal equivalent scores for Model 3.1

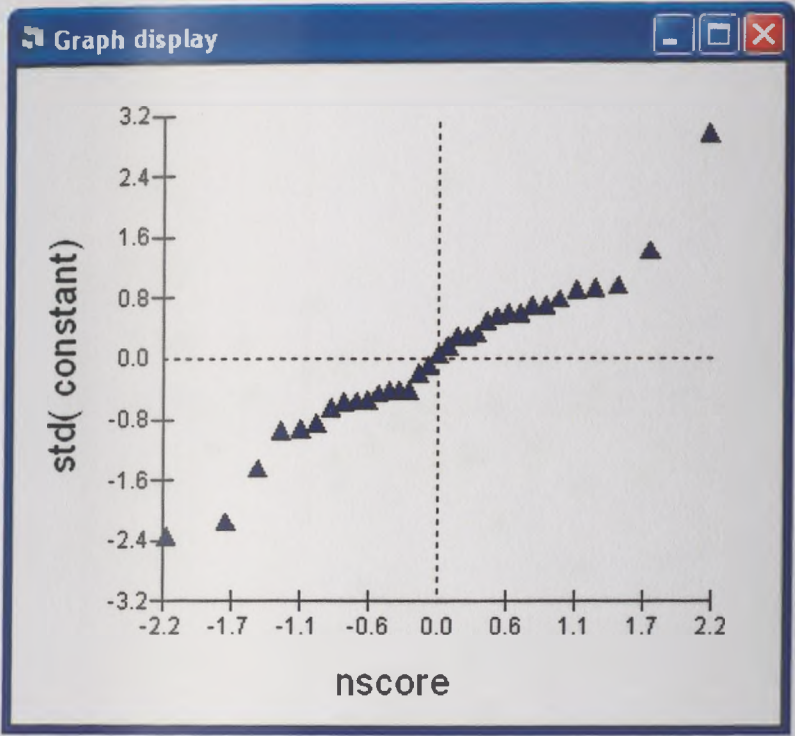


Figure K39: Standardised level 1 residuals by predicted values for Model 3.1

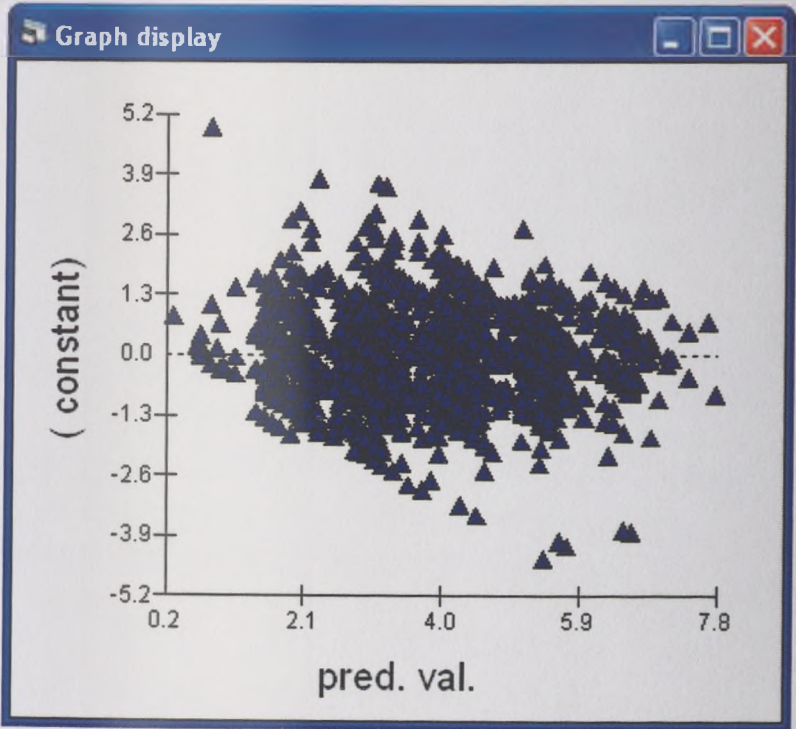
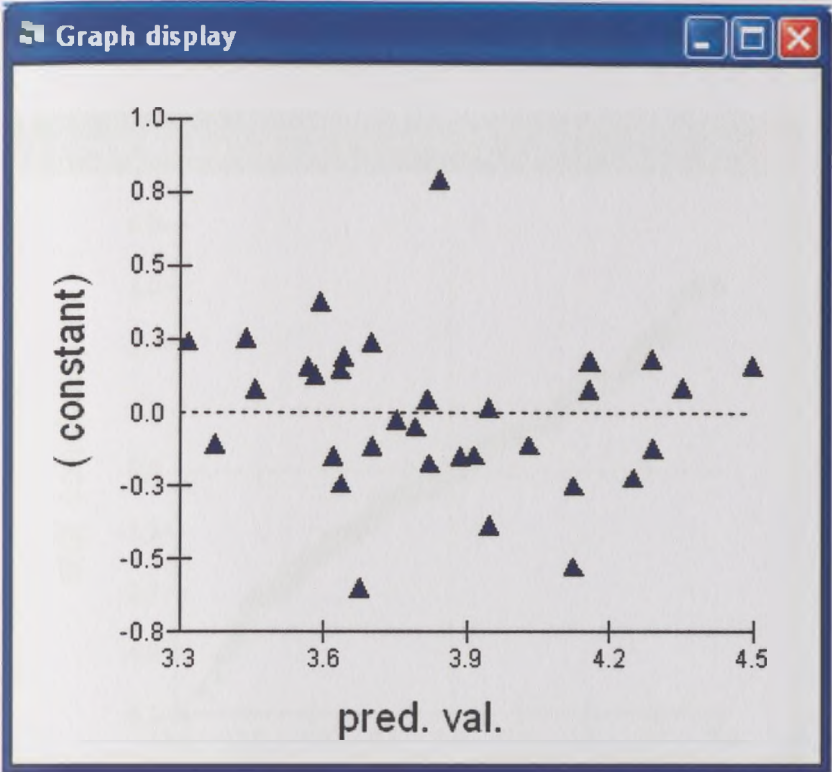


Figure K40: Standardised level 2 residuals by predicted values for Model 3.1



MODEL 4.1

Figure K41: Standardised level 1 residuals by normal equivalent scores for Model 4.1

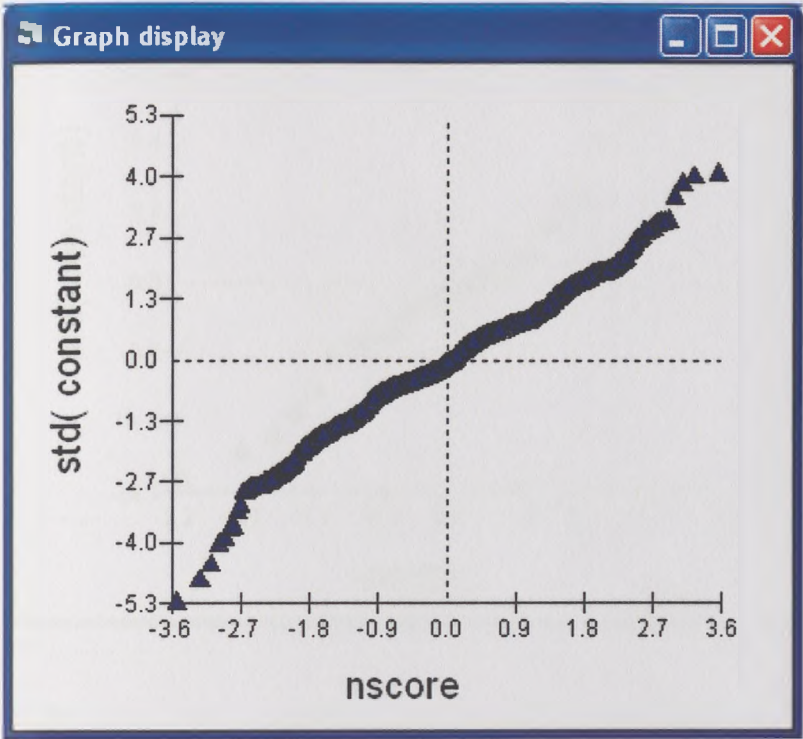


Figure K42: Standardised level 2 residuals by normal equivalent scores for Model 4.1

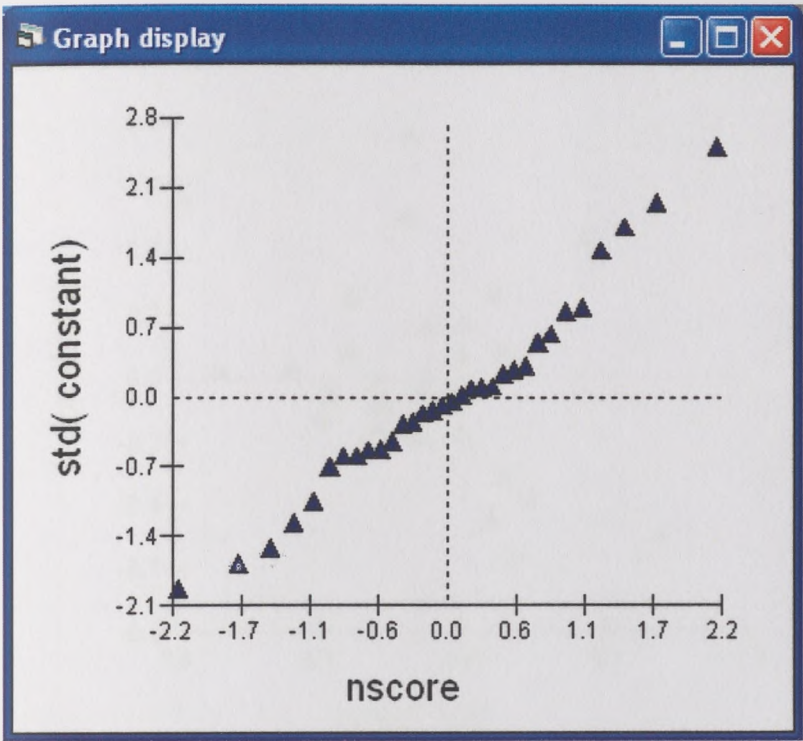


Figure K43: Standardised level 1 residuals by predicted values for Model 4.1

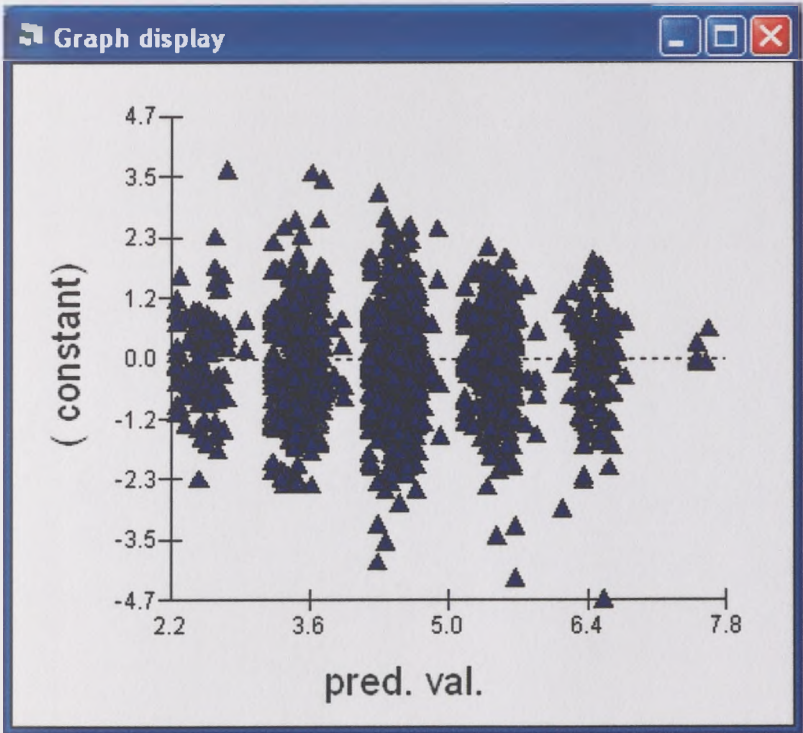
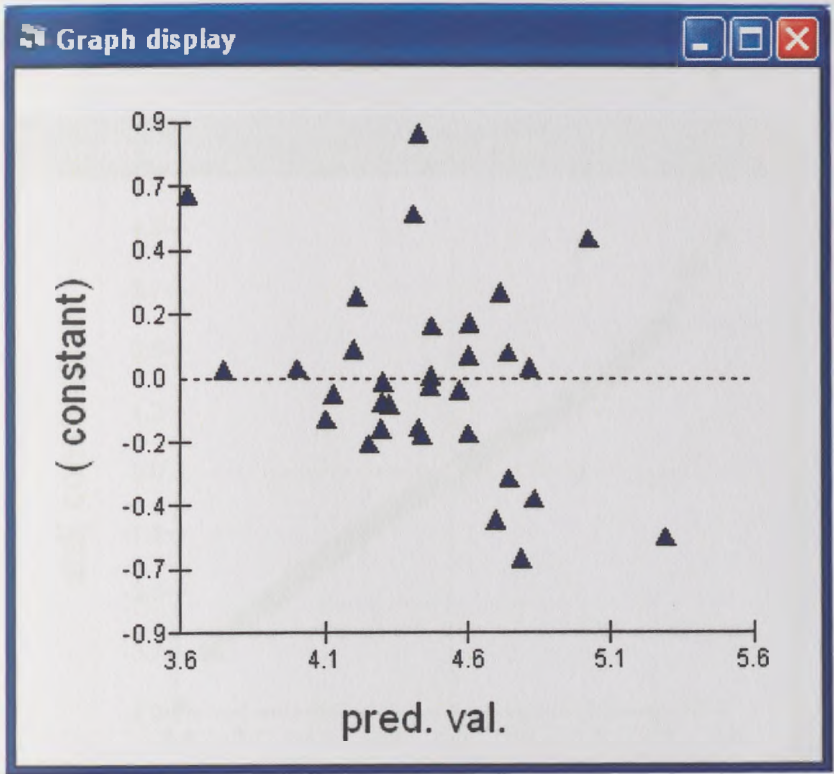


Figure K44: Standardised level 2 residuals by predicted values for Model 4.1



MODEL 5.1

Figure K45: Standardised level 1 residuals by normal equivalent scores for Model 5.1

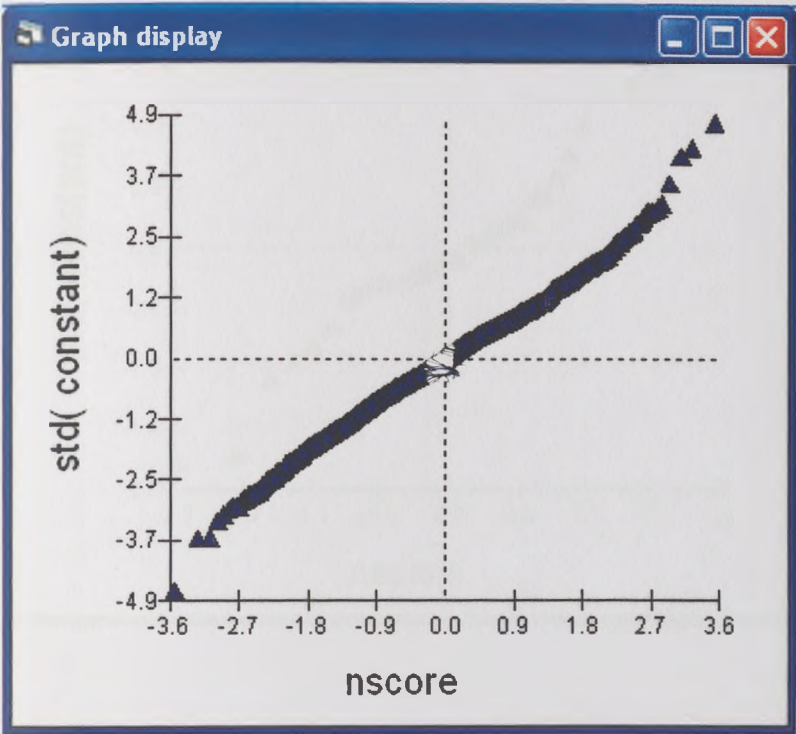


Figure K46: Standardised level 2 residuals by normal equivalent scores for Model 5.1

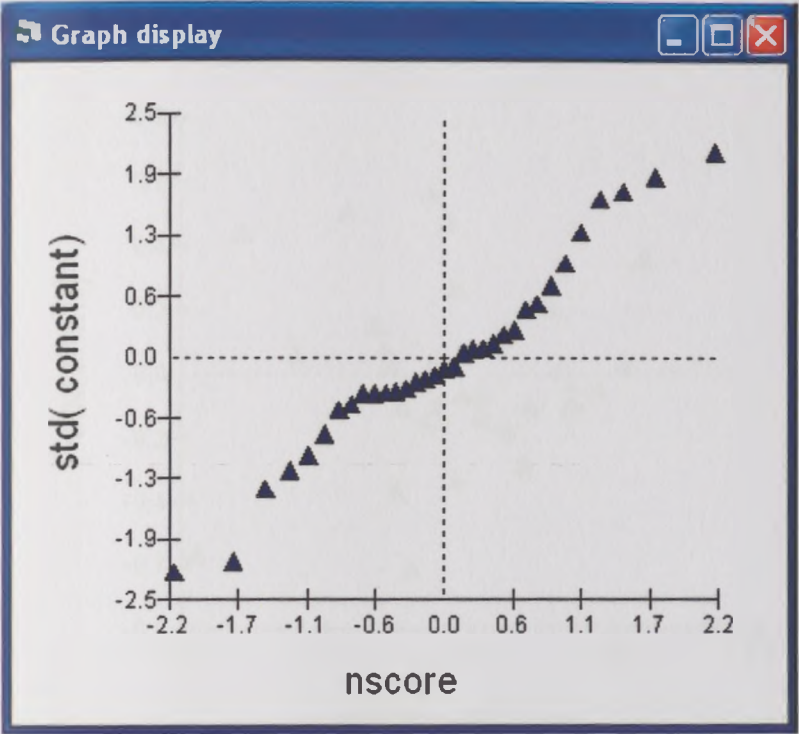


Figure K47: Standardised level 1 residuals by predicted values for Model 5.1

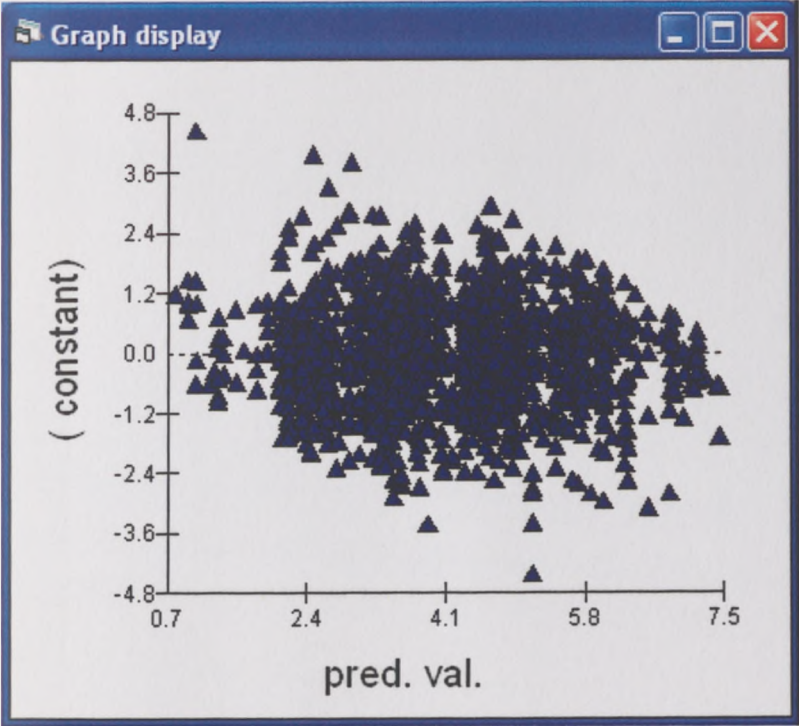
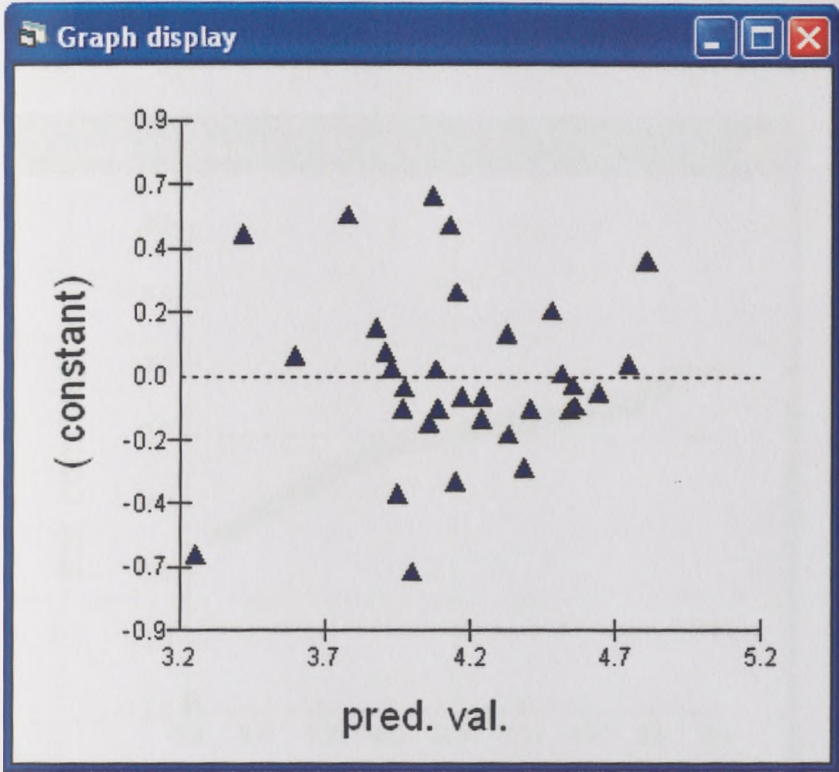


Figure K48: Standardised level 2 residuals by predicted values for Model 5.1



MODEL 6.1

Figure K49: Standardised level 1 residuals by normal equivalent scores for Model 6.1

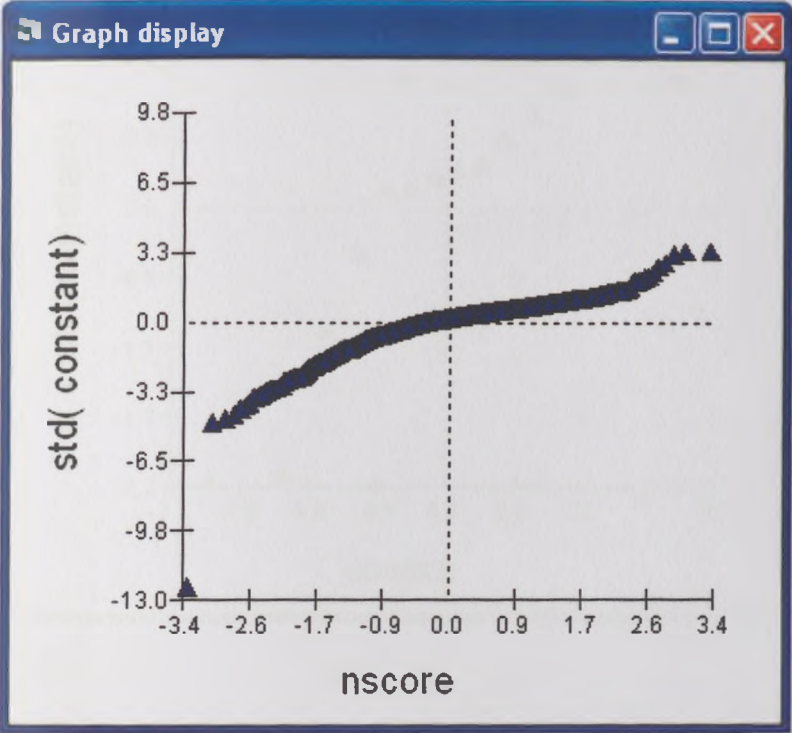


Figure K50: Standardised level 2 residuals by normal equivalent scores for Model 6.1

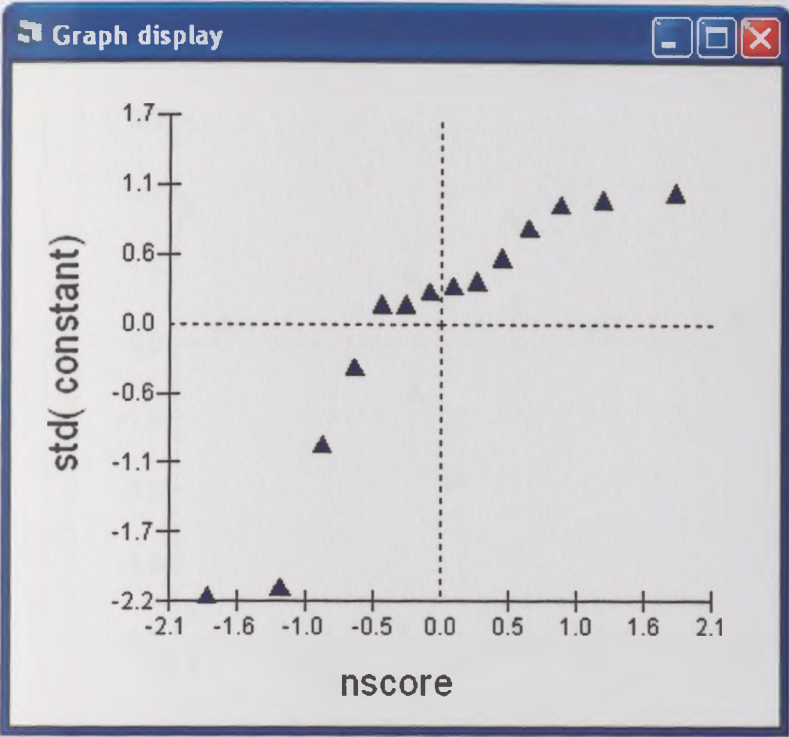


Figure K51: Standardised level 1 residuals by predicted values for Model 6.1

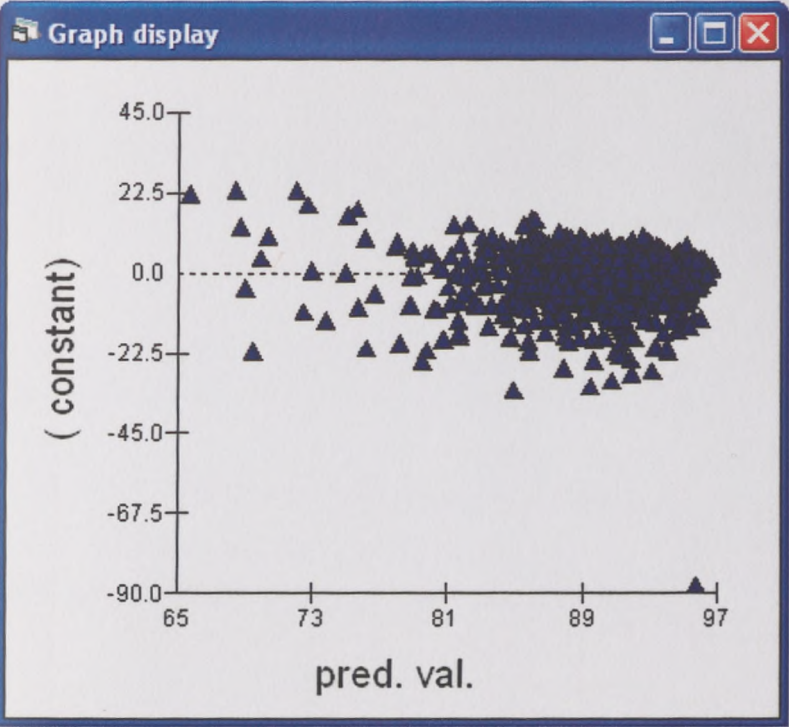
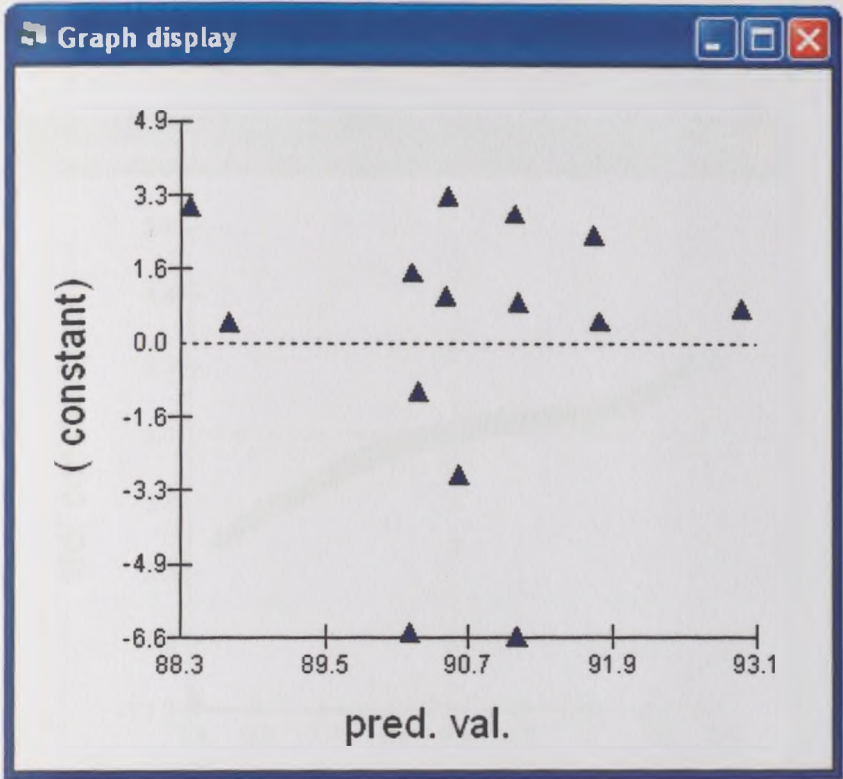


Figure K52: Standardised level 2 residuals by predicted values for Model 6.1



MODEL 7.1

Figure K53: Standardised level 1 residuals by normal equivalent scores for Model 7.1

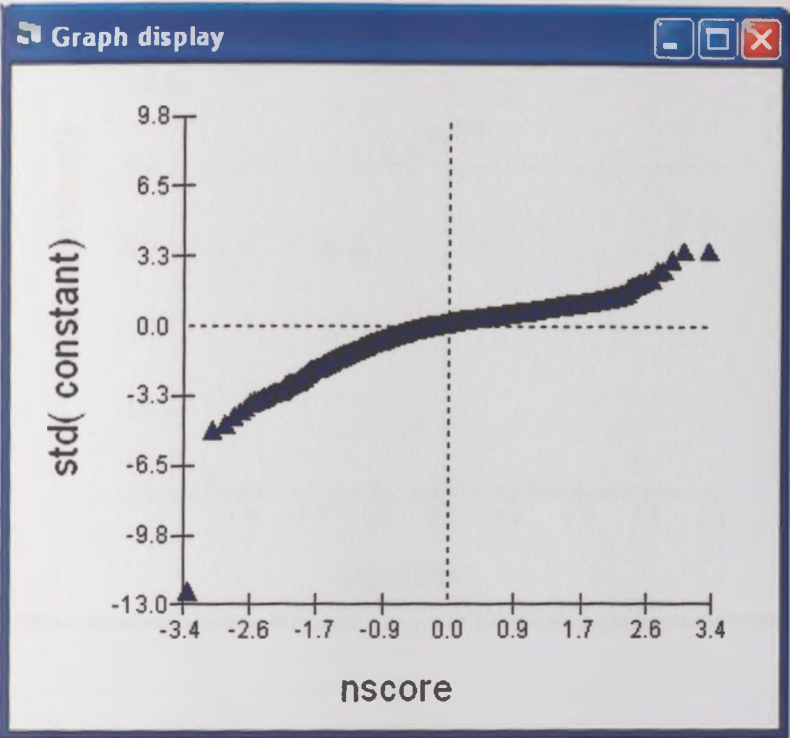


Figure K54: Standardised level 2 residuals by normal equivalent scores for Model 7.1

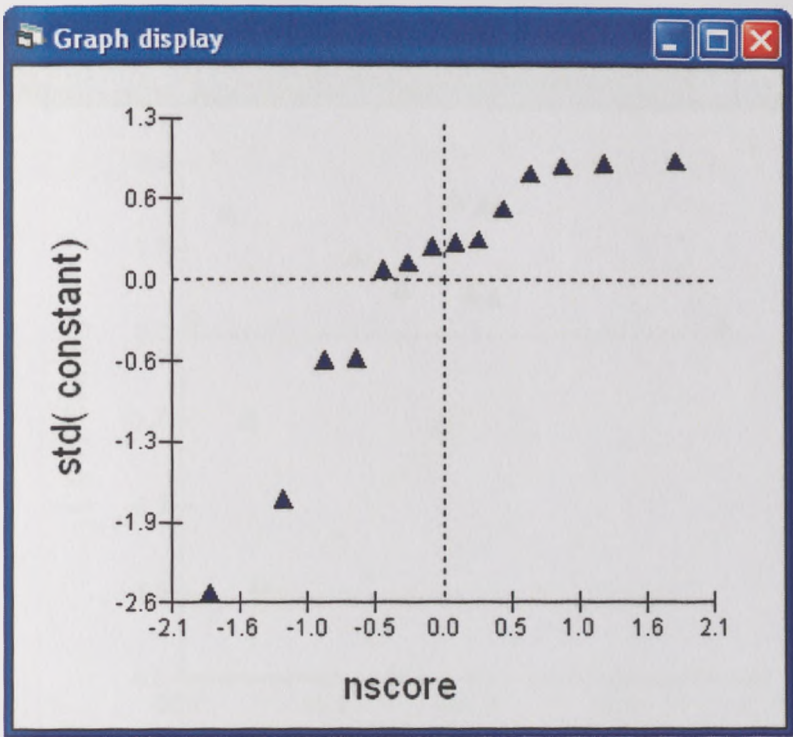


Figure K55: Standardised level 2 residuals by predicted values for Model 7.1

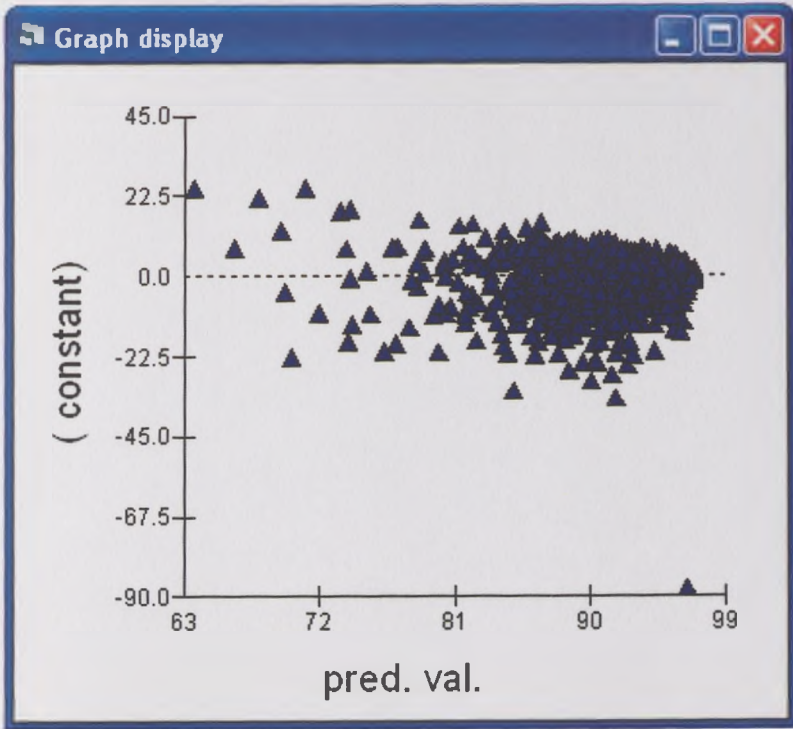
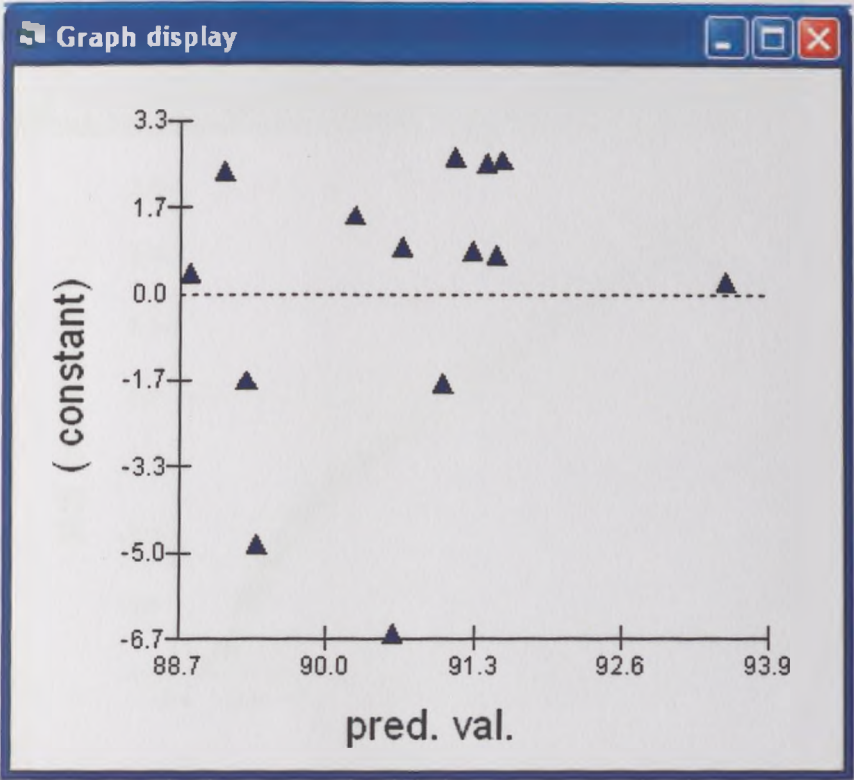


Figure K56: Standardised level 2 residuals by predicted values for Model 7.1



MODEL 8.1

Figure K57: Standardised level 1 residuals by normal equivalent scores for Model 8.1

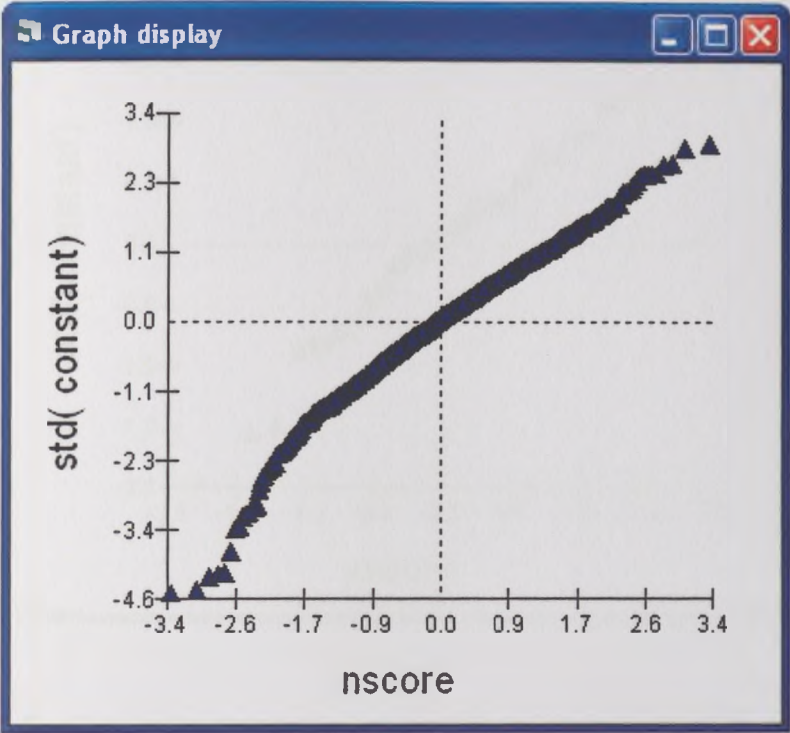


Figure K58: Standardised level 2 residuals by normal equivalent scores for Model 8.1

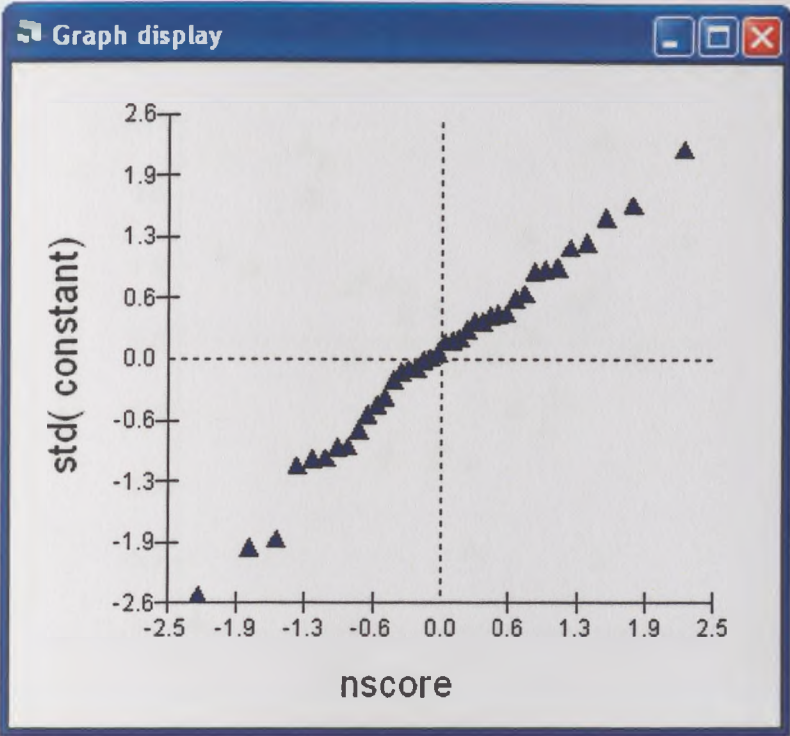


Figure K59: Standardised level 1 residuals by predicted values for Model 8.1

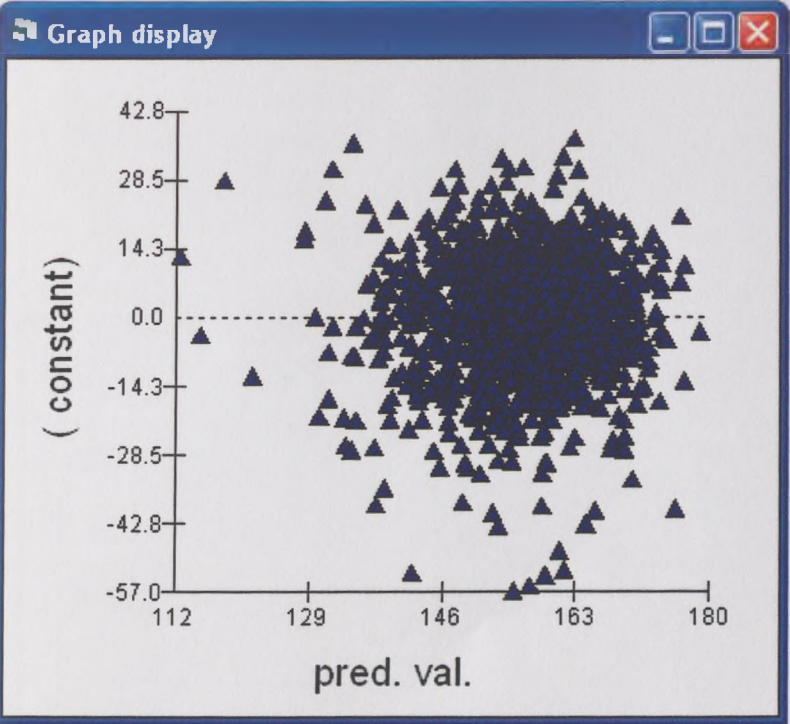
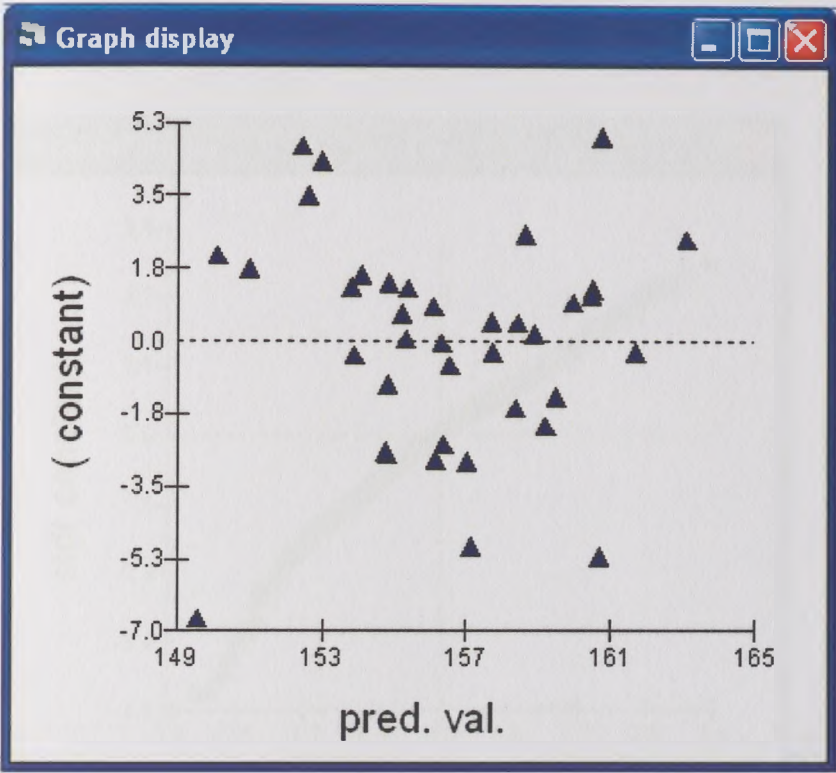


Figure K60: Standardised level 2 residuals by predicted values for Model 8.1



MODEL 9.1

Figure K61: Standardised level 1 residuals by normal equivalent scores for Model 9.1

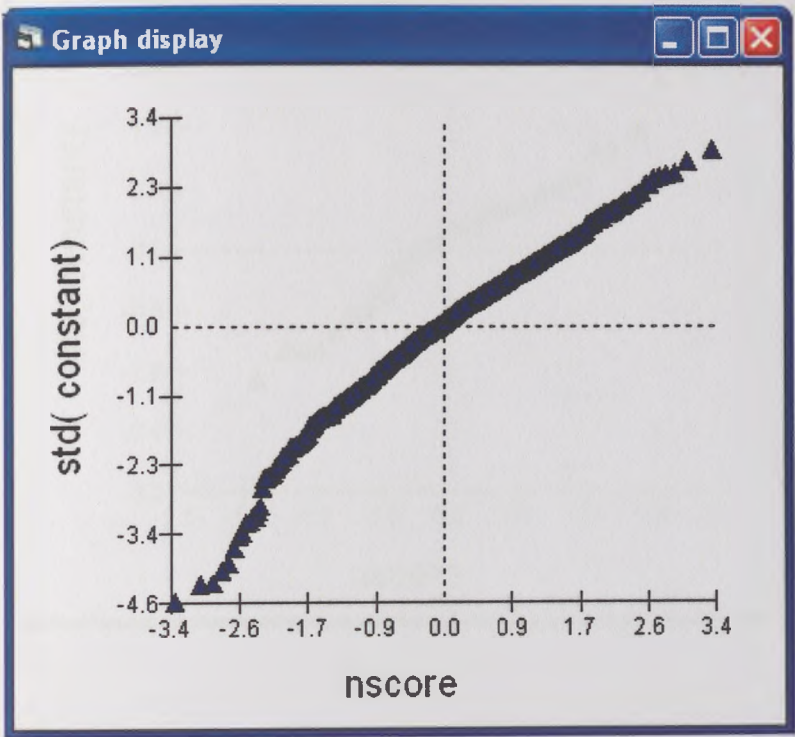


Figure K62: Standardised level 2 residuals by normal equivalent scores for Model 9.1

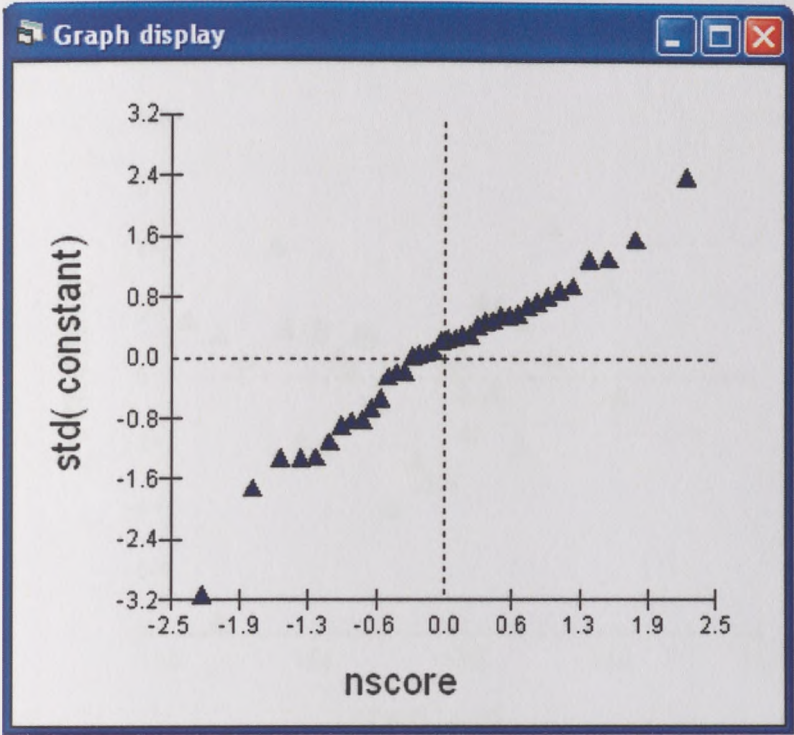


Figure K63: Standardised level 1 residuals by predicted values for Model 9.1

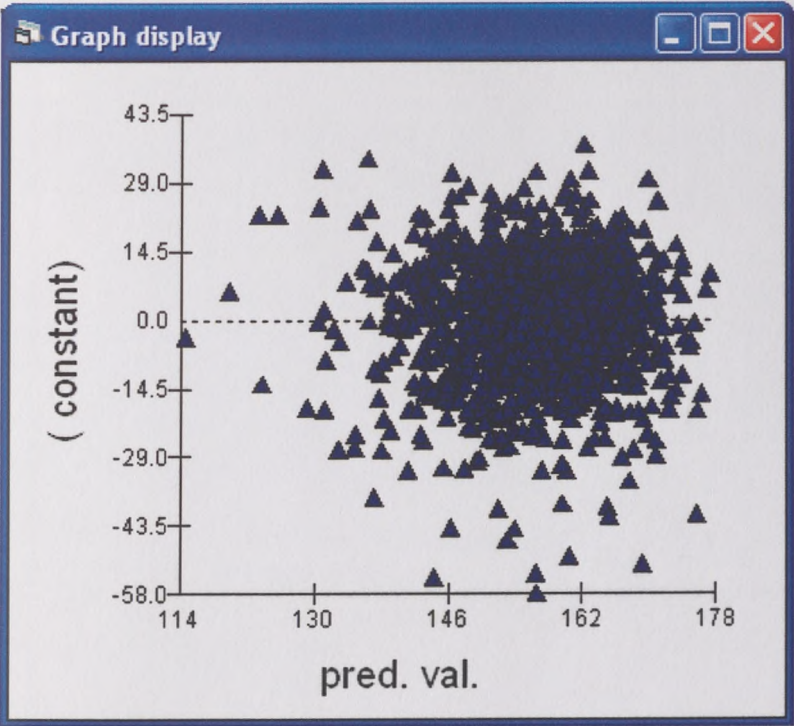
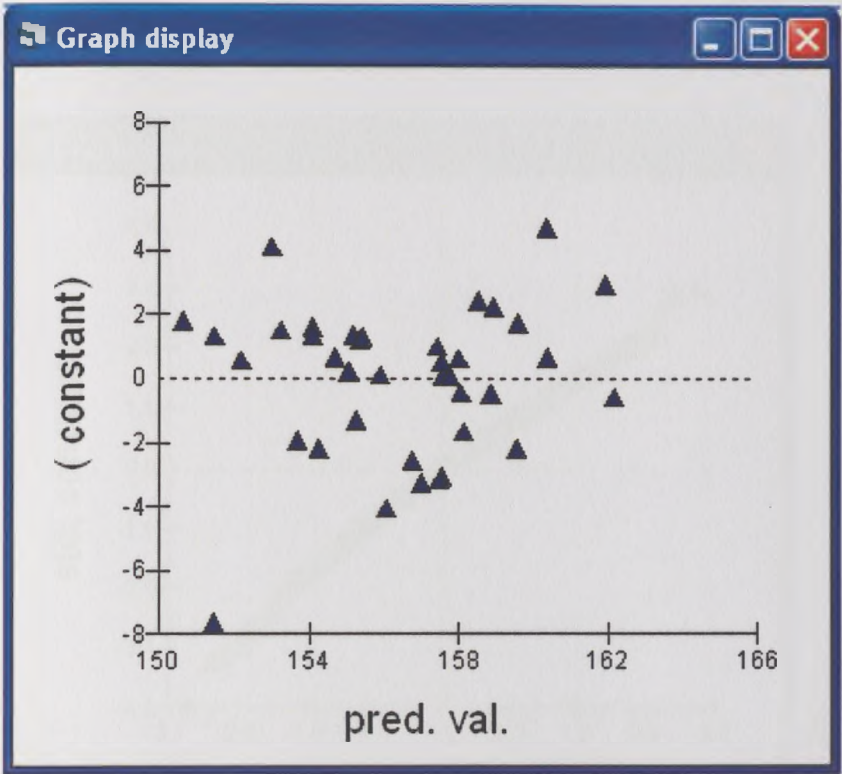


Figure K64: Standardised level 2 residuals by normal equivalent scores for Model 9.1



MODEL 10.1

Figure K65: Standardised level 1 residuals by normal equivalent scores for Model 10.1

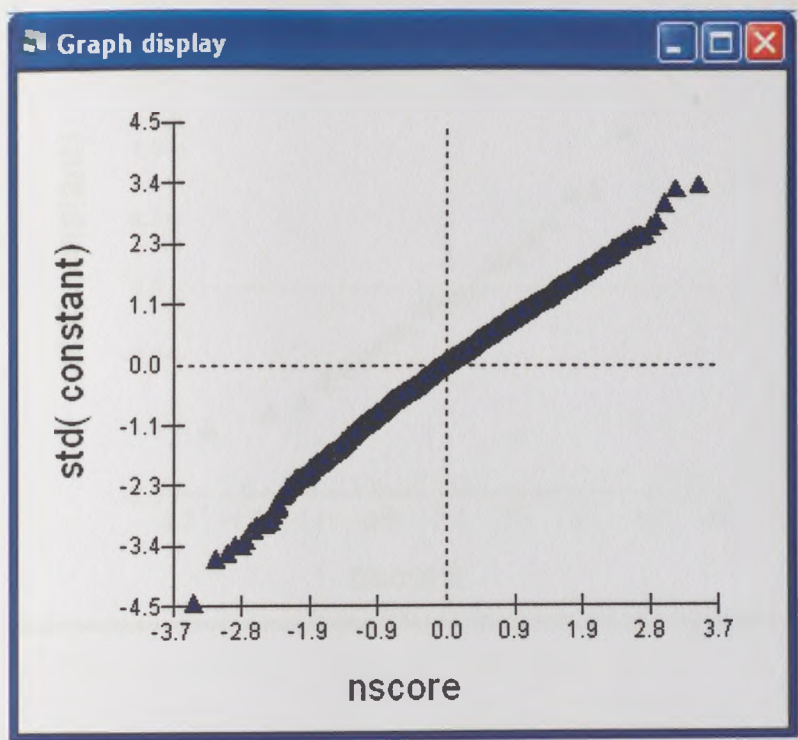


Figure K66: Standardised level 2 residuals by normal equivalent scores for Model 10.1

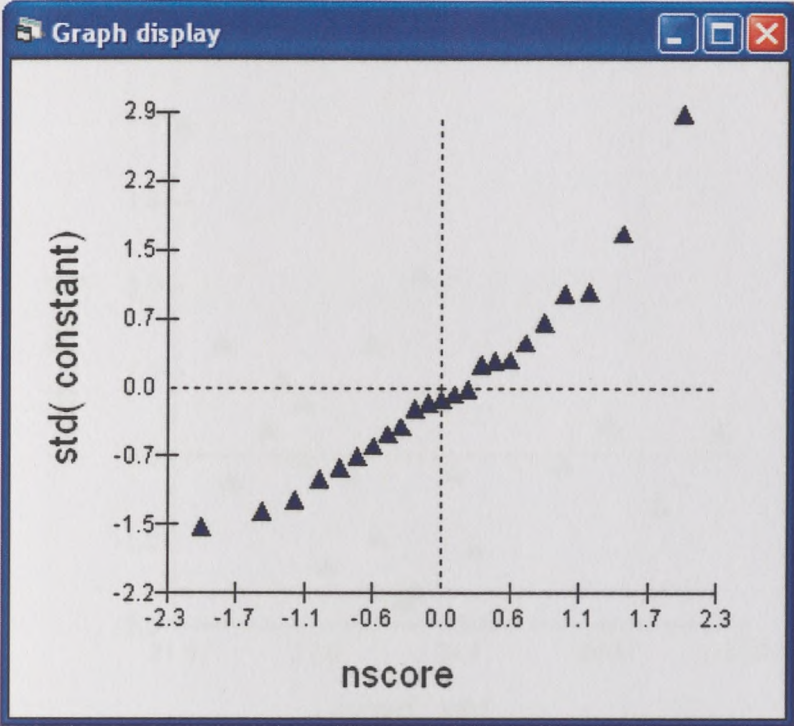


Figure K67: Standardised level 1 residuals by predicted values for Model 10.1

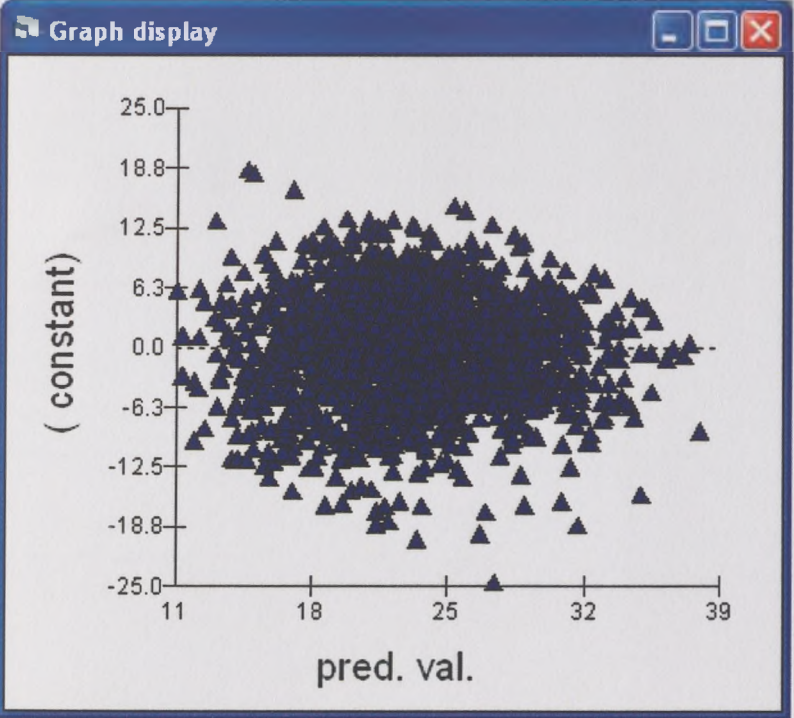
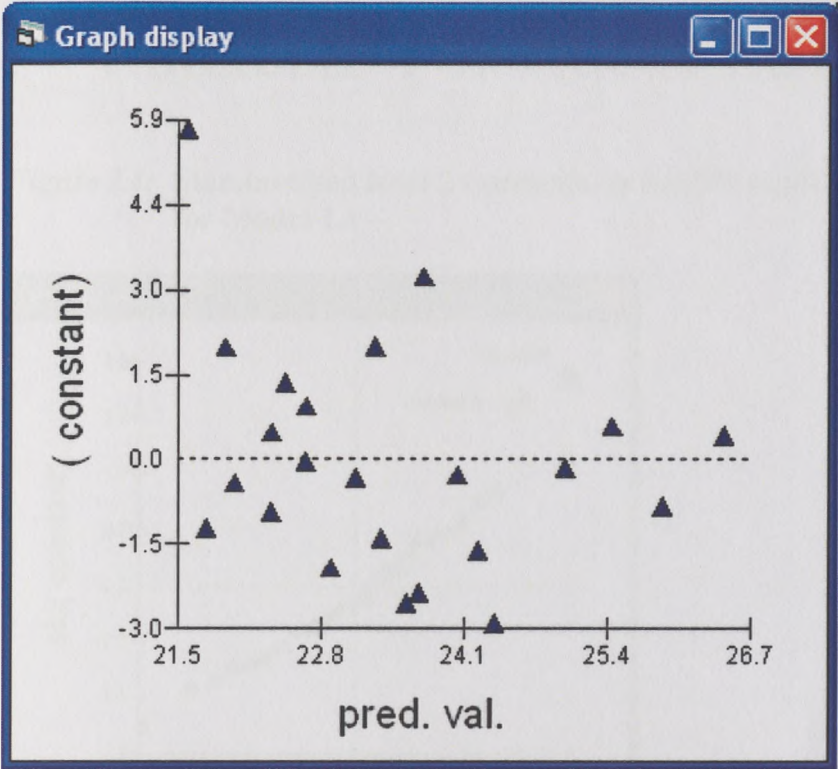


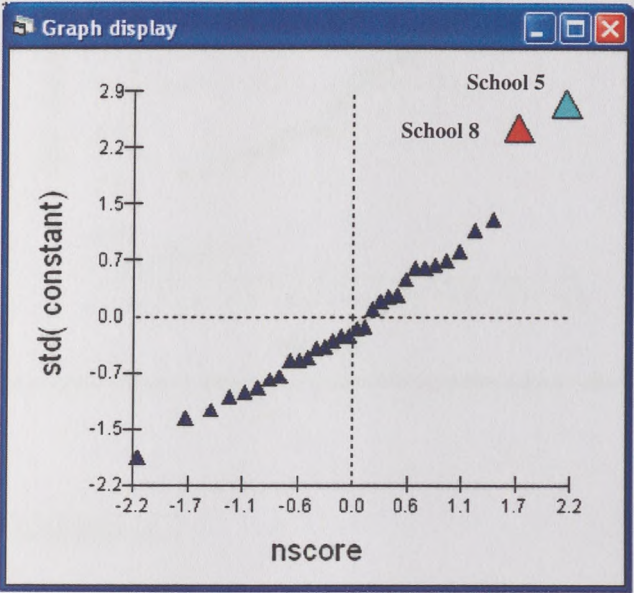
Figure K68: Standardised level 2 residuals by predicted values for Model 10.1



Appendix L:

COMPARISON OF MODEL 1s WITH DUMMY VARIABLES FOR OUTLYING SCHOOLS

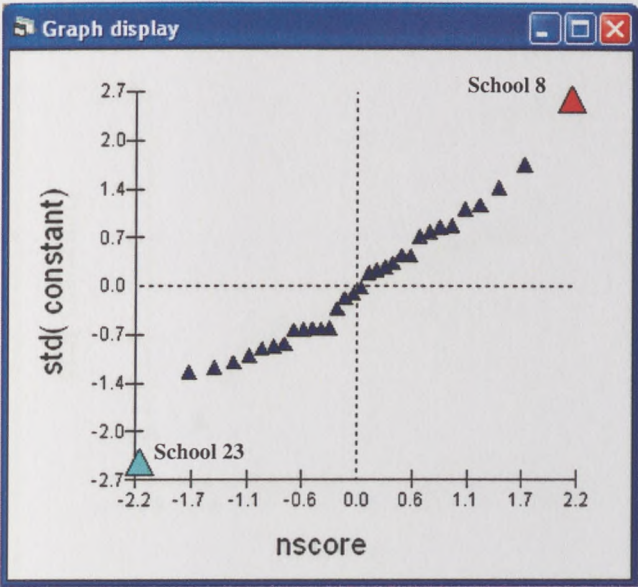
Figure L1: Standardised level 2 residuals by normal equivalent scores for Model 1.1



MODEL 1.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	20.975	0.577	20.518	0.534
NVR (centered)	0.300	0.010	0.299	0.010
Male	-1.307	0.258	-1.336	0.257
FME	-1.488	0.279	-1.422	0.278
White	-0.994	0.325	-1.112	0.317
Yr10 Subject SS	1.246	0.303	1.260	0.296
Yr11 Subject SS	3.333	0.379	3.521	0.380
School 5			5.863	1.497
School 8			5.148	1.454
Random				
Between schools	3.643	1.049	1.756	0.571
Between students	33.509	0.992	33.521	0.993
Intra-school correlation	0.098			
Loglikelihood	14740.9		14720.6	
Number of cases in use	2312		2312	

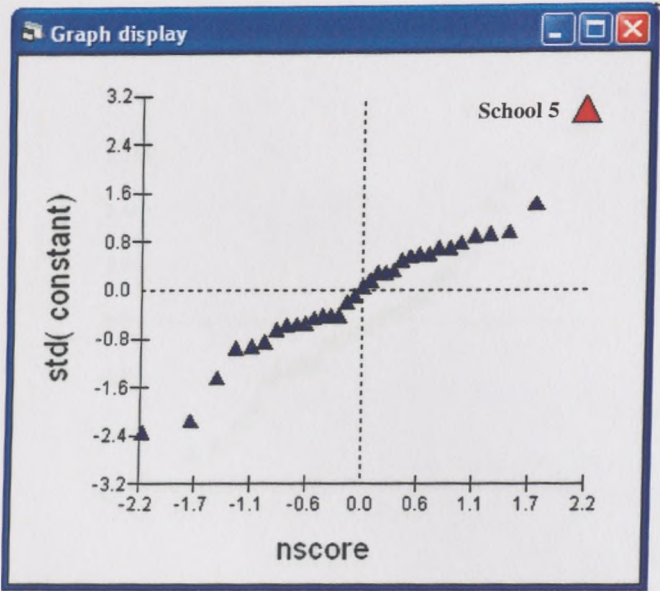
Figure L2: Standardised level 2 residuals by normal equivalent scores for Model 2.1



MODEL 2.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	22.777	0.586	22.718	0.545
NVR (centered)	0.305	0.010	0.304	0.010
Male	-1.550	0.264	-1.612	0.263
FME	-1.640	0.284	-1.605	0.283
White	-1.158	0.329	-1.269	0.322
Yr10 Non-Subject SS	1.116	0.401	1.197	0.392
Yr11 Non-Subject SS	1.216	0.360	1.296	0.359
School 8			4.658	1.415
School 23			-4.735	1.617
Random				
Between schools	2.947	0.880	1.637	0.549
Between students	34.818	1.032	34.823	1.032
Intra-school correlation	0.078		0.045	
Loglikelihood	14809.9		14793.3	
Number of cases in use	2310		2310	

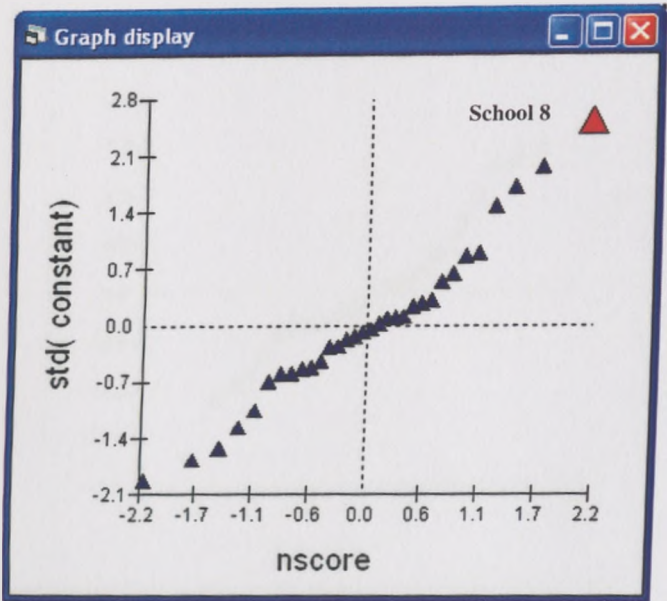
Figure L3: Standardised level 2 residuals by normal equivalent scores for Model 3.1



MODEL 3.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	3.709	0.068	3.680	0.062
SATS Maths (centered)	1.147	0.015	1.146	0.015
Male	-0.112	0.035	-0.112	0.035
FME	-0.219	0.039	-0.213	0.039
White	-0.259	0.045	-0.269	0.045
Yr10 Maths	0.218	0.061	0.228	0.060
Yr11 Maths	0.266	0.039	0.276	0.039
School 5			0.891	0.252
Random				
Between schools	0.081	0.022	0.054	0.016
Between students	0.748	0.020	0.749	0.021
Intra-school correlation	0.098		0.067	
Loglikelihood	6943.3		6932.4	
Number of cases in use	2699		2699	

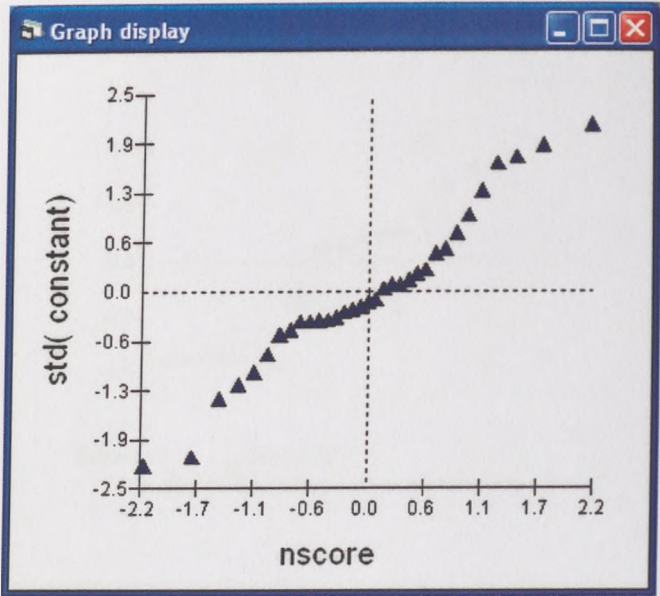
Figure L4: Standardised level 2 residuals by normal equivalent scores for Model 4.1



MODEL 4.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	4.482	0.079	4.452	0.075
SATS English (centered)	0.972	0.019	0.971	0.019
Male	-0.165	0.039	-0.165	0.039
FME	-0.222	0.043	-0.219	0.043
White	-0.087	0.049	-0.090	0.049
Yr10 English	0.218	0.111	0.212	0.111
Yr11 English	0.026	0.043	0.029	0.043
School 8			0.918	0.327
Random				
Between schools	0.125	0.034	0.099	0.028
Between students	0.814	0.023	0.814	0.023
Intra-school correlation	0.133		0.108	
Loglikelihood	6614.3		6606.9	
Number of cases in use	2485		2485	

Figure L5: Standardised level 2 residuals by normal equivalent scores for Model 5.1



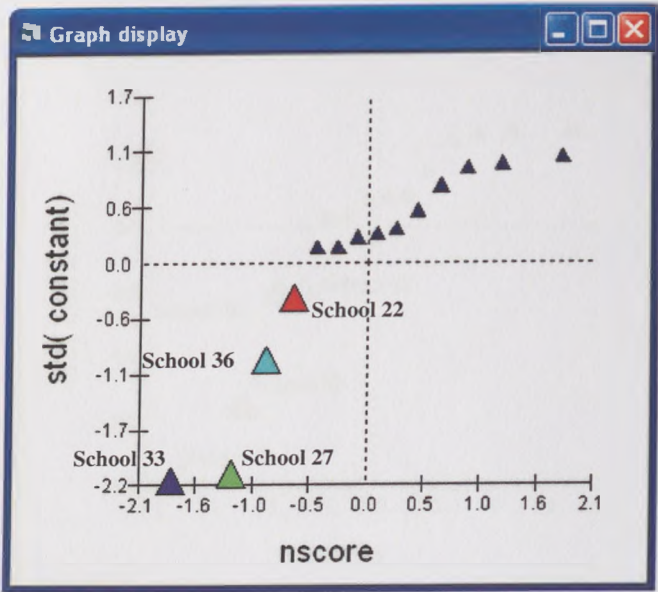
There are no outliers in this model.

MODEL 5.1

PARAMETER	Estimate	S.E.
Fixed		
Intercept	4.035	0.078
SATS Science (centered)	1.126	0.020
Male	-0.266	0.040
FME	-0.155	0.045
White	-0.255	0.051
Yr10 Science	0.028	0.078
Yr11 Science	0.320	0.043
Random		
Between schools	0.111	0.031
Between students	0.889	0.025
Intra-school correlation	0.111	
Loglikelihood	6835.8	
Number of cases in use	2488	

No outliers

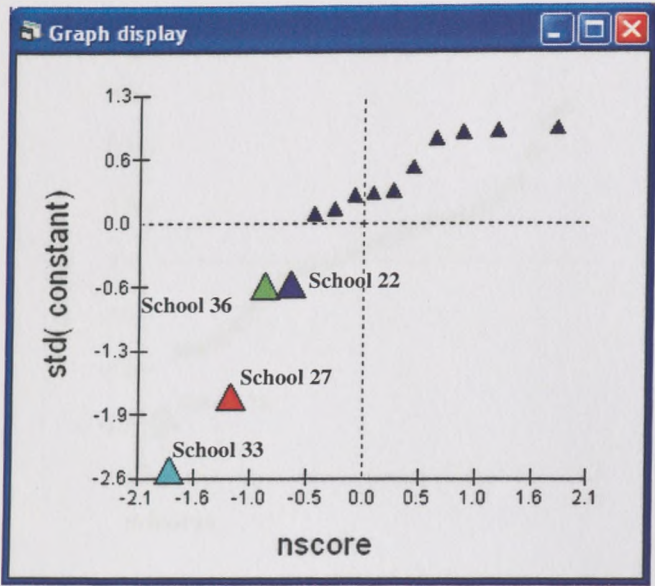
Figure L6: Standardised level 2 residuals by normal equivalent scores for Model 6.1



MODEL 6.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	87.121	1.213	88.906	0.847
Yr9 Attendance (centered)	0.447	0.026	0.449	0.026
Male	0.413	0.438	0.432	0.430
FME	-2.141	0.473	-2.122	0.468
White	-0.607	0.617	-0.272	0.553
Yr10 Subject SS	0.227	0.494	0.027	0.467
Yr11 Subject SS	3.007	0.591	2.873	0.585
School 22			-3.049	1.213
School 27			-8.651	1.129
School 33			-9.353	1.534
School 36			-4.983	1.334
Random				
Between schools	11.116	4.463	0.673	0.493
Between students	50.447	2.071	50.438	2.070
Intra-school correlation	0.181		0.013	
Loglikelihood	8150.8		8116.3	
Number of cases in use	1201		1201	

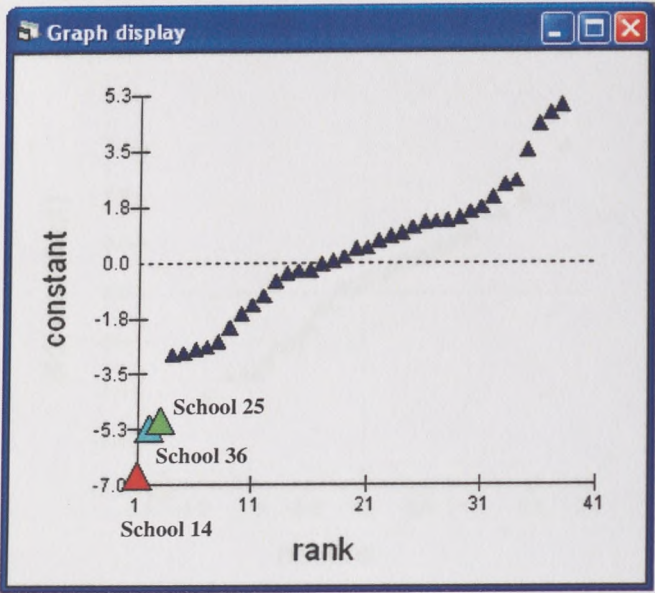
Figure L7: Standardised level 2 residuals by normal equivalent scores for Model 7.1



MODEL 7.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	87.286	1.116	88.896	0.820
Yr9 Attendance (centered)	0.449	0.026	0.452	0.026
Male	-0.096	0.438	0.014	0.427
FME	-2.217	0.474	-2.192	0.468
White	-0.725	0.616	-0.313	0.540
Yr10 Non-Subject SS	1.323	0.605	1.049	0.599
Yr11 Non-Subject SS	2.413	0.537	2.266	0.531
School 22			-3.527	1.130
School 27			-6.929	1.113
School 33			-9.580	1.484
School 36			-3.789	1.313
Random				
Between schools	8.696	3.547	0.486	0.417
Between students	50.528	2.075	50.486	2.072
Intra-school correlation	0.147		0.010	
Loglikelihood	8142.7		8108.6	
Number of cases in use	1200		1200	

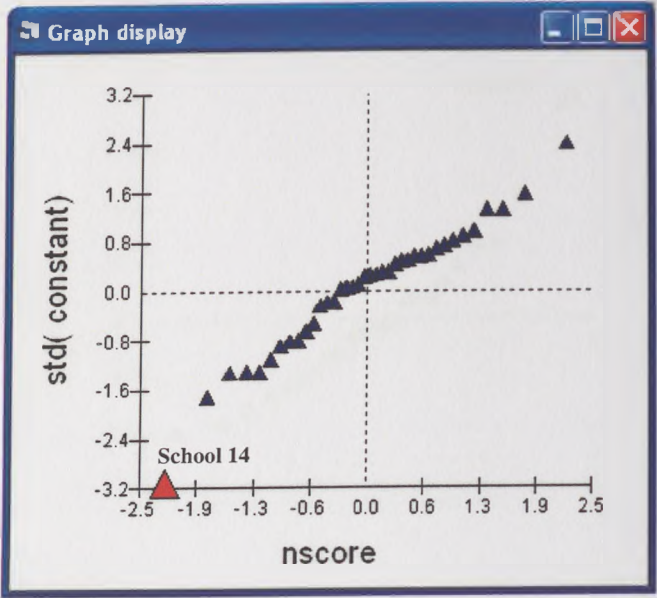
Figure L8: Standardised level 2 residuals by normal equivalent scores for Model 8.1



MODEL 8.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	152.062	1.516	153.056	1.434
Yr9 Attitudes (centered)	0.509	0.027	0.508	0.027
Male	-4.306	0.752	-4.237	0.746
FME	-2.658	0.869	-2.641	0.861
White	-0.915	0.987	-0.969	0.946
Yr10 Subject SS	1.534	0.880	1.593	0.855
Yr11 Subject SS	6.900	1.141	6.550	1.117
School 14			-10.474	3.285
School 25			-8.438	3.432
School 36			-8.793	3.441
Random				
Between schools	10.835	3.783	5.246	2.429
Between students	163.408	6.618	163.332	6.611
Intra-school correlation	0.062		0.031	
Loglikelihood	9999.9		9980.8	
Number of cases in use	1256		1256	

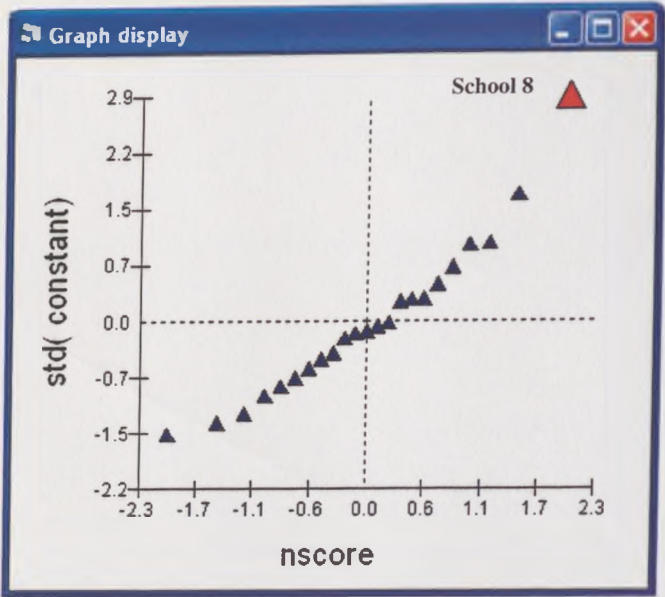
Figure L9: Standardised level 2 residuals by normal equivalent scores for Model 9.1



MODEL 9.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	152.835	1.549	153.156	1.479
Yr9 Attitudes (centered)	0.513	0.027	0.506	0.027
Male	-5.070	0.760	-5.081	0.754
FME	-2.854	0.870	-2.962	0.862
White	-1.363	0.978	-1.342	0.946
Yr10 Non-Subject SS	2.593	1.179	2.705	1.146
Yr11 Non-Subject SS	5.509	0.993	5.429	0.983
School 14			-12.039	3.320
Random				
Between schools	9.476	3.458	5.532	2.510
Between students	164.341	6.658	164.390	6.657
Intra-school correlation	0.055		0.033	
Loglikelihood	9995.7		9983.8	
Number of cases in use	1255		1255	

Figure L10: Standardised level 2 residuals by normal equivalent scores for Model 10.1



MODEL 10.1

PARAMETER	Estimate	S.E.	Estimate	S.E.
Fixed				
Intercept	18.997	0.724	18.766	0.671
NVR (centered)	0.276	0.011	0.276	0.011
Male	-1.164	0.298	-1.211	0.297
FME	-1.145	0.311	-1.121	0.310
White	-0.374	0.401	-0.489	0.394
Yr10 Subject SS	1.395	0.345	1.375	0.340
Yr11 Subject SS	3.112	0.445	3.164	0.444
Easter School	3.846	0.317	3.850	0.315
School 8			6.386	1.735
Random				
Between schools	4.392	1.453	2.586	0.917
Between students	31.273	1.084	31.277	1.084
Intra-school correlation	0.123		0.076	
Loglikelihood	10653.7		10642.4	
Number of cases in use	1689		1689	